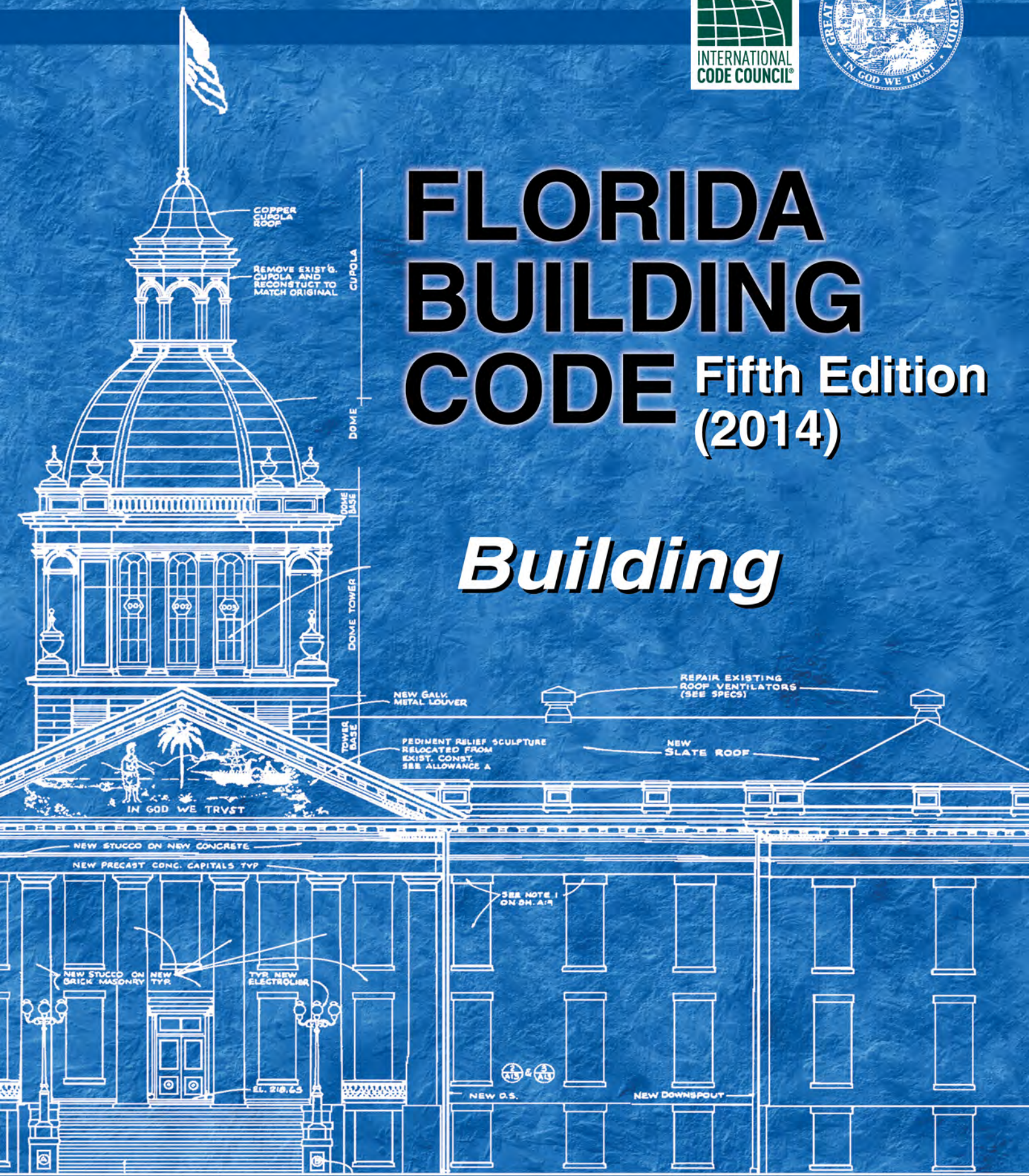
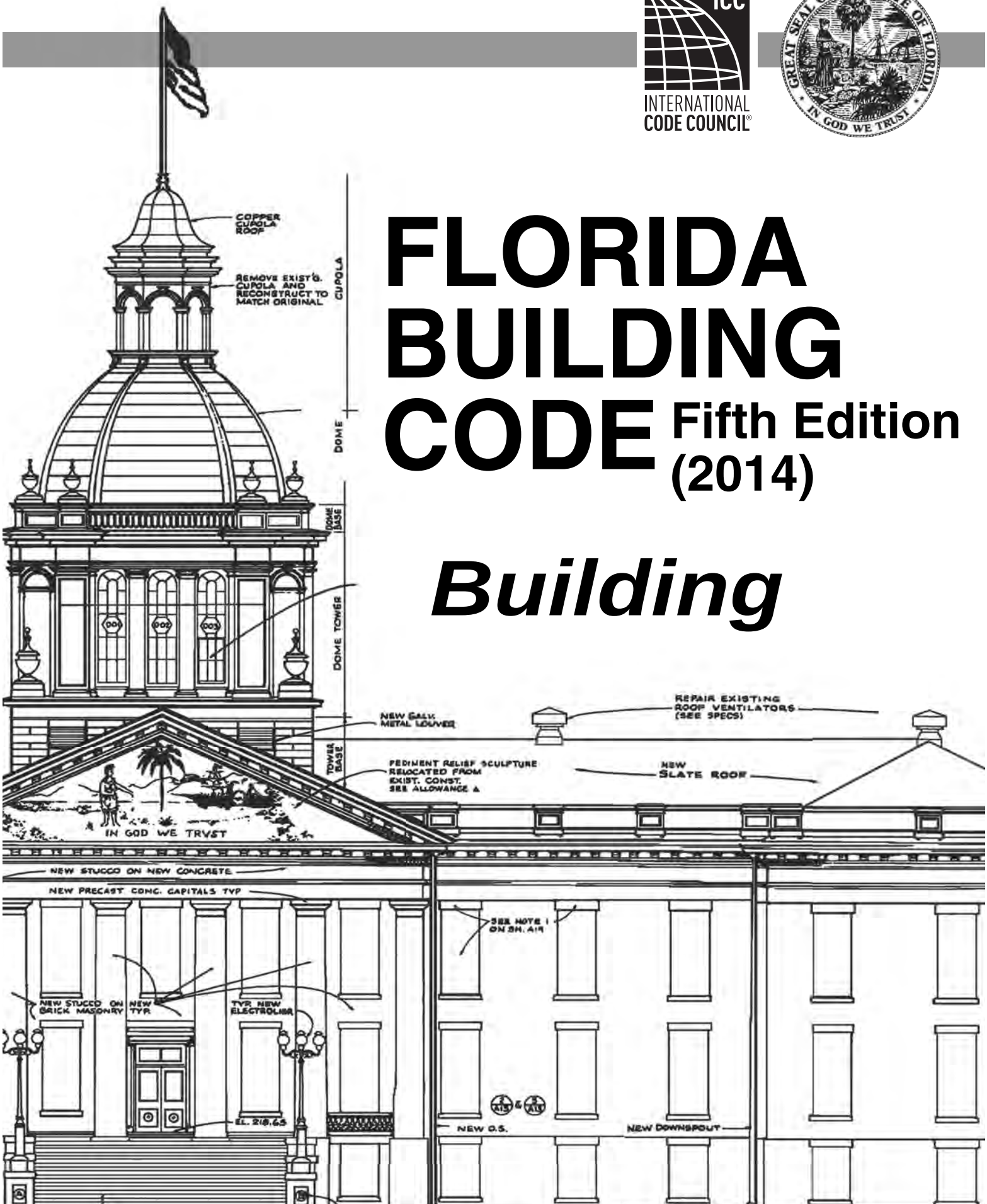


FLORIDA BUILDING CODE

Fifth Edition (2014)

Building



FLORIDA BUILDING CODE Fifth Edition (2014)

Building

Florida Building Code, Building, 5th Edition (2014)

First Printing: March 2015

ISBN: 978-1-60983-557-6

PRINTED IN THE U.S.A.

PREFACE

History

The State of Florida first mandated statewide building codes during the 1970s at the beginning of the modern construction boom. The first law required all municipalities and counties to adopt and enforce one of the four state-recognized model codes known as the "state minimum building codes." During the early 1990s a series of natural disasters, together with the increasing complexity of building construction regulation in vastly changed markets, led to a comprehensive review of the state building code system. The study revealed that building code adoption and enforcement was inconsistent throughout the state and those local codes thought to be the strongest proved inadequate when tested by major hurricane events. The consequences of the building codes system failure were devastation to lives and economies and a statewide property insurance crisis. The response was a reform of the state building construction regulatory system that placed emphasis on uniformity and accountability.

The 1998 Florida Legislature amended Chapter 553, *Florida Statutes* (FS), Building Construction Standards, to create a single state building code that is enforced by local governments. As of March 1, 2002, the *Florida Building Code*, which is developed and maintained by the Florida Building Commission, supersedes all local building codes. The *Florida Building Code* is updated every three years and may be amended annually to incorporate interpretations and clarifications.

Scope

The *Florida Building Code* is based on national model building codes and national consensus standards which are amended where necessary for Florida's specific needs. However, code requirements that address snow loads and earthquake protection are pervasive; they are left in place but should not be utilized or enforced because Florida has no snow load or earthquake threat. The code incorporates all building construction-related regulations for public and private buildings in the State of Florida other than those specifically exempted by Section 553.73, *Florida Statutes*. It has been harmonized with the *Florida Fire Prevention Code*, which is developed and maintained by the Department of Financial Services, Office of the State Fire Marshal, to establish unified and consistent standards.

The base codes for the Fifth edition (2014) of the *Florida Building Code* include: the *International Building Code®*, 2012 edition; the *International Plumbing Code®*, 2012 edition; the *International Mechanical Code®*, 2012 edition; the *International Fuel Gas Code®*, 2012 edition; the *International Residential Code®*, 2012 edition; the *International Existing Building Code®*, 2012 edition; the I*nternational Energy Conservation Code®*, 2012 edition; the *National Electrical Code*, 2011 edition; substantive criteria from the American Society of Heating, Refrigerating and Air-conditioning Engineers' (ASHRAE) Standard 90.1-2010. State and local codes adopted and incorporated into the code include the *Florida Building Code, Accessibility,* and special hurricane protection standards for the High-Velocity Hurricane Zone.

The code is composed of nine main volumes: the *Florida Building Code, Building*, which also includes state regulations for licensed facilities; the *Florida Building Code, Plumbing*; the *Florida Building Code, Mechanical;* the *Florida Building Code, Fuel Gas*; the *Florida Building Code, Existing Building*; the *Florida Building Code, Residential;* the *Florida Building Code, Energy Conservation*; the *Florida Building Code, Accessibility* and the *Florida Building Code, Test Protocols for High-Velocity Hurricane Zones*. Chapter 27 of the *Florida Building Code, Building*, adopts the *National Electrical Code*, NFPA 70, by reference.

Under certain strictly defined conditions, local governments may amend requirements to be more stringent than the code. All local amendments to the *Florida Building Code* must be adopted by local ordinance and reported to the Florida Building Commission, then posted on www.floridabuilding.org in Legislative format for a month before being enforced. Local amendments to the *Florida Building Code* and the *Florida Fire Prevention Code* may be obtained from the Florida Building Commission web site, or from the Florida Department of Business and Professional Regulation or the Florida Department of Financial Services, Office of the State Fire Marshal, respectively.

Adoption and Maintenance

The Florida Building Code is adopted and updated with new editions triennially by the Florida Building Commission. It is amended annually to incorporate interpretations, clarifications and to update standards. Minimum requirements for permitting, plans review and inspections are established by the code, and local jurisdictions may adopt additional administrative requirements that are more stringent. Local technical amendments are subject to strict criteria established by Section 553.73, FS They are subject to Commission review and adoption into the code or repeal when the code is updated triennially and are subject to appeal to the Commission according to the procedures established by Section 553.73, FS.

Eleven Technical Advisory Committees (TACs), which are constituted consistent with American National Standards Institute (ANSI) Guidelines, review proposed code changes and clarifications of the code and make recommendations to the Commission. These TACs, whose membership is constituted consistent with American National Standards Institute (ANSI) Guidelines, include: Accessibility; Joint Building Fire (a joint committee of the Commission and the State Fire Marshal); Building Structural; Code Administration/Enforcement; Electrical; Energy; Mechanical; Plumbing and Fuel Gas; Roofing; Swimming Pool; and Special Occupancy (state agency construction and facility licensing regulations).

The Commission may only issue official code clarifications using procedures of Chapter 120, *Florida Statutes*. To obtain such a clarification, a request for a Declaratory Statement (DEC) must be made to the Florida Building Commission in a manner that establishes a clear set of facts and circumstances and identifies the section of the code in question. Requests are analyzed by staff, reviewed by the appropriate Technical Advisory Committee, and sent to the Florida Building Commission for action. These interpretations establish precedents for situations having similar facts and circumstances and are typically incorporated into the code in the next code amendment cycle. Nonbinding opinions are available from the Building Officials Association of Florida's web site (www.BOAF.net) and a Binding Opinion process is available online at www.floridabuilding.org.

Code Development Committee Responsibilities (Letter Designations in Front of Section Numbers)

In each code development cycle, proposed changes to the code are considered at the Code Development Hearings by the applicable International Building Code Development Committee (IBC-Fire Safety, General, Means of Egress or Structural). Proposed changes to a code section that has a number beginning with a letter in brackets are considered by a different code development committee. For example, proposed changes to code sections that have [F] in front of them (e.g., [F] 903.1.1.1) are considered by the International Building Code, Fire Development Committee during the portion of the code development hearings when the International Building Code, Fire Development Committee meets.

The content of sections in this code that begin with a letter designation is maintained by another code development committee in accordance with the following:

[A] = Administrative Code Development Committee;

[E] = International Energy Conservation Code Development Committee (Commercial Energy Committee or Residential Energy Committee, as applicable);

[EB] = International Existing Building Code Development Committee;

[F] = Florida Building Code, Fire Development Committee;

[FG] = Florida Building Code, Fuel Gas Development Committee;

[M] = Florida Building Code, Mechanical Development Committee; and

[P] = Florida Building Code, Plumbing Development Committee.

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2009 edition. Deletion indicators in the form of an arrow (→) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or table has been deleted.

A single asterisk [*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [**] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code.

Dotted vertical lines in the margins within the body of the supplement indicate a change from the requirements of the base codes to the *Florida Building Code,* 5th Edition (2014) effective June 30, 2015.

Sections deleted from the base code or the High-Velocity Hurricane Zones (HVHZ) are designated "Reserved" in order to maintain the structure of the base code.

Italicized Terms

Selected terms set forth in Chapter 2, Definitions, are italicized where they appear in code text (except those in Sections 1903 through 1908 where italics indicate provisions that differ from ACI 318). Such terms are not italicized where the definition set forth in Chapter 2 does not impart the intended meaning in the use of the term. The terms selected have definitions which the user should read carefully to facilitate better understanding of the code.

Acknowledgments

The *Florida Building Code* is produced through the efforts and contributions of building designers, contractors, product manufacturers, regulators and other interested parties who participate in the Florida Building Commission's consensus processes, Commission staff and the participants in the national model code development processes.

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CHAPTER 1

SCOPE AND ADMINISTRATION

PART 1—SCOPE AND APPLICATION

SECTION 101
GENERAL

[A] 101.1 Title. These regulations shall be known as the *Florida Building Code,* hereinafter referred to as "this code."

[A] 101.2 Scope. The provisions of this code shall apply to the construction, *alteration*, relocation, enlargement, replacement, *repair*, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family *dwellings* (town houses) not more than three stories above *grade plane* in height with a separate *means of egress* and their accessory structures shall comply with the *Florida Building Code, Residential.*
2. Existing buildings undergoing repair, alterations or additions or change of occupancy shall comply with Chapter 34 of this code.

[A] 101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

[A] 101.3 Intent. The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, *means of egress* facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.

[A] 101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.8 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

[A] 101.4.1 Gas. The provisions of the *Florida Building Code, Fuel Gas* shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories.

[A] 101.4.2 Mechanical. The provisions of the *Florida Building Code, Mechanical* shall apply to the installation, alterations, repairs and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

[A] 101.4.3 Plumbing. The provisions of the *Florida Building Code, Plumbing* shall apply to the installation, *alteration*, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system.

[A] 101.4.4 Property maintenance. Reserved.

[A] 101.4.5 Fire prevention. For provisions related to fire prevention, refer to the *Florida Fire Prevention Code.* The *Florida Fire Prevention Code* shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, *repair*, *alteration* or removal of fire suppression, and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

[A] 101.4.6 Energy. The provisions of the *Florida Building Code, Energy Conservation* shall apply to all matters governing the design and construction of buildings for energy efficiency.

101.4.7 Accessibility. For provisions related to accessibility, refer to the *Florida Building Code, Accessibility.*

101.4.8 Manufactured buildings. For additional administrative and special code requirements, see Section 458, *Florida Building Code, Building,* and Rule 61-41 *Florida Administrative Code.*

SECTION 102
APPLICABILITY

[A] 102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

102.1.1 The *Florida Building Code* does not apply to, and no code enforcement action shall be brought with respect to, zoning requirements, land use requirements and owner specifications or programmatic requirements which do not pertain to and govern the design, construction, erection, alteration, modification, repair or demolition of public or private buildings, structures or facilities or to programmatic requirements that do not pertain to enforcement of the *Florida Building Code*. Additionally, a local code enforcement agency may not administer or enforce the

Florida Building Code, Building to prevent the siting of any publicly owned facility, including, but not limited to, correctional facilities, juvenile justice facilities, or state universities, community colleges, or public education facilities, as provided by law.

[A] 102.2 Building. The provisions of the *Florida Building Code* shall apply to the construction, erection, alteration, modification, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every public and private building, structure or facility or floating residential structure, or any appurtenances connected or attached to such buildings, structures or facilities. Additions, alterations, repairs and changes of use or occupancy group in all buildings and structures shall comply with the provisions provided in Chapter 34 of this code. The following buildings, structures and facilities are exempt from the *Florida Building Code* as provided by law, and any further exemptions shall be as determined by the legislature and provided by law:

(a) Building and structures specifically regulated and preempted by the federal government.

(b) Railroads and ancillary facilities associated with the railroad.

(c) Nonresidential farm buildings on farms.

(d) Temporary buildings or sheds used exclusively for construction purposes.

(e) Mobile or modular structures used as temporary offices, except that the provisions of Part II (Sections 553.501–553.513, *Florida Statutes*) relating to accessibility by persons with disabilities shall apply to such mobile or modular structures.

(f) Those structures or facilities of electric utilities, as defined in Section 366.02, *Florida Statutes*, which are directly involved in the generation, transmission, or distribution of electricity.

(g) Temporary sets, assemblies, or structures used in commercial motion picture or television production, or any sound-recording equipment used in such production, on or off the premises.

(h) Chickees constructed by the Miccosukee Tribe of Indians of Florida or the Seminole Tribe of Florida. As used in this paragraph, the term "chickee" means an open-sided wooden hut that has a thatched roof of palm or palmetto or other traditional materials, and that does not incorporate any electrical, plumbing, or other nonwood features.

(i) Family mausoleums not exceeding 250 square feet (23 m^2) in area which are prefabricated and assembled on site or preassembled and delivered on site and have walls, roofs, and a floor constructed of granite, marble, or reinforced concrete.

(j) Temporary housing provided by the Department of Corrections to any prisoner in the state correctional system.

(k) A building or structure having less than 1,000 square feet (93 m^2) which is constructed and owned by a natural person for hunting and which is repaired or reconstructed to the same dimension and condition as existed on January 1, 2011, if the building or structure:

1. Is not rented or leased or used as a principal residence;
2. Is not located within the 100-year floodplain according to the Federal Emergency Management Agency's current Flood Insurance Rate Map; and
3. Is not connected to an off-site electric power or water supply.

102.2.1 In addition to the requirements of Sections 553.79 and 553.80, *Florida Statutes*, facilities subject to the provisions of Chapter 395, *Florida Statutes*, and Part II of Chapter 400, *Florida Statutes*, shall have facility plans reviewed and construction surveyed by the state agency authorized to do so under the requirements of Chapter 395, *Florida Statutes*, and Part II of Chapter 400, *Florida Statutes*, and the certification requirements of the federal government.

102.2.2 Residential buildings or structures moved into or within a county or municipality shall not be required to be brought into compliance with the state minimum building code in force at the time the building or structure is moved, provided:

1. The building or structure is structurally sound and in occupiable condition for its intended use;
2. The occupancy use classification for the building or structure is not changed as a result of the move;
3. The building is not substantially remodeled;
4. Current fire code requirements for ingress and egress are met;
5. Electrical, gas and plumbing systems meet the codes in force at the time of construction and are operational and safe for reconnection; and
6. Foundation plans are sealed by a professional engineer or architect licensed to practice in this state, if required by the *Florida Building Code, Building* for all residential buildings or structures of the same occupancy class.

102.2.3 The *building official* shall apply the same standard to a moved residential building or structure as that applied to the remodeling of any comparable residential building or structure to determine whether the moved structure is substantially remodeled. The cost of the foundation on which the moved building or structure is placed shall not be included in the cost of remodeling for purposes of determining whether a moved building or structure has been substantially remodeled.

102.2.4 This section does not apply to the jurisdiction and authority of the Department of Agriculture and Consumer Services to inspect amusement rides or the Department of Financial Services to inspect state-owned buildings and boilers.

102.2.5 Each enforcement district shall be governed by a board, the composition of which shall be determined by the affected localities.

1. At its own option, each enforcement district or local enforcement agency may adopt rules granting to the owner of a single-family residence one or more exemptions from the *Florida Building Code* relating to:
   a. Addition, alteration, or repairs performed by the property owner upon his or her own property, provided any addition or alteration shall not exceed 1,000 square feet (93 m^2) or the square footage of the primary structure, whichever is less.
   b. Addition, alteration, or repairs by a nonowner within a specific cost limitation set by rule, provided the total cost shall not exceed $5,000 within any 12-month period.
   c. Building and inspection fees.
2. However, the exemptions under subparagraph 1 do not apply to single-family residences that are located in mapped flood hazard areas, as defined in the code, unless the enforcement district or local enforcement agency has determined that the work, which is otherwise exempt, does not constitute a substantial improvement, including the repair of substantial damage, of such single-family residences.
3. Each code exemption, as defined in sub-subparagraphs 1a, 1b, and 1c shall be certified to the local board 10 days prior to implementation and shall only be effective in the territorial jurisdiction of the enforcement district or local enforcement agency implementing it.

102.2.6 This section does not apply to swings and other playground equipment accessory to a one- or two-family dwelling.

Exception: Electrical service to such playground equipment shall be in accordance with Chapter 27.

[A] 102.3 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

[A] 102.4 Referenced codes and standards. The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 102.4.1 and 102.4.2.

[A] 102.4.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

[A] 102.4.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code or the Florida Codes listed in Section 101.4, the provisions of this code or the Florida Codes listed in Section 101.4, as applicable, shall take precedence over the provisions in the referenced code or standard.

[A] 102.5 Partial invalidity. Reserved.

[A] 102.6 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *Florida Fire Prevention Code*, or as is deemed necessary by the *building official* for the general safety and welfare of the occupants and the public.

102.7 Relocation of manufactured buildings.

(1) Relocation of an existing manufactured building does not constitute an alteration.

(2) A relocated building shall comply with wind speed requirements of the new location, using the appropriate wind speed map. If the existing building was manufactured in compliance with the Standard Building Code (prior to March 1, 2002), the wind speed map of the Standard Building Code shall be applicable. If the existing building was manufactured in compliance with the *Florida Building Code* (after March 1, 2002), the wind speed map of the *Florida Building Code* shall be applicable.

(3) A relocated building shall comply with the flood hazard area requirements of the new location, if applicable.

102.8 Existing mechanical equipment. An agency or local government may not require that existing mechanical equipment located on or above the surface of a roof be installed in compliance with the requirements of the *Florida Building Code* except when the equipment is being replaced or moved during reroofing and is not in compliance with the provisions of the *Florida Building Code* relating to roof-mounted mechanical units.

PART 2—ADMINISTRATION AND ENFORCEMENT

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SECTION 104
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[A] 104.1 General. Reserved.

[A] 104.2 Applications and permits. Reserved.

[A] 104.3 Notices and orders. Reserved.

[A] 104.4 Inspections. Reserved.

[A] 104.5 Identification. Reserved.

[A] 104.6 Right of entry. Reserved.

[A] 104.7 Department records. Reserved.

[A] 104.8 Liability. Reserved.

[A] 104.9 Approved materials and equipment. Materials, equipment and devices *approved* by the *building official* shall be constructed and installed in accordance with such approval.

[A] 104.9.1 Used materials and equipment. The use of used materials which meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless *approved* by the *building official*.

[A] 104.10 Modifications. Reserved.

[A] 104.10.1 Flood hazard areas. Reserved.

[A] 104.11 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, *fire resistance*, durability and safety.

[A] 104.11.1 Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from *approved* sources.

[A] 104.11.2 Tests. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the *building official* shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the *building official* shall approve the testing procedures. Tests shall be performed by an *approved agency*. Reports of such tests shall be retained by the *building official* for the period required for retention of public records.

SECTION 105
PERMITS

[A] 105.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any impact-resistant coverings, electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*.

[A] 105.1.1 Annual facility permit. In lieu of an individual permit for each alteration to an existing electrical, gas, mechanical, plumbing or interior nonstructural office system(s), the *building official* is authorized to issue an annual permit for any occupancy to facilitate routine or emergency service, repair, refurbishing, minor renovations of service systems or manufacturing equipment installations/relocations. The *building official* shall be notified of major changes and shall retain the right to make inspections at the facility site as deemed necessary. An annual facility permit shall be assessed with an annual fee and shall be valid for one year from date of issuance. A separate permit shall be obtained for each facility and for each construction trade, as applicable. The permit application shall contain a general description of the parameters of work intended to be performed during the year.

[A] 105.1.2 Annual permit records. The person to whom an annual *permit* is issued shall keep a detailed record of *alterations* made under such annual *permit*. The *building official* shall have access to such records at all times or such records shall be filed with the *building official* as designated.

105.1.3 Food permit. In accordance with Section 500.12, *Florida Statutes*, a food permit from the Department of Agriculture and Consumer Services is required of any person who operates a food establishment or retail store.

105.1.4 Public swimming pool. The local enforcing agency may not issue a building permit to construct, develop, or modify a public swimming pool without proof of application, whether complete or incomplete, for an operating permit pursuant to Section 514.031, *Florida Statutes*. A certificate of completion or occupancy may not be issued until such operating permit is issued. The local enforcing agency shall conduct their review of the building permit application upon filing and in accordance with Chapter 553, *Florida Statutes.* The local enforcing agency may confer with the Department of Health, if necessary, but may not delay the building permit application review while awaiting comment from the Department of Health.

[A] 105.2 Work exempt from permit. Exemptions from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code. *Permits* shall not be required for the following:

Gas:

1. Portable heating appliance.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

Mechanical:

1. Portable heating appliance.
2. Portable ventilation equipment.
3. Portable cooling unit.
4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any part that does not alter its approval or make it unsafe.
6. Portable evaporative cooler.

7. Self-contained refrigeration system containing 10 pounds (5 kg) or less of refrigerant and actuated by motors of 1 horsepower (746 W) or less.
8. The installation, replacement, removal or metering of any load management control device.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

[A] 105.2.1 Emergency repairs. Where equipment replacements and repairs must be performed in an emergency situation, the *permit* application shall be submitted within the next working business day to the *building official*.

[A] 105.2.2 Minor repairs. Ordinary minor repairs may be made with the approval of the building official without a permit, provided the repairs do not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required *means of egress*, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include *addition* to, *alteration* of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring systems or mechanical equipment or other work affecting public health or general safety, and such repairs shall not violate any of the provisions of the technical codes.

[A] 105.2.3 Public service agencies. Reserved.

[A] 105.3 Application for permit. To obtain a *permit*, the applicant shall first file an application therefor in writing on a form furnished by the building department for that purpose.

Permit application forms shall be in the format prescribed by a local administrative board, if applicable, and must comply with the requirements of Section 713.135(5) and (6), *Florida Statutes*.

Each application shall be inscribed with the date of application, and the code in effect as of that date. For a building *permit* for which an application is submitted prior to the effective date of the *Florida Building Code*, the state minimum building code in effect in the permitting jurisdiction on the date of the application governs the permitted work for the life of the *permit* and any extension granted to the *permit*.

[A] 105.3.1 Action on application. The *building official* shall examine or cause to be examined applications for *permits* and amendments thereto within a reasonable time after filing. If the application or the *construction documents* do not conform to the requirements of pertinent laws, the *building official* shall reject such application in writing, stating the reasons therefor. If the *building official* is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the *building official* shall issue a *permit* therefor as soon as practicable. When authorized through contractual agreement with a school board, in acting on applications for *permits*, the *building official* shall give first priority to any applications for the construction of, or addition or renovation to, any school or educational facility.

105.3.1.1 If a state university, Florida college or public school district elects to use a local government's code enforcement offices, fees charged by counties and municipalities for enforcement of the *Florida Building Code* on buildings, structures, and facilities of state universities, state colleges, and public school districts shall not be more than the actual labor and administrative costs incurred for plans review and inspections to ensure compliance with the code.

105.3.1.2 No *permit* may be issued for any building construction, erection, alteration, modification, repair, or addition unless the applicant for such *permit* provides to the enforcing agency which issues the permit any of the following documents which apply to the construction for which the *permit* is to be issued and which shall be prepared by or under the direction of an engineer registered under Chapter 471, *Florida Statutes*:

1. Plumbing documents for any new building or addition which requires a plumbing system with more than 250 fixture units or which costs more than $125,000.
2. Fire sprinkler documents for any new building or addition which includes a fire sprinkler system which contains 50 or more sprinkler heads. Personnel as authorized by chapter 633 *Florida Statutes*, may design a fire sprinkler system of 49 or fewer heads and may design the alteration of an existing fire sprinkler system if the alteration consists of the relocation, addition or deletion of not more than 49 heads, notwithstanding the size of the existing fire sprinkler system.
3. Heating, ventilation, and air-conditioning documents for any new building or addition which requires more than a 15-ton-per-system capacity which is designed to accommodate 100 or more persons or for which the system costs more than $125,000. This paragraph does not include any document for the replacement or repair of an existing system in which the work does not require altering a structural part of the building or for work on a residential one-, two-, three- or four-family structure.

   An air-conditioning system may be designed by an installing air-conditioning contractor certified under Chapter 489, *Florida Statutes*, to serve any building or addition which is designed to

accommodate fewer than 100 persons and requires an air-conditioning system with a value of $125,000 or less; and when a 15-ton-per system or less is designed for a singular space of a building and each 15-ton system or less has an independent duct system. Systems not complying with the above require design documents that are to be sealed by a professional engineer.

Example 1: When a space has two 10-ton systems with each having an independent duct system, the contractor may design these two systems, since each unit (system) is less than 15 tons.

Example 2: Consider a small single-story office building which consists of six individual offices where each office has a single three-ton package air-conditioning heat pump. The six heat pumps are connected to a single water cooling tower. The cost of the entire heating, ventilation and air-conditioning work is $47,000 and the office building accommodates fewer than 100 persons. Because the six mechanical units are connected to a common water tower, this is considered to be an 18-ton system.

NOTE: It was further clarified by the Commission that the limiting criteria of 100 persons and $125,000 apply to the building occupancy load and the cost for the total air-conditioning system of the building.

4. Any specialized mechanical, electrical, or plumbing document for any new building or addition which includes a medical gas, oxygen, steam, vacuum, toxic air filtration, halon, or fire detection and alarm system which costs more than $5,000.

5. Electrical documents. See *Florida Statutes*, Section 471.003(2)(h).

   Documents requiring an engineer seal by this part shall not be valid unless a professional engineer who possesses a valid certificate of registration has signed, dated, and stamped such document as provided in Section 471.025, *Florida Statutes*.

6. All public swimming pools and public bathing places defined by and regulated under Chapter 514, *Florida Statutes*.

[A] 105.3.2 Time limitation of application. An application for a *permit* for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a *permit* has been issued; except that the *building official* is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

105.3.3 An enforcing authority may not issue a building permit for any building construction, erection, alteration, modification, repair or addition unless the *permit* either includes on its face or there is attached to the permit the following statement: "NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies."

105.3.4 A building permit for a single-family residential dwelling must be issued within 30 working days of application therefor unless unusual circumstances require a longer time for processing the application or unless the *permit* application fails to satisfy the *Florida Building Code* or the enforcing agency's laws or ordinances.

105.3.5 Identification of minimum premium policy. Except as otherwise provided in Chapter 440, *Florida Statutes*, Workers' Compensation, every employer shall, as a condition to receiving a building *permit*, show proof that it has secured compensation for its employees as provided in Sections 440.10 and 440.38, *Florida Statutes*.

105.3.6 Asbestos removal. Moving, removal or disposal of asbestos-containing materials on a residential building where the owner occupies the building, the building is not for sale or lease, and the work is performed according to the owner-builder limitations provided in this paragraph. To qualify for exemption under this paragraph, an owner must personally appear and sign the building permit application. The permitting agency shall provide the person with a disclosure statement in substantially the following form:

Disclosure statement: State law requires asbestos abatement to be done by licensed contractors. You have applied for a permit under an exemption to that law. The exemption allows you, as the owner of your property, to act as your own asbestos abatement contractor even though you do not have a license. You must supervise the construction yourself. You may move, remove or dispose of asbestos-containing materials on a residential building where you occupy the building and the building is not for sale or lease, or the building is a farm outbuilding on your property. If you sell or lease such building within 1 year after the asbestos abatement is complete, the law will presume that you intended to sell or lease the property at the time the work was done, which is a violation of this exemption. You may not hire an unlicensed person as your contractor. Your work must be done according to all local, state and federal laws and regulations which apply to asbestos abatement projects. It is your responsibility to make sure that people employed by you have licenses required by state law and by county or municipal licensing ordinances.

105.3.7 Applicable code for manufactured buildings. Manufacturers should be permitted to complete all buildings designed and approved prior to the effective date of a new code edition, provided a clear signed contract is in

place. The contract shall provide specific data mirroring that required by an application for permit, specifically, without limitation, date of execution, building owner or dealer, and anticipated date of completion. However, the construction activity must commence within 6 months of the contract's execution. The contract is subject to verification by the Department of Business and Professional Regulation.

[A] 105.4 Conditions of the permit.

105.4.1 Permit intent. A permit issued shall be construed to be a license to proceed with the work and not as authority to violate, cancel, alter or set aside any of the provisions of the technical codes, nor shall issuance of a *permit* prevent the *building official* from thereafter requiring a correction of errors in plans, construction or violations of this code. Every *permit* issued shall become invalid unless the work authorized by such *permit* is commenced within six months after its issuance, or if the work authorized by such *permit* is suspended or abandoned for a period of six months after the time the work is commenced.

105.4.1.1 If work has commenced and the *permit* is revoked, becomes null and void, or expires because of lack of progress or abandonment, a new *permit* covering the proposed construction shall be obtained before proceeding with the work.

105.4.1.2 If a new *permit* is not obtained within 180 days from the date the initial *permit* became null and void, the *building official* is authorized to require that any work which has been commenced or completed be removed from the building site. Alternately, a new *permit* may be issued on application, providing the work in place and required to complete the structure meets all applicable regulations in effect at the time the initial *permit* became null and void and any regulations which may have become effective between the date of expiration and the date of issuance of the new *permit*.

105.4.1.3 Work shall be considered to be in active progress when the *permit* has received an approved inspection within 180 days. This provision shall not be applicable in case of civil commotion or strike or when the building work is halted due directly to judicial injunction, order or similar process.

105.4.1.4 The fee for renewal reissuance and extension of a *permit* shall be set forth by the administrative authority.

[A] 105.5 Expiration. Reserved.

[A] 105.6 Denial or revocation. Whenever a *permit* required under this section is denied or revoked because the plan, or the construction, erection, alteration, modification, repair, or demolition of a building, is found by the local enforcing agency to be not in compliance with the *Florida Building Code*, the local enforcing agency shall identify the specific plan or project features that do not comply with the applicable codes, identify the specific code chapters and sections upon which the finding is based, and provide this information to the *permit* applicant. If the local building code administrator or inspector finds that the plans are not in compliance with the *Florida Building Code*, the local building code administrator or inspector shall identify the specific plan features that do not comply with the applicable codes, identify the specific code chapters and sections upon which the finding is based, and provide this information to the local enforcing agency. The local enforcing agency shall provide this information to the *permit* applicant.

[A] 105.7 Placement of permit. The building *permit* or copy shall be kept on the site of the work until the completion of the project.

105.8 Notice of commencement. In accordance with Section 713.135, *Florida Statutes*, when any person applies for a building *permit*, the authority issuing such *permit* shall print on the face of each *permit* card in no less than 14-point, capitalized, boldfaced type: "WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT."

105.9 Asbestos. The enforcing agency shall require each building *permit* for the demolition or renovation of an existing structure to contain an asbestos notification statement which indicates the owner's or operator's responsibility to comply with the provisions of Section 469.003, *Florida Statutes*, and to notify the Department of Environmental Protection of his or her intentions to remove asbestos, when applicable, in accordance with state and federal law.

105.10 Certificate of protective treatment for prevention of termites. A weather-resistant job-site posting board shall be provided to receive duplicate treatment certificates as each required protective treatment is completed, providing a copy for the person the *permit* is issued to and another copy for the building *permit* files. The treatment certificate shall provide the product used, identity of the applicator, time and date of the treatment, site location, area treated, chemical used, percent concentration and number of gallons used, to establish a verifiable record of protective treatment. If the soil chemical barrier method for termite prevention is used, final exterior treatment shall be completed prior to final building approval.

105.11 Notice of termite protection. A permanent sign which identifies the termite treatment provider and need for reinspection and treatment contract renewal shall be provided. The sign shall be posted near the water heater or electric panel.

105.12 Work starting before permit issuance. Upon approval of the *building official*, the scope of work delineated in the building *permit* application and plan may be started prior to the final approval and issuance of the *permit*, provided any work completed is entirely at risk of the *permit* applicant and the work does not proceed past the first required inspection.

105.13 Phased permit approval. After submittal of the appropriate construction documents, the *building official* is authorized to issue a *permit* for the construction of foundations or any other part of a building or structure before the construction documents for the whole building or structure have been submitted. The holder of such *permit* for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure will be granted. Corrections may be required to meet the requirements of the technical codes.

105.14 Permit issued on basis of an affidavit. Whenever a *permit* is issued in reliance upon an affidavit or whenever the work to be covered by a *permit* involves installation under conditions which, in the opinion of the *building official*, are hazardous or complex, the building official shall require that the architect or engineer who signed the affidavit or prepared the drawings or computations shall supervise such work. In addition, they shall be responsible for conformity to the *permit*, provide copies of inspection reports as inspections are performed, and upon completion make and file with the *building official* written affidavit that the work has been done in conformity to the reviewed plans and with the structural provisions of the technical codes. In the event such architect or engineer is not available, the owner shall employ in his stead a competent person or agency whose qualifications are reviewed by the *building official*. The *building official* shall ensure that any person conducting plans review is qualified as a plans examiner under Part XII of Chapter 468, *Florida Statutes*, and that any person conducting inspections is qualified as a building inspector under Part III of Chapter 468, *Florida Statutes.*

Exception: Permit issued on basis of an affidavit shall not extend to the flood load and flood-resistance requirements of the *Florida Building Code*.

105.15 Opening protection. When any activity requiring a building *permit* that is applied for on or after July 1, 2008, and for which the estimated cost is $50,000 or more for a site built single-family detached residential structure that is located in the wind borne debris region as defined in this code and that has an insured value of $750,000 or more, or, if the site built single-family detached residential structure is uninsured or for which documentation of insured value is not presented, has a just valuation for the structure for purposes of ad valorem taxation of $750,000 or more; opening protections as required within this code or *Florida Building Code, Residential* for new construction shall be provided.

Exception: Single-family residential structures permitted subject to the *Florida Building Code* are not required to comply with this section.

105.16 Inspection of existing residential building not impacted by construction.

(a) A local enforcing agency, and any local building code administrator, inspector, or other official or entity, may not require as a condition of issuance of a one- or two-family residential building *permit* the inspection of any portion of a building, structure, or real property that is not directly impacted by the construction, erection, alteration, modification, repair, or demolition of the building, structure, or real property for which the permit is sought.

(b) This subsection does not apply to a building permit sought for:

1. A substantial improvement as defined in Section 161.54, *Florida Statutes* or as defined in the *Florida Building Code.*
2. A change of occupancy as defined in the *Florida Building Code*.
3. A conversion from residential to nonresidential or mixed use pursuant to Section 553.507(2)(a), *Florida Statutes* or as defined in the *Florida Building Code*.
4. A historic building as defined in the *Florida Building Code*.

(c) This subsection does not prohibit a local enforcing agency, or any local building code administrator, inspector, or other official or entity, from:

1. Citing any violation inadvertently observed in plain view during the ordinary course of an inspection conducted in accordance with the prohibition in paragraph (a).
2. Inspecting a physically nonadjacent portion of a building, structure, or real property that is directly impacted by the construction, erection, alteration, modification, repair, or demolition of the building, structure, or real property for which the permit is sought in accordance with the prohibition in paragraph (a).
3. Inspecting any portion of a building, structure, or real property for which the owner or other person having control of the building, structure, or real property has voluntarily consented to the inspection of that portion of the building, structure, or real property in accordance with the prohibition in paragraph (a).
4. Inspecting any portion of a building, structure, or real property pursuant to an inspection warrant issued in accordance with Sections 933.20 through 933.30, *Florida Statutes*.

105.17 Streamlined low-voltage alarm system installation permitting.

(1) As used in this section, the term:

(a) "Contractor" means a person who is qualified to engage in the business of electrical or alarm system contracting pursuant to a certificate or registration issued by the department under Part II of Chapter 489, *Florida Statutes*.

(b) "Low-voltage alarm system project" means a project related to the installation, maintenance, inspection, replacement, or service of a new or existing alarm system, as defined in Section 489.505, *Florida Statutes*, operating at low voltage, as defined in the *National Electrical*

Code Standard 70, and ancillary components or equipment attached to such a system, including, but not limited to, home-automation equipment, thermostats and video cameras.

(2) Notwithstanding any provision of this code, this section applies to low-voltage alarm system projects for which a permit is required by a local enforcement agency.

(3) This section does not apply to the installation or replacement of a fire alarm if a plan review is required.

(4) A local enforcement agency shall make uniform basic permit labels available for purchase by a contractor to be used for the installation or replacement of a new or existing alarm system at a cost as indicated in Section 553.793, *Florida Statutes*.

(a) A local enforcement agency may not require a contractor, as a condition of purchasing a label, to submit information other than identification information of the licensee and proof of registration or certification as a contractor.

(b) A label is valid for 1 year after the date of purchase and may only be used within the jurisdiction of the local enforcement agency that issued the label. A contractor may purchase labels in bulk for one or more unspecified current or future projects.

(5) A contractor shall post an unused uniform basic permit label in a conspicuous place on the premises of the low-voltage alarm system project site before commencing work on the project.

(6) A contractor is not required to notify the local enforcement agency before commencing work on a low-voltage alarm system project. However, a contractor must submit a Uniform Notice of a Low-voltage Alarm System Project as provided under subsection (7) to the local enforcement agency within 14 days after completing the project. A local enforcement agency may take disciplinary action against a contractor who fails to timely submit a Uniform Notice of a Low-voltage Alarm System Project.

(7) The Uniform Notice of a Low-voltage Alarm System Project may be submitted electronically or by facsimile if all submissions are signed by the owner, tenant, contractor, or authorized representative of such persons. The Uniform Notice of a Low-voltage Alarm System Project shall be in the format prescribed by the local enforcement agency and must comply with the requirements of Section 553.793(7), *Florida Statutes*.

(8) A low-voltage alarm system project may be inspected by the local enforcement agency to ensure compliance with applicable codes and standards. If a low-voltage alarm system project fails an inspection, the contractor must take corrective action as necessary to pass inspection.

(9) A municipality, county, district, or other entity of local government may not adopt or maintain in effect an ordinance or rule regarding a low-voltage alarm system project that is inconsistent with this section.

(10) A uniform basic permit label shall not be required for the subsequent maintenance, inspection, or service of an alarm system that was permitted in accordance with this section.

The provisions of this act are not intended to impose new or additional licensure requirements on persons licensed in accordance with the applicable provisions of Chapter 489, *Florida Statutes*.

SECTION 106
FLOOR AND ROOF DESIGN LOADS

[A] 106.1 Live loads posted. Where the live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed to exceed 50 psf (2.40 kN/m^2), such design live loads shall be conspicuously posted by the owner in that part of each *story* in which they apply, using durable signs. It shall be unlawful to remove or deface such notices

[A] 106.2 Issuance of certificate of occupancy. A certificate of occupancy required by Section 111 shall not be issued until the floor load signs, required by Section 106.1, have been installed.

[A] 106.3 Restrictions on loading. It shall be unlawful to place, or cause or permit to be placed, on any floor or roof of a building, structure or portion thereof, a load greater than is permitted by this code.

SECTION 107
SUBMITTAL DOCUMENTS

[A] 107.1 General. Submittal documents consisting of *construction documents*, statement of *special inspections*, geotechnical report and other data shall be submitted in two or more sets with each *permit* application. The *construction documents* shall be prepared by a *registered design professional* where required by Chapter 471, *Florida Statutes* or Chapter 481, *Florida Statutes*. Where special conditions exist, the *building official* is authorized to require additional *construction documents* to be prepared by a *registered design professional*.

Exception: The *building official* is authorized to waive the submission of *construction documents* and other data not required to be prepared by a *registered design professional* if it is found that the nature of the work applied for is such that review of *construction documents* is not necessary to obtain compliance with this code.

[A] 107.2 Construction documents. *Construction documents* shall be in accordance with Sections 107.2.1 through 107.2.5.

[A] 107.2.1 Information on construction documents. *Construction documents* shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted when *approved* by the *building*

official. *Construction documents* shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the *building official*.

[A] 107.2.2 Fire protection system shop drawings. Shop drawings for the *fire protection system(s)* shall be submitted to indicate conformance to this code and the *construction documents* and shall be *approved* prior to the start of system installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.

[A] 107.2.3 Means of egress. The *construction documents* shall show in sufficient detail the location, construction, size and character of all portions of the *means of egress* including the path of the *exit discharge* to the *public way* in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-3, and I-1, the *construction documents* shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

[A] 107.2.4 Exterior wall envelope. *Construction documents* for all buildings shall describe the *exterior wall envelope* in sufficient detail to determine compliance with this code. The *construction documents* shall provide details of the *exterior wall envelope* as required, including flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves or parapets, means of drainage, water-resistive membrane and details around openings.

The *construction documents* shall include manufacturer's installation instructions that provide supporting documentation that the proposed penetration and opening details described in the *construction documents* maintain the weather resistance of the *exterior wall envelope*. The supporting documentation shall fully describe the *exterior wall* system which was tested, where applicable, as well as the test procedure used.

[A] 107.2.5 Site plan. The *construction documents* submitted with the application for *permit* shall be accompanied by a site plan showing to scale the size and location of new construction and existing structures on the site, distances from *lot lines*, the established street grades and the proposed finished grades and, as applicable, flood hazard areas, floodways, and *design flood* elevations; and it shall be drawn in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot. The *building official* is authorized to waive or modify the requirement for a site plan when the application for *permit* is for *alteration* or repair or when otherwise warranted.

[A] 107.2.5.1 Design flood elevations. Where *design flood* elevations are not specified, they shall be established in accordance with Section 1612.3.1.

107.2.5.2 For the purpose of inspection and record retention, site plans for a building may be maintained in the form of an electronic copy at the worksite. These plans must be open to inspection by the building official or a duly authorized representative, as required by the *Florida Building Code*.

[A] 107.3 Examination of documents. The *building official* shall examine or cause to be examined the accompanying submittal documents and shall ascertain by such examinations whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances.

Exceptions:

1. Building plans approved pursuant to state-approved manufactured buildings are exempt from local codes enforcing agency plan reviews except for provisions of the code relating to erection, assembly or construction at the site. Erection, assembly and construction at the site are subject to local permitting and inspections. Photocopies of plans approved according to FAC 61-41.009, *Florida Administrative Code*, shall be sufficient for local permit application documents of record for the modular building portion of the permitted project.
2. Industrial construction on sites where design, construction and fire safety are supervised by appropriate design and inspection professionals and which contain adequate in-house fire departments and rescue squads is exempt, subject to local government option, from review of plans and inspections, providing owners certify that applicable codes and standards have been met and supply appropriate approved drawings to local building and fire-safety inspectors.

[A] 107.3.1 Approval of construction documents. When the *building official* issues a *permit*, the *construction documents* shall be *approved*, in writing or by stamp, as "Reviewed for Code Compliance." One set of *construction documents* so reviewed shall be retained by the *building official*. The other set shall be returned to the applicant, shall be kept at the site of work and shall be open to inspection by the *building official* or a duly authorized representative.

[A] 107.3.2 Previous approvals. This code shall not require changes in the *construction documents*, construction or designated occupancy of a structure for which a lawful *permit* has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned.

[A] 107.3.3 Phased approval. The *building official* is authorized to issue a *permit* for the construction of foundations or any other part of a building or structure before the *construction documents* for the whole building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such *permit* for the foundation or other parts of a building or

structure shall proceed at the holder's own risk with the building operation and without assurance that a *permit* for the entire structure will be granted.

[A] 107.3.4 Design professional in responsible charge. Reserved.

[A] 107.3.4.1 Deferred submittals. For the purposes of this section, deferred submittals are defined as those portions of the design that are not submitted at the time of the application and that are to be submitted to the *building official* within a specified period.

Deferral of any submittal items shall have the prior approval of the *building official*. The *registered design professional in responsible charge* shall list the deferred submittals on the *construction documents* for review by the *building official*.

Documents for deferred submittal items shall be submitted to the *registered design professional in responsible charge* who shall review them and forward them to the *building official* with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building. The deferred submittal items shall not be installed until the deferred submittal documents have been *approved* by the *building official*.

107.3.4.2 Certifications by contractors authorized under the provisions of Section 489.115(4)(b), *Florida Statutes*, shall be considered equivalent to sealed plans and specifications by a person licensed under Chapter 471, *Florida Statutes*, or Chapter 481, *Florida Statutes*, by local enforcement agencies for plans review for permitting purposes relating to compliance with the wind-resistance provisions of the code or alternate methodologies approved by the Florida Building Commission for one- and two-family dwellings. Local enforcement agencies may rely upon such certification by contractors that the plans and specifications submitted conform to the requirements of the code for wind resistance. Upon good cause shown, local government code enforcement agencies may accept or reject plans sealed by persons licensed under Chapters 471, 481 or 489, *Florida Statutes*.

107.3.5 Minimum plan review criteria for buildings. The examination of the documents by the building official shall include the following minimum criteria and documents: a floor plan; site plan; foundation plan; floor/roof framing plan or truss layout; all fenestration penetrations; flashing; and rough opening dimensions; and all exterior elevations:

Commercial Buildings:

Building:

1. Site requirements:
   - Parking
   - Fire access
   - Vehicle loading
   - Driving/turning radius
   - Fire hydrant/water supply/post indicator valve (PIV)
   - Set back/separation (assumed property lines)
   - Location of specific tanks, water lines and sewer lines
   - Flood hazard areas, flood zones, and design flood elevations
2. Occupancy group and special occupancy requirements shall be determined.
3. Minimum type of construction shall be determined (see Table 503).
4. Fire-resistant construction requirements shall include the following components:
   - Fire-resistant separations
   - Fire-resistant protection for type of construction
   - Protection of openings and penetrations of rated walls
   - Fire blocking and draftstopping and calculated fire resistance
5. Fire suppression systems shall include:
   - Early warning smoke evacuation systems
   - Schematic fire sprinklers
   - Standpipes
   - Pre-engineered systems
   - Riser diagram.
6. Life safety systems shall be determined and shall include the following requirements:
   - Occupant load and egress capacities
   - Early warning
   - Smoke control
   - Stair pressurization
   - Systems schematic
7. Occupancy load/egress requirements shall include:
   - Occupancy load
   - Gross
   - Net
   - Means of egress
   - Exit access
   - Exit
   - Exit discharge
   - Stairs construction/geometry and protection
   - Doors
   - Emergency lighting and exit signs
   - Specific occupancy requirements
   - Construction requirements
   - Horizontal exits/exit passageways
8. Structural requirements shall include:
   - Soil conditions/analysis
   - Termite protection
   - Design loads
   - Wind requirements
   - Building envelope
   - Impact resistant coverings or systems
   - Structural calculations (if required)
   - Foundation
   - Flood requirements in accordance with Section 1612, including lowest floor elevations, enclosures, flood damage-resistant materials

Wall systems
Floor systems
Roof systems
Threshold inspection plan
Stair systems

9. Materials shall be reviewed and shall at a minimum include the following:
   Wood
   Steel
   Aluminum
   Concrete
   Plastic
   Glass
   Masonry
   Gypsum board and plaster
   Insulating (mechanical)
   Roofing
   Insulation
10. Accessibility requirements shall include the following:
   Site requirements
   Accessible route
   Vertical accessibility
   Toilet and bathing facilities
   Drinking fountains
   Equipment
   Special occupancy requirements
   Fair housing requirements
11. Interior requirements shall include the following:
   Interior finishes (flame spread/smoke development)
   Light and ventilation
   Sanitation
12. Special systems:
   Elevators
   Escalators
   Lifts
13. Swimming pools:
   Barrier requirements
   Spas
   Wading pools

Electrical:

1. Electrical:
   Wiring
   Services
   Feeders and branch circuits
   Overcurrent protection
   Grounding
   Wiring methods and materials
   GFCIs
2. Equipment
3. Special occupancies
4. Emergency systems
5. Communication systems
6. Low voltage
7. Load calculations
8. Design flood elevation

Plumbing:

1. Minimum plumbing facilities
2. Fixture requirements
3. Water supply piping
4. Sanitary drainage
5. Water heaters
6. Vents
7. Roof drainage
8. Back flow prevention
9. Irrigation
10. Location of water supply line
11. Grease traps
12. Environmental requirements
13. Plumbing riser
14. Design flood elevation

Mechanical:

1. Energy calculations
2. Exhaust systems:
   Clothes dryer exhaust
   Kitchen equipment exhaust
   Specialty exhaust systems
3. Equipment
4. Equipment location
5. Make-up air
6. Roof-mounted equipment
7. Duct systems
8. Ventilation
9. Combustion air
10. Chimneys, fireplaces and vents
11. Appliances
12. Boilers
13. Refrigeration
14. Bathroom ventilation
15. Laboratory
16. Design flood elevation

Gas:

1. Gas piping
2. Venting
3. Combustion air
4. Chimneys and vents
5. Appliances
6. Type of gas
7. Fireplaces

8. LP tank location
9. Riser diagram/shutoffs
10. Design flood elevation

Demolition:

1. Asbestos removal

Residential (one- and two-family):

1. Site requirements:
   Set back/separation (assumed property lines)
   Location of septic tanks
2. Fire-resistant construction (if required)
3. Fire
4. Smoke detector locations
5. Egress:
   Egress window size and location stairs construction requirements
6. Structural requirements shall include:
   Wall section from foundation through roof, including assembly and materials connector tables wind requirements structural calculations (if required)
   Flood hazard areas, flood zones, design flood elevations, lowest floor elevations, enclosures, equipment, and flood damage-resistant materials
7. Accessibility requirements:
   Show/identify
   Accessible bath
8. Impact resistant coverings or systems

Exemptions:

Plans examination by the building official shall not be required for the following work:

1. Replacing existing equipment such as mechanical units, water heaters, etc.
2. Reroofs
3. Minor electrical, plumbing and mechanical repairs
4. Annual maintenance permits
5. Prototype plans:
   Except for local site adaptions, siding, foundations and/or modifications.
   Except for structures that require waiver.
6. Manufactured buildings plan except for foundations and modifications of buildings on site.

[A] 107.4 Amended construction documents. Work shall be installed in accordance with the *approved construction documents*, and any changes made during construction that are not in compliance with the *approved construction documents* shall be resubmitted for approval as an amended set of *construction documents*.

[A] 107.5 Retention of construction documents. One set of *approved construction documents* shall be retained by the *building official* for a period of not less than 180 days from date of completion of the permitted work, or as required by *Florida Statues.*

107.6 Affidavits. The building official may accept a sworn affidavit from a registered architect or engineer stating that the plans submitted conform to the technical codes. For buildings and structures, the affidavit shall state that the plans conform to the laws as to egress, type of construction and general arrangement and, if accompanied by drawings, show the structural design and that the plans and design conform to the requirements of the technical codes as to strength, stresses, strains, loads and stability. The building official may without any examination or inspection accept such affidavit, provided the architect or engineer who made such affidavit agrees to submit to the building official copies of inspection reports as inspections are performed and upon completion of the structure, electrical, gas, mechanical or plumbing systems a certification that the structure, electrical, gas, mechanical or plumbing system has been erected in accordance with the requirements of the technical codes. Where the building official relies upon such affidavit, the architect or engineer shall assume full responsibility for compliance with all provisions of the technical codes and other pertinent laws or ordinances. The building official shall ensure that any person conducting plans review is qualified as a plans examiner under Part XII of Chapter 468, *Florida Statutes*, and that any person conducting inspections is qualified as a building inspector under Part XII of Chapter 468, *Florida Statutes*.

107.6.1 Building permits issued on the basis of an affidavit. Pursuant to the requirements of federal regulation for participation in the National Flood Insurance Program (44 C.F.R. Parts 59 and 60), the authority granted to the *building official* to issue permits, to rely on inspections, and to accept plans and construction documents on the basis of affidavits and plans submitted pursuant to Sections 105.14 and 107.6, shall not extend to the flood load and flood-resistance construction requirements of the *Florida Building Code.*

SECTION 108
TEMPORARY STRUCTURES AND USES

[A] 108.1 General. The *building official* is authorized to issue a *permit* for temporary structures and temporary uses. Such *permits* shall be limited as to time of service, but shall not be permitted for more than 180 days. The *building official* is authorized to grant extensions for demonstrated cause.

[A] 108.2 Conformance. Temporary structures and uses shall conform to the structural strength, fire safety, *means of egress*, accessibility, light, ventilation and sanitary requirements of this code as necessary to ensure public health, safety and general welfare.

[A] 108.3 Temporary power. The *building official* is authorized to give permission to temporarily supply and use power in part of an electric installation before such installation has been fully completed and the final certificate of completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in NFPA 70.

[A] 108.4 Termination of approval. The *building official* is authorized to terminate such *permit* for a temporary structure or use and to order the temporary structure or use to be discontinued.

SECTION 109
FEES

[A] 109.1 Payment of fees. A *permit* shall not be valid until the fees prescribed by law have been paid, nor shall an amendment to a *permit* be released until the additional fee, if any, has been paid.

[A] 109.2 Schedule of permit fees. On buildings, structures, electrical, gas, mechanical, and plumbing systems or *alterations* requiring a *permit*, a fee for each *permit* shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

[A] 109.3 Building permit valuations. The applicant for a *permit* shall provide an estimated *permit* value at time of application. *Permit* valuations shall include total value of work, including materials and labor, for which the *permit* is being issued, such as electrical, gas, mechanical, plumbing equipment and permanent systems. If, in the opinion of the *building official*, the valuation is underestimated on the application, the *permit* shall be denied, unless the applicant can show detailed estimates to meet the approval of the *building official*. Final building *permit* valuation shall be set by the *building official*.

[A] 109.4 Work commencing before permit issuance. Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary *permits* shall be subject to a fee established by the *building official* that shall be in addition to the required *permit* fees.

[A] 109.5 Related fees. Reserved.

[A] 109.6 Refunds. Reserved.

SECTION 110
INSPECTIONS

[A] 110.1 General. Construction or work for which a *permit* is required shall be subject to inspection by the *building official* and such construction or work shall remain accessible and exposed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the *permit* applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the *building official* nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

[A] 110.2 Preliminary inspection. Before issuing a *permit*, the *building official* is authorized to examine or cause to be examined buildings, structures and sites for which an application has been filed.

[A] 110.3 Required inspections. The building official upon notification from the permit holder or his or her agent shall make the following inspections, and shall either release that portion of the construction or shall notify the permit holder or his or her agent of any violations which must be corrected in order to comply with the technical codes. The building official shall determine the timing and sequencing of when inspections occur and what elements are inspected at each inspection.

Building:

1. Foundation inspection. To be made after trenches are excavated and forms erected and shall, at a minimum, include the following building components:
   - Stem-wall
   - Monolithic slab-on-grade
   - Piling/pile caps
   - Footers/grade beams

   1.1. In flood hazard areas, upon placement of the lowest floor, including basement, and prior to further vertical construction, the elevation certification shall be submitted to the authority having jurisdiction.
2. Framing inspection. To be made after the roof, all framing, fireblocking and bracing is in place, all concealing wiring, all pipes, chimneys, ducts and vents are complete and shall, at a minimum, include the following building components:
   - Window/door framing
   - Vertical cells/columns
   - Lintel/tie beams
   - Framing/trusses/bracing/connectors
   - Draft stopping/fire blocking
   - Curtain wall framing
   - Energy insulation
   - Accessibility
   - Verify rough opening dimensions are within tolerances.
3. Sheathing inspection. To be made either as part of a dry-in inspection or done separately at the request of the contractor after all roof and wall sheathing and fasteners are complete and shall, at a minimum, include the following building components:
   - Roof sheathing
   - Wall sheathing
   - Sheathing fasteners
   - Roof/wall dry-in
4. Roofing inspection. Shall, at a minimum, include the following building components:
   - Dry-in

- Insulation
- Roof coverings
- Flashing

5. Final inspection. To be made after the building is completed and ready for occupancy.

   5.1. In flood hazard areas, as part of the final inspection, a final certification of the lowest floor elevation shall be submitted to the authority having jurisdiction.

6. Swimming pool inspection. First inspection to be made after excavation and installation of reinforcing steel, bonding and main drain and prior to placing of concrete.

   Final inspection to be made when the swimming pool is complete and all required enclosure requirements are in place.

   In order to pass final inspection and receive a certificate of completion, a residential swimming pool must meet the requirements relating to pool safety features as described in Section 454.2.17 of this code.

7. Demolition inspections. First inspection to be made after all utility connections have been disconnected and secured in such manner that no unsafe or unsanitary conditions shall exist during or after demolition operations.

   Final inspection to be made after all demolition work is completed.

8. Manufactured building inspections. The building department shall inspect construction of foundations; connecting buildings to foundations; installation of parts identified on plans as site installed items, joining the modules, including utility crossovers; utility connections from the building to utility lines on site; and any other work done on site which requires compliance with the *Florida Building Code*. Additional inspections may be required for public educational facilities (see Section 453.27.20 of this code).

9. Where impact-resistant coverings or impact-resistant systems are installed, the building official shall schedule adequate inspections of impact-resistant coverings or impact-resistant systems to determine the following:

   The system indicated on the plans was installed.

   The system is installed in accordance with the manufacturer's installation instructions and the product approval.

Electrical:

1. Underground inspection. To be made after trenches or ditches are excavated, conduit or cable installed, and before any backfill is put in place.
2. Rough-in inspection. To be made after the roof, framing, fireblocking and bracing is in place and prior to the installation of wall or ceiling membranes.
3. Final inspection. To be made after the building is complete, all required electrical fixtures are in place and properly connected or protected, and the structure is ready for occupancy.

Plumbing:

1. Underground inspection. To be made after trenches or ditches are excavated, piping installed, and before any backfill is put in place.
2. Rough-in inspection. To be made after the roof, framing, fireblocking and bracing is in place and all soil, waste and vent piping is complete, and prior to this installation of wall or ceiling membranes.
3. Final inspection. To be made after the building is complete, all plumbing fixtures are in place and properly connected, and the structure is ready for occupancy.

   Note: See Section P312 of the *Florida Building Code, Plumbing* for required tests.

Mechanical:

1. Underground inspection. To be made after trenches or ditches are excavated, underground duct and fuel piping installed, and before any backfill is put in place.
2. Rough-in inspection. To be made after the roof, framing, fire blocking and bracing are in place and all ducting and other concealed components are complete, and prior to the installation of wall or ceiling membranes.
3. Final inspection. To be made after the building is complete, the mechanical system is in place and properly connected, and the structure is ready for occupancy.

Gas:

1. Rough piping inspection. To be made after all new piping authorized by the permit has been installed, and before any such piping has been covered or concealed or any fixtures or gas appliances have been connected.
2. Final piping inspection. To be made after all piping authorized by the permit has been installed and after all portions which are to be concealed by plastering or otherwise have been so concealed, and before any fixtures or gas appliances have been connected. This inspection shall include a pressure test.
3. Final inspection. To be made on all new gas work authorized by the permit and such portions of existing systems as may be affected by new work or any changes, to ensure compliance with all the requirements of this code and to assure that the installation and construction of the gas system is in accordance with reviewed plans.

[A] 110.3.1 Footing and foundation inspection. Reserved.

[A] 110.3.2 Concrete slab and under-floor inspection. Reserved.

[A] 110.3.3 Lowest floor elevation. Reserved.

[A] 110.3.4 Frame inspection. Reserved.

[A] 110.3.5 Lath and gypsum board inspection. Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, is in place, but before any plastering is applied or gypsum board joints and fasteners are taped and finished.

Exception: Gypsum board that is not part of a fire-resistance-rated assembly or a shear assembly.

[A] 110.3.6 Fire- and smoke-resistant penetrations. Protection of joints and penetrations in fire-resistance-rated assemblies, *smoke barriers* and smoke partitions shall not be concealed from view until inspected and *approved*.

[A] 110.3.7 Energy efficiency inspections. Inspections shall be made to determine compliance with Chapter 13 and shall include, but not be limited to, inspections for: envelope insulation *R*- and *U*-values, fenestration *U*-value, duct system *R*-value, and HVAC and water-heating equipment efficiency.

[A] 110.3.8 Other inspections. In addition to the inspections specified in Sections 110.3 through 110.3.7, the *building official* is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by the department of building safety.

[A] 110.3.9 Special inspections. Reserved.

[A] 110.3.10 Final inspection. Reserved.

[A] 110.3.10.1 Flood hazard documentation. Reserved.

110.3.11 Termites. Building components and building surroundings required to be protected from termite damage in accordance with Section 1503.7, 2304.11.6 or 2304.13, specifically required to be inspected for termites in accordance with Section 2114, or required to have chemical soil treatment in accordance with Section 1816 shall not be covered or concealed until the release from the building official has been received.

110.3.12 Impact-resistant coverings or systems. Where impact-resistant coverings or systems are installed to meet requirements of this code, the building official shall schedule adequate inspections of impact-resistant coverings or systems to determine the following:

1. The system indicated on the plans was installed.
2. The system is installed in accordance with the manufacturer's installation instructions and the product approval.

[A] 110.4 Inspection agencies. Reserved.

[A] 110.5 Inspection requests. It shall be the duty of the holder of the building *permit* or their duly authorized agent to notify the *building official* when work is ready for inspection. It shall be the duty of the *permit* holder to provide access to and means for inspections of such work that are required by this code.

[A] 110.6 Approval required. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the *building official*. The *building official*, upon notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or notify the *permit* holder or his or her agent wherein the same fails to comply with this code. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the *building official*.

110.7 Shoring. For threshold buildings, shoring and associated formwork or falsework shall be designed and inspected by a Florida licensed professional engineer, prior to any required mandatory inspections by the threshold building inspector.

110.8 Threshold building.

110.8.1 The enforcing agency shall require a special inspector to perform structural inspections on a threshold building pursuant to a structural inspection plan prepared by the engineer or architect of record. The structural inspection plan must be submitted to the enforcing agency prior to the issuance of a building permit for the construction of a threshold building. The purpose of the structural inspection plans is to provide specific inspection procedures and schedules so that the building can be adequately inspected for compliance with the permitted documents. The special inspector may not serve as a surrogate in carrying out the responsibilities of the building official, the architect, or the engineer of record. The contractor's contractual or statutory obligations are not relieved by any action of the special inspector.

110.8.2 The special inspector shall determine that a professional engineer who specializes in shoring design has inspected the shoring and reshoring for conformance with the shoring and reshoring plans submitted to the enforcing agency. A fee simple title owner of a building, which does not meet the minimum size, height, occupancy, occupancy classification, or number-of-stories criteria which would result in classification as a threshold building under Section 553.71(7), *Florida Statutes*, may designate such building as a threshold building, subject to more than the minimum number of inspections required by the *Florida Building Code*.

110.8.3 The fee owner of a threshold building shall select and pay all costs of employing a special inspector, but the special inspector shall be responsible to the enforcement agency. The inspector shall be a person certified, licensed or registered under Chapter 471, *Florida Statutes*, as an

engineer or under Chapter 481, *Florida Statutes*, as an architect.

110.8.4 Each enforcement agency shall require that, on every threshold building:

110.8.4.1 The special inspector, upon completion of the building and prior to the issuance of a certificate of occupancy, file a signed and sealed statement with the enforcement agency in substantially the following form: "To the best of my knowledge and belief, the above described construction of all structural load-bearing components complies with the permitted documents, and the shoring and reshoring conforms to the shoring and reshoring plans submitted to the enforcement agency."

110.8.4.2 Any proposal to install an alternate structural product or system to which building codes apply be submitted to the enforcement agency for review for compliance with the codes and made part of the enforcement agency's recorded set of permit documents.

110.8.4.3 All shoring and reshoring procedures, plans and details be submitted to the enforcement agency for recordkeeping. Each shoring and reshoring installation shall be supervised, inspected and certified to be in compliance with the shoring documents by the contractor.

110.8.4.4 All plans for the building which are required to be signed and sealed by the architect or engineer of record contain a statement that, to the best of the architect's or engineer's knowledge, the plans and specifications comply with the applicable minimum building codes and the applicable fire-safety standards as determined by the local authority in accordance with this section and Chapter 633, *Florida Statutes.*

110.8.5 No enforcing agency may issue a building permit for construction of any threshold building except to a licensed general contractor, as defined in Section 489.105(3)(a), *Florida Statutes*, or to a licensed building contractor, as defined in Section 489.105(3)(b), *Florida Statutes*, within the scope of her or his license. The named contractor to whom the building permit is issued shall have the responsibility for supervision, direction, management and control of the construction activities on the project for which the building permit was issued.

110.8.6 The building department may allow a special inspector to conduct the minimum structural inspection of threshold buildings required by this code, Section 553.73, *Florida Statutes*, without duplicative inspection by the building department. The building official is responsible for ensuring that any person conducting inspections is qualified as a building inspector under Part XII of Chapter 468, *Florida Statutes*, or certified as a special inspector under Chapter 471 or 481, *Florida Statutes*. Inspections of threshold buildings required by Section 553.79(5), *Florida Statutes*, are in addition to the minimum inspections required by this code.

SECTION 111
CERTIFICATE OF OCCUPANCY

[A] 111.1 Use and occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made, until the *building official* has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

Exception: Certificates of occupancy are not required for work exempt from *permits* under Section 105.2.

[A] 111.2 Certificate issued. After the *building official* inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the department of building safety, the *building official* shall issue a certificate of occupancy that contains the following:

1. The building *permit* number.
2. The address of the structure.
3. The name and address of the owner.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.
6. For buildings and structures in flood hazard areas, a statement that documentation of the as-built lowest floor elevation has been provided and is retained in the records of the authority having jurisdiction
7. The name of the *building official*.
8. The edition of the code under which the *permit* was issued.
9. The use and occupancy, in accordance with the provisions of Chapter 3.
10. The type of construction as defined in Chapter 6.
11. The design *occupant load*.
12. If an *automatic sprinkler system* is provided, whether the sprinkler system is required.
13. Any special stipulations and conditions of the building *permit*.

[A] 111.3 Temporary occupancy. The *building official* is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the *permit*, provided that such portion or portions shall be occupied safely. The *building official* shall set a time period during which the temporary certificate of occupancy is valid.

[A] 111.4 Revocation. The *building official* is authorized to, in writing, suspend or revoke a certificate of occupancy or completion issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the build-

ing or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

111.5 Certificate of completion. A certificate of completion is proof that a structure or system is complete and for certain types of permits is released for use and may be connected to a utility system. This certificate does not grant authority to occupy a building, such as shell building, prior to the issuance of a certificate of occupancy.

SECTION 112
SERVICE UTILITIES

[A] 112.1 Connection of service utilities. No person shall make connections from a utility, source of energy, fuel or power to any building or system that is regulated by this code for which a *permit* is required, until released by the *building official*.

[A] 112.2 Temporary connection. The *building official* shall have the authority to authorize the temporary connection of the building or system to the utility source of energy, fuel or power.

[A] 112.3 Authority to disconnect service utilities. The *building official* shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards set forth in Section 101.4 in case of emergency where necessary to eliminate an immediate hazard to life or property or when such utility connection has been made without the approval required by Section 112.1 or 112.2. The *building official* shall notify the serving utility, and wherever possible the owner and occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnecting, the owner or occupant of the building, structure or service system shall be notified in writing, as soon as practical thereafter.

SECTION 113
BOARD OF APPEALS
RESERVED

SECTION 114
VIOLATIONS
RESERVED

SECTION 115
STOP WORK ORDER

[A] 115.1 Authority. Whenever the *building official* finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or dangerous or unsafe, the *building official* is authorized to issue a stop work order.

[A] 115.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.

[A] 115.3 Unlawful continuance. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

SECTION 116
UNSAFE STRUCTURES AND EQUIPMENT
RESERVED

SECTION 117
VARIANCES IN FLOOD HAZARD AREAS

117.1 Flood hazard areas. Pursuant to Section 553.73(5), *Florida Statutes*, the variance procedures adopted in the local floodplain management ordinance shall apply to requests submitted to the *building official* for variances to the provisions of Section 1612.4 of the *Florida Building Code, Building* or, as applicable, the provisions of Section R322 of the *Florida Building Code, Residential*. This section shall not apply to Section 3109 of the *Florida Building Code, Building*.

CHAPTER 2
DEFINITIONS

SECTION 201
GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the *Florida Building Code, Energy Conservation*, *Florida Building Code, Fuel Gas*, *Florida Fire Prevention Code*, *Florida Building Code, Mechanical* or *Florida Building Code, Plumbing*, such terms shall have the meanings ascribed to them as in those codes.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202
DEFINITIONS

24-HOUR CARE. The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours**.**

AAC MASONRY. *Masonry* made of autoclaved aerated concrete (AAC) units, manufactured without internal reinforcement and bonded together using thin- or thick-bed *mortar*.

ACCESSIBLE. See the *Florida Building Code, Accessibility.*

ACCESSIBLE MEANS OF EGRESS. A continuous and unobstructed way of egress travel from any *accessible* point in a *building* or *facility* to a *public way*.

ACCESSIBLE ROUTE. See the *Florida Building Code, Accessibility.*

ACCESSIBLE UNIT. See the *Florida Building Code, Accessibility.*

ACCREDITATION BODY. An *approved*, third-party organization that is independent of the grading and inspection agencies, and the lumber mills, and that initially accredits and subsequently monitors, on a continuing basis, the competency and performance of a grading or inspection agency related to carrying out specific tasks.

[A] ADDITION. An extension or increase in floor area, number of stories or height of a building or structure.

ADHERED MASONRY VENEER. *Veneer* secured and supported through the adhesion of an *approved* bonding material applied to an *approved backing*.

ADOBE CONSTRUCTION. Construction in which the exterior *load-bearing* and *nonload-bearing walls* and partitions are of unfired clay *masonry units*, and floors, roofs and interior framing are wholly or partly of wood or other *approved* materials.

Adobe, stabilized. Unfired clay *masonry units* to which admixtures, such as emulsified asphalt, are added during the manufacturing process to limit the units' water absorption so as to increase their durability.

Adobe, unstabilized. Unfired clay *masonry units* that do not meet the definition of "Adobe, stabilized."

[F] AEROSOL. A product that is dispensed from an *aerosol container* by a propellant. Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, Level 2 or Level 3.

Level 1 aerosol products. Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

Level 2 aerosol products. Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

Level 3 aerosol products. Those with a total chemical heat of combustion that is greater than 13,000 Btu/lb (30 kJ/g).

[F] AEROSOL CONTAINER. A metal can or a glass or plastic bottle designed to dispense an *aerosol*. Metal cans shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Glass or plastic bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).

AGGREGATE. In roofing, crushed stone, crushed slag or water-worn gravel used for surfacing for *roof coverings.*

AGRICULTURAL BUILDING. Reserved.

AIR-INFLATED STRUCTURE. A structure that uses air-pressurized membrane beams, arches or other elements to enclose space. Occupants of such a structure do not occupy the pressurized area used to support the structure.

AIR-SUPPORTED STRUCTURE. A structure wherein the shape of the structure is attained by air pressure and occupants of the structure are within the elevated pressure area. Air-supported structures are of two basic types:

Double skin. Similar to a single skin, but with an attached liner that is separated from the outer skin and provides an airspace which serves for insulation, acoustic, aesthetic or similar purposes.

Single skin. Where there is only the single outer skin and the air pressure is directly against that skin.

AISLE. An unenclosed *exit access* component that defines and provides a path of egress travel.

AISLE ACCESSWAY. That portion of an *exit access* that leads to an *aisle*.

[F] ALARM NOTIFICATION APPLIANCE. A *fire alarm system* component such as a bell, horn, speaker, light or text display that provides audible, tactile or visible outputs, or any combination thereof.

[F] ALARM SIGNAL. A signal indicating an emergency requiring immediate action, such as a signal indicative of fire.

[F] ALARM VERIFICATION FEATURE. A feature of *automatic* fire detection and alarm systems to reduce unwanted alarms wherein *smoke detectors* report alarm conditions for a minimum period of time, or confirm alarm conditions within a given time period, after being *automatically* reset, in order to be accepted as a valid alarm-initiation signal.

ALLOWABLE STRESS DESIGN. A method of proportioning structural members, such that elastically computed stresses produced in the members by *nominal loads* do not exceed *specified* allowable stresses (also called "working stress design").

[A] ALTERATION. Any construction or renovation to an *existing structure* other than *repair* or *addition*.

ALTERNATING TREAD DEVICE. A device that has a series of steps between 50 and 70 degrees (0.87 and 1.22 rad) from horizontal, usually attached to a center support rail in an alternating manner so that the user does not have both feet on the same level at the same time.

AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered *incapable of self-preservation* by the services provided.

ANCHOR. Metal rod, wire or strap that secures *masonry* to its structural support.

ANCHOR BUILDING. An exterior perimeter building of a group other than H having direct access to a *covered or open mall building* but having required *means of egress* independent of the mall.

ANCHORED MASONRY VENEER. *Veneer* secured with *approved* mechanical fasteners to an *approved backing*

ANNULAR SPACE. The opening around the penetrating item.

[F] ANNUNCIATOR. A unit containing one or more indicator lamps, alphanumeric displays or other equivalent means in which each indication provides status information about a circuit, condition or location.

APPLICABLE GOVERNING BODY. A city, county, state, state agency or other political government subdivision or entity authorized to administer and enforce the provisions of this code, as adopted or amended. Also applies to administrative authority.

[A] APPROVED. Acceptable to the *building official* or authority having jurisdiction.

[A] APPROVED AGENCY. An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been *approved*.

APPROVED FABRICATOR. An established and qualified person, firm or corporation *approved* by the *building official* pursuant to Chapter 17 of this code.

APPROVED SOURCE. An independent person, firm or corporation, *approved* by the *building official*, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

ARCHITECT. A Florida-registered architect.

ARCHITECTURAL TERRA COTTA. Plain or ornamental hard-burned modified clay units, larger in size than *brick*, with glazed or unglazed ceramic finish.

AREA (for masonry).

Gross cross-sectional. The *area* delineated by the out-to-out *specified* dimensions of *masonry* in the plane under consideration.

Net cross-sectional. The *area* of *masonry units*, grout and *mortar* crossed by the plane under consideration based on out-to-out *specified* dimensions.

AREA, BUILDING. The area included within surrounding *exterior walls* (or *exterior walls* and *fire walls*) exclusive of vent *shafts* and *courts*. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above.

AREA OF REFUGE. An area where persons unable to use *stairways* can remain temporarily to await instructions or assistance during emergency evacuation.

AREAWAY. A subsurface space adjacent to a building open at the top or protected at the top by a grating or *guard*.

ASSEMBLY SEATING, MULTILEVEL. See "Multilevel assembly seating."

ATRIUM. An opening connecting two or more *stories* other than enclosed *stairways*, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. *Stories*, as used in this definition, do not include balconies within assembly groups or *mezzanines* that comply with Section 505.

ATTIC. The space between the ceiling beams of the top *story* and the roof rafters.

[F] AUDIBLE ALARM NOTIFICATION APPLIANCE. A notification appliance that alerts by the sense of hearing.

AUTOCLAVED AERATED CONCRETE (AAC). Low density cementitious product of calcium silicate hydrates, whose material specifications are defined in ASTM C 1386.

[F] AUTOMATIC. As applied to fire protection devices, a device or system providing an emergency function without the necessity for human intervention and activated as a result of a predetermined temperature rise, rate of temperature rise or combustion products.

[F] AUTOMATIC FIRE-EXTINGUISHING SYSTEM. An *approved* system of devices and equipment which *automatically* detects a fire and discharges an *approved* fire-extinguishing agent onto or in the area of a fire.

[F] AUTOMATIC SMOKE DETECTION SYSTEM. A *fire alarm system* that has initiation devices that utilize *smoke detectors* for protection of an area such as a room or space with detectors to provide early warning of fire.

[F] AUTOMATIC SPRINKLER SYSTEM. An automatic sprinkler system, for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply. The portion of the system above the ground is a network of specially sized or hydraulically designed piping installed in a structure or area, generally overhead, and to which *automatic* sprinklers are connected in a systematic pattern. The system is usually activated by heat from a fire and discharges water over the fire area.

[F] AVERAGE AMBIENT SOUND LEVEL. The root mean square, A-weighted sound pressure level measured over a 24-hour period, or the time any person is present, whichever time period is less.

AWNING. An architectural projection that provides weather protection, identity or decoration and is partially or wholly supported by the building to which it is attached. An awning is comprised of a lightweight *frame structure* over which a covering is attached. An awning may be fixed or moveable, cantilevered, or otherwise entirely supported from a building.

BACKING. The wall or surface to which the *veneer* is secured.

[F] BALED COTTON. A natural seed fiber wrapped in and secured with industry accepted materials, usually consisting of burlap, woven polypropylene, polyethylene or cotton or sheet polyethylene, and secured with steel, synthetic or wire bands or wire; also includes linters (lint removed from the cottonseed) and motes (residual materials from the ginning process).

[F] BALED COTTON, DENSELY PACKED. Cotton made into banded bales with a packing density of at least 22 pounds per cubic foot (360 kg/m^3), and dimensions complying with the following: a length of 55 inches (1397 mm), a width of 21 inches (533.4 mm) and a height of 27.6 to 35.4 inches (701 to 899 mm).

BALLAST. In roofing, ballast comes in the form of large stones or paver systems or light-weight interlocking paver systems and is used to provide uplift resistance for roofing systems that are not adhered or mechanically attached to the *roof deck*.

[F] BARRICADE. A structure that consists of a combination of walls, floor and roof, which is designed to withstand the rapid release of energy in an *explosion* and which is fully confined, partially vented or fully vented; or other effective method of shielding from explosive materials by a natural or artificial barrier.

Artificial barricade. An artificial mound or revetment a minimum thickness of 3 feet (914 mm).

Natural barricade. Natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures that require protection cannot be seen from the magazine or building containing explosives when the trees are bare of leaves.

BASE FLOOD. The *flood* having a 1-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION. The elevation of the *base flood*, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the *Flood Insurance Rate Map* (FIRM).

BASEMENT (for flood loads). The portion of a building having its floor subgrade (below ground level) on all sides. This definition of "Basement" is limited in application to the provisions of Section 1612.

BASEMENT. A *story* that is not a *story above grade plane* (see "*Story above grade plane*"). This definition of "Basement" does not apply to the provisions of Section 1612 for flood *loads*.

BEARING WALL STRUCTURE. A building or other structure in which vertical *loads* from floors and roofs are primarily supported by walls.

BED JOINT. The horizontal layer of *mortar* on which a *masonry unit* is laid.

BLEACHERS. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "*Grandstands*").

BOARDING HOUSE. A building arranged or used for lodging for compensation, with or without meals, and not occupied as a single-family unit.

[F] BOILING POINT. The temperature at which the vapor pressure of a *liquid* equals the atmospheric pressure of 14.7 pounds per square inch (psia) (101 kPa) or 760 mm of mercury. Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for the purposes of this classification, the 20-percent evaporated point of a distillation performed in accordance with ASTM D 86 shall be used as the boiling point of the *liquid*.

BOND BEAM. A horizontal grouted element within *masonry* in which reinforcement is embedded.

BRACED WALL LINE. A series of *braced wall panels* in a single *story* that meets the requirements of Section 2308.3 or 2308.12.4.

BRACED WALL PANEL. A section of wall braced in accordance with Section 2308.9.3 or 2308.12.4.

BRICK.

Calcium silicate (sand lime brick). A pressed and subsequently autoclaved unit that consists of sand and lime, with or without the inclusion of other materials.

Clay or shale. A solid or hollow *masonry unit* of clay or shale, usually formed into a rectangular *prism*, then burned or fired in a kiln; brick is a ceramic product.

Concrete. A concrete *masonry unit* made from Portland cement, water, and suitable aggregates, with or without the inclusion of other materials.

[A] BUILDING. Any structure used or intended for supporting or sheltering any use or occupancy.

BUILDING AREA. See "Area, building."

BUILDING ELEMENT. A fundamental component of building construction, listed in Table 601, which may or may not be of fire-resistance-rated construction and is constructed of materials based on the *building* type of construction.

BUILDING HEIGHT. See "Height, building."

BUILDING LINE. The line established by law, beyond which a *building* shall not extend, except as specifically provided by law.

[A] BUILDING OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

BUILT-UP ROOF COVERING. Two or more layers of felt cemented together and surfaced with a cap sheet, mineral *aggregate*, smooth coating or similar surfacing material.

BURIAL CHAMBER MAUSOLEUM. A family mausoleum consisting of six or fewer casket placement crypts plus a chamber to be used for loading of caskets from the interior of the mausoleum which is not below the level of the ground and which is substantially exposed above ground.

CABLE-RESTRAINED, AIR-SUPPORTED STRUCTURE. A structure in which the uplift is resisted by cables or webbings which are anchored to either foundations or dead men. Reinforcing cable or webbing is attached by various methods to the membrane or is an integral part of the membrane. This is not a cable-supported structure.

CANOPY. A permanent structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration. A canopy is permitted to be structurally independent or supported by attachment to a *building* on one or more sides.

[F] CARBON DIOXIDE EXTINGUISHING SYSTEMS. A system supplying carbon dioxide (CO_2) from a pressurized vessel through fixed pipes and nozzles. The system includes a manual- or *automatic*-actuating mechanism.

CARBON MONOXIDE ALARM. A device for the purpose of detecting carbon monoxide, that produces a distinct audible alarm, and is listed or labeled with the appropriate standard, either ANSI/UL 2034, Standard for Single and Multiple Station CO Alarms, or UL 2075, Gas and Vapor Detector Sensor, in accordance with its application.

CARE SUITE. A group of treatment rooms, care recipient sleeping rooms and their associated support rooms or spaces and circulation space within Group I-2 occupancies where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.3.

CAST STONE. A building stone manufactured from Portland cement concrete precast and used as a *trim*, *veneer* or facing on or in *buildings* or *structures*.

[F] CEILING LIMIT. The maximum concentration of an air-borne contaminant to which one may be exposed. The ceiling limits utilized are those published in DOL 29 CFR Part 1910.1000. The ceiling Recommended Exposure Limit (REL-C) concentrations published by the U.S. National Institute for Occupational Safety and Health (NIOSH), Threshold Limit Value—Ceiling (TLV-C) concentrations published by the American Conference of Governmental Industrial Hygenists (ACGIH), Ceiling Work place Environmental Exposure Level (WEEL-Ceiling) Guides published by the American Industrial Hygiene Association (AIHA), and other *approved*, consistent measures are allowed as surrogates for hazardous substances not listed in DOL 29 CFR Part 1910.1000.

CEILING RADIATION DAMPER. A *listed* device installed in a ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly to limit *automatically* the radiative heat transfer through an air inlet/outlet opening.

CELL (Group I-3 occupancy). A room within a housing unit in a detention or correctional facility used to confine inmates or prisoners.

CELL (masonry). A void space having a gross cross-sectional *area* greater than $1^1/_2$ square inches (967 mm^2).

CELL TIER. Levels of *cells* vertically stacked above one another within a *housing unit*.

CEMENT PLASTER. A mixture of portland or blended cement, Portland cement or blended cement and hydrated lime, masonry cement or plastic cement and aggregate and other *approved* materials as specified in this code.

CERAMIC FIBER BLANKET. A *mineral wool* insulation material made of alumina-silica fibers and weighing 4 to 10 pounds per cubic foot (pcf) (64 to 160 kg/m^3).

CERTIFICATE OF COMPLIANCE. A certificate stating that materials and products meet *specified* standards or that work was done in compliance with *approved construction documents*.

CHAPEL MAUSOLEUM. A mausoleum for the public that has heat or air conditioning, with or without a committal area or office.

[M] CHIMNEY. A primarily vertical enclosure containing one or more passageways for conveying flue gases to the outside atmosphere.

CHIMNEY TYPES.

High-heat appliance type. An *approved* chimney for removing the products of combustion from fuel-burning, high-heat appliances producing combustion gases in excess of 2000°F (1093°C) measured at the appliance flue outlet (see Section 2113.11.3).

Low-heat appliance type. An *approved* chimney for removing the products of combustion from fuel-burning, low-heat appliances producing combustion gases not in excess of 1000°F (538°C) under normal operating conditions, but capable of producing combustion gases of 1400°F (760°C) during intermittent forces firing for periods up to 1 hour. Temperatures shall be measured at the appliance flue outlet.

Masonry type. A field-constructed chimney of solid *masonry units* or stones.

Medium-heat appliance type. An *approved* chimney for removing the products of combustion from fuel-burning, medium-heat appliances producing combustion gases not exceeding 2000°F (1093°C) measured at the appliance flue outlet (see Section 2113.11.2).

CIRCULATION PATH. See the *Florida Building Code, Accessibility*.

[F] CLEAN AGENT. Electrically nonconducting, volatile or gaseous fire extinguishant that does not leave a residue upon vaporation.

CLEANOUT. An opening to the bottom of a grout space of sufficient size and spacing to allow the removal of debris.

CLINIC, OUTPATIENT. *Buildings* or portions thereof used to provide *medical care* on less than a 24-hour basis to persons who are not rendered *incapable of self-preservation* by the services provided.

[F] CLOSED SYSTEM. The *use* of a *solid* or *liquid hazardous material* involving a closed vessel or system that remains closed during normal operations where vapors emitted by the product are not liberated outside of the vessel or system and the product is not exposed to the atmosphere during normal operations; and all *uses* of *compressed gases*. Examples of closed systems for *solids* and *liquids* include product conveyed through a piping system into a closed vessel, system or piece of equipment.

COASTAL HIGH HAZARD AREA. Area within the special flood hazard area extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area that is subject to high-velocity wave action from storms or seismic sources, and shown on a Flood Insurance Rate Map (FIRM) or other flood hazard map as velocity Zone V, VO, VE or V1-30.

COLLAR JOINT. Vertical longitudinal space between *wythes* of *masonry* or between *masonry wythe* and backup construction that is permitted to be filled with *mortar* or grout.

COLLECTOR. A horizontal *diaphragm* element parallel and in line with the applied force that collects and transfers *diaphragm* shear forces to the vertical elements of the lateral-force-resisting system and/or distributes forces within the *diaphragm*.

COLUMBARIUM. A permanent structure consisting of niches.

COMBINATION FIRE/SMOKE DAMPER. A *listed* device installed in ducts and air transfer openings designed to close *automatically* upon the detection of heat and resist the passage of flame and smoke. The device is installed to operate *automatically*, controlled by a smoke detection system, and where required, is capable of being positioned from a *fire command center*.

[F] COMBUSTIBLE DUST. Finely divided *solid* material that is 420 microns or less in diameter and which, when dispersed in air in the proper proportions, could be ignited by a flame, spark or other source of ignition. Combustible dust will pass through a U.S. No. 40 standard sieve.

[F] COMBUSTIBLE FIBERS. Readily ignitable and free-burning materials in a fibrous or shredded form, such as cocoa fiber, cloth, cotton, excelsior, hay, hemp, henequen, istle, jute, kapok, oakum, rags, sisal, Spanish moss, straw, tow, wastepaper, certain synthetic fibers or other like materials. This definition does not include densely packed baled cotton.

[F] COMBUSTIBLE LIQUID. A *liquid* having a closed cup *flash point* at or above 100°F (38°C). Combustible liquids shall be subdivided as follows:

Class II. *Liquids* having a closed cup *flash point* at or above 100°F (38°C) and below 140°F (60°C).

Class IIIA. *Liquids* having a closed cup *flash point* at or above 140°F (60°C) and below 200°F (93°C).

Class IIIB. *Liquids* having a closed cup *flash point* at or above 200°F (93°C).

The category of combustible liquids does not include *compressed gases* or *cryogenic fluids*.

COMMISSION. The Florida Building Commission, created per Section 553.74, *Florida Statutes*.

COMMON PATH OF EGRESS TRAVEL. That portion of *exit access* which the occupants are required to traverse before two separate and distinct paths of egress travel to two *exits* are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted travel distance.

COMMON USE. Interior or exterior *circulation paths*, rooms, spaces or elements that are not for public use and are made available for the shared use of two or more people.

COMPANION CRYPT. A permanent chamber in a mausoleum for the containment of human remains of more than one individual.

[F] COMPRESSED GAS. A material, or mixture of materials, that:

1. Is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure; and
2. Has a *boiling point* of 68°F (20°C) or less at 14.7 psia (101 kPa) which is either liquefied, nonliquefied or in solution, except those gases which have no other health- or physical-hazard properties are not considered to be compressed until the pressure in the packaging exceeds 41 psia (282 kPa) at 68°F (20°C).

The states of a compressed gas are categorized as follows:

1. Nonliquefied compressed gases are gases, other than those in solution, which are in a packaging under the charged pressure and are entirely gaseous at a temperature of 68°F (20°C).
2. Liquefied compressed gases are gases that, in a packaging under the charged pressure, are partially *liquid* at a temperature of 68°F (20°C).
3. Compressed gases in solution are nonliquefied gases that are dissolved in a solvent.

4. Compressed gas mixtures consist of a mixture of two or more compressed gases contained in a packaging, the hazard properties of which are represented by the properties of the mixture as a whole.

COMPRESSIVE STRENGTH OF MASONRY. Maximum compressive force resisted per unit of net cross-sectional *area* of *masonry*, determined by the testing of masonry *prisms*.

CONCRETE.

Carbonate aggregate. Concrete made with aggregates consisting mainly of calcium or magnesium carbonate, such as limestone or dolomite, and containing 40 percent or less quartz, chert or flint.

Cellular. A lightweight insulating concrete made by mixing a preformed foam with Portland cement slurry and having a dry unit weight of approximately 30 pcf (480 kg/m^3).

Lightweight aggregate. Concrete made with aggregates of expanded clay, shale, slag or slate or sintered fly ash or any natural lightweight aggregate meeting ASTM C 330 and possessing equivalent fire-resistance properties and weighing 85 to 115 pcf (1360 to 1840 kg/m^3).

Perlite. A lightweight insulating concrete having a dry unit weight of approximately 30 pcf (480 kg/m^3) made with perlite concrete aggregate. Perlite aggregate is produced from a volcanic rock which, when heated, expands to form a glass-like material of cellular structure.

Sand-lightweight. Concrete made with a combination of expanded clay, shale, slag, slate, sintered fly ash, or any natural lightweight aggregate meeting ASTM C 330 and possessing equivalent fire-resistance properties and natural sand. Its unit weight is generally between 105 and 120 pcf (1680 and 1920 kg/m^3).

Siliceous aggregate. Concrete made with normal-weight aggregates consisting mainly of silica or compounds other than calcium or magnesium carbonate, which contains more than 40-percent quartz, chert or flint.

Vermiculite. A light weight insulating concrete made with vermiculite concrete aggregate which is laminated micaceous material produced by expanding the ore at high temperatures. When added to a Portland cement slurry the resulting concrete has a dry unit weight of approximately 30 pcf (480 kg/m^3).

CONGREGATE LIVING FACILITIES. A *building* or part thereof that contains *sleeping units* where residents share bathroom and/or kitchen facilities.

[F] CONSTANTLY ATTENDED LOCATION. A designated location at a facility staffed by trained personnel on a continuous basis where alarm or supervisory signals are monitored and facilities are provided for notification of the fire department or other emergency services.

[A] CONSTRUCTION DOCUMENTS. Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building *permit*.

CONSTRUCTION TYPES. See Section 602.

Type I. See Section 602.2.

Type II. See Section 602.2.

Type III. See Section 602.3.

Type IV. See Section 602.4.

Type V. See Section 602.5.

[F] CONTINUOUS GAS DETECTION SYSTEM. A gas detection system where the analytical instrument is maintained in continuous operation and sampling is performed without interruption. Analysis is allowed to be performed on a cyclical basis at intervals not to exceed 30 minutes.

[F] CONTROL AREA. Spaces within a building where quantities of *hazardous materials* not exceeding the maximum allowable quantities per control area are stored, dispensed, *used* or handled. See also the definition of "Outdoor control area" in the *Florida Fire Prevention Code*.

CONTROLLED LOW-STRENGTH MATERIAL. A self-compacted, cementitious material used primarily as a backfill in place of compacted fill.

CONVENTIONAL LIGHT-FRAME CONSTRUCTION. A type of construction whose primary structural elements are formed by a system of repetitive wood-framing members. See Section 2308 for conventional light-frame construction provisions.

CORNICE. A projecting horizontal molded element located at or near the top of an architectural feature.

CORRIDOR. An enclosed *exit access* component that defines and provides a path of egress travel.

CORROSION RESISTANCE. The ability of a material to withstand deterioration of its surface or its properties when exposed to its environment.

[F] CORROSIVE. A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact. A chemical shall be considered corrosive if, when tested on the intact skin of albino rabbits by the method described in DOTn 49 CFR, Part 173.137, such chemical destroys or changes irreversibly the structure of the tissue at the point of contact following an exposure period of 4 hours. This term does not refer to action on inanimate surfaces.

COURT. An open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.

COVERED MALL BUILDING. A single *building* enclosing a number of tenants and occupants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, passenger transportation terminals, offices and other similar uses wherein two or more tenants have a main entrance into one or more malls. *Anchor buildings* shall not be considered as a part of the covered mall building. The term "covered mall building" shall include *open mall buildings* as defined below.

Mall. A roofed or covered common pedestrian area within a *covered mall building* that serves as access for two or more tenants and not to exceed three levels that are open

to each other. The term "mall" shall include open malls as defined below.

Open mall. An unroofed common pedestrian way serving a number of tenants not exceeding three levels. Circulation at levels above grade shall be permitted to include open exterior balconies leading to *exits* discharging at grade.

Open mall building. Several structures housing a number of tenants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, offices, and other similar uses, wherein two or more tenants have a main entrance into one or more open malls. *Anchor buildings* are not considered as a part of the open mall building.

CRIPPLE WALL. A framed stud wall extending from the top of the foundation to the underside of floor framing for the lowest occupied floor level.

[F] CRYOGENIC FLUID. A *liquid* having a *boiling point* lower than -150°F (-101°C) at 14.7 pounds per square inch atmosphere (psia) (an absolute pressure of 101 kPa).

CRYPT. A permanent chamber in a mausoleum for the containment of human remains.

CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes persons receiving care who evacuate at a slower rate and/or who have mental and psychiatric complications.

DALLE GLASS. A decorative composite glazing material made of individual pieces of glass that are embedded in a cast matrix of concrete or epoxy.

DAMPER. See "*Ceiling radiation damper*," "*Combination fire/smoke damper*," "*Fire damper*" and "*Smoke damper*."

DANGEROUS. Any *building*, *structure* or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The *building* or *structure* has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the *building* or *structure* under service loads.

[F] DAY BOX. A portable magazine designed to hold explosive materials constructed in accordance with the requirements for a Type 3 magazine as defined and classified in the *Florida Fire Prevention Code*.

DEAD LOAD. The weight of materials of construction incorporated into the *building*, including but not limited to walls, floors, roofs, ceilings, *stairways*, built-in partitions, finishes, cladding and other similarly incorporated architectural and structural items, and the weight of fixed service equipment, such as cranes, plumbing stacks and risers, electrical feeders, heating, ventilating and air-conditioning systems and *automatic sprinkler systems*.

DECORATIVE GLASS. A carved, leaded or *Dalle glass* or glazing material whose purpose is decorative or artistic, not functional; whose coloring, texture or other design qualities or components cannot be removed without destroying the glazing material and whose surface, or assembly into which it is incorporated, is divided into segments.

[F] DECORATIVE MATERIALS. All materials applied over the building *interior finish* for decorative, acoustical or other effect (such as curtains, draperies, fabrics, streamers and surface coverings), and all other materials utilized for decorative effect (such as batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include floor coverings, ordinary window shades, *interior finish* and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

DEEP FOUNDATION. A deep foundation is a foundation element that does not satisfy the definition of a *shallow foundation.*

[F] DEFLAGRATION. An exothermic reaction, such as the extremely rapid oxidation of a flammable dust or vapor in air, in which the reaction progresses through the unburned material at a rate less than the velocity of sound. A deflagration can have an explosive effect.

[F] DELUGE SYSTEM. A sprinkler system employing open sprinklers attached to a piping system connected to a water supply through a valve that is opened by the operation of a detection system installed in the same areas as the sprinklers. When this valve opens, water flows into the piping system and discharges from all sprinklers attached thereto.

DESIGN DISPLACEMENT. See Section 1905.1.1.

DESIGN EARTHQUAKE GROUND MOTION. The earthquake ground motion that *buildings* and *structures* are specifically proportioned to resist in Section 1613.

DESIGN FLOOD. The *flood* associated with the greater of the following two areas:

1. Area with a flood plain subject to a 1-percent or greater chance of *flooding* in any year; or
2. Area designated as a *flood hazard area* on a community's flood hazard map, or otherwise legally designated.

DESIGN FLOOD ELEVATION. The elevation of the "*design flood*," including wave height, relative to the datum specified on the community's legally designated flood hazard map. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building's* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

DESIGN PROFESSIONAL, REGISTERED. See "Registered design professional."

DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE, REGISTERED. See "Registered design professional in responsible charge."

DESIGN STRENGTH. The product of the nominal strength and a *resistance factor* (or strength reduction factor).

DESIGNATED SEISMIC SYSTEM. Those nonstructural components that require design in accordance with Chapter 13 of ASCE 7 and for which the component importance factor, I_p, is greater than 1 in accordance with Section 13.1.3 of ASCE 7.

[F] DETACHED BUILDING. A separate single-*story building*, without a basement or crawl space, used for the storage or *use* of *hazardous materials* and located an *approved* distance from all structures.

DETAILED PLAIN CONCRETE STRUCTURAL WALL. See Section 1905.1.1

DETECTABLE WARNING. See the *Florida Building Code, Accessibility*.

[F] DETECTOR, HEAT. A fire detector that senses heat—either abnormally high temperature or rate of rise, or both.

[F] DETONATION. An exothermic reaction characterized by the presence of a shock wave in the material which establishes and maintains the reaction. The reaction zone progresses through the material at a rate greater than the velocity of sound. The principal heating mechanism is one of shock compression. Detonations have an explosive effect.

DETOXIFICATION FACILITIES. Facilities that provide treatment for substance abuse, serving care recipients who are *incapable of self-preservation* or who are harmful to themselves or others.

DIAPHRAGM. A horizontal or sloped system acting to transmit lateral forces to the vertical-resisting elements. When the term "diaphragm" is used, it shall include horizontal bracing systems.

Diaphragm, blocked. In *light-frame construction*, a diaphragm in which all sheathing edges not occurring on a framing member are supported on and fastened to blocking.

Diaphragm boundary. In *light-frame construction*, a location where shear is transferred into or out of the diaphragm sheathing. Transfer is either to a boundary element or to another force-resisting element.

Diaphragm chord. A diaphragm boundary element perpendicular to the applied load that is assumed to take axial stresses due to the diaphragm moment.

Diaphragm flexible. A diaphragm is flexible for the purpose of distribution of story shear and torsional moment where so indicated in Section 12.3.1 of ASCE 7.

Diaphragm, rigid. A diaphragm is rigid for the purpose of distribution of story shear and torsional moment when the lateral deformation of the diaphragm is less than or equal to two times the average story drift.

Diaphram, unblocked. A diaphragm that has edge nailing at supporting members only. Blocking between supporting structural members at panel edges is not included. Diaphragm panels are field nailed to supporting members.

DIMENSIONS.

Nominal. The *specified* dimension plus an allowance for the *joints* with which the units are to be laid. Nominal dimensions are usually stated in whole numbers. Thickness is given first, followed by height and then length.

Specified. Dimensions specified for the manufacture or construction of a unit, *joint* element.

[F] DISPENSING. The pouring or transferring of any material from a container, tank or similar vessel, whereby vapors, dusts, fumes, mists or gases are liberated to the atmosphere.

DOOR, BALANCED. A door equipped with double-pivoted hardware so designed as to cause a semicounter balanced swing action when opening.

DORMITORY. A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories or fraternity houses.

DRAFTSTOP. A material, device or construction installed to restrict the movement of air within open spaces of concealed areas of building components such as crawl spaces, floor/ceiling assemblies, roof/ceiling assemblies and *attics*.

DRAG STRUT. See "Collector."

DRILLED SHAFT. A drilled shaft is a cast-in-place deep foundation element constructed by drilling a hole (with or without permanent casing) into soil or rock and filling it with fluid concrete.

Socketed drilled shaft. A socketed drilled shaft is a drilled shaft with a permanent pipe or tube casing that extends down to bedrock and an uncased socket drilled into the bedrock.

[F] DRY-CHEMICAL EXTINGUISHING AGENT. A powder composed of small particles, usually of sodium bicarbonate, potassium bicarbonate, urea-potassium-based bicarbonate, potassium chloride or monoammonium phosphate, with added particulate material supplemented by special treatment to provide resistance to packing, resistance to moisture absorption (caking) and the proper flow capabilities.

DRY FLOODPROOFING. A combination of design modifications that results in a building or structure, including the attendant utilities and equipment and sanitary facilities, being water tight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist *loads* as identified in ASCE 7.

DURATION OF LOAD. The period of continuous application of a given *load*, or the aggregate of periods of intermittent applications of the same *load*.

DWELLING. A building that contains one or two *dwelling units* used, intended or designed to be used, rented, leased, let or hired out to be occupied for living purposes.

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

DWELLING UNIT OR SLEEPING UNIT, MULTISTORY. See definition for "*Multistory unit.*"

DWELLING UNIT OR SLEEPING UNIT, TYPE A. Reserved.

DWELLING UNIT OR SLEEPING UNIT, TYPE B. Reserved.

EGRESS COURT. A court or *yard* which provides access to a *public way* for one or more *exits*.

[F] ELEVATOR GROUP. A grouping of elevators in a *building* located adjacent or directly across from one another that responds to common hall call buttons.

[F] EMERGENCY ALARM SYSTEM. A system to provide indication and warning of emergency situations involving *hazardous materials*.

[F] EMERGENCY CONTROL STATION. An *approved* location on the premises where signals from emergency equipment are received and which is staffed by trained personnel.

EMERGENCY ESCAPE AND RESCUE OPENING. An operable window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

[F] EMERGENCY VOICE/ALARM COMMUNICATIONS. Dedicated manual or *automatic* facilities for originating and distributing voice instructions, as well as alert and evacuation signals pertaining to a fire emergency, to the occupants of a building.

EMPLOYEE WORK AREA. See the *Florida Building Code, Accessibility*.

ENFORCEMENT AGENCY.

Local enforcement agency. Means an agency of local government, a local school board, a community college board of trustees, or a university board of trustees in the State University System with jurisdiction to make inspections of buildings and to enforce the codes which establish standards for design, construction, erection, alteration, repair, modification, or demolition of public or private buildings, structures, or facilities.

State enforcement agency. The agency of state government with authority to make inspections of buildings and to enforce the codes, as required by Ch. 553, F.S., which establish standards for design, construction, erection, alteration, repair, modification, or demolition of public or private buildings, structures, or facilities.

ENGINEER. A Florida-registered engineer.

ENTRANCE, PUBLIC. See "Public entrance."

ENTRANCE, RESTRICTED. See "Restricted entrance."

ENTRANCE, SERVICE. See "Service entrance."

EQUIPMENT PLATFORM. An unoccupied, elevated platform used exclusively for mechanical systems or industrial process equipment, including the associated elevated walkways, *stairs, alternating tread devices* and ladders necessary to access the platform (see Section 505.3).

ESSENTIAL FACILITIES. Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from *flood*, wind, snow or earthquakes.

[F] EXHAUSTED ENCLOSURE. An appliance or piece of equipment that consists of a top, a back and two sides providing a means of local exhaust for capturing gases, fumes, vapors and mists. Such enclosures include laboratory hoods, exhaust fume hoods and similar appliances and equipment used to locally retain and exhaust the gases, fumes, vapors and mists that could be released. Rooms or areas provided with general *ventilation*, in themselves, are not exhausted enclosures.

EXISTING CONSTRUCTION. Any buildings and structures for which the *start of construction* commenced before the effective date of the community's first flood plain management code, ordinance or standard. "Existing construction" is also referred to as "existing structures."

EXISTING STRUCTURE (For Section 1612.2). See "Existing construction".

EXISTING STRUCTURE (For Chapter 34). A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building *permit* has been issued.

EXIT. That portion of a *means of egress* system between the *exit access* and the *exit discharge* or *public way*. Exit components include exterior exit doors at the *level of exit discharge*, *interior exit stairways*, *interior exit ramps*, *exit passageways*, *exterior exit stairways* and *exterior exit ramps and horizontal exits*.

EXIT ACCESS. That portion of a *means of egress* system that leads from any occupied portion of a *building* or *structure* to an *exit*.

EXIT ACCESS DOORWAY. A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, *corridor*, *exit access stair* or *exit access ramp*.

EXIT ACCESS RAMP. An interior *ramp* that is not a required *interior exit ramp*.

EXIT ACCESS STAIRWAY. An interior *stairway* that is not a required *interior exit stairway*.

EXIT DISCHARGE. That portion of a *means of egress* system between the termination of an *exit* and a *public way*.

EXIT DISCHARGE, LEVEL OF. The *story* at the point at which an *exit* terminates and an *exit discharge* begins.

EXIT HARDWARE, FIRE. See "Fire exit hardware."

EXIT, HORIZONTAL. A path of egress travel from one building to an area in another building on approximately the same level, or a path of egress travel through or around a wall or partition to an area on approximately the same level in the same building, which affords safety from fire and smoke from the area of incidence and areas communicating therewith.

EXIT PASSAGEWAY. An *exit* component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a horizontal direction to an *exit* or to the *exit discharge*.

EXPANDED VINYL WALL COVERING. Wall covering consisting of a woven textile backing, an expanded vinyl base

coat layer and a nonexpanded vinyl skin coat. The expanded base coat layer is a homogeneous vinyl layer that contains a blowing agent. During processing, the blowing agent decomposes, causing this layer to expand by forming closed cells. The total thickness of the wall covering is approximately 0.055 inch to 0.070 inch (1.4 mm to 1.78 mm).

[F] EXPLOSION. An effect produced by the sudden violent expansion of gases, which may be accompanied by a shock wave or disruption, or both, of enclosing materials or structures. An explosion could result from any of the following:

1. Chemical changes such as rapid oxidation, *deflagration* or *detonation*, decomposition of molecules and runaway polymerization (usually *detonation*s).
2. Physical changes such as pressure tank ruptures.
3. Atomic changes (nuclear fission or fusion).

[F] EXPLOSIVE. A chemical compound, mixture or device, the primary or common purpose of which is to function by explosion. The term includes, but is not limited to, dynamite, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, igniters and display fireworks, 1.3G.

The term "explosive" includes any material determined to be within the scope of USC Title 18: Chapter 40 and also includes any material classified as an explosive other than consumer fireworks, 1.4G by the *hazardous materials* regulations of DOTn 49 CFR Parts 100-185.

High explosive. Explosive material, such as dynamite, which can be caused to detonate by means of a No. 8 test blasting cap when unconfined.

Low explosive. Explosive material that will burn or deflagrate when ignited. It is characterized by a rate of reaction that is less than the speed of sound. Examples of low explosives include, but are not limited to, black powder; safety fuse; igniters; igniter cord; fuse lighters; fireworks, 1.3G and propellants, 1.3C.

Mass-detonating explosives. Division 1.1, 1.2 and 1.5 explosives alone or in combination, or loaded into various types of ammunition or containers, most of which can be expected to explode virtually instantaneously when a small portion is subjected to fire, severe concussion, impact, the impulse of an initiating agent or the effect of a considerable discharge of energy from without. Materials that react in this manner represent a mass explosion hazard. Such an explosive will normally cause severe structural damage to adjacent objects. Explosive propagation could occur immediately to other items of ammunition and explosives stored sufficiently close to and not adequately protected from the initially exploding pile with a time interval short enough so that two or more quantities must be considered as one for quantity-distance purposes.

UN/DOTn Class 1 explosives. The former classification system used by DOTn included the terms "high" and "low" explosives as defined herein. The following terms further define explosives under the current system applied by DOTn for all explosive materials defined as hazard Class 1 materials. Compatibility group letters are used in concert with the division to specify further limitations on each division noted (i.e., the letter G identifies the material as a pyrotechnic substance or article containing a pyrotechnic substance and similar materials).

Division 1.1. Explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.

Division 1.2. Explosives that have a projection hazard but not a mass explosion hazard.

Division 1.3. Explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

Division 1.4. Explosives that pose a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

Division 1.5. Very insensitive explosives. This division is comprised of substances that have a mass explosion hazard, but that are so insensitive there is very little probability of initiation or of transition from burning to *detonation* under normal conditions of transport.

Division 1.6. Extremely insensitive articles which do not have a mass explosion hazard. This division is comprised of articles that contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS). EIFS are nonstructural, nonload-bearing, *exterior wall* cladding systems that consist of an insulation board attached either adhesively or mechanically, or both, to the substrate; an integrally reinforced base coat and a textured protective finish coat.

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) WITH DRAINAGE. An EIFS that incorporates a means of drainage applied over a *water-resistive barrier*.

EXTERIOR SURFACES. Weather-exposed surfaces.

EXTERIOR WALL. A wall, bearing or nonbearing, that is used as an enclosing wall for a building, other than a *fire wall*, and that has a slope of 60 degrees (1.05 rad) or greater with the horizontal plane.

EXTERIOR WALL COVERING. A material or assembly of materials applied on the exterior side of *exterior walls* for the purpose of providing a weather-resisting barrier, insulation or for aesthetics, including but not limited to, *veneers*, siding, exterior insulation and finish systems, architectural *trim* and embellishments such as *cornices*, soffits, facias, gutters and leaders.

EXTERIOR WALL ENVELOPE. A system or assembly of *exterior wall* components, including *exterior wall* finish materials, that provides protection of the building structural members, including framing and sheathing materials, and conditioned interior space, from the detrimental effects of the exterior environment.

F RATING. The time period that the *through-penetration firestop system* limits the spread of fire through the penetration when tested in accordance with ASTM E 814 or UL 1479.

FABRIC PARTITION. A partition consisting of a finished surface made of fabric, without a continuous rigid backing, that is directly attached to a framing system in which the vertical framing members are spaced greater than 4 feet (1219 mm) on center.

FABRICATED ITEM. Structural, load-bearing or lateral load-resisting assemblies consisting of materials assembled prior to installation in a building or structure, or subjected to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standard specifications referenced by this code, such as rolled structural steel shapes, steel reinforcing bars, *masonry units* and wood structural panels, or in accordance with a referenced standard which provides requirements for quality control done under the supervisions of a third-party quality control agency, shall not be considered "fabricated items."

[F] FABRICATION AREA. An area within a semiconductor fabrication facility and related research and development areas in which there are processes using hazardous production materials. Such areas are allowed to include ancillary rooms or areas such as dressing rooms and offices that are directly related to the fabrication area processes.

FACILITY. All or any portion of buildings, structures, *site* improvements, elements and pedestrian or vehicular routes located on a *site*.

FACTORED LOAD. The product of a *nominal load* and a *load factor*.

FAMILY MAUSOLEUM. A mausoleum for the private use of a family or group of family members.

FIBER-CEMENT SIDING. A manufactured, fiber-reinforcing product made with an inorganic hydraulic or calcium silicate binder formed by chemical reaction and reinforced with discrete organic or inorganic nonasbestos fibers, or both. Additives that enhance manufacturing or product performance are permitted. Fiber-cement siding products have either smooth or textured faces and are intended for *exterior wall* and related applications.

FIBER-REINFORCED POLYMER. A polymeric composite material consisting of reinforcement fibers, such as glass, impregnated with a fiber-binding polymer which is then molded and hardened. Fiber-reinforced polymers are permitted to contain cores laminated between fiber-reinforced polymer facings.

FIBERBOARD. A fibrous, homogeneous panel made from lignocellulosic fibers (usually wood or cane) and having a density of less than 31 pounds per cubic foot (pcf) (497 kg/m^3) but more than 10 pcf (160 kg/m^3).

FIELD NAILING. See "Nailing, field."

[F] FIRE ALARM BOX, MANUAL. See "Manual fire alarm box."

[F] FIRE ALARM CONTROL UNIT. A system component that receives inputs from *automatic* and manual *fire alarm* devices and may be capable of supplying power to detection devices and transponders or off-premises transmitters. The control unit may be capable of providing a transfer of power to the notification appliances and transfer of condition to relays or devices.

[F] FIRE ALARM SIGNAL. A signal initiated by a *fire alarm-initiating device* such as a *manual fire alarm box*, *automatic fire detector*, waterflow switch or other device whose activation is indicative of the presence of a fire or fire signature.

[F] FIRE ALARM SYSTEM. A system or portion of a combination system consisting of components and circuits arranged to monitor and annunciate the status of *fire alarm* or *supervisory signal-initiating device*s and to initiate the appropriate response to those signals.

FIRE AREA. The aggregate floor area enclosed and bounded by fire walls, *fire barriers*, *exterior walls* or *horizontal assemblies* of a building. Areas of the building not provided with surrounding walls shall be included in the fire area if such areas are included within the horizontal projection of the roof or floor next above.

FIRE BARRIER. A fire-resistance-rated wall assembly of materials designed to restrict the spread of fire in which continuity is maintained.

[F] FIRE COMMAND CENTER. The principal attended or unattended location where the status of detection, alarm communications and control systems is displayed, and from which the systems can be manually controlled.

FIRE DAMPER. A *listed* device installed in ducts and air transfer openings designed to close *automatically* upon detection of heat and resist the passage of flame. Fire dampers are classified for use in either static systems that will *automatically* shut down in the event of a fire, or in dynamic systems that continue to operate during a fire. A dynamic fire damper is tested and rated for closure under elevated temperature airflow.

[F] FIRE DETECTOR, AUTOMATIC. A device designed to detect the presence of a fire signature and to initiate action.

FIRE DOOR. The door component of a *fire door assembly*.

FIRE DOOR ASSEMBLY. Any combination of a *fire door*, frame, hardware and other accessories that together provide a specific degree of fire protection to the opening.

FIRE DOOR ASSEMBLY, FLOOR. See "Floor fire door assembly."

FIRE EXIT HARDWARE. *Panic hardware* that is *listed* for use on *fire door assemblies*.

[F] FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

FIRE PARTITION. A vertical assembly of materials designed to restrict the spread of fire in which openings are protected.

FIRE PROTECTION RATING. The period of time that an opening protective will maintain the ability to confine a fire as determined by tests prescribed in Section 716. Ratings are stated in hours or minutes.

[F] FIRE PROTECTION SYSTEM. *Approved* devices, equipment and systems or combinations of systems used to detect a fire, activate an alarm, extinguish or control a fire, control or manage smoke and products of a fire or any combination thereof.

FIRE-RATED GLAZING. Glazing with either a *fire protection rating* or a *fire-resistance rating.*

FIRE RESISTANCE. That property of materials or their assemblies that prevents or retards the passage of excessive heat, hot gases or flames under conditions of use.

FIRE-RESISTANCE RATING. The period of time a building element, component or assembly maintains the ability to confine a fire, continues to perform a given structural function, or both, as determined by the tests, or the methods based on tests, prescribed in Section 703.

FIRE-RESISTANT JOINT SYSTEM. An assemblage of specific materials or products that are designed, tested and fire-resistance rated in accordance with either ASTM E 1966 or UL 2079 to resist for a prescribed period of time the passage of fire through *joints* made in or between fire-resistance-rated assemblies.

[F] FIRE SAFETY FUNCTIONS. Building and fire control functions that are intended to increase the level of life safety for occupants or to control the spread of harmful effects of fire.

FIRE SEPARATION DISTANCE. The distance measured from the building face to one of the following:

1. The closest interior *lot line*;
2. To the centerline of a street, an alley or *public way*; or
3. To an imaginary line between two buildings on the lot.

The distance shall be measured at right angles from the face of the wall.

FIRE WALL. A fire-resistance-rated wall having protected openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall.

FIRE WINDOW ASSEMBLY. A window constructed and glazed to give protection against the passage of fire.

FIREBLOCKING. Building materials, or materials *approved* for use as fireblocking, installed to resist the free passage of flame to other areas of the building through concealed spaces.

FIREPLACE. A hearth and fire chamber or similar prepared place in which a fire may be made and which is built in conjunction with a chimney.

FIREPLACE THROAT. The opening between the top of the firebox and the smoke chamber.

FIRESTOP, MEMBRANE PENETRATION. See "Membrane penetration firestop."

FIRESTOP, PENETRATION. See "Penetration firestop."

FIRESTOP SYSTEM, THROUGH PENETRATION. See "Through penetration firestop system."

[F] FIREWORKS. Any composition or device for the purpose of producing a visible or audible effect for entertainment purposes by combustion, *deflagration* or *detonation* that meets the definition of 1.4G fireworks or 1.3G fireworks as set forth herein.

Fireworks, 1.3G. Large fireworks devices, which are explosive materials, intended for use in fireworks displays and designed to produce audible or visible effects by combustion, *deflagration* or *detonation*. Such 1.3G fireworks include, but are not limited to, firecrackers containing more than 130 milligrams (2 grains) of explosive composition, aerial shells containing more than 40 grams of pyrotechnic composition, and other display pieces which exceed the limits for classification as 1.4G fireworks. Such 1.3G fireworks are also described as fireworks, UN0335 by the DOTn.

Fireworks, 1.4G. Small fireworks devices containing restricted amounts of pyrotechnic composition designed primarily to produce visible or audible effects by combustion. Such 1.4G fireworks which comply with the construction, chemical composition and labeling regulations of the DOTn for fireworks, UN0336, and the U.S. Consumer Product Safety Commission (CPSC) as set forth in CPSC 16 CFR: Parts 1500 and 1507, are not explosive materials for the purpose of this code.

FIXED BASE OPERATOR (FBO). A commercial business granted the right by the airport sponsor to operate on an airport and provide aeronautical services, such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance and flight instruction.

FIXED SEATING. Furniture or fixture designed and installed for the use of sitting and secured in place including bench-type seats and seats with or without backs or arm rests.

FLAME SPREAD. The propagation of flame over a surface.

FLAME SPREAD INDEX. A comparative measure, expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time for a material tested in accordance with ASTM E 84 or UL 723.

[F] FLAMMABLE GAS. A material that is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure [a material that has a *boiling point* of 68°F (20°C) or less at 14.7 psia (101 kPa)] which:

1. Is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air; or
2. Has a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit.

The limits specified shall be determined at 14.7 psi (101 kPa) of pressure and a temperature of 68°F (20°C) in accordance with ASTM E 681.

[F] FLAMMABLE LIQUEFIED GAS. A liquefied compressed gas which, under a charged pressure, is partially liquid at a temperature of 68°F (20°C) and which is flammable.

[F] FLAMMABLE LIQUID. A *liquid* having a closed cup *flash point* below 100°F (38°C). Flammable liquids are further categorized into a group known as Class I liquids. The Class I category is subdivided as follows:

Class IA. *Liquids* having a *flash point* below 73°F (23°C) and a *boiling point* below 100°F (38°C).

Class IB. *Liquids* having a *flash point* below 73°F (23°C) and a *boiling point* at or above 100°F (38°C).

Class IC. *Liquids* having a *flash point* at or above 73°F (23°C) and below 100°F (38°C). The category of flammable liquids does not include *compressed gases* or *cryogenic fluids*.

[F] FLAMMABLE MATERIAL. A material capable of being readily ignited from common sources of heat or at a temperature of 600°F (316°C) or less.

[F] FLAMMABLE SOLID. A *solid*, other than a blasting agent or explosive, that is capable of causing fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard. A chemical shall be considered a flammable *solid* as determined in accordance with the test method of CPSC 16 CFR; Part 1500.44, if it ignites and burns with a self-sustained flame at a rate greater than 0.1 inch (2.5 mm) per second along its major axis.

[F] FLAMMABLE VAPORS OR FUMES. The concentration of flammable constituents in air that exceed 25 percent of their *lower flammable limit (LFL).*

[F] FLASH POINT. The minimum temperature in degrees Fahrenheit at which a *liquid* will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion. The flash point of a *liquid* shall be determined by appropriate test procedure and apparatus as specified in ASTM D 56, ASTM D 93 or ASTM D 3278.

FLIGHT. A continuous run of rectangular treads, *winders* or combination thereof from one *landing* to another.

FLOATING RESIDENTIAL UNIT. Means a structure primarily designed or constructed as a living unit, built on a floating base, which is not designed primarily as a vessel, is not self-propelled although it may be towed about from place to place, and is primarily intended to be anchored or otherwise moored in a fixed location.

FLOOD or FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD DAMAGE-RESISTANT MATERIALS. Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic *repair*.

FLOOD, DESIGN. See "Design flood."

FLOOD ELEVATION, DESIGN. See "Design flood elevation."

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of *flooding* in any year.
2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

FLOOD HAZARD AREAS, SPECIAL. See "Special flood hazard areas."

FLOOD INSURANCE RATE MAP (FIRM). An official map of a community on which the Federal emergency Management Agency (FEMA) has delineated both the *special flood hazard areas* and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY. The official report provided by the Federal Emergency Management Agency containing the Flood Insurance Rate Map (FIRM), the Flood Boundary and Floodway Map (FBFM), the water surface elevation of the *base flood* and supporting technical data.

FLOODWAY. The channel of the river, creek or other watercourse and the adjacent land areas that must be reserved in order to discharge the *base flood* without cumulatively increasing the water surface elevation more than a designated height.

FLOOR AREA, GROSS. The floor area within the inside perimeter of the *exterior walls* of the building under consideration, exclusive of vent *shafts* and *courts*, without deduction for *corridors*, *stairways*, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding *exterior walls* shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include *shafts* with no openings or interior *courts.*

FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as *corridors*, *stairways*, toilet rooms, mechanical rooms and closets.

FLOOR FIRE DOOR ASSEMBLY. A combination of a *fire door*, a frame, hardware and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire-resistance-rated floor (see Section 711.8).

[F] FOAM-EXTINGUISHING SYSTEM. A special system discharging a foam made from concentrates, either mechanically or chemically, over the area to be protected.

FOAM PLASTIC INSULATION. A plastic that is intentionally expanded by the use of a foaming agent to produce a reduced-density plastic containing voids consisting of open or closed cells distributed throughout the plastic for thermal insulating or acoustical purposes and that has a density less than 20 pounds per cubic foot (pcf) (320 kg/m^3).

FOLDING AND TELESCOPIC SEATING. Tiered seating having an overall shape and size that is capable of being reduced for purposes of moving or storing and is not a building element.

FOOD COURT. A public seating area located in the *mall* that serves adjacent food preparation tenant spaces.

FOSTER CARE FACILITIES. Facilities that provide care to more than five children, $2^1/_2$ years of age or less.

FOUNDATION PIER. An isolated vertical foundation member whose horizontal dimension measured at right angles to its thickness does not exceed three times its thickness and whose height is equal to or less than four times its thickness.

FRAME STRUCTURE. A building or other structure in which vertical *loads* from floors and roofs are primarily supported by columns.

[F] GAS CABINET. A fully enclosed, ventilated noncombustible enclosure used to provide an isolated environment for *compressed gas* cylinders in storage or *use*. Doors and access ports for exchanging cylinders and accessing pressure-regulating controls are allowed to be included.

GARAGE DOOR MANUFACTURER. The party responsible for the completed assembly of the garage door components.

GARDEN MAUSOLEUM. A mausoleum for the public built without heat or air conditioning but may contain an open-air committal area.

[F] GAS ROOM. A separately ventilated, fully enclosed room in which only *compressed gases* and associated equipment and supplies are stored or *used.*

[F] GASEOUS HYDROGEN SYSTEM. An assembly of piping, devices and apparatus designed to generate, store, contain, distribute or transport a nontoxic, gaseous hydrogen-containing mixture having at least 95-percent hydrogen gas by volume and not more than 1-percent oxygen by volume. Gaseous hydrogen systems consist of items such as *compressed gas* containers, reactors and appurtenances, including pressure regulators, pressure relief devices, manifolds, pumps, compressors and interconnecting piping and tubing and controls.

GLASS FIBERBOARD. Fibrous glass roof insulation consisting of inorganic glass fibers formed into rigid boards using a binder. The board has a top surface faced with asphalt and kraft reinforced with glass fiber.

GLUED BUILT-UP MEMBER. A structural element, the section of which is composed of built-up lumber, wood structural panels or wood structural panels in combination with lumber, all parts bonded together with structural adhesives.

GRADE FLOOR OPENING. A window or other opening located such that the sill height of the opening is not more than 44 inches (1118 mm) above or below the finished ground level adjacent to the opening.

GRADE (LUMBER). The classification of lumber in regard to strength and utility in accordance with American Softwood Lumber Standard DOC PS 20 and the grading rules of an *approved* lumber rules-writing agency.

GRADE PLANE. A reference plane representing the average of finished ground level adjoining the building at *exterior walls*. Where the finished ground level slopes away from the *exterior walls*, the reference plane shall be established by the lowest points within the area between the building and the *lot line* or, where the *lot line* is more than 6 feet (1829 mm) from the building, between the building and a point 6 feet (1829 mm) from the building.

GRADE PLANE, STORY ABOVE. See "Story above grade plane."

GRANDSTAND. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "*Bleachers*").

GROSS LEASABLE AREA. The total floor area designed for tenant occupancy and exclusive use. The area of tenant occupancy is measured from the centerlines of joint partitions to the outside of the tenant walls. All tenant areas, including areas used for storage, shall be included in calculating gross leasable area.

GROUP HOME. A facility for social rehabilitation, substance abuse or mental health problems that contains a group housing arrangement that provides *custodial care* but does not provide acute care.

GUARD. A building component or a system of building components located at or near the open sides of elevated walking surfaces that minimizes the possibility of a fall from the walking surface to a lower level.

GYPSUM BOARD. Gypsum wallboard, gypsum sheathing, gypsum base for gypsum *veneer* plaster, exterior gypsum soffit board, predecorated gypsum board or water-resistant gypsum backing board complying with the standards listed in Tables 2506.2, 2507.2 and Chapter 35.

GYPSUM PLASTER. A mixture of calcined gypsum or calcined gypsum and lime and aggregate and other *approved* materials as specified in this code.

GYPSUM VENEER PLASTER. *Gypsum plaster* applied to an *approved* base in one or more coats normally not exceeding $^1/_4$ inch (6.4 mm) in total thickness.

HABITABLE SPACE. A space in a structure for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, screen enclosures, sunroom Categories I, II and III as defined in the AAMA/NPEA/NSA 2100, storage or utility spaces and similar areas are not considered habitable spaces.

[F] HALOGENATED EXTINGUISHING SYSTEM. A fire-extinguishing system using one or more atoms of an element from the halogen chemical series: fluorine, chlorine, bromine and iodine.

[F] HANDLING. The deliberate transport by any means to a point of storage or *use*.

HANDRAIL. A horizontal or sloping rail intended for grasping by the hand for guidance or support.

HARDBOARD. A fibrous-felted, homogeneous panel made from lignocellulosic fibers consolidated under heat and pressure in a hot press to a density not less than 31 pcf (497 kg/m^3).

[F] HAZARDOUS MATERIALS. Those chemicals or substances that are *physical hazards* or *health hazards* as classified in the *Florida Fire Prevention Code*, whether the materials are in usable or waste condition.

[F] HAZARDOUS PRODUCTION MATERIAL (HPM). A *solid*, *liquid* or gas associated with semiconductor manufacturing that has a degree-of-hazard rating in health, flammability or instability of Class 3 or 4 as ranked by NFPA 704 and which is *used* directly in research, laboratory or production processes which have as their end product materials that are not hazardous.

HEAD JOINT. Vertical *mortar joint* placed between *masonry units* within the *wythe* at the time the *masonry units* are laid.

[F] HEALTH HAZARD. A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are *toxic* or *highly toxic*, and *corrosive*.

HEAT DETECTOR. See "Detector, heat."

HEIGHT, BUILDING. The vertical distance from *grade plane* to the average height of the highest roof surface.

HEIGHT, THRESHOLD BUILDING. The height of the building is at the mean distance between the eaves and the ridge of the roofing structure. If the distance from grade to the line which is the mean distance between the eaves and the ridge of the roofing structure is more than 50 feet (16 240 mm), the building is to be considered a "threshold building" within the contemplation of the Threshold Building Act.

HELICAL PILE. Manufactured steel deep foundation element consisting of a central shaft and one or more helical bearing plates. A helical pile is installed by rotating it into the ground. Each helical bearing plate is formed into a screw thread with a uniform defined pitch.

HELIPAD. A structural surface that is used for the landing, taking off, taxiing and parking of helicopters.

HELIPORT. An area of land or water or a structural surface that is used, or intended for the use, for the landing and taking off of helicopters, and any appurtenant areas that are used, or intended for use, for heliport buildings or other heliport facilities.

HELISTOP. The same as "heliport," except that no fueling, defueling, maintenance, repairs or storage of helicopters is permitted.

HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL). Panels consisting of layers of cellulose fibrous material impregnated with thermosetting resins and bonded together by a high-pressure process to form a homogeneous nonporous core suitable for exterior use.

HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL) SYSTEM. An *exterior wall covering* fabricated using HPL in a specific assembly including *joints*, seams, attachments, substrate, framing and other details as appropriate to a particular design.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

HIGH-VELOCITY HURRICANE ZONE. This zone consists of Broward and Dade counties.

[F] HIGHLY TOXIC. A material which produces a lethal dose or lethal concentration that falls within any of the following categories:

1. A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
2. A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
3. A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Mixtures of these materials with ordinary materials, such as water, might not warrant classification as *highly toxic*. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.

HISTORIC BUILDINGS. Buildings that are listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate state or local law (see Chapter 12 of the *Florida Building Code, Existing Building)*.

HORIZONTAL ASSEMBLY. A fire-resistance-rated floor or *roof assembly* of materials designed to restrict the spread of fire in which continuity is maintained.

HORIZONTAL EXIT. See "Exit, horizontal."

HOSPITALS AND PSYCHIATRIC HOSPITALS. Facilities that provide care or treatment for the medical, psychiatric, obstetrical, or surgical treatment of care recipients that are *incapable of self-preservation.*

HOUSING UNIT. A *dormitory* or a group of *cells* with a common dayroom in Group I-3.

[F] HPM FLAMMABLE LIQUID. An HPM liquid that is defined as either a *Class I flammable liquid* or a *Class II or Class IIIA combustible liquid*.

[F] HPM ROOM. A room used in conjunction with or serving a Group H-5 occupancy, where *HPM* is stored or *used* and which is classified as a Group H-2, H-3 or H-4 occupancy.

HURRICANE-PRONE REGIONS. Areas vulnerable to hurricanes defined as:

1. The U.S. Atlantic Ocean and Gulf of Mexico coasts where the ultimate design wind speed, V_{ult}, for Risk Category II buildings is greater than 115 mph (51.4 m/s); and
2. Hawaii, Puerto Rico, Guam, Virgin Islands and American Samoa.

[F] HYDROGEN CUTOFF ROOM. A room or space that is intended exclusively to house a *gaseous hydrogen system*.

ICE-SENSITIVE STRUCTURE. A structure for which the effect of an atmospheric ice *load* governs the design of a structure or portion thereof. This includes, but is not limited to, lattice structures, guyed masts, overhead lines, light suspension and cable-stayed bridges, aerial cable systems (e.g., for ski lifts or logging operations), amusement rides, open catwalks and platforms, flagpoles and signs.

[F] IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH). The concentration of air-borne contaminants which poses a threat of death, immediate or delayed permanent adverse health effects, or effects that could prevent escape from such an environment. This contaminant concentration level is established by the National Institute of Occupational Safety and Health (NIOSH) based on both toxicity and flammability. It generally is expressed in parts per million by volume (ppmv/v) or milligrams per cubic meter (mg/m^3). If adequate data do not exist for precise establishment of IDLH concentrations, an independent certified industrial hygienist, industrial toxicologist, appropriate regulatory agency or other source *approved* by the *building official* shall make such determination.

IMPACT LOAD. The *load* resulting from moving machinery, elevators, craneways, vehicles and other similar forces and kinetic *loads*, pressure and possible surcharge from fixed or moving *loads.*

INCAPABLE OF SELF-PRESERVATION. Persons because of age, physical limitations, mental limitations, chemical dependency, or medical treatment who cannot respond as an individual to an emergency situation.

[F] INCOMPATIBLE MATERIALS. Materials that, when mixed, have the potential to react in a manner that generates heat, fumes, gases or byproducts which are hazardous to life or property.

[F] INERT GAS. A gas that is capable of reacting with other materials only under abnormal conditions such as high temperatures, pressures and similar extrinsic physical forces. Within the context of the code, inert gases do not exhibit either physical or health hazard properties as defined (other than acting as a simple asphyxiant) or hazard properties other than those of a *compressed gas*. Some of the more common inert gases include argon, helium, krypton, neon, nitrogen and xenon.

[F] INITIATING DEVICE. A system component that originates transmission of a change-of-state condition, such as in a *smoke detector, manual fire alarm box* or supervisory switch.

INSPECTION CERTIFICATE. An identification applied on a product by an *approved agency* containing the name of the manufacturer, the function and performance characteristics, and the name and identification of an *approved agency* that indicates that the product or material has been inspected and evaluated by an *approved agency* (see Section 1703.5 and "*Label*," "Manufacturer's designation" and "*Mark*").

INTENDED TO BE OCCUPIED AS A RESIDENCE. This refers to a *dwelling unit* or *sleeping unit* that can or will be used all or part of the time as the occupant's place of abode.

INTERIOR EXIT RAMP. An *exit* component that serves to meet one or more *means of egress* design requirements, such as required number of *exits* or *exit access* travel distance, and provides for a protected path of egress travel to the *exit discharge* or *public way*.

INTERIOR EXIT STAIRWAY. An *exit* component that serves to meet one or more *means of egress* design requirements, such as required number of *exits* or *exit access* travel distance, and provides for a protected path of egress travel to the *exit discharge* or *public way*.

INTERIOR FINISH. Interior finish includes *interior wall and ceiling finish* and *interior floor finish*.

INTERIOR FLOOR FINISH. The exposed floor surfaces of buildings including coverings applied over a finished floor or *stair*, including risers.

INTERIOR FLOOR-WALL BASE. *Interior floor finish trim* used to provide a functional or decorative border at the intersection of walls and floors.

INTERIOR SURFACES. Surfaces other than weather exposed surfaces.

INTERIOR WALL AND CEILING FINISH. The exposed *interior surfaces* of buildings, including but not limited to: fixed or movable walls and partitions; toilet room privacy partitions; columns; ceilings; and interior wainscoting, paneling or other finish applied structurally or for decoration, acoustical correction, surface insulation, structural fire resistance or similar purposes, but not including *trim*.

INTERLAYMENT. A layer of felt or nonbituminous saturated felt not less than 18 inches (457 mm) wide, shingled between each course of a wood-shake *roof covering*.

INTUMESCENT FIRE-RESISTANT COATINGS. Thin film liquid mixture applied to substrates by brush, roller, spray or trowel which expands into a protective foamed layer to provide fire-resistant protection of the substrates when exposed to flame or intense heat.

JOINT. The opening in or between adjacent assemblies that is created due to building tolerances, or is designed to allow independent movement of the building in any plane caused by thermal, seismic, wind or any other loading.

[A] JURISDICTION. The governmental unit that has adopted this code under due legislative authority.

L RATING. The air leakage rating of a *through penetration firestop system* or a fire-resistant *joint* system when tested in accordance with UL 1479 or UL 2079, respectively.

[A] LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an *approved*

agency and that indicates that the representative sample of the product or material has been tested and evaluated by an *approved agency* (see Section 1703.5 and "Inspection certificate," "Manufacturer's designation" and "*Mark*").

[A] LABELED. Equipment, materials or products to which has been affixed a *label*, seal, symbol or other identifying *mark* of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

LANDSCAPE ARCHITECT. A Florida-registered landscape architect.

LEVEL OF EXIT DISCHARGE. See "Exit discharge, level of."

LIGHT-DIFFUSING SYSTEM. Construction consisting in whole or in part of lenses, panels, grids or baffles made with light-transmitting plastics positioned below independently mounted electrical light sources, skylights or light-transmitting plastic roof panels. Lenses, panels, grids and baffles that are part of an electrical fixture shall not be considered as a light-diffusing system.

LIGHT-FRAME CONSTRUCTION. A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood or cold-formed steel framing members.

LIGHT-TRANSMITTING PLASTIC ROOF PANELS. Structural plastic panels other than skylights that are fastened to structural members, or panels or sheathing and that are used as light-transmitting media in the plane of the roof.

LIGHT-TRANSMITTING PLASTIC WALL PANELS. Plastic materials that are fastened to structural members, or to structural panels or sheathing, and that are used as light-transmitting media in *exterior walls*.

LIMIT STATE. A condition beyond which a structure or member becomes unfit for service and is judged to be no longer useful for its intended function (serviceability limit state) or to be unsafe (strength limit state).

[F] LIQUID. A material that has a melting point that is equal to or less than 68°F (20°C) and a *boiling point* that is greater than 68°F (20°C) at 14.7 pounds per square inch absolute (psia) (101 kPa). When not otherwise identified, the term "liquid" includes both flammable and *combustible liquids.*

[F] LIQUID STORAGE ROOM. A room classified as a Group H-3 occupancy used for the storage of *flammable* or *combustible liquids* in a closed condition.

[F] LIQUID USE, DISPENSING AND MIXING ROOM. A room in which Class I, II and IIIA *flammable* or *combustible liquids* are *used*, dispensed or mixed in open containers.

[A] LISTED. Equipment, materials, products or services included in a list published by an organization acceptable to the *building* official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

LIVE/WORK UNIT. A *dwelling unit* or *sleeping unit* in which a significant portion of the space includes a nonresidential use that is operated by the tenant.

LIVE LOAD. A *load* produced by the use and occupancy of the building or other structure that does not include construction or environmental *loads* such as wind load, snow load, rain load, earthquake load, flood load or *dead load*.

LIVE LOAD, ROOF. A *load* on a roof produced:

1. During maintenance by workers, equipment and materials;
2. During the life of the structure by movable objects such as planters or other similar small decorative appurtenances that are not occupancy related; or
3. By the use and occupancy of the roof such as for roof gardens or assembly areas.

LOAD AND RESISTANCE FACTOR DESIGN (LRFD). A method of proportioning structural members and their connections using load and *resistance factors* such that no applicable *limit state* is reached when the structure is subjected to appropriate *load* combinations. The term "LRFD" is used in the design of steel and wood structures.

LOAD EFFECTS. Forces and deformations produced in structural members by the applied *loads*.

LOAD FACTOR. A factor that accounts for deviations of the actual *load* from the *nominal load*, for uncertainties in the analysis that transforms the *load* into a *load effect*, and for the probability that more than one extreme *load* will occur simultaneously.

LOADS. Forces or other actions that result from the weight of building materials, occupants and their possessions, environmental effects, differential movement and restrained dimensional changes. Permanent loads are those loads in which variations over time are rare or of small magnitude, such as *dead loads*. All other loads are variable loads (see also "*Nominal loads*").

LOCAL FLOODPLAIN MANAGEMENT ORDINANCE. An ordinance or regulation adopted pursuant to the requirements in Title 44 Code of Federal Regulations, Parts 59 and 60 for participation in the National Flood Insurance Program.

[A] LOT. A portion or parcel of land considered as a unit.

[A] LOT LINE. A line dividing one lot from another, or from a street or any public place.

[F] LOWER FLAMMABLE LIMIT (LFL). The minimum concentration of vapor in air at which propagation of flame will occur in the presence of an ignition source. The LFL is sometimes referred to as "LEL" or "lower explosive limit."

LOWEST FLOOR. The lowest floor of the lowest enclosed area, including *basement*, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclo-

sure is not built so as to render the structure in violation of this section.

MAIN WINDFORCE-RESISTING SYSTEM. An assemblage of structural elements assigned to provide support and stability for the overall structure. The system generally receives wind loading from more than one surface

MALL BUILDING, COVERED and MALL BUILDING, OPEN. See "Covered mall building."

[F] MANUAL FIRE ALARM BOX. A manually operated device used to initiate an *alarm signal*.

[A] MANUFACTURER'S DESIGNATION. An identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules (see also "Inspection certificate," "*Label*" and "*Mark*").

[A] MARK. An identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection certificate," "*Label*" and "Manufacturer's designation").

MARQUEE. A *canopy* that has a top surface which is sloped less than 25 degrees from the horizontal and is located less than 10 feet (3.05 m) from operable openings above or adjacent to the level of the marquee.

MASONRY. A built-up construction or combination of building units or materials of clay, shale, concrete, glass, gypsum, stone or other *approved* units bonded together with or without *mortar* or grout or other accepted methods of joining.

Ashlar masonry. Masonry composed of various-sized rectangular units having sawed, dressed or squared bed surfaces, properly bonded and laid in *mortar*.

Coursed ashlar. Ashlar masonry laid in courses of stone of equal height for each course, although different courses shall be permitted to be of varying height.

Glass unit masonry. Masonry composed of glass units bonded by *mortar*.

Plain masonry. Masonry in which the tensile resistance of the masonry is taken into consideration and the effects of stresses in reinforcement are neglected.

Random ashlar. Ashlar masonry laid in courses of stone set without continuous *joints* and laid up without drawn patterns. When composed of material cut into modular heights, discontinuous but aligned horizontal *joints* are discernible.

Reinforced masonry. Masonry construction in which reinforcement acting in conjunction with the masonry is used to resist forces.

Solid masonry. Masonry consisting of solid masonry units laid contiguously with the *joints* between the units filled with *mortar*.

Unreinforced (plain) masonry. Masonry in which the tensile resistance of masonry is taken into consideration and the resistance of the reinforcing steel, if present, is neglected.

MASONRY UNIT. *Brick*, tile, stone, glass block or concrete block conforming to the requirements specified in Section 2103.

Hollow. A masonry unit whose net cross-sectional *area* in any plane parallel to the load-bearing surface is less than 75 percent of its gross cross-sectional *area* measured in the same plane.

Solid. A masonry unit whose net cross-sectional *area* in every plane parallel to the load-bearing surface is 75 percent or more of its gross cross-sectional *area* measured in the same plane.

MASTIC FIRE-RESISTANT COATINGS. Liquid mixture applied to a substrate by brush, roller, spray or trowel that provides fire-resistant protection of a substrate when exposed to flame or intense heat.

MATERIAL CODE VIOLATION. A violation that exists within a completed building, structure or facility which may reasonably result, or has resulted, in physical harm to a person or significant damage to the performance of a building or its systems.

MATERIAL VIOLATION. As defined in *Florida Statutes.*

MAUSOLEUM. A permanent structure or building which is substantially exposed above the ground and is intended for the interment, entombment, or inurnment of human remains.

MEANS OF EGRESS. A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a *public way*. A means of egress consists of three separate and distinct parts: the *exit access*, the *exit* and the *exit discharge*.

MEANS OF ESCAPE. As used in Section 1008.1.4.5, a way out of a building or structure that does not conform to the strict definition of means of egress but does provide an alternate way out. A means of escape consists of a door, stairway, passage or hall providing a way of unobstructed travel to the outside at street or ground level. It may also consist of a passage through an adjacent nonlockable space, independent of and remotely located from the means of egress, to any approved exit.

MECHANICAL-ACCESS OPEN PARKING GARAGES. *Open parking garages* employing parking machines, lifts, elevators or other mechanical devices for vehicles moving from and to street level and in which public occupancy is prohibited above the street level.

MECHANICAL EQUIPMENT SCREEN. A partially enclosed rooftop structure used to aesthetically conceal heating, ventilation and air conditioning (HVAC), electrical or mechanical equipment from view.

MECHANICAL SYSTEMS. For the purposes of determining seismic *loads* in ASCE 7, mechanical systems shall include plumbing systems as specified therein.

MEDICAL CARE. Care involving medical or surgical procedures, nursing or for psychiatric purposes.

MEMBRANE-COVERED CABLE STRUCTURE. A nonpressurized structure in which a mast and cable system provides support and tension to the membrane weather barrier and the membrane imparts stability to the structure.

MEMBRANE-COVERED FRAME STRUCTURE. A nonpressurized building wherein the structure is composed of a rigid framework to support a tensioned membrane which provides the weather barrier.

MEMBRANE PENETRATION. A breach in one side of a floor-ceiling, roof-ceiling or wall assembly to accommodate an item installed into or passing through the breach.

MEMBRANE-PENETRATION FIRESTOP. A material, device or construction installed to resist for a prescribed time period the passage of flame and heat through openings in a protective membrane in order to accommodate cables, cable trays, conduit, tubing, pipes or similar items.

MEMBRANE-PENETRATION FIRESTOP SYSTEM. An assemblage consisting of a fire-resistance-rated floor-ceiling, roof-ceiling or wall assembly, one or more penetrating items installed into or passing through the breach in one side of the assembly and the materials or devices, or both, installed to resist the spread of fire into the assembly for a prescribed period of time.

MERCHANDISE PAD. A merchandise pad is an area for display of merchandise surrounded by *aisles*, permanent fixtures or walls. Merchandise pads contain elements such as nonfixed and moveable fixtures, cases, racks, counters and partitions from which customers browse or shop.

METAL COMPOSITE MATERIAL (MCM). A factory-manufactured panel consisting of metal skins bonded to both faces of a plastic core.

METAL COMPOSITE MATERIAL (MCM) SYSTEM. An *exterior wall covering* fabricated using MCM in a specific assembly including *joints*, seams, attachments, substrate, framing and other details as appropriate to a particular design.

METAL ROOF PANEL. An interlocking metal sheet having a minimum installed weather exposure of 3 square feet (0.279 m^2) per sheet.

METAL ROOF SHINGLE. An interlocking metal sheet having an installed weather exposure less than 3 square feet (0.279 m^2) per sheet.

MEZZANINE. An intermediate level or levels between the floor and ceiling of any *story* and in accordance with Section 505.

MICROPILE. A micropile is a bored, grouted-in-place *deep foundation* element that develops its load-carrying capacity by means of a bond zone in soil, bedrock or a combination of soil and bedrock.

MINERAL BOARD. A rigid felted thermal insulation board consisting of either felted *mineral fiber* or cellular beads of expanded aggregate formed into flat rectangular units.

MINERAL FIBER. Insulation composed principally of fibers manufactured from rock, slag or glass, with or without binders.

MINERAL WOOL. Synthetic vitreous fiber insulation made by melting predominately igneous rock or furnace slag, and other inorganic materials, and then physically forming the melt into fibers.

MODIFIED BITUMEN ROOF COVERING. One or more layers of polymer-modified asphalt sheets. The sheet materials shall be fully adhered or mechanically attached to the substrate or held in place with an *approved* ballast layer.

MORTAR. A mixture consisting of cementitious materials, fine aggregates, water, with or without admixtures, that is used to construct unit masonry assemblies.

MORTAR, SURFACE-BONDING. A mixture to bond concrete *masonry units* that contains hydraulic cement, glass fiber reinforcement with or without inorganic fillers or organic modifiers and water.

MULTILEVEL ASSEMBLY SEATING. Seating that is arranged in distinct levels where each level is comprised of either multiple rows, or a single row of box seats accessed from a separate level.

[F] MULTIPLE-STATION ALARM DEVICE. Two or more single-station alarm devices that can be interconnected such that actuation of one causes all integral or separate audible alarms to operate. It also can consist of one single-station alarm device having connections to other detectors or to a *manual fire alarm box.*

[F] MULTIPLE-STATION SMOKE ALARM. Two or more single-station alarm devices that are capable of interconnection such that actuation of one causes the appropriate *alarm signal* to operate in all interconnected alarms.

MULTISTORY UNIT. A *dwelling unit* or *sleeping unit* with *habitable space* located on more than one *story*.

NAILING, BOUNDARY. A special nailing pattern required by design at the boundaries of *diaphragms*.

NAILING, EDGE. A special nailing pattern required by design at the edges of each panel within the assembly of a *diaphragm* or *shear wall*.

NAILING, FIELD. Nailing required between the sheathing panels and framing members at locations other than *boundary nailing* and edge nailing.

NATURALLY DURABLE WOOD. The heartwood of the following species except for the occasional piece with corner sapwood, provided 90 percent or more of the width of each side on which it occurs is heartwood.

Decay resistant. Redwood, cedar, black locust and black walnut.

Termite resistant. Redwood, Alaska yellow cedar, Eastern red cedar and both heartwood and all sapwood of Western red cedar.

NICHE. A permanent chamber in a columbarium or mausoleum to hold the cremated remains of one or more individuals.

NOMINAL LOADS. The magnitudes of the *loads* specified in Chapter 16 (dead, live, soil, wind, snow, rain, *flood* and earthquake).

NOMINAL SIZE (LUMBER). The commercial size designation of width and depth, in standard sawn lumber and glued-laminated lumber *grades*; somewhat larger than the standard net size of dressed lumber, in accordance with

DOCPS 20 for sawn lumber and with the AF&PA NDS for glued-laminated lumber.

NONCOMBUSTIBLE MEMBRANE STRUCTURE. A membrane structure in which the membrane and all component parts of the structure are noncombustible.

NONVISITATION CRYPT MAUSOLEUM. A mausoleum for the public where the crypts are not accessible to the public.

[F] NORMAL TEMPERATURE AND PRESSURE (NTP). A temperature of 70°F (21°C) and a pressure of 1 atmosphere [14.7 psia (101 kPa)].

NOSING. The leading edge of treads of *stairs* and of *landings* at the top of *stairway flights*.

[F] NOTIFICATION ZONE. See "Zone, notification."

[F] NUISANCE ALARM. An alarm caused by mechanical failure, malfunction, improper installation or lack of proper maintenance, or an alarm activated by a cause that cannot be determined.

NURSING HOMES. Facilities that provide care, including both intermediate care facilities and skilled nursing facilities where any of the persons are *incapable of self-preservation*.

OCCUPANT LOAD. The number of persons for which the *means of egress* of a building or portion thereof is designed.

OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with *means of egress* and light and *ventilation* facilities meeting the requirements of this code.

OPEN PARKING GARAGE. A structure or portion of a structure with the openings as described in Section 406.5.2 on two or more sides that is used for the parking or storage of private motor vehicles as described in Section 406.5.3.

[F] OPEN SYSTEM. The *use* of a *solid* or *liquid hazardous material* involving a vessel or system that is continuously open to the atmosphere during normal operations and where vapors are liberated, or the product is exposed to the atmosphere during normal operations. Examples of open systems for *solids* and *liquids* include dispensing from or into open beakers or containers, dip tank and plating tank operations.

[F] OPERATING BUILDING. A building occupied in conjunction with the manufacture, transportation or *use* of explosive materials. Operating buildings are separated from one another with the use of intraplant or intraline distances.

ORDINARY PRECAST STRUCTURAL WALL. See Section 1905.1.1.

ORDINARY REINFORCED CONCRETE STRUCTURAL WALL. See Section 1905.1.1.

ORDINARY STRUCTURAL PLAIN CONCRETE WALL. See Section 1905.1.1.

[F] ORGANIC PEROXIDE. An organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can pose an *explosion* hazard (*detonation* or *deflagration*) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.

Class I. Those formulations that are capable of *deflagration* but not *detonation*.

Class II. Those formulations that burn very rapidly and that pose a moderate reactivity hazard.

Class III. Those formulations that burn rapidly and that pose a moderate reactivity hazard.

Class IV. Those formulations that burn in the same manner as ordinary combustibles and that pose a minimal reactivity hazard.

Class V. Those formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and that pose no reactivity hazard.

Unclassified detonable. Organic peroxides that are capable of *detonation*. These peroxides pose an extremely high *explosion* hazard through rapid explosive decomposition.

ORTHOGONAL. To be in two horizontal directions, at 90 degrees (1.57 rad) to each other.

OTHER STRUCTURES. Structures, other than buildings, for which *loads* are specified in Chapter 16.

OUTPATIENT CLINIC. See "Clinic, outpatient."

[A] OWNER. Any person, agent, firm or corporation having a legal or equitable interest in the property.

[F] OXIDIZER. A material that readily yields oxygen or other *oxidizing gas*, or that readily reacts to promote or initiate combustion of combustible materials and, if heated or contaminated, can result in vigorous self-sustained decomposition.

Class 4. An oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock and that causes a severe increase in the burning rate of combustible materials with which it comes into contact. Additionally, the oxidizer causes a severe increase in the burning rate and can cause spontaneous ignition of combustibles.

Class 3. An oxidizer that causes a severe increase in the burning rate of combustible materials with which it comes in contact.

Class 2. An oxidizer that will cause a moderate increase in the burning rate of combustible materials with which it comes in contact.

Class 1. An oxidizer that does not moderately increase the burning rate of combustible materials.

[F] OXIDIZING GAS. A gas that can support and accelerate combustion of other materials more than air does.

PANEL (PART OF A STRUCTURE). The section of a floor, wall or roof comprised between the supporting frame of two adjacent rows of columns and girders or column bands of floor or roof construction.

PANIC HARDWARE. A door-latching assembly incorporating a device that releases the latch upon the application of

a force in the direction of egress travel. See also "Fire exit hardware."

PARTICLEBOARD. A generic term for a panel primarily composed of cellulosic materials (usually wood), generally in the form of discrete pieces or particles, as distinguished from fibers. The cellulosic material is combined with synthetic resin or other suitable bonding system by a process in which the interparticle bond is created by the bonding system under heat and pressure.

PENETRATION FIRESTOP. A through-penetration firestop or a *membrane-penetration firestop*.

PENTHOUSE. An enclosed, unoccupied rooftop structure above the roof of a building other than a tank, tower, spire, dome cupola or bulkhead.

PERFORMANCE CATEGORY. A designation of wood structural panels as related to the panel performance used in Chapter 23.

[A] PERMIT. An official document or certificate issued by the authority having jurisdiction which authorizes performance of a specified activity.

[A] PERSON. An individual, heirs, executors, administrators or assigns, and also includes a firm, partnership or corporation, its or their successors or assigns, or the agent of any of the aforesaid.

PERSONAL CARE SERVICE. The care of persons who do not require *medical care*. Personal care involves responsibility for the safety of the persons while inside the building.

PHOTOLUMINESCENT. Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed.

PHOTOVOLTAIC MODULES/SHINGLES. A *roof covering* composed of flat-plate photovoltaic modules fabricated in sheets that resemble three-tab composite shingles.

[F] PHYSICAL HAZARD. A chemical for which there is evidence that it is a *combustible liquid*, *cryogenic fluid, explosive*, flammable (*solid*, *liquid* or gas), *organic peroxide* (*solid* or *liquid*), *oxidizer* (*solid* or *liquid*), *oxidizing gas*, *pyrophoric* (*solid*, *liquid* or gas), *unstable (reactive) material* (*solid*, *liquid* or gas) or *water-reactive material* (*solid* or *liquid*).

[F] PHYSIOLOGICAL WARNING THRESHOLD LEVEL. A concentration of air-borne contaminants, normally expressed in parts per million (ppm) or milligrams per cubic meter (mg/m^3), that represents the concentration at which persons can sense the presence of the contaminant due to odor, irritation or other quick-acting physiological response. When used in conjunction with the permissible exposure limit (PEL) the physiological warning threshold levels are those consistent with the classification system used to establish the PEL. See the definition of "Permissible exposure limit (PEL)" in the *Florida Building Fire Prevention Code*.

PLACE OF RELIGIOUS WORSHIP. See "Religious worship, place of."

PLANS. All construction drawings and specifications for any structure necessary for the building official to review in order to determine whether a proposed structure, addition or renovation will meet the requirements of this code and other applicable codes.

PLASTIC, APPROVED. Any thermoplastic, thermosetting or reinforced thermosetting plastic material that conforms to combustibility classifications specified in the section applicable to the application and plastic type.

PLASTIC GLAZING. Plastic materials that are glazed or set in frame or sash and not held by mechanical fasteners that pass through the glazing material.

PLATFORM. A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round *stages*; and similar purposes wherein there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.

POLYPROPYLENE SIDING. A shaped material, made principally from polypropylene homopolymer, or copolymer, which in some cases contains fillers or reinforcements, that is used to clad *exterior walls* of buildings.

PORCELAIN TILE. Porcelain tile shall conform to the requirements of ANSI 137.1.3 for ceramic tile having an absorption of 0.5 percent or less according to ANSI 137.4.1–Class Table and ANSI 137.1.6.1 Allowable Properties by Tile Type–Table 10.

POSITIVE ROOF DRAINAGE. The drainage condition in which consideration has been made for all loading deflections of the *roof deck*, and additional slope has been provided to ensure drainage of the roof within 48 hours of precipitation.

PREFABRICATED WOOD I-JOIST. Structural member manufactured using sawn or structural composite lumber flanges and wood structural panel webs bonded together with exterior exposure adhesives, which forms an "I" cross-sectional shape.

PRESTRESSED MASONRY. *Masonry* in which internal stresses have been introduced to counteract potential tensile stresses in *masonry* resulting from applied *loads*.

PRIMARY FUNCTION. A primary function is a major activity for which the *facility* is intended. Areas that contain a primary function include, but are not limited to, the customer service lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and other work areas in which the activities of the public accommodation or other private entity using the *facility* are carried out. Mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, *corridors* and restrooms are not areas containing a primary function.

PRIMARY STRUCTURAL FRAME. The primary structural frame shall include all of the following structural members:

1. The columns;

2. Structural members having direct connections to the columns, including girders, beams, trusses and spandrels;
3. Members of the floor construction and roof construction having direct connections to the columns; and
4. Bracing members that are essential to the vertical stability of the primary structural frame under gravity loading shall be considered part of the primary structural frame whether or not the bracing member carries gravity *loads.*

PRISM. An assemblage of *masonry units* and *mortar* with or without grout used as a test specimen for determining properties of the *masonry*.

PROSCENIUM WALL. The wall that separates the *stage* from the auditorium or assembly seating area.

PSYCHIATRIC HOSPITALS. See "Hospitals."

PUBLIC ENTRANCE. An entrance that is not a *service entrance* or a *restricted entrance*.

PUBLIC-USE AREAS. Interior or exterior rooms or spaces that are made available to the general public.

[A] PUBLIC WAY. A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3048 mm).

[F] PYROPHORIC. A chemical with an auto-ignition temperature in air, at or below a temperature of 130°F (54.4°C).

[F] PYROTECHNIC COMPOSITION. A chemical mixture that produces visible light displays or sounds through a self-propagating, heat-releasing chemical reaction which is initiated by ignition.

RAMP. A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

RAMP-ACCESS OPEN PARKING GARAGES. *Open parking garages* employing a series of continuously rising floors or a series of interconnecting ramps between floors permitting the movement of vehicles under their own power from and to the street level.

[F] RECORD DRAWINGS. Drawings ("as builts") that document the location of all devices, appliances, wiring sequences, wiring methods and connections of the components of a *fire alarm system* as installed.

REFLECTIVE PLASTIC CORE FOIL INSULATION. An insulation material packaged in rolls, that is less than 0.5 inches thick, with at least one exterior low emittance surface (0.1 or less) and a core material containing voids or cells.

[A] REGISTERED DESIGN PROFESSIONAL. An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or *jurisdiction* in which the project is to be constructed.

[A] REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A *registered design professional* engaged by the *owner* to review and coordinate certain aspects of the project, as determined by the *building official*, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal documents and phased submittal documents.

REGISTERED TERMITICIDE. Product listed as registered for use as a preventative treatment for termites for new construction by the Florida Department of Agriculture and Consumer Services under authority of Chapter 487, *Florida Statutes*.

RELIGIOUS WORSHIP, PLACE OF. A building or portion thereof intended for the performance of religious services.

[A] REPAIR. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance.

REROOFING. The process of recovering or replacing an existing *roof covering*. See "Roof recover" and "Roof replacement."

RESIDENTIAL AIRCRAFT HANGAR. An accessory building less than 2,000 square feet (186 m^2) and 20 feet (6096 mm) in *building height* constructed on a one- or two-family property where aircraft are stored. Such use will be considered as a residential accessory use incidental to the dwelling.

RESISTANCE FACTOR. A factor that accounts for deviations of the actual strength from the *nominal strength* and the manner and consequences of failure (also called "strength reduction factor").

RESTRICTED ENTRANCE. An entrance that is made available for *common use* on a controlled basis, but not public use, and that is not a *service entrance*.

RETRACTABLE AWNING. A retractable *awning* is a cover with a frame that retracts against a building or other structure to which it is entirely supported.

RISK CATEGORY. A categorization of buildings and other structures for determination of *flood*, wind, snow, ice and earthquake *loads* based on the risk associated with unacceptable performance.

RISK-TARGETED MAXIMUM CONSIDERED EARTHQUAKE (MCE_R) GROUND MOTION RESPONSE ACCELERATIONS. The most severe earthquake effects considered by this code, determined for the orientation that results in the largest maximum response to horizontal ground motions and with adjustment for targeted risk.

ROOF ASSEMBLY (For application to Chapter 15 only). A system designed to provide weather protection and resistance to design *loads*. The system consists of a *roof covering* and *roof deck* or a single component serving as both the roof covering and the *roof deck*. A roof assembly includes the *roof deck*, *vapor retarder*, substrate or thermal barrier, insulation, *vapor retarder* and *roof covering*.

ROOF COVERING. The covering applied to the *roof deck* for weather resistance, fire classification or appearance.

ROOF COVERING SYSTEM. See "Roof assembly."

ROOF DECK. See Section 1502.

ROOF DRAINAGE, POSITIVE. See "Positive roof drainage."

ROOF RECOVER. The process of installing an additional *roof covering* over a prepared existing *roof covering* without removing the existing *roof covering*.

ROOF REPAIR. Reconstruction or renewal of any part of an existing roof for the purposes of its maintenance.

ROOF REPLACEMENT. The process of removing the existing *roof covering*, repairing any damaged substrate and installing a new *roof covering*.

ROOF VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, *attics*, cathedral ceilings or other enclosed spaces over which a *roof assembly* is installed.

ROOFTOP STRUCTURE. See Section 1502.

RUBBLE MASONRY. *Masonry* composed of roughly shaped stones.

Coursed rubble. Masonry composed of roughly shaped stones fitting approximately on level beds and well bonded.

Random rubble. Masonry composed of roughly shaped stones laid without regularity of coursing but well bonded and fitted together to form well-divided *joints.*

Rough or ordinary rubble. Masonry composed of unsquared field stones laid without regularity of coursing but well bonded.

RUNNING BOND. The placement of *masonry units* such that *head joints* in successive courses are horizontally offset at least one-quarter the unit length.

SALLYPORT. A security vestibule with two or more doors or gates where the intended purpose is to prevent continuous and unobstructed passage by allowing the release of only one door or gate at a time.

SCISSOR STAIR. Two interlocking *stairways* providing two separate paths of egress located within one stairwell enclosure.

SCREEN ENCLOSURE. A building or part thereof, in whole or in part self-supporting, and having walls of insect screening with or without removable vinyl or acrylic wind break panels and a roof of insect screening, plastic, aluminum or similar lightweight material, or other materials and assemblies such as a patio, deck or roof of a structure.

SCUPPER. An opening in a wall or parapet that allows water to drain from a roof.

SECONDARY MEMBERS. The following structural members shall be considered secondary members and not part of the *primary structural frame*:

1. Structural members not having direct connections to the columns;
2. Members of the floor construction and roof construction not having direct connections to the columns; and
3. Bracing members other than those that are part of the *primary structural frame.*

SEISMIC DESIGN CATEGORY. A classification assigned to a structure based on its *risk category* and the severity of the *design earthquake ground motion* at the site.

SEISMIC FORCE-RESISTING SYSTEM. That part of the structural system that has been considered in the design to provide the required resistance to the prescribed seismic forces.

SELF-CLOSING. As applied to a *fire door* or other opening protective, means equipped with an device that will ensure closing after having been opened.

SELF-LUMINOUS. Illuminated by a self-contained power source, other than batteries, and operated independently of external power sources.

SELF-PRESERVATION, INCAPABLE OF. See "Incapable of self-preservation."

SELF-SERVICE STORAGE FACILITY. Real property designed and used for the purpose of renting or leasing individual storage spaces to customers for the purpose of storing and removing personal property on a self-service basis.

SEPARATE ATMOSPHERE. The atmosphere that exists between rooms, spaces, or areas that are separated by an approved smoke barrier.

[F] SERVICE CORRIDOR. A fully enclosed passage used for transporting *HPM* and purposes other than required *means of egress*.

SERVICE ENTRANCE. An entrance intended primarily for delivery of goods or services.

SHAFT. An enclosed space extending through one or more *stories* of a building, connecting vertical openings in successive floors, or floors and roof.

SHAFT ENCLOSURE. The walls or construction forming the boundaries of a *shaft*.

SHALLOW FOUNDATION. A shallow foundation is an individual or strip footing, a mat foundation, a slab-on-grade foundation or a similar foundation element.

SHEAR WALL. (For Chapter 23) A wall designed to resist lateral forces parallel to the plane of a wall.

Shear wall, perforated. A wood structural panel sheathed wall with openings, that has not been specifically designed and detailed for force transfer around openings.

Shear wall segment, perforated. A section of shear wall with full-height sheathing that meets the height-to-width ratio limits of Section 4.3.4 of AF&PA SDPWS.

SHEAR WALL (For Chapter 21).

Detailed plain masonry shear wall. A masonry shear wall designed to resist lateral forces neglecting stresses in reinforcement, and designed in accordance with Section 2106.1.

Intermediate prestressed masonry shear wall. A prestressed masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Intermediate reinforced masonry shear wall. A masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Ordinary plain masonry shear wall. A masonry shear wall designed to resist lateral forces neglecting stresses in reinforcement, and designed in accordance with Section 2106.1.

Ordinary plain prestressed masonry shear wall. A prestressed masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Ordinary reinforced masonry shear wall. A masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Special prestressed masonry shear wall. A prestressed masonry shear wall designed to resist lateral forces considering stresses in reinforcement and designed in accordance with Section 2106.1 except that only grouted, laterally restrained tendons are used.

Special reinforced masonry shear wall. A masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

SINGLE-PLY MEMBRANE. A roofing membrane that is field applied using one layer of membrane material (either homogeneous or composite) rather than multiple layers.

[F] SINGLE-STATION SMOKE ALARM. An assembly incorporating the detector, the control equipment and the alarm-sounding device in one unit, operated from a power supply either in the unit or obtained at the point of installation.

SITE. A parcel of land bounded by a *lot line* or a designated portion of a public right-of-way.

SITE CLASS. A classification assigned to a site based on the types of soils present and their engineering properties as defined in Section 1613.3.2.

SITE COEFFICIENTS. The values of F_a and F_v indicated in Tables 1613.3.3(1) and 1613.3.3(2), respectively.

SITE-FABRICATED STRETCH SYSTEM. A system, fabricated on site and intended for acoustical, tackable or aesthetic purposes, that is comprised of three elements:

1. A frame (constructed of plastic, wood, metal or other material) used to hold fabric in place,
2. A core material (infill, with the correct properties for the application), and
3. An outside layer, comprised of a textile, fabric or vinyl, that is stretched taut and held in place by tension or mechanical fasteners via the frame.

SKYLIGHT, UNIT. A factory-assembled, glazed fenestration unit, containing one panel of glazing material that allows for natural lighting through an opening in the *roof assembly* while preserving the weather-resistant barrier of the roof.

SKYLIGHTS AND SLOPED GLAZING. Glass or other transparent or translucent glazing material installed at a slope of 15 degrees (0.26 rad) or more from vertical. Glazing material in skylights, including *unit skylights*, *tubular daylighting devices*, solariums, *sunrooms*, roofs and sloped walls, are included in this definition.

SLEEPING UNIT. A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

[F] SMOKE ALARM. A single- or multiple-station alarm responsive to smoke. See also definitions of "Multiple-station smoke alarm" and "Single station smoke alarm."

SMOKE BARRIER. A continuous membrane, either vertical or horizontal, such as a wall, floor or ceiling assembly, that is designed and constructed to restrict the movement of smoke.

SMOKE COMPARTMENT. A space within a building enclosed by *smoke barriers* on all sides, including the top and bottom.

SMOKE DAMPER. A *listed* device installed in ducts and air transfer openings designed to resist the passage of smoke. The device is installed to operate *automatically*, controlled by a smoke detection system, and where required, is capable of being positioned from a *fire command center*.

[F] SMOKE DETECTOR. A *listed* device that senses visible or invisible particles of combustion.

SMOKE-DEVELOPED INDEX. A comparative measure, expressed as a dimensionless number, derived from measurements of smoke obscuration versus time for a material tested in accordance with ASTM E 84.

SMOKE-PROTECTED ASSEMBLY SEATING. Seating served by *means of egress* that is not subject to smoke accumulation within or under a structure.

SMOKEPROOF ENCLOSURE. An *exit stairway* designed and constructed so that the movement of the products of combustion produced by a fire occurring in any part of the building into the enclosure is limited.

[F] SOLID. A material that has a melting point, decomposes or sublimes at a temperature greater than 68°F (20°C).

SPECIAL AMUSEMENT BUILDING. A special amusement building is any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction so arranged that the *means of egress* path is not readily apparent due to visual or audio distractions or is intentionally confounded or is not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a *Flood Insurance Rate Map* or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE or V1-30.

SPECIAL INSPECTION. Reserved.

SPECIAL INSPECTOR. Reserved.

SPECIAL STRUCTURAL WALL. See Section 1905.1.1.

SPECIFIED. Required by *construction documents*.

SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, f'_m. Minimum compressive strength, expressed as force per unit of net cross-sectional area, required of the *masonry* used in construction by the *construction documents*, and upon which the project design is based. Whenever the quantity f'_m is under the radical sign, the square root of numerical value only is intended and the result has units of pounds per square inch (psi) (MPa).

SPLICE. The result of a factory and/or field method of joining or connecting two or more lengths of a *fire-resistant joint system* into a continuous entity.

SPRAYED FIRE-RESISTANT MATERIALS. Cementitious or fibrous materials that are sprayed to provide fire-resistant protection of the substrates.

STACK BOND. The placement of *masonry units* in a bond pattern is such that head *joints* in successive courses are vertically aligned. For the purpose of this code, requirements for stack bond shall apply to *masonry* laid in other than *running bond*.

STAGE. A space within a building utilized for entertainment or presentations, which includes overhead hanging curtains, drops, scenery or stage effects other than lighting and sound.

STAIR. A change in elevation, consisting of one or more risers.

STAIR, SCISSOR. See "Scissor stair."

STAIRWAY. One or more *flights* of *stairs*, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another.

STAIRWAY, EXIT ACCESS. See "Exit access stairway."

STAIRWAY, EXTERIOR. A *stairway* that is open on at least one side, except for required structural columns, beams, *handrails* and *guards*. The adjoining open areas shall be either *yards*, *courts* or *public ways*. The other sides of the exterior stairway need not be open.

STAIRWAY, INTERIOR. A *stairway* not meeting the definition of an *exterior stairway*.

STAIRWAY, INTERIOR EXIT. See "Interior exit stairway."

STAIRWAY, SPIRAL. A *stairway* having a closed circular form in its plan view with uniform section-shaped treads attached to and radiating from a minimum-diameter supporting column.

[F] STANDPIPE SYSTEM, CLASSES OF. Standpipe classes are as follows:

Class I system. A system providing $2^1/_2$-inch (64 mm) hose connections to supply water for use by fire departments and those trained in handling heavy fire streams.

Class II system. A system providing $1^1/_2$-inch (38 mm) hose stations to supply water for use primarily by the building occupants or by the fire department during initial response.

Class III system. A system providing $1^1/_2$-inch (38 mm) hose stations to supply water for use by building occupants and $2^1/_2$-inch (64 mm) hose connections to supply a larger volume of water for use by fire departments and those trained in handling heavy fire streams.

[F] STANDPIPE, TYPES OF. Standpipe types are as follows:

Automatic dry. A dry standpipe system, normally filled with pressurized air, that is arranged through the use of a device, such as dry pipe valve, to admit water into the system piping *automatically* upon the opening of a hose valve. The water supply for an *automatic* dry standpipe system shall be capable of supplying the system demand.

Automatic wet. A wet standpipe system that has a water supply that is capable of supplying the system demand *automatically*.

Manual dry. A dry standpipe system that does not have a permanent water supply attached to the system. Manual dry standpipe systems require water from a fire department pumper to be pumped into the system through the fire department connection in order to meet the system demand.

Manual wet. A wet standpipe system connected to a water supply for the purpose of maintaining water within the system but does not have a water supply capable of delivering the system demand attached to the system. Manual-wet standpipe systems require water from a fire department pumper (or the like) to be pumped into the system in order to meet the system demand.

Semiautomatic dry. A dry standpipe system that is arranged through the use of a device, such as a deluge valve, to admit water into the system piping upon activation of a remote control device located at a hose connection. A remote control activation device shall be provided at each hose connection. The water supply for a semiautomatic dry standpipe system shall be capable of supplying the system demand.

START OF CONSTRUCTION. The date of issuance for new construction and *substantial improvements* to *existing structures*, provided the actual start of construction, *repair*, reconstruction, rehabilitation, *addition*, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), the installation of streets or walkways, excavation for a *basement*, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as *dwelling units* or not part of the main building. For a *substantial improvement*, the actual "start of construction" means the first *alteration* of any wall, ceiling, floor or other structural part of a building, whether or not that *alteration* affects the external dimensions of the building.

STATE ENFORCEMENT AGENCY. Means the agency of state government with authority to make inspections of buildings and to enforce the codes, as required by this part, which establish standards for design, construction, erection, alteration, repair, modification or demolition of public or private buildings, structures or facilities.

STEEL CONSTRUCTION, COLD-FORMED. That type of construction made up entirely or in part of *steel structural members* cold formed to shape from sheet or strip steel such as *roof deck*, floor and wall panels, studs, floor joists, roof joists and other structural elements.

STEEL JOIST. Any *steel structural member* of a building or structure made of hot-rolled or cold-formed solid or open-web sections, or riveted or welded bars, strip or sheet steel members, or slotted and expanded, or otherwise deformed rolled sections.

STEEL MEMBER, STRUCTURAL. Any steel structural member of a building or structure consisting of a rolled steel structural shape other than cold-formed steel, or steel joist members.

STEEP SLOPE. A roof slope greater than two units vertical in 12 units horizontal (17-percent slope).

STONE MASONRY. *Masonry* composed of field, quarried or *cast stone* units bonded by *mortar*.

Ashlar stone masonry. Stone masonry composed of rectangular units having sawed, dressed or squared bed surfaces and bonded by *mortar*.

Rubble stone masonry. Stone masonry composed of irregular-shaped units bonded by *mortar*.

[F] STORAGE, HAZARDOUS MATERIALS. The keeping, retention or leaving of hazardous materials in closed containers, tanks, cylinders, or similar vessels; or vessels supplying operations through closed connections to the vessel.

STORM SHELTER. A building, structure or portions thereof, constructed in accordance with ICC 500 and designated for use during a severe wind storm event, such as a hurricane or tornado.

Community storm shelter. A storm shelter not defined as a "Residential Storm Shelter."

Residential storm shelter. A storm shelter serving occupants of *dwelling units* and having an *occupant load* not exceeding 16 persons.

STORY. That portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above (also see "*Basement*," "*Building height,*" "*Grade plane" and* "*Mezzanine*"). It is measured as the vertical distance from top to top of two successive tiers of beams or finished floor surfaces and, for the topmost story, from the top of the floor finish to the top of the ceiling joists or, where there is not a ceiling, to the top of the roof rafters.

STORY ABOVE GRADE PLANE. Any *story* having its finished floor surface entirely above *grade plane*, or in which the finished surface of the floor next above is:

1. More than 6 feet (1829 mm) above *grade plane*; or
2. More than 12 feet (3658 mm) above the finished ground level at any point.

STRENGTH (For Chapter 21).

Design strength. Nominal strength multiplied by a strength reduction factor.

Nominal strength. Strength of a member or cross section calculated in accordance with these provisions before application of any strength-reduction factors.

Required strength. Strength of a member or cross section required to resist *factored loads*.

STRENGTH (For Chapter 16).

Nominal strength. The capacity of a structure or member to resist the effects of *loads*, as determined by computations using *specified* material strengths and dimensions and equations derived from accepted principles of structural mechanics or by field tests or laboratory tests of scaled models, allowing for modeling effects and differences between laboratory and field conditions.

Required strength. Strength of a member, cross section or connection required to resist *factored loads* or related internal moments and forces in such combinations as stipulated by these provisions.

Strength Design. A method of proportioning structural members such that the computed forces produced in the members by *factored loads* do not exceed the member design strength [also called "*load and resistance factor design*" (LRFD)]. The term "strength design" is used in the design of concrete and *masonry* structural elements.

STRUCTURAL COMPOSITE LUMBER. Structural member manufactured using wood elements bonded together with exterior adhesives. Examples of structural composite lumber are:

Laminated strand lumber (LSL). A compsite of wood strand elements with wood fibers primarily oriented along the length of the member, where the least dimension of the wood strand elements is 0.10 inches (2.54 mm) or less and their average lengths are a minimum of 150 times the least dimension of the wood strand elements.

Laminated veneer lumber (LVL). A composite of wood *veneer* sheet elements with wood fibers primarily oriented along the length of the member, where the *veneer* element thicknesses are 0.25 inches (6.4 mm) or less.

Oriented strand lumber (OSL). A composite of wood strand elements with wood fibers primarily oriented along the length of the member, where the least dimension of the wood strand elements is 0.10 inches (2.54 mm) or less and their average lengths are a minimum of 75 times and less than 150 times the least dimension of the wood strand elements.

Parallel strand lumber (PSL). A composite of wood strand elements with wood fibers primarily oriented along the length of the member where the least dimension of the wood strand elements is 0.25 inches (6.4 mm) or less and their average lengths are a minimum of 300 times the least dimension of the wood strand elements.

STRUCTURAL DETERMINATION. For purposes of this code, "structural" shall mean any part, material or assembly of a building or structure which affects the safety of such building or structure and/or which supports any dead or designed live load and the removal of which part, material or assembly could cause, or be expected to cause, all or any portion to collapse or fail.

STRUCTURAL GLUED-LAMINATED TIMBER. An engineered, stress-rated product of a timber laminating plant, comprised of assemblies of specially selected and prepared wood laminations in which the grain of all laminations is approximately parallel longitudinally and the laminations are bonded with adhesives.

STRUCTURAL OBSERVATION. Reserved.

[A] STRUCTURE. That which is built or constructed.

SUBDIAPHRAGM. A portion of a larger wood *diaphragm* designed to anchor and transfer local forces to primary *diaphragm* struts and the main *diaphragm*.

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT. Any *repair*, reconstruction, rehabilitation, alteration, *addition* or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or *repair* is started. If the structure has sustained *substantial damage*, any repairs are considered substantial improvement regardless of the actual *repair* work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the *building official* and that is the minimum necessary to assure safe living conditions.
2. Any *alteration* of a historic structure provided that the *alteration* will not preclude the structure's continued designation as a historic structure.

SUBSTANTIAL STRUCTURAL DAMAGE. A condition where:

1. In any *story*, the vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of the structure in any horizontal direction has been reduced by more than 33 percent from its predamage condition; or
2. The capacity of any vertical gravity load-carrying component, or any group of such components, that supports more than 30 percent of the total area of the structure's floors and roofs has been reduced more than 20 percent from its predamage condition and the remaining capacity of such affected elements, with respect to all dead and *live loads*, is less than 75 percent of that required by this code for new buildings of similar structure, purpose and location.

➡ **[E] SUNROOM.**

1. A one-*story* structure attached to a building with a glazing area in excess of 40 percent of the gross area of the structure's *exterior walls* and roof.
2. A one-story structure added to a dwelling with solid roof panels without sloped glazing. The sunroom walls may have any configuration, provided the open areas with operable or fixed glass or windows or side hinged or sliding glass doors of the longer wall and one additional wall is equal to at least 65 percent of the area below 6 foot 8 inches (2032 mm) of each wall, measured from the floor. For the purposes of this code the term sunroom as used herein shall include conservatories, sunspaces, solariums, and porch or patio covers or enclosures.

[F] SUPERVISING STATION. A facility that receives signals and at which personnel are in attendance at all times to respond to these signals.

[F] SUPERVISORY SERVICE. The service required to monitor performance of guard tours and the operative condition of fixed suppression systems or other systems for the protection of life and property.

[F] SUPERVISORY SIGNAL. A signal indicating the need of action in connection with the supervision of guard tours, the fire suppression systems or equipment or the maintenance features of related systems.

[F] SUPERVISORY SIGNAL-INITIATING DEVICE. An initiation device, such as a valve supervisory switch, water-level indicator or low-air pressure switch on a dry-pipe sprinkler system, whose change of state signals an off-normal condition and its restoration to normal of a fire protection or life safety system, or a need for action in connection with guard tours, fire suppression systems or equipment or maintenance features of related systems.

SUSCEPTIBLE BAY. A roof or portion thereof with:

1. A slope less than $^1/_4$-inch per foot (0.0208 rad); or
2. On which water is impounded upon it, in whole or in part, and the secondary drainage system is functional but the primary drainage system is blocked.

A roof surface with a slope of $^1/_4$-inch per foot (0.0208 rad) or greater towards points of free drainage is not a susceptible bay.

SWIMMING POOL. Any structure intended for swimming, recreational bathing or wading that contains water over 24 inches (610 mm) deep. This includes in-ground, above-ground and on-ground pools; hot tubs; spas and fixed-in-place wading pools.

T RATING. The time period that the *penetration firestop system*, including the penetrating item, limits the maximum temperature rise to 325°F (163°C) above its initial temperature through the penetration on the nonfire side when tested in accordance with ASTM E 814 or UL 1479.

TECHNICAL PRODUCTION AREA. Open elevated areas or spaces intended for entertainment technicians to walk on and occupy for servicing and operating entertainment technology systems and equipment. Galleries, includ-

ing fly and lighting galleries, gridirons, catwalks, and similar areas are designed for these purposes.

TECHNICALLY INFEASIBLE. See the *Florida Building Code, Accessibility.*

TENT. A structure, enclosure or shelter, with or without sidewalls or drops, constructed of fabric or pliable material supported in any manner except by air or the contents it protects.

[E] THERMAL ISOLATION. A separation of conditioned spaces, between a *sunroom* and a *dwelling unit*, consisting of existing or new walls, doors or windows.

THERMOPLASTIC MATERIAL. A plastic material that is capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature.

THERMOSETTING MATERIAL. A plastic material that is capable of being changed into a substantially nonreformable product when cured.

THIN-BED MORTAR. *Mortar* for use in construction of AAC unit masonry with *joints* 0.06 inch (1.5 mm) or less.

THRESHOLD BUILDING. In accordance with Florida Statute, any building which is greater than 3 stories or 50 feet (15 240 mm) in height, or which has an assembly occupancy classification that exceeds 5,000 square feet (464.52 m^2) in area and an occupant content of greater than 500 persons.

THROUGH PENETRATION. A breach in both sides of a floor, floor-ceiling or wall assembly to accommodate an item passing through the breaches**.**

THROUGH-PENETRATION FIRESTOP SYSTEM. An assemblage consisting of a fire-resistance-rated floor, floor-ceiling, or wall assembly, one or more penetrating items passing through the breaches in both sides of the assembly and the materials or devices, or both, installed to resist the spread of fire through the assembly for a prescribed period of time.

TIE-DOWN (HOLD-DOWN). A device used to resist uplift of the chords of *shear walls.*

TIE, WALL. Metal connector that connects *wythes* of *masonry* walls together.

TILE, STRUCTURAL CLAY. A hollow *masonry unit* composed of burned clay, shale, fire clay or mixture thereof, and having parallel *cells*.

[F] TIRES, BULK STORAGE OF. Storage of tires where the area available for storage exceeds 20,000 cubic feet (566 m^3).

[A] TOWNHOUSE. A single-family *dwelling unit* constructed in a group of three or more attached units with property lines separating each unit in which each unit extends from the foundation to roof and with open space on at least two sides.

[F] TOXIC. A chemical falling within any of the following categories:

1. A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
2. A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram, but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
3. A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million, but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

TRANSIENT. Occupancy of a *dwelling unit* or *sleeping unit* for not more than 30 days.

TRANSIENT AIRCRAFT. Aircraft based at another location and that is at the transient location for not more than 90 days.

TREATED WOOD. Wood and wood-based materials that use vacuum-pressure impregnation processes to enhance fire retardant or preservative properties.

Fire-retardant-treated wood. Pressure-treated lumber and plywood that exhibit reduced surface-burning characteristics and resist propagation of fire.

Preservative-treated wood. Pressure-treated wood products that exhibit reduced susceptibility to damage by fungi, insects or marine borers.

TRIM. Picture molds, chair rails, baseboards, *handrails*, door and window frames and similar decorative or protective materials used in fixed applications.

[F] TROUBLE SIGNAL. A signal initiated by the *fire alarm system* or device indicative of a fault in a monitored circuit or component.

TUBULAR DAYLIGHTING DEVICE (TDD). A nonoperable fenestration unit primarily designed to transmit daylight from a roof surface to an interior ceiling via a tubular conduit. The basic unit consists of an exterior glazed weathering surface, a light-transmitting tube with a reflective interior surface, and an interior-sealing device such as a translucent ceiling panel. The unit can be factory assembled, or field-assembled from a manufactured kit.

24-HOUR CARE. See "24-hour care" located preceding "AAC masonry."

TYPE A UNIT. Reserved.

TYPE B UNIT. Reserved.

UNDERLAYMENT. One or more layers of felt, sheathing paper, nonbituminous saturated felt or other *approved* material over which a steep-slope *roof covering* is applied.

UNIT SKYLIGHT. See "Skylight, unit."

[F] UNSTABLE (REACTIVE) MATERIAL. A material, other than an explosive, which in the pure state or as commer-

cially produced, will vigorously polymerize, decompose, condense or become self-reactive and undergo other violent chemical changes, including *explosion*, when exposed to heat, friction or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with *incompatible materials*. Unstable (reactive) materials are subdivided as follows:

Class 4. Materials that in themselves are readily capable of *detonation* or explosive decomposition or explosive reaction at *normal temperatures and pressures*. This class includes materials that are sensitive to mechanical or localized thermal shock at *normal temperatures and pressures.*

Class 3. Materials that in themselves are capable of *detonation* or of explosive decomposition or explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

Class 2. Materials that in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at *normal temperatures and pressures*, and that can undergo violent chemical change at elevated temperatures and pressures.

Class 1. Materials that in themselves are normally stable but which can become unstable at elevated temperatures and pressure.

[F] USE (MATERIAL). Placing a material into action, including *solids*, *liquids* and gases.

VALUE. The estimated current replacement cost of the building in kind.

VAPOR PERMEABLE. The property of having a moisture vapor permeance rating of 5 perms (2.9 × 10-10 kg/Pa × s × m^2) or greater, when tested in accordance with the desiccant method using Procedure A of ASTM E 96. A vapor permeable material permits the passage of moisture vapor.

VAPOR RETARDER CLASS. A measure of a material or assembly's ability to limit the amount of moisture that passes through that material or assembly. Vapor retarder class shall be defined using the desiccant method of ASTM E 96 as follows:

Class I: 0.1 perm or less.

Class II: 0.1 < perm ≤ 1.0 perm.

Class III: 1.0 < perm ≤ 10 perm.

VEHICLE BARRIER. A component or a system of components, near open sides or walls of garage floors or ramps, that acts as a restraint for vehicles.

VEHICULAR GATE. A gate that is intended for use at a vehicular entrance or exit to a facility, building or portion thereof, and that is not intended for use by pedestrian traffic.

VENEER. A facing attached to a wall for the purpose of providing ornamentation, protection or insulation, but not counted as adding strength to the wall.

[M] VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

VINYL SIDING. A shaped material, made principally from rigid polyvinyl chloride (PVC), that is used as an *exterior wall covering*.

[F] VISIBLE ALARM NOTIFICATION APPLIANCE. A notification appliance that alerts by the sense of sight.

WALKWAY, PEDESTRIAN. A walkway used exclusively as a pedestrian trafficway.

WALL. A vertical element with a horizontal length-to-thickness ratio greater than three, used to enclose space.

Cavity wall. A wall built of *masonry units* or of concrete, or a combination of these materials, arranged to provide an airspace within the wall, and in which the inner and outer parts of the wall are tied together with metal ties.

Composite wall. A wall built of a combination of two or more *masonry units* bonded together, one forming the backup and the other forming the facing elements.

Dry-stacked, surface-bonded wall. A wall built of concrete *masonry units* where the units are stacked dry, without *mortar* on the bed or *head joints*, and where both sides of the wall are coated with a surface-bonding *mortar*.

Masonry-bonded hollow wall. A multi-*wythe* wall built of *masonry units* arranged to provide an air space between the *wythes* and with the *wythes* bonded together with *masonry units.*

Parapet wall. The part of any wall entirely above the roof line.

WALL, LOAD-BEARING. Any wall meeting either of the following classifications:

1. Any metal or wood stud wall that supports more than 100 pounds per linear foot (1459 N/m) of vertical load in addition to its own weight.
2. Any *masonry* or concrete wall that supports more than 200 pounds per linear foot (2919 N/m) of vertical load in addition to its own weight.

WALL, NONLOAD-BEARING. Any wall that is not a *load-bearing wall*.

WALL PIER. See Section 1905.1.1.

[F] WATER-REACTIVE MATERIAL. A material that explodes; violently reacts; produces *flammable*, *toxic* or other hazardous gases; or evolves enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture. Water-reactive materials are subdivided as follows:

Class 3. Materials that react explosively with water without requiring heat or confinement.

Class 2. Materials that react violently with water or have the ability to boil water. Materials that produce *flammable*, *toxic* or other hazardous gases or evolve enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture.

Class 1. Materials that react with water with some release of energy, but not violently.

WATER-RESISTIVE BARRIER. A material behind an *exterior wall covering* that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the *exterior wall* assembly.

WEATHER-EXPOSED SURFACES. Surfaces of walls, ceilings, floors, roofs, soffits and similar surfaces exposed to the weather except the following:

1. Ceilings and roof soffits enclosed by walls, fascia, bulkheads or beams that extend a minimum of 12 inches (305 mm) below such ceiling or roof soffits.
2. Walls or portions of walls beneath an unenclosed roof area, where located a horizontal distance from an open exterior opening equal to at least twice the height of the opening.
3. Ceiling and roof soffits located a minimum horizontal distance of 10 feet (3048 mm) from the outer edges of the ceiling or roof soffits.

➡ **[F] WET-CHEMICAL EXTINGUISHING SYSTEM.** A solution of water and potassium-carbonate-based chemical, potassium-acetate-based chemical or a combination thereof, forming an extinguishing agent.

WHEELCHAIR SPACE. See the *Florida Building Code, Accessibility*.

WIND-BORNE DEBRIS REGION. Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed, V_{ult}, is 130 mph (58 m/s) or greater; or
2. In areas where the ultimate design wind speed is 140 mph (63.6 m/s) or greater.

For *Risk Category* II buildings and structures and *Risk Category* III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609A. For *Risk Category* IV buildings and structures and *Risk Category* III health care facilities, the windborne debris region shall be based on Figure 1609B.

WINDFORCE-RESISTING SYSTEM, MAIN. See "Main Windforce-Resisting System."

WIND SPEED, V_{ult}. Ultimate design wind speeds.

WIND SPEED, V_{asd}. Nominal design wind speeds.

WINDER. A tread with nonparallel edges.

WIRE BACKING. Horizontal strands of tautened wire attached to surfaces of vertical supports which, when covered with the building paper, provide a *backing* for cement plaster.

[F] WIRELESS PROTECTION SYSTEM. A system or a part of a system that can transmit and receive signals without the aid of wire.

WOOD SHEAR PANEL. A wood floor, roof or wall component sheathed to act as a *shear wall* or *diaphragm*.

WOOD STRUCTURAL PANEL. A panel manufactured from *veneers*, wood strands or wafers or a combination of *veneer* and wood strands or wafers bonded together with waterproof synthetic resins or other suitable bonding systems. Examples of wood structural panels are:

Composite panels. A wood structural panel that is comprised of wood *veneer* and reconstituted wood-based material and bonded together with waterproof adhesive;

Oriented strand board (OSB). A mat-formed wood structural panel comprised of thin rectangular wood strands arranged in cross-aligned layers with surface layers normally arranged in the long panel direction and bonded with waterproof adhesive; or

Plywood. A wood structural panel comprised of plies of wood *veneer* arranged in cross-aligned layers. The plies are bonded with waterproof adhesive that cures on application of heat and pressure.

[F] WORKSTATION. A defined space or an independent principal piece of equipment using *HPM* within a *fabrication area* where a specific function, laboratory procedure or research activity occurs. *Approved* or *listed hazardous materials storage cabinets*, *flammable liquid* storage cabinets or *gas cabinets* serving a workstation are included as part of the workstation. A workstation is allowed to contain *ventilation* equipment, fire protection devices, detection devices, electrical devices and other processing and scientific equipment.

WYTHE. Each continuous, vertical section of a wall, one *masonry unit* in thickness.

YARD. An open space, other than a *court*, unobstructed from the ground to the sky, except where specifically provided by this code, on the lot on which a building is situated.

[F] ZONE. A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent or an area in which a form of control can be executed.

[F] ZONE, NOTIFICATION. An area within a building or facility covered by notification appliances which are activated simultaneously.

CHAPTER 3

USE AND OCCUPANCY CLASSIFICATION

SECTION 301
GENERAL

301.1 Scope. The provisions of this chapter shall control the classification of all buildings and structures as to use and occupancy.

SECTION 302
CLASSIFICATION

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5
2. Business (see Section 304): Group B
3. Educational (see Section 305): Group E
4. Factory and Industrial (see Section 306): Groups F-1 and F-2
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4
7. Mercantile (see Section 309): Group M
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4
9. Storage (see Section 311): Groups S-1 and S-2
10. Utility and Miscellaneous (see Section 312): Group U

SECTION 303
ASSEMBLY GROUP A

303.1 Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption or awaiting transportation.

303.1.1 Small buildings and tenant spaces. A building or tenant space used for assembly purposes with an *occupant load* of less than 50 persons shall be classified as a Group B occupancy.

303.1.2 Small assembly spaces. The following rooms and spaces shall not be classified as Assembly occupancies:

1. A room or space used for assembly purposes with an *occupant load* of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
2. A room or space used for assembly purposes that is less than 750 square feet (70 m^2) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

303.1.3 Associated with Group E occupancies. A room or space used for assembly purposes that is associated with a Group E occupancy is not considered a separate occupancy.

303.1.4 Accessory to places of religious worship. Accessory religious educational rooms and religious auditoriums with *occupant loads* of less than 100 are not considered separate occupancies.

303.2 Assembly Group A-1. Assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:

Motion picture theaters
Symphony and concert halls
Television and radio studios admitting an audience
Theaters

303.3 Assembly Group A-2. Assembly uses intended for food and/or drink consumption including, but not limited to:

Banquet halls
Casinos (gaming areas)
Nightclubs
Restaurants, cafeterias and similar dining facilities (including associated commercial kitchens)
Taverns and bars

303.4 Assembly Group A-3. Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:

Amusement arcades
Art galleries
Bowling alleys
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor *swimming pools* (without spectator seating)
Indoor tennis courts (without spectator seating)
Lecture halls
Libraries

Museums
Places of religious worship
Pool and billiard parlors
Waiting areas in transportation terminals

303.5 Assembly Group A-4. Assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

Arenas
Skating rinks
Swimming pools
Tennis courts

303.6 Assembly Group A-5. Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

SECTION 304
BUSINESS GROUP B

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers
Ambulatory care facilities
Animal hospitals, kennels and pounds
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic, outpatient
Dry cleaning and laundries: pick-up and delivery stations and self-service
Educational occupancies for students above the 12th grade
Electronic data processing
Laboratories: testing and research
Motor vehicle showrooms
Post offices
Print shops
Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Telephone exchanges
Training and skill development not within a school or academic program

304.2 Definitions. The following terms are defined in Chapter 2:

AMBULATORY CARE FACILITY.

CLINIC, OUTPATIENT.

304.3 Public and private colleges and universities shall comply with Section 468.

304.4 Florida colleges shall comply with Section 453.

SECTION 305
EDUCATIONAL GROUP E

305.1 Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade.

305.1.1 Accessory to places of religious worship. Religious educational rooms and religious auditoriums, which are accessory to *places of religious worship* in accordance with Section 303.1.4 and have *occupant loads* of less than 100, shall be classified as Group A-3 occupancies.

305.2 Group E, day care facilities. This group includes buildings and structures or portions thereof occupied by more than five children older than $2^1/_2$ years of age who receive educational, supervision or *personal care services* for fewer than 24 hours per day.

305.2.1 Within places of religious worship. Rooms and spaces within *places of religious worship* providing such day care during religious functions shall be classified as part of the primary occupancy.

305.2.2 Five or fewer children. A facility having five or fewer children receiving such day care shall be classified as part of the primary occupancy.

305.2.3 Five or fewer children in a dwelling unit. A facility such as the above within a *dwelling unit* and having five or fewer children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the *Florida Building Code, Residential.*

305.3 Public and private educational occupancies shall comply with Section 468.

305.4 Public education occupancies shall comply with Section 453.

SECTION 306
FACTORY GROUP F

306.1 Factory Industrial Group F. Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy.

306.2 Moderate-hazard factory industrial, Group F-1. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft (manufacturing, not to include repair)
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages: over 16-percent alcohol content
Bicycles

Boats
Brooms or brushes
Business machines
Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing
Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric generation plants
Electronics
Engines (including rebuilding)
Food processing and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash and door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

306.3 Low-hazard factory industrial, Group F-2. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages: up to and including 16-percent alcohol content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)

SECTION 307
HIGH-HAZARD GROUP H

[F] 307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in *control areas* complying with Section 414, based on the maximum allowable quantity limits for *control areas* set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *Florida Fire Prevention Code*. Hazardous materials stored, or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with the *Florida Fire Prevention Code*.

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *Florida Fire Prevention Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *Florida Fire Prevention Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *Florida Building Code, Mechanical*.

10. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *Florida Fire Prevention Code*.
12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *Florida Fire Prevention Code*.
14. Mercantile occupancies offering for retail sale sparklers, novelties and trick noisemakers as defined at Section 791.01, *Florida Statutes,* and that are not defined as fireworks by Chapter 791, *Florida Statutes*. Storage of sparklers and other novelties or trick noisemakers as defined in Chapter 791, *Florida Statutes,* within mercantile occupancies shall be in accordance with Section 791.055, *Florida Statutes*.

[F] 307.1.1 Hazardous materials. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the *Florida Fire Prevention Code*.

[F] 307.2 Definitions. The following terms are defined in Chapter 2:

AEROSOL.
- **Level 1 aerosol products.**
- **Level 2 aerosol products.**
- **Level 3 aerosol products.**

AEROSOL CONTAINER.
BALED COTTON.
BALED COTTON, DENSELY PACKED.
BARRICADE.
- **Artificial barricade.**
- **Natural barricade.**

BOILING POINT.
CLOSED SYSTEM.
COMBUSTIBLE DUST.
COMBUSTIBLE FIBERS.
COMBUSTIBLE LIQUID.
- **Class II.**
- **Class IIIA.**
- **Class IIIB.**

COMPRESSED GAS.
CONTROL AREA.
CORROSIVE.
CRYOGENIC FLUID.
DAY BOX.
DEFLAGRATION.
DETONATION.
DISPENSING.
EXPLOSION.
EXPLOSIVE.
- **High explosive.**
- **Low explosive.**
- **Mass-detonating explosives.**
- **UN/DOTn Class 1 explosives.**
  - **Division 1.1.**
  - **Division 1.2.**
  - **Division 1.3.**
  - **Division 1.4.**
  - **Division 1.5.**
  - **Division 1.6.**

FIREWORKS.
- **Fireworks, 1.3G.**
- **Fireworks, 1.4G.**

FLAMMABLE GAS.
FLAMMABLE LIQUEFIED GAS.
FLAMMABLE LIQUID.
- **Class IA.**
- **Class IB.**
- **Class IC.**

FLAMMABLE MATERIAL.
FLAMMABLE SOLID.
FLASH POINT.
HANDLING.
HAZARDOUS MATERIALS.
HEALTH HAZARD.
HIGHLY TOXIC.
INCOMPATIBLE MATERIALS.
INERT GAS.
OPEN SYSTEM.
OPERATING BUILDING.
ORGANIC PEROXIDE.
- **Class I.**
- **Class II.**
- **Class III.**

Class IV.

Class V.

Unclassified detonable.

OXIDIZER.

Class 4.

Class 3.

Class 2.

Class 1.

OXIDIZING GAS.

PHYSICAL HAZARD.

PYROPHORIC.

PYROTECHNIC COMPOSITION.

TOXIC.

UNSTABLE (REACTIVE) MATERIAL.

Class 4.

Class 3.

Class 2.

Class 1.

WATER-REACTIVE MATERIAL.

Class 3.

Class 2.

Class 1.

[F] 307.3 High-hazard Group H-1. Buildings and structures containing materials that pose a detonation hazard shall be classified as Group H-1. Such materials shall include, but not be limited to, the following:

Detonable pyrophoric materials
Explosives:

Division 1.1
Division 1.2
Division 1.3
Division 1.4
Division 1.5
Division 1.6

Organic peroxides, unclassified detonable
Oxidizers, Class 4
Unstable (reactive) materials, Class 3 detonable and Class 4

[F] TABLE 307.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	N/A	H-2	Note q	N/A	N/A	Note q	N/A	N/A	Note q	N/A
Combustible liquid[c, i]	II IIIA IIIB	H-2 or H-3 H-2 or H-3 N/A	N/A	120[d, e] 330[d, e] 13,200[e, f]	N/A	N/A	120[d] 330[d] 13,200[f]	N/A	N/A	30[d] 80[d] 3,300[f]
Combustible fiber	Loose Baled[o]	H-3	(100) (1,000)	N/A	N/A	(100) (1,000)	N/A	N/A	(20) (200)	N/A
Consumer fireworks	1.4G	H-3	125[d, e, l]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cryogenics, flammable	N/A	H-2	N/A	45[d]	N/A	N/A	45[d]	N/A	N/A	10[d]
Cryogenics, inert	N/A	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Cryogenics, oxidizing	N/A	H-3	N/A	45[d]	N/A	N/A	45[d]	N/A	N/A	10[d]
Explosives	Division 1.1 Division 1.2 Division 1.3 Division 1.4 Division 1.4G Division 1.5 Division 1.6	H-1 H-1 H-1 or H-2 H-3 H-3 H-1 H-1	1[e, g] 1[e, g] 5[e, g] 50[e, g] 125[d, e, l] 1[e, g] 1[d, e, g]	(1)[e, g] (1)[e, g] (5)[e, g] (50)[e, g] N/A (1)[e, g] N/A	N/A N/A N/A N/A N/A N/A N/A	0.25[g] 0.25[g] 1[g] 50[g] N/A 0.25[g] N/A	(0.25)[g] (0.25)[g] (1)[g] (50)[g] N/A (0.25)[g] N/A	N/A N/A N/A N/A N/A N/A N/A	0.25[g] 0.25[g] 1[g] N/A N/A 0.25[g] N/A	(0.25)[g] (0.25)[g] (1)[g] N/A N/A (0.25)[g] N/A
Flammable gas	Gaseous Liquefied	H-2	N/A	N/A (150)[d,e]	1,000[d,e] N/A	N/A	N/A (150)[d,e]	1,000[d,e] N/A	N/A	N/A
Flammable liquid[c]	1A 1B and 1C	H-2 or H-3	N/A	30[d, e] 120[d, e]	N/A	N/A	30[d] 120[d]	N/A	N/A	10[d] 30[d]
Flammable liquid, combination (1A, 1B, 1C)	N/A	H-2 or H-3	N/A	120[d, e, h]	N/A	N/A	120[d, h]	N/A	N/A	30[d, h]

(continued)

[F] TABLE 307.1(1)—(continued)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Flammable solid	N/A	H-3	125[d, e]	N/A	N/A	125[d]	N/A	N/A	25[d]	N/A
Inert gas	Gaseous	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
	Liquefied	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Organic peroxide	UD	H-1	1[e, g]	(1)[e, g]	N/A	0.25[g]	(0.25)[g]	N/A	0.25[g]	(0.25)[g]
	I	H-2	5[d, e]	(5)[d, e]	N/A	1[d]	(1)[d]	N/A	1[d]	(1)[d]
	II	H-3	50[d, e]	(50)[d, e]	N/A	50[d]	(50)[d]	N/A	10[d]	(10)[d]
	III	H-3	125[d, e]	(125)[d, e]	N/A	125[d]	(125)[d]	N/A	25[d]	(25)[d]
	IV	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
	V	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Oxidizer	4	H-1	1[e, g]	(1)[e, g]	N/A	0.25[g]	(0.25)[g]	N/A	0.25[g]	(0.25)[g]
	3[k]	H-2 or H-3	10[d, e]	(10)[d, e]	N/A	2[d]	(2)[d]	N/A	2[d]	(2)[d]
	2	H-3	250[d, e]	(250)[d, e]	N/A	250[d]	(250)[d]	N/A	50[d]	(50)[d]
	1	N/A	4,000[e, f]	(4,000)[e, f]	N/A	4,000[f]	(4,000)[f]	N/A	1,000[f]	(1,000)[f]
Oxidizing gas	Gaseous	H-3	N/A	N/A	1,500[d,e]	N/A	N/A	1,500[d,e]	N/A	N/A
	Liquefied		N/A	(150)[d,e]	N/A	N/A	(150)[d,e]	N/A	N/A	N/A
Pyrophoric material	N/A	H-2	4[e, g]	(4)[e, g]	50[e, g]	1[g]	(1)[g]	10[e,g]	0	0
Unstable (reactive)	4	H-1	1[e, g]	(1)[e, g]	10[g]	0.25[g]	(0.25)[g]	2[e, g]	0.25[g]	(0.25)[g]
	3	H-1 or H-2	5[d, e]	(5)[d, e]	50[d, e]	1[d]	(1)[d]	10[d, e]	1[d]	(1)[d]
	2	H-3	50[d, e]	(50)[d, e]	250[d, e]	50[d]	(50)[d]	250[d, e]	10[d]	(10)[d]
	1	N/A	NL	NL	NL	NL	NL	NL	NL	NL
Water reactive	3	H-2	5[d, e]	(5)[d, e]	N/A	5[d]	(5)[d]	N/A	1[d]	(1)[d]
	2	H-3	50[d, e]	(50)[d, e]	N/A	50[d]	(50)[d]	N/A	10[d]	(10)[d]
	1	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL

For SI: 1 cubic foot = 0.028 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.
NL = Not Limited; N/A = Not Applicable; UD = Unclassified Detonable.

a. For use of control areas, see Section 414.2.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
e. Maximum allowable quantities shall be increased 100 percent when stored in *approved* storage cabinets, day boxes, gas cabinets or exhausted enclosures or in *listed* safety cans in accordance with the *Florida Fire Prevention Code*. Where Note d also applies, the increase for both notes shall be applied accumulatively.
f. The permitted quantities shall not be limited in a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
g. Permitted only in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
h. Containing not more than the maximum allowable quantity per *control area* of Class IA, IB or IC flammable liquids.
i. The maximum allowable quantity shall not apply to fuel oil storage complying with the *Florida Fire Prevention Code.*
j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment. Storage containers and the manner of storage shall be *approved*.
l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.
m. For gallons of liquids, divide the amount in pounds by 10 in accordance with the *Florida Fire Prevention Code*.
n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
o. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.
p. The following shall not be included in determining the maximum allowable quantities:
   1. Liquid or gaseous fuel in fuel tanks on vehicles.
   2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
   3. Gaseous fuels in piping systems and fixed appliances regulated by the *Florida Building Code, Fuel Gas.*
   4. Liquid fuels in piping systems and fixed appliances regulated by the *Florida Building Code, Mechanical*.
q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

[F] TABLE 307.1(2)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD[a, b, c, i]

MATERIAL	STORAGE[d]			USE-CLOSED SYSTEMS[d]			USE-OPEN SYSTEMS[d]	
	Solid pounds (cubic feet)[e, f]	Liquid gallons (pounds)[e, f]	Gas (cubic feet at NTP)[e]	Solid pounds[e]	Liquid gallons (pounds)[e]	Gas (cubic feet at NTP)[e]	Solid pounds[e]	Liquid gallons (pounds)[e]
Corrosive	5,000	500	Gaseous 810[f] Liquefied (150)[h]	5,000	500	Gaseous 810[f] Liquefied (150)[h]	1,000	100
Highly toxic	10	(10)[h]	Gaseous 20[g] Liquefied (4)[g,h]	10	(10)[i]	Gaseous 20[g] Liquefied (4)[g,h]	3	(3)[i]
Toxic	500	(500)[h]	Gaseous 810[f] Liquefied (150)[f,h]	500	(500)[i]	Gaseous 810[f] Liquefied (150)[f,h]	125	(125)

For SI: 1 cubic foot = 0.028 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 414.2.

b. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

c. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).

d. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

e. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.

f. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the *Florida Fire Prevention Code*. Where Note e also applies, the increase for both notes shall be applied accumulatively.

g. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures as specified in the *Florida Fire Prevention Code*.

h. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

i. For gallons of liquids, divide the amount in pounds by 10 in accordance with the *Florida Fire Prevention Code*.

[F] 307.3.1 Occupancies containing explosives not classified as H-1. The following occupancies containing explosive materials shall be classified as follows:

1. Division 1.3 explosive materials that are used and maintained in a form where either confinement or configuration will not elevate the hazard from a mass fire to mass explosion hazard shall be allowed in H-2 occupancies.
2. Articles, including articles packaged for shipment, that are not regulated as a Division 1.4 explosive under Bureau of Alcohol, Tobacco, Firearms and Explosives regulations, or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles shall be allowed in H-3 occupancies.

[F] 307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified as Group H-2. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids which are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 psi (103.4 kPa) gage
Combustible dusts where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3
Cryogenic fluids, flammable
Flammable gases
Organic peroxides, Class I
Oxidizers, Class 3, that are used or stored in normally open containers or systems, or in closed containers or sytems pressurized at more than 15 psi (103 kPa) gage
Pyrophoric liquids, solids and gases, nondetonable
Unstable (reactive) materials, Class 3, nondetonable
Water-reactive materials, Class 3

[F] 307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less
Combustible fibers, other than densely packed baled cotton
Consumer fireworks, 1.4G (Class C, Common)
Cryogenic fluids, oxidizing
Flammable solids
Organic peroxides, Class II and III
Oxidizers, Class 2
Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

[F] 307.6 High-hazard Group H-4. Buildings and structures which contain materials that are health hazards shall be classified as Group H-4. Such materials shall include, but not be limited to, the following:

Corrosives
Highly toxic materials
Toxic materials

[F] 307.7 High-hazard Group H-5. Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials (HPM) are used and the aggregate quantity of materials is in excess of those listed in Tables 307.1(1) and 307.1(2) shall be classified as Group H-5. Such facilities and areas shall be designed and constructed in accordance with Section 415.10.

[F] 307.8 Multiple hazards. Buildings and structures containing a material or materials representing hazards that are classified in one or more of Groups H-1, H-2, H-3 and H-4 shall conform to the code requirements for each of the occupancies so classified.

SECTION 308
INSTITUTIONAL GROUP I

308.1 Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which care or supervision is provided to persons who are or are not capable of self-preservation without physical assistance or in which persons are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

308.2 Definitions. The following terms are defined in Chapter 2:

24-HOUR CARE.

CUSTODIAL CARE.

DETOXIFICATION FACILITIES.

FOSTER CARE FACILITIES.

HOSPITALS AND PSYCHIATRIC HOSPITALS.

INCAPABLE OF SELF-PRESERVATION.

MEDICAL CARE.

NURSING HOMES.

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment and receive *custodial care*. The persons receiving care are capable of self preservation. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and *custodial care* facilities
Social rehabilitation facilities

308.3.1 Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *Florida Building Code, Residential* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *Florida Building Code, Residential.*

308.3.2 Six to sixteen persons receiving care. A facility such as above, housing not fewer than six and not more than 16 persons receiving such care, shall be classified as Group R-4.

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of self-preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.4.1 Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *Florida Building Code, Residential* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *Florida Building Code, Residential.*

308.5 Institutional Group I-3. This occupancy shall include buildings and structures that are inhabited by more than five persons who are under restraint or security. An I-3 facility is occupied by persons who are generally *incapable of self-preservation* due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

Correctional centers
Detention centers
Jails
Prerelease centers
Prisons
Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated in Sections 308.5.1 through 308.5.5 (see Section 408.1).

308.5.1 Condition 1. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas, and other spaces where access or occupancy is permitted, to the exterior via *means of egress* without restraint. A Condition 1 facility is permitted to be constructed as Group R.

308.5.2 Condition 2. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied *smoke compartment* to one or more other *smoke compartments.* Egress to the exterior is impeded by locked *exits*.

308.5.3 Condition 3. This occupancy condition shall include buildings in which free movement is allowed

within individual *smoke compartments*, such as within a residential unit comprised of individual *sleeping units* and group activity spaces, where egress is impeded by remote-controlled release of *means of egress* from such a *smoke compartment* to another *smoke compartment*.

308.5.4 Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from *sleeping units*, activity spaces and other occupied areas within the *smoke compartment* to other *smoke compartments.*

308.5.5 Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from *sleeping units*, activity spaces and other occupied areas within the *smoke compartment* to other *smoke compartments*.

308.6 Institutional Group I-4, day care facilities. This group shall include buildings and structures occupied by more than five persons of any age who receive *custodial care* for fewer than 24 hours per day by persons other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

Adult day care
Child day care

308.6.1 Classification as Group E. A child day care facility that provides care for more than five but no more than 100 children $2^1/_2$ years or less of age, where the rooms in which the children are cared for are located on a *level of exit discharge* serving such rooms and each of these child care rooms has an *exit* door directly to the exterior, shall be classified as Group E.

308.6.2 Within a place of religious worship. Rooms and spaces within *places of religious worship* providing such care during religious functions shall be classified as part of the primary occupancy.

308.6.3 Five or fewer persons receiving care. A facility having five or fewer persons receiving *custodial care* shall be classified as part of the primary occupancy.

308.6.4 Five or fewer persons receiving care in a dwelling unit. A facility such as the above within a *dwelling unit* and having five or fewer persons receiving *custodial care* shall be classified as a Group R-3 occupancy or shall comply with the *Florida Building Code, Residential.*

SECTION 309
MERCANTILE GROUP M

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof, for the display and sale of merchandise and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

Department stores
Drug stores
Markets
Motor fuel-dispensing facilities
Retail or wholesale stores
Sales rooms

309.2 Quantity of hazardous materials. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials stored or displayed in a single *control area* of a Group M occupancy shall not exceed the quantities in Table 414.2.5(1).

SECTION 310
RESIDENTIAL GROUP R

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *Florida Building Code, Residential.*

310.2 Definitions. The following terms are defined in Chapter 2:

BOARDING HOUSE.

CONGREGATE LIVING FACILITIES.

DORMITORY.

GROUP HOME.

PERSONAL CARE SERVICE.

TRANSIENT.

310.3 Residential Group R-1. Residential occupancies containing *sleeping units* where the occupants are primarily *transient* in nature, including:

Boarding houses (*transient*) with more than 10 occupants
Congregate living facilities (*transient)* with more than 10 occupants
Hotels (*transient*)
Motels (*transient*)

310.4 Residential Group R-2. Residential occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses
Boarding houses (nontransient) with more than 16 occupants
Congregate living facilities (nontransient) with more than 16 occupants
Convents
Dormitories
Fraternities and sororities
Hotels (nontransient)
Live/work units
Monasteries
Motels (nontransient)
Vacation timeshare properties

310.5 Residential Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two *dwelling units*

Boarding houses (nontransient) with 16 or fewer occupants
Boarding houses (*transient*) with 10 or fewer occupants
Care facilities that provide accommodations for five or fewer persons receiving care
Congregate living facilities (nontransient) with 16 or fewer occupants
Congregate living facilities (*transient*) with 10 or fewer occupants

310.5.1 Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the *Florida Building Code, Residential* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *Florida Building Code, Residential*.

310.6 Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. The persons receiving care are capable of self-preservation. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and *custodial care* facilities
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

SECTION 311
STORAGE GROUP S

311.1 Storage Group S. Storage Group S occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy.

311.2 Moderate-hazard storage, Group S-1. Buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

Aerosols, Levels 2 and 3
Aircraft hangar (storage and repair)
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size
Grains
Horns and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)
Photo engravings
Resilient flooring
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

311.3 Low-hazard storage, Group S-2. Includes, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic *trim*, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of the following:

Asbestos
Beverages up to and including 16-percent alcohol in metal, glass or ceramic containers
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and *trim*
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages, open or enclosed
Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

SECTION 312
UTILITY AND MISCELLANEOUS GROUP U

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings
Aircraft hangars, accessory to a one- or two-family residence (see Section 412.5)
Barns
Carports
Fences more than 6 feet (1829 mm) in height
Grain silos, accessory to a residential occupancy
Greenhouses
Livestock shelters
Private garages
Retaining walls
Sheds
Stables
Tanks
Towers

CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

SECTION 401
SCOPE

401.1 Detailed use and occupancy requirements. In addition to the occupancy and construction requirements in this code, the provisions of this chapter apply to the special uses and occupancies described herein.

401.2 Additional design criteria.

401.2.1 Scope. In addition to the provisions of this chapter, the following special occupancies, standards, requirements and codes shall conform to the following sections:

Section 449:	Hospitals
Section 450:	Nursing homes
Section 451:	Ambulatory surgical centers
Section 452:	Birthing centers
Section 453:	State requirements for educational facilities
Section 454:	Swimming pools and bathing places
Section 455:	Public lodging establishments
Section 456:	Public food service establishments
Section 457:	Mental health programs
Section 458:	Manufactured buildings
Section 459:	Boot camps for children
Section 460:	Mausoleums and columbariums
Section 461:	Transient public lodging establishments
Section 462:	Use of asbestos in new public buildings or buildings newly constructed for lease to government entities–prohibition
Section 463:	Adult day care
Section 464:	Assisted living facilities
Section 465:	Control of radiation hazards
Section 466:	Day care occupancies
Section 467:	Hospice inpatient facilities and units and hospice residences.
Section 468:	Schools, colleges and universities
Chapter 30:	Elevators and conveying systems
Section 3109:	Structures seaward of a coastal construction control line

401.2.2 General. Where in any specific case, Sections 449 through 468 specify different materials, methods of construction, design criteria or other requirements than found in this code, the requirements of Sections 449 through 468 shall be applicable.

401.2.3 Referenced standards. Further information concerning the requirements for licensing, maintenance, equipment or other items not related to design and construction may be obtained for all state codes, rules and standards from the State of Florida Bureau of Administrative Codes.

SECTION 402
COVERED MALL AND OPEN MALL BUILDINGS

*Section 402 has been completely reorganized from the 2009 code; therefore, the * and ** margin indicators have not been included for clarity.*

402.1 Applicability. The provisions of this section shall apply to buildings or structures defined herein as *covered or open mall buildings* not exceeding three floor levels at any point nor more than three *stories above grade plane*. Except as specifically required by this section, *covered and open mall buildings* shall meet applicable provisions of this code.

Exceptions:

1. Foyers and lobbies of Groups B, R-1 and R-2 are not required to comply with this section.
2. Buildings need not comply with the provisions of this section where they totally comply with other applicable provisions of this code.

402.1.1 Open space. A *covered mall building* and attached *anchor buildings* and parking garages shall be surrounded on all sides by a permanent open space or not less than 60 feet (18 288 mm). An *open mall building* and *anchor buildings* and parking garages adjoining the perimeter line shall be surrounded on all sides by a permanent open space of not less than 60 feet (18 288 mm).

Exception: The permanent open space of 60 feet (18 288 mm) shall be permitted to be reduced to not less than 40 feet (12 192 mm), provided the following requirements are met:

1. The reduced open space shall not be allowed for more than 75 percent of the perimeter of the *covered or open mall building* and *anchor buildings;*
2. The *exterior wall* facing the reduced open space shall have a *fire-resistance rating* of not less than 3 hours;
3. Openings in the *exterior wall* facing the reduced open space shall have opening protectives with a *fire protection rating* of not less than 3 hours; and
4. Group E, H, I or R occupancies are not located within the *covered or open mall building* or *anchor buildings*.

402.1.2 Open mall building perimeter line. For the purpose of this code, a perimeter line shall be established. The perimeter line shall encircle all buildings and struc-

tures which comprise the *open mall building* and shall encompass any open-air interior walkways, open-air courtyards or similar open-air spaces. The perimeter line shall define the extent of the *open mall building*. *Anchor buildings* and parking structures shall be outside of the perimeter line and are not considered as part of the *open mall building*.

402.2 Definitions. The following terms are defined in Chapter 2:

ANCHOR BUILDING.

COVERED MALL BUILDING.

Mall.

Open mall.

Open mall building.

FOOD COURT.

GROSS LEASABLE AREA.

402.3 Lease plan. Each *owner* of a *covered mall building* or of an *open mall building* shall provide both the building and fire departments with a lease plan showing the location of each occupancy and its *exits* after the certificate of occupancy has been issued. No modifications or changes in occupancy or use shall be made from that shown on the lease plan without prior approval of the *building official*.

402.4 Construction. The construction of *covered and open mall buildings*, *anchor buildings* and parking garages associated with a *mall* building shall comply with Sections 402.4.1 through 402.4.3.

402.4.1 Area and types of construction. The *building area* of any *covered mall or open mall building*, including *anchor buildings*, of Type I, II, III and IV construction shall not be limited provided the *anchor buildings* do not exceed three *stories above grade plane*.

The construction type of *open parking garages* and enclosed parking garages shall comply with Sections 406.5 and 406.6, respectively.

Exception: The type of construction allowable *building height* and *building area* of *anchor buildings* greater than three *stories above grade plane* shall comply with Section 503, as modified by Sections 504 and 506.

402.4.2 Fire-resistance-rated separation. Fire-resistance-rated separation is not required between tenant spaces and the *mall*. Fire-resistance-rated separation is not required between a *food court* and adjacent tenant spaces or the *mall*.

402.4.2.1 Tenant separations. Each tenant space shall be separated from other tenant spaces by a *fire partition* complying with Section 708. A tenant separation wall is not required between any tenant space and the *mall*.

402.4.2.2 Anchor building separation. An *anchor building* shall be separated from the *covered or open mall building* by *fire walls* complying with Section 706.

Exceptions:

1. *Anchor buildings* of not more than three *stories above grade plane* that have an occupancy classification the same as that permitted for tenants of the *mall building* shall be separated by 2-hour fire-resistance-rated *fire barriers* complying with Section 707.
2. The exterior walls of *anchor buildings* separated from an *open mall building* by an *open mall* shall comply with Table 602.

402.4.2.2.1 Openings between anchor building and mall. Except for the separation between Group R-1 *sleeping units* and the *mall*, openings between *anchor buildings* of Type IA, IB, IIA or IIB construction and the *mall* need not be protected.

402.4.2.3 Parking garages. An attached garage for the storage of passenger vehicles having a capacity of not more than nine persons and *open parking garages* shall be considered as a separate building where it is separated from the *covered or open mall building* or *anchor building* by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

Parking garages, open or enclosed, which are separated from *covered mall buildings*, *open mall buildings* or *anchor buildings* shall comply with the provisions of Table 602.

Pedestrian walkways and tunnels which connect garages to *mall* buildings or *anchor buildings* shall be constructed in accordance with Section 3104.

402.4.3 Open mall construction. Floor assemblies in, and *roof assemblies* over, the *open mall* of an *open mall building* shall be open to the atmosphere for not less than 20 feet (9096 mm), measured perpendicular from the face of the tenant spaces on the lowest level, from edge of balcony to edge of balcony on upper floors and from edge of roof line to edge of roof line. The openings within, or the unroofed area of, an *open mall* shall extend from the lowest/grade level of the open mall through the entire *roof assembly*. Balconies on upper levels of the *mall* shall not project into the required width of the opening.

402.4.3.1 Pedestrian walkways. *Pedestrian walkways* connecting balconies in an *open mall* shall be located not less than 20 feet (9096 mm) from any other *pedestrian walkway*.

[F] 402.5 Automatic sprinkler system. *Covered and open mall buildings* and buildings connected shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, which shall comply with the all of the following:

1. The *automatic sprinkler system* shall be complete and operative throughout occupied space in the *mall building* prior to occupancy of any of the tenant spaces. Unoccupied tenant spaces shall be similarly protected unless provided with *approved* alternative protection.
2. Sprinkler protection for the *mall* of a *covered mall building* shall be independent from that provided for tenant spaces or *anchor buildings*.
3. Sprinkler protection for the tenant spaces of an *open mall building* shall be independent from that provided for *anchor buildings.*
4. Sprinkler protection shall be provided beneath exterior circulation balconies located adjacent to an *open mall*.
5. Where tenant spaces are supplied by the same system, they shall be independently controlled.

Exception: An *automatic sprinkler system* shall not be required in spaces or areas of *open parking garages* separated from the *covered or open mall building* in accordance with Section 402.4.2.3 and constructed in accordance with Section 406.5.

402.6 Interior finishes and features. Interior finishes within the *mall* and installations within the *mall* shall comply with Sections 402.6.1 through 402.6.4.

402.6.1 Interior finish. *Interior wall* and *ceiling finishes* within the *mall* of a *covered mall building* and within the *exits* of *covered or open mall buildings* shall have a minimum *flame spread index* and smoke-developed index of Class B in accordance with Chapter 8. *Interior floor finishes* shall meet the requirements of Section 804.

402.6.2 Kiosks. Kiosks and similar structures (temporary or permanent) located within the *mall* of a *covered mall building* or within the perimeter line of an *open mall building* shall meet the following requirements:

1. Combustible kiosks or other structures shall not be located within a *covered* or *open mall* unless constructed of any of the following materials:
   1.1. *Fire-retardant-treated* wood complying with Section 2303.2.
   1.2. Foam plastics having a maximum heat release rate not greater than 100 kW (105 Btu/h) when tested in accordance with the exhibit booth protocol in UL 1975 or when tested in accordance with NFPA 289 using the 20 kW ignition source.
   1.3. Aluminum composite material (ACM) meeting the requirements of Class A *interior finish* in accordance with Chapter 8 when tested as an assembly in the maximum thickness intended.
2. Kiosks or similar structures located within the *mall* shall be provided with *approved automatic sprinkler system* and detection devices.
3. The horizontal separation between kiosks or groupings thereof and other structures within the *mall* shall be not less than 20 feet (6096 mm).
4. Each kiosk or similar structure or groupings thereof shall have an area not greater than 300 square feet (28 m^2).

402.6.3 Children's play structures. Children's play structures located within the *mall* of a *covered mall building* or within the perimeter line of an *open mall building* shall comply with Section 424. The horizontal separation between children's play structures, kiosks and similar structures within the *mall* shall be not less than 20 feet (6096 mm).

402.6.4 Plastic signs. Plastic signs affixed to the storefront of any tenant space facing a *mall* or *open mall* shall be limited as specified in Sections 402.6.4.1 through 402.6.4.5.

402.6.4.1 Area. Plastic signs shall be not more than 20 percent of the wall area facing the *mall*.

402.6.4.2 Height and width. Plastic signs shall be not greater than 36 inches (914 mm) in height, except that if the sign is vertical, the height shall be not greater than 96 inches (2438 mm) and the width shall be not greater than 36 inches (914 mm).

402.6.4.3 Location. Plastic signs shall be located not less than 18 inches (457 mm) from adjacent tenants.

402.6.4.4 Plastics other than foam plastics. Plastics other than foam plastics used in signs shall be light-transmitting plastics complying with Section 2606.4 or shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929, and a *flame spread index* not greater than 75 and smoke-developed index not greater than 450 when tested in the manner intended for use in accordance with ASTM E 84 or UL 723 or meet the acceptance criteria of Section 803.1.2.1 when tested in accordance with NFPA 286.

402.6.4.4.1 Encasement. Edges and backs of plastic signs in the *mall* shall be fully encased in metal.

402.6.4.5 Foam plastics. Foam plastics used in signs shall have flame-retardant characteristics such that the sign has a maximum heat-release rate of 150 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289 using the 20 kW ignition source, and the foam plastics shall have the physical characteristics specified in this section. Foam plastics used in signs installed in accordance with Section 402.6.4 shall not be required to comply with the *flame spread* and smoke-developed indices specified in Section 2603.3.

402.6.4.5.1 Density. The density of foam plastics used in signs shall be not less than 20 pounds per cubic foot (pcf) (320 kg/ m^3).

402.6.4.5.2 Thickness. The thickness of foam plastic signs shall not be greater than $^1/_2$ inch (12.7 mm).

[F] 402.7 Emergency systems. *Covered and open mall buildings, anchor buildings* and associated parking garages shall be provided with emergency systems complying with Sections 402.7.1 through 402.7.5.

[F] 402.7.1 Standpipe system. *Covered and open mall buildings* shall be equipped throughout with a standpipe system as required by Section 905.3.3.

[F] 402.7.2 Smoke control. Where a *covered mall building* contains an *atrium*, a smoke control system shall be provided in accordance with Section 404.5.

Exception: A smoke control system is not required in *covered mall buildings* where an *atrium* connects only two stories.

[F] 402.7.3 Standby power. *Covered mall buildings* greater than 50,000 square feet (4645 m^2) in area and *open mall buildings* greater than 50,000 square feet (4645 m^2) within the established perimeter line shall be provided with standby power systems that are capable of operating the *emergency voice/alarm communication system*.

[F] 402.7.4 Emergency voice/alarm communication system. Where the total floor area is greater than 50,000 square feet (4645 m^2) within either a *covered mall building* or within the perimeter line of an *open mall building*, an *emergency voice/alarm communication system* shall be provided.

Emergency voice/alarm communication systems serving a *mall*, required or otherwise, shall be accessible to the fire department. The systems shall be provided in accordance with Section 907.5.2.2.

[F] 402.7.5 Fire department access to equipment. Rooms or areas containing controls for air-conditioning systems, *automatic fire-extinguishing systems*, *automatic sprinkler systems* or other detection, suppression or control elements shall be identified for use by the fire department.

402.8 Means of egress. *Covered mall buildings*, *open mall buildings* and each tenant space within a mall building shall be provided with *means of egress* as required by this section and this code. Where there is a conflict between the requirements of this code and the requirements of Sections 402.8.1 through 402.8.8, the requirements of Sections 402.8.1 through 402.8.8 shall apply.

402.8.1 Mall width. For the purpose of providing required egress, *malls* are permitted to be considered as *corridors* but need not comply with the requirements of Section 1005.1 of this code where the width of the *mall* is as specified in this section.

402.8.1.1 Minimum width. The aggregate clear egress width of the *mall* in either a *covered or open mall building* shall be not less than 20 feet (6096 mm). The *mall* width shall be sufficient to accommodate the *occupant load* served. No portion of the minimum required aggregate egress width shall be less than 10 feet (3048 mm) measured to a height of 8 feet (2438 mm) between any projection of a tenant space bordering the *mall* and the nearest kiosk, vending machine, bench, display opening, *food court* or other obstruction to *means of egress* travel.

402.8.2 Determination of occupant load. The *occupant load* permitted in any individual tenant space in a *covered or open mall building* shall be determined as required by this code. *Means of egress* requirements for individual tenant spaces shall be based on the *occupant load* thus determined.

402.8.2.1 Occupant formula. In determining required *means of egress* of the *mall*, the number of occupants for whom *means of egress* are to be provided shall be based on *gross leasable area* of the *covered or open mall building* (excluding *anchor buildings*) and the *occupant load* factor as determined by Equation 4-1.

$$OLF = (0.00007)\,(GLA) + 25 \qquad \textbf{(Equation 4-1)}$$

where:

OLF= The *occupant load* factor (square feet per person).

GLA= The *gross leasable area* (square feet).

Exception: Tenant spaces attached to a *covered or open mall building* but with a *means of egress* system that is totally independent of the *open mall* of an *open mall building* or of a *covered mall building* shall not be considered as *gross leasable area* for determining the required *means of egress* for the *mall building*.

402.8.2.2 OLF range. The *occupant load* factor (*OLF*) is not required to be less than 30 and shall not exceed 50.

402.8.2.3 Anchor buildings. The *occupant load* of *anchor buildings* opening into the *mall* shall not be included in computing the total number of occupants for the *mall*.

402.8.2.4 Food courts. The *occupant load* of a *food court* shall be determined in accordance with Section 1004. For the purposes of determining the *means of egress* requirements for the *mall*, the *food court occupant load* shall be added to the *occupant load* of the *covered or open mall building* as calculated above.

402.8.3 Number of means of egress. Wherever the distance of travel to the *mall* from any location within a tenant space used by persons other than employees is greater than 75 feet (22 860 mm) or the tenant space has an *occupant load* of 50 or more, no fewer than two *means of egress* shall be provided.

402.8.4 Arrangements of means of egress. Assembly occupancies with an *occupant load* of 500 or more located within a *covered mall building* shall be so located such that their entrance will be immediately adjacent to a principal entrance to the *mall* and shall have not less than one-half of their required *means of egress* opening directly to the exterior of the *covered mall building*. Assembly occupancies located within the perimeter line of an *open mall building* shall be permitted to have their main *exit* open to the *open mall*.

402.8.4.1 Anchor building means of egress. Required *means of egress* for *anchor buildings* shall be provided independently from the *mall means of egress* system. The *occupant load* of *anchor buildings* opening into the *mall* shall not be included in determining *means of egress* requirements for the *mall*. The path of egress

travel of *malls* shall not exit through *anchor buildings*. *Malls* terminating at an *anchor building* where no other *means of egress* has been provided shall be considered as a dead-end *mall.*

402.8.5 Distance to exits. Within each individual tenant space in a *covered or open mall building*, the distance of travel from any point to an *exit* or entrance to the *mall* shall be not greater than 200 feet (60 960 mm).

The distance of travel from any point within a *mall* of a *covered mall building* to an *exit* shall be not greater than 200 feet (60 960 mm). The maximum distance of travel from any point within an *open mall* to the perimeter line of the *open mall building* shall be not greater than 200 feet (60 960 mm).

402.8.6 Access to exits. Where more than one *exit* is required, they shall be so arranged that it is possible to travel in either direction from any point in a *mall* of a *covered mall building* to separate *exits* or from any point in an *open mall* of an *open mall building* to two separate locations on the perimeter line, provided neither location is an exterior wall of an *anchor building* or parking garage. The width of an *exit passageway* or *corridor* from a *mall* shall be not less than 66 inches (1676 mm).

Exception: Access to exits are permitted by way of a dead-end *mall* which does not exceed a length equal to twice the width of the *mall* measured at the narrowest location within the dead-end portion of the *mall*.

402.8.6.1 Exit passageways. Where *exit passageways* provide a secondary *means of egress* from a tenant space, doorways to the *exit passageway* shall be protected by 1-hour *fire door assemblies* that are self- or automatic-closing by smoke detection in accordance with Section 716.5.9.3.

402.8.7 Service areas fronting on exit passageways. Mechanical rooms, electrical rooms, building service areas and service elevators are permitted to open directly into *exit passageways*, provided the *exit passageway* is separated from such rooms with not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire protection rating* of openings in the *fire barriers* shall be not less than 1 hour.

402.8.8 Security grilles and doors. Horizontal sliding or vertical security grilles or doors that are a part of a required *means of egress* shall conform to the following:

1. They shall remain in the full open position during the period of occupancy by the general public.
2. Doors or grilles shall not be brought to the closed position when there are 10 or more persons occupying spaces served by a single *exit* or 50 or more persons occupying spaces served by more than one *exit.*
3. The doors or grilles shall be openable from within without the use of any special knowledge or effort where the space is occupied.
4. Where two or more *exits* are required, not more than one-half of the *exits* shall be permitted to include either a horizontal sliding or vertical rolling grille or door.

SECTION 403
HIGH-RISE BUILDINGS

403.1 Applicability. *High-rise buildings* shall comply with Sections 403.2 through 403.6.

Exception: The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. Buildings with a Group A-5 occupancy in accordance with Section 303.6.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with a Group H-1, H-2 or H-3 occupancy in accordance with Section 415.

403.2 Construction. The construction of *high-rise buildings* shall comply with the provisions of Sections 403.2.1 through 403.2.4.

403.2.1 Reduction in fire-resistance rating. The *fire-resistance-rating* reductions listed in Sections 403.2.1.1 and 403.2.1.2 shall be allowed in buildings that have sprinkler control valves equipped with supervisory initiating devices and water-flow initiating devices for each floor.

403.2.1.1 Type of construction. The following reductions in the minimum *fire-resistance rating* of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 000 mm) in *building height*, the *fire-resistance rating* of the building elements in Type IA construction shall be permitted to be reduced to the minimum *fire-resistance ratings* for the building elements in Type IB.

   Exception: The required *fire-resistance rating* of columns supporting floors shall not be permitted to be reduced.
2. In other than Group F-1, M and S-1 occupancies, the *fire-resistance rating* of the building elements in Type IB construction shall be permitted to be reduced to the *fire-resistance ratings* in Type IIA.
3. The *building height* and *building area* limitations of a building containing building elements with reduced *fire-resistance ratings* shall be permitted to be the same as the building without such reductions.

403.2.1.2 Shaft enclosures. For buildings not greater than 420 feet (128 000 mm) in *building height*, the

required *fire-resistance rating* of the *fire barriers* enclosing vertical *shafts*, other than *exit enclosures* and elevator hoistway enclosures, is permitted to be reduced to 1 hour where automatic sprinklers are installed within the *shafts* at the top and at alternate floor levels.

403.2.2 Seismic considerations. For seismic considerations, see Chapter 16.

403.2.3 Structural integrity of interior exit stairways and elevator hoistway enclosures. For *high-rise buildings* of *Risk Category* III or IV in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 000 mm) in *building height*, enclosures for *interior exit stairways* and elevator hoistway enclosures shall comply with Sections 403.2.3.1 through 403.2.3.4.

403.2.3.1 Wall assembly. The wall assemblies making up the enclosures for *interior exit stairways* and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C 1629/C 1629M.

403.2.3.2 Wall assembly materials. The face of the wall assemblies making up the enclosures for *interior exit stairways* and elevator hoistway enclosures that are not exposed to the interior of the enclosures for *interior exit stairways* or elevator hoistway enclosure shall be constructed in accordance with one of the following methods:

1. The wall assembly shall incorporate no fewer than two layers of impact-resistant construction board each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C 1629/C 1629M.
2. The wall assembly shall incorporate no fewer than one layer of impact-resistant construction material that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C 1629/C 1629M.
3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C 1629/C 1629M.

403.2.3.3 Concrete and masonry walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.3.1 and 403.2.3.2.

403.2.3.4 Other wall assemblies. Any other wall assembly that provides impact resistance equivalent to that required by Sections 403.2.3.1 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C 1629/C 1629M, shall be permitted.

403.2.4 Sprayed fire-resistant materials (SFRM). The bond strength of the SFRM installed throughout the building shall be in accordance with Table 403.2.4.

TABLE 403.2.4
MINIMUM BOND STRENGTH

HEIGHT OF BUILDING[a]	SFRM MINIMUM BOND STRENGTH
Up to 420 feet	430 psf
Greater than 420 feet	1,000 psf

For SI: 1 foot = 304.8 mm, 1 pound per square foot (psf) = 0.0479 kW/m^2.
a. Above the lowest level of fire department vehicle access.

[F] 403.3 Automatic sprinkler system. Buildings and structures shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 903.3.5.2.

Exception: An *automatic sprinkler system* shall not be required in spaces or areas of:

1. *Open parking garages* in accordance with Section 406.5.
2. Telecommunications equipment buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic fire detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or not less than 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

[F] 403.3.1 Number of sprinkler risers and system design. Each sprinkler system zone in buildings that are more than 420 feet (128 000 mm) in *building height* shall be supplied by no fewer than two risers. Each riser shall supply sprinklers on alternate floors. If more than two risers are provided for a zone, sprinklers on adjacent floors shall not be supplied from the same riser.

[F] 403.3.1.1 Riser location. Sprinkler risers shall be placed in *interior exit stairways* and ramps that are remotely located in accordance with Section 1015.2.

[F] 403.3.2 Water supply to required fire pumps. Required fire pumps shall be supplied by connections to no fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

Exception: Two connections to the same main shall be permitted provided the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through no fewer than one of the connections.

[F] 403.3.3 Fire pump room. Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

[F] 403.4 Emergency systems. The detection, alarm and emergency systems of *high-rise buildings* shall comply with Sections 403.4.1 through 403.4.9.

[F] 403.4.1 Smoke detection. Smoke detection shall be provided in accordance with Section 907.2.13.1.

[F] 403.4.2 Fire alarm system. A *fire alarm* system shall be provided in accordance with Section 907.2.13.

[F] 403.4.3 Standpipe system. A *high-rise building* shall be equipped with a standpipe system as required by Section 905.3.

[F] 403.4.4 Emergency voice/alarm communication system. An *emergency voice/alarm communication system* shall be provided in accordance with Section 907.5.2.2.

[F] 403.4.5 Emergency responder radio coverage. Emergency responder radio coverage shall be provided in accordance with the *Florida Fire Prevention Code*.

[F] 403.4.6 Fire command. A *fire command center* complying with Section 911 shall be provided in a location *approved* by the fire department.

403.4.7 Smoke removal. To facilitate smoke removal in post-fire salvage and overhaul operations, buildings and structures shall be equipped with natural or mechanical *ventilation* for removal of products of combustion in accordance with one of the following:

1. Easily identifiable, manually operable windows or panels shall be distributed around the perimeter of each floor at not more than 50-foot (15 240 mm) intervals. The area of operable windows or panels shall be not less than 40 square feet (3.7 m^2) per 50 linear feet (15 240 mm) of perimeter.

   Exceptions:

   1. In Group R-1 occupancies, each *sleeping unit* or suite having an *exterior wall* shall be permitted to be provided with 2 square feet (0.19 m^2) of venting area in lieu of the area specified in Item 1.
   2. Windows shall be permitted to be fixed provided that glazing can be cleared by fire fighters.

2. Mechanical air-handling equipment providing one exhaust air change every 15 minutes for the area involved. Return and exhaust air shall be moved directly to the outside without recirculation to other portions of the building.
3. Any other *approved* design that will produce equivalent results.

[F] 403.4.8 Standby power. A standby power system complying with Chapter 27 and Section 3003 shall be provided for standby power loads specified in 403.4.8.2. Where elevators are provided in a *high-rise building* for *accessible means of egress*, fire service access or occupant self-evacuation, the standby power system shall also comply with Section 1007, 3007 or 3008, as applicable.

[F] 403.4.8.1 Special requirements for standby power systems. If the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. System supervision with manual start and transfer features shall be provided at the *fire command center*.

[F] 403.4.8.2 Standby power loads. The following are classified as standby power loads:

1. Power and lighting for the *fire command center* required by Section 403.4.6;
2. *Ventilation* and automatic fire detection equipment for *smokeproof enclosures*; and
3. Elevators.

[F] 403.4.9 Emergency power systems. An emergency power system complying with Chapter 27 shall be provided for emergency power loads specified in Section 403.4.9.1.

[F] 403.4.9.1 Emergency power loads. The following are classified as emergency power loads:

1. Exit signs and *means of egress* illumination required by Chapter 10;
2. Elevator car lighting;
3. *Emergency voice/alarm communications systems*;
4. Automatic fire detection systems;
5. *Fire alarm* systems; and
6. Electrically powered fire pumps.

403.5 Means of egress and evacuation. The *means of egress* in *high-rise buildings* shall comply with Sections 403.5.1 through 403.5.6.

403.5.1 Remoteness of interior exit stairways. Required *interior exit stairways* shall be separated by a distance not less than 30 feet (9144 mm) or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less. The distance shall be measured in a straight line between the nearest points of the *interior exit stairways*. In buildings with three or more *interior exit stairways*, no fewer than two of the *interior exit stairways* shall comply with this section. Interlocking or *scissor stairs* shall be counted as one *interior exit stairway*.

403.5.2 Additional exit stairway. For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *exit stairway* meeting the requirements of Sections 1009 and 1022 shall be provided in addition to the minimum number of *exits* required by Section 1021.1. The total width of any combination of remaining *exit stairways* with one *exit stairway* removed shall be not less than the total width required by Section 1005.1. *Scissor stairs* shall not be considered the additional *exit stairway* required by this section.

Exception: An additional *exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

403.5.3 Stairway door operation. *Stairway* doors other than the *exit discharge* doors shall be permitted to be locked from the *stairway* side. *Stairway* doors that are

locked from the *stairway* side shall be capable of being unlocked simultaneously without unlatching upon a signal from the *fire command center.*

403.5.3.1 Stairway communication system. A telephone or other two-way communications system connected to an *approved constantly attended station* shall be provided at not less than every fifth floor in each *stairway* where the doors to the *stairway* are locked.

403.5.4 Smokeproof enclosures. Every required *exit stairway* serving floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be a *smokeproof enclosure* in accordance with Sections 909.20 and 1022.10.

403.5.5 Luminous egress path markings. Luminous egress path markings shall be provided in accordance with Section 1024.

403.5.6 Emergency escape and rescue. Emergency escape and rescue openings required by Section 1029 are not required.

403.6 Elevators. Elevator installation and operation in *high-rise buildings* shall comply with Chapter 30 and Sections 403.6.1 and 403.6.2.

403.6.1 Fire service access elevator. In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, no fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3500 pounds (1588 kg).

403.6.2 Occupant evacuation elevators. Where installed in accordance with Section 3008, passenger elevators for general public use shall be permitted to be used for occupant self-evacuation.

SECTION 404
ATRIUMS

404.1 General. In other than Group H occupancies, and where permitted by Section 712.1.6, the provisions of Sections 404.1 through 404.9 shall apply to buildings or structures containing vertical openings defined as "Atriums."

404.1.1 Definition. The following term is defined in Chapter 2:

ATRIUM.

404.2 Use. The floor of the *atrium* shall not be used for other than low fire hazard uses and only *approved* materials and decorations in accordance with the *Florida Fire Prevention Code* shall be used in the *atrium* space.

Exception: The *atrium* floor area is permitted to be used for any *approved* use where the individual space is provided with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

[F] 404.3 Automatic sprinkler protection. An *approved automatic sprinkler system* shall be installed throughout the entire building.

Exceptions:

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Where the ceiling of the *atrium* is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the *atrium* is not required.

[F] 404.4 Fire alarm system. A *fire alarm* system shall be provided in accordance with Section 907.2.14.

404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.

Exception: Smoke control is not required for *atriums* that connect only two *stories*.

404.6 Enclosure of atriums. *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
   1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
   1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
   1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or automatic-closing.
2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a $^{3}/_{4}$-hour *fire protection rating* is provided.
3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of any three floors of the *atrium* provided such spaces are accounted for in the design of the smoke control system.

[F] 404.7 Standby power. Equipment required to provide smoke control shall be connected to a standby power system in accordance with Section 909.11.

404.8 Interior finish. The *interior finish* of walls and ceilings of the *atrium* shall be not less than Class B with no reduction in class for sprinkler protection.

404.9 Travel distance. In other than the lowest level of the *atrium*, where the required *means of egress* is through the *atrium* space, the portion of *exit access* travel distance within the *atrium* space shall be not greater than 200 feet (60 960 mm). The travel distance requirements for areas of buildings open to the *atrium* and where access to the *exits* is not through the *atrium*, shall comply with the requirements of Section 1016.

SECTION 405
UNDERGROUND BUILDINGS

405.1 General. The provisions of Sections 405.2 through 405.10 apply to building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the finished floor of the lowest *level of exit discharge*.

Exception: The provisions of Section 405 are not applicable to the following buildings or portions of buildings**:**

1. One- and two-family *dwellings*, sprinklered in accordance with Section 903.3.1.3.
2. Parking garages provided with *automatic sprinkler systems* in compliance with Section 405.3.
3. Fixed guideway transit systems.
4. *Grandstands*, *bleachers*, stadiums, arenas and similar facilities.
5. Where the lowest *story* is the only *story* that would qualify the building as an underground building and has an area not greater than 1,500 square feet (139 m^2) and has an *occupant load* less than 10.
6. Pumping stations and other similar mechanical spaces intended only for limited periodic use by service or maintenance personnel.

405.2 Construction requirements. The underground portion of the building shall be of Type I construction.

[F] 405.3 Automatic sprinkler system. The highest *level of exit discharge* serving the underground portions of the building and all levels below shall be equipped with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1. Water-flow switches and control valves shall be supervised in accordance with Section 903.4.

405.4 Compartmentation. Compartmentation shall be in accordance with Sections 405.4.1 through 405.4.3.

405.4.1 Number of compartments. A building having a floor level more than 60 feet (18 288 mm) below the finished floor of the lowest *level of exit discharge* shall be divided into no fewer than two compartments of approximately equal size. Such compartmentation shall extend through the highest *level of exit discharge* serving the underground portions of the building and all levels below.

Exception: The lowest *story* need not be compartmented where the area is not greater than 1,500 square feet (139 m^2) and has an *occupant load* of less than 10.

405.4.2 Smoke barrier penetration. The compartments shall be separated from each other by a *smoke barrier* in accordance with Section 709. Penetrations between the two compartments shall be limited to plumbing and electrical piping and conduit that are firestopped in accordance with Section 714. Doorways shall be protected by *fire door assemblies* that are automatic-closing by smoke detection in accordance with Section 716.5.9.3 and are installed in accordance with NFPA 105 and Section 716.5.3. Where provided, each compartment shall have an air supply and an exhaust system independent of the other compartments.

405.4.3 Elevators. Where elevators are provided, each compartment shall have direct access to an elevator. Where an elevator serves more than one compartment, an elevator lobby shall be provided and shall be separated from each compartment by a s*moke barrier* in accordance with Section 709. Doors shall be gasketed, have a drop sill and be automatic-closing by smoke detection in accordance with Section 716.5.9.3.

405.5 Smoke control system. A smoke control system shall be provided in accordance with Sections 405.5.1 and 405.5.2.

405.5.1 Control system. A smoke control system is required to control the migration of products of combustion in accordance with Section 909 and the provisions of this section. Smoke control shall restrict movement of smoke to the general area of fire origin and maintain *means of egress* in a usable condition.

405.5.2 Compartment smoke control system. Where compartmentation is required, each compartment shall have an independent smoke control system. The system shall be automatically activated and capable of manual operation in accordance with Sections 907.2.18 and 907.2.19.

[F] 405.6 Fire alarm systems. A *fire alarm* system shall be provided where required by Sections 907.2.18 and 907.2.19.

405.7 Means of egress. *Means of egress* shall be in accordance with Sections 405.7.1 and 405.7.2.

405.7.1 Number of exits. Each floor level shall be provided with no fewer than two *exits*. Where compartmentation is required by Section 405.4, each compartment shall have no fewer than one *exit* and shall also have no fewer than one *exit access* doorway into the adjoining compartment.

405.7.2 Smokeproof enclosure. Every required *stairway* serving floor levels more than 30 feet (9144 mm) below the finished floor of its *level of exit discharge* shall comply with the requirements for a *smokeproof enclosure* as provided in Section 1022.10.

[F] 405.8 Standby power. A standby power system complying with Chapter 27 shall be provided standby power loads specified in Section 405.8.1.

[F] 405.8.1 Standby power loads. The following loads are classified as standby power loads:

1. Smoke control system.

2. *Ventilation* and automatic fire detection equipment for *smokeproof enclosures.*

3. Fire pumps.

Standby power shall be provided for elevators in accordance with Section 3003.

[F] 405.8.2 Pick-up time. The standby power system shall pick up its connected loads within 60 seconds of failure of the normal power supply.

[F] 405.9 Emergency power. An emergency power system complying with Chapter 27 shall be provided for emergency power loads specified in Section 405.9.1.

[F] 405.9.1 Emergency power loads. The following loads are classified as emergency power loads:

1. *Emergency voice/alarm communications systems*.
2. *Fire alarm* systems.
3. Automatic fire detection systems.
4. Elevator car lighting.
5. *Means of egress* and exit sign illumination as required by Chapter 10.

[F] 405.10 Standpipe system. The underground building shall be equipped throughout with a standpipe system in accordance with Section 905.

SECTION 406
MOTOR-VEHICLE-RELATED OCCUPANCIES

*Section 406 has been completely reorganized from the 2010 code; therefore, the * and ** margin indicators have not been included for clarity.*

406.1 General. Motor-vehicle-related occupancies shall comply with Sections 406.1 through 406.8.

406.2 Definitions. The following terms are defined in Chapter 2:

MECHANICAL-ACCESS OPEN PARKING GARAGES.

OPEN PARKING GARAGE.

RAMP-ACCESS OPEN PARKING GARAGES.

406.3 Private garages and carports. Private garages and carports shall comply with Sections 406.3.1 through 406.3.5.

406.3.1 Classification. Buildings or parts of buildings classified as Group U occupancies because of the use or character of the occupancy shall be not greater than 1,000 square feet (93 m^2) in area or one *story* in height except as provided in Section 406.3.2. Any building or portion thereof that exceeds the limitations specified in this section shall be classified in the occupancy group other than Group U that it most nearly resembles.

406.3.2 Area increase. Group U occupancies used for the storage of private or pleasure-type motor vehicles where no repair work is completed or fuel is dispensed are permitted to be 3,000 square feet (279 m^2) where the following provisions are met:

1. For a mixed occupancy building, the *exterior wall* and opening protection for the Group U portion of the building shall be as required for the major occupancy of the building. For such a mixed occupancy building, the allowable floor area of the building shall be as permitted for the major occupancy contained therein.
2. For a building containing only a Group U occupancy, the *exterior wall* shall not be required to have a *fire-resistance rating* and the area of openings shall not be limited where the *fire separation distance* is 5 feet (1524 mm) or more.

More than one 3,000-square-foot (279 m^2) Group U occupancy shall be permitted to be in the same structure, provided each 3,000-square-foot (279 m^2) area is separated by *fire walls* complying with Section 706.

406.3.3 Garages and carports. Carports shall be open on no fewer than two sides. Carport floor surfaces shall be of *approved* noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages.

Exception: Asphalt surfaces shall be permitted at ground level in carports.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

406.3.4 Separation. Separations shall comply with the following:

1. The private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than $^1/_2$ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a $^5/_8$-inch (15.9 mm) Type X gypsum board or equivalent and $^1/_2$-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than $1^3/_8$ inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be *self-closing* and self-latching.
2. Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit*, including its *attic* area, from the garage shall be constructed of sheet steel of not less than 0.019 inches (0.48 mm), in thickness, and shall have no openings into the garage.
3. A separation is not required between a Group R-3 and U carport, provided the carport is entirely open on two or more sides and there are not enclosed areas above.

406.3.5 Automatic garage door openers. Automatic garage door openers, if provided, shall be *listed* in accordance with UL 325.

406.4 Public parking garages. Parking garages other than private parking garages, shall be classified as public parking garages and shall comply with the provisions of Sections 406.4.2 through 406.4.8 and shall be classified as either an *open parking garage* or an enclosed parking garage. *Open parking garages* shall also comply with Section 406.5. Enclosed parking garages shall also comply with Section 406.6. See Section 510 for special provisions for parking garages.

406.4.1 Clear height. The clear height of each floor level in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Vehicle and pedestrian areas accommodating van-accessible parking shall comply with the *Florida Building Code, Accessibility.*

406.4.2 Guards. Guards shall be provided in accordance with Section 1013. Guards serving as *vehicle barriers* shall comply with Sections 406.4.3 and 1013.

406.4.3 Vehicle barriers. *Vehicle barriers* not less than 2 feet 9 inches (835 mm) in height shall be placed at the ends of drive lanes, and at the end of parking spaces where the vertical distance to the ground or surface directly below is greater than 1 foot (305 mm). *Vehicle barriers* shall comply with the loading requirements of Section 1607.8.3.

Exception: *Vehicle barriers* are not required in vehicle storage compartments in a mechanical access parking garage.

406.4.4 Ramps. Vehicle ramps shall not be considered as required *exits* unless pedestrian facilities are provided. Vehicle ramps that are utilized for vertical circulation as well as for parking shall not exceed a slope of 1:15 (6.67 percent).

406.4.5 Floor surface. Parking surfaces shall be of concrete or similar noncombustible and nonabsorbent materials.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

Exceptions:

1. Asphalt parking surfaces shall be permitted at ground level.
2. Floors of Group S-2 parking garages shall not be required to have a sloped surface.

406.4.6 Mixed occupancy separation. Parking garages shall be separated from other occupancies in accordance with Section 508.1.

406.4.7 Special hazards. Connection of a parking garage with any room in which there is a fuel-fired appliance shall be by means of a vestibule providing a two-doorway separation.

Exception: A single door shall be allowed provided the sources of ignition in the appliance are not less than 18 inches (457 mm) above the floor.

406.4.8 Attached to rooms. Openings from a parking garage directly into a room used for sleeping purposes shall not be permitted.

406.5 Open parking garages. *Open parking garages* shall comply with Sections 406.5.1 through 406.5.11.

406.5.1 Construction. *Open parking garages* shall be of Type I, II or IV construction. *Open parking garages* shall meet the design requirements of Chapter 16. For *vehicle barriers*, see Section 406.4.3.

406.5.2 Openings. For natural *ventilation* purposes, the exterior side of the structure shall have uniformly distributed openings on two or more sides. The area of such openings in *exterior walls* on a tier shall be not less than 20 percent of the total perimeter wall area of each tier. The aggregate length of the openings considered to be providing natural *ventilation* shall be not less than 40 percent of the perimeter of the tier. Interior walls shall be not less than 20 percent open with uniformly distributed openings.

Exception: Openings are not required to be distributed over 40 percent of the building perimeter where the required openings are uniformly distributed over two opposing sides of the building.

406.5.2.1 Openings below grade. Where openings below grade provide required natural *ventilation*, the outside horizontal clear space shall be one and one-half times the depth of the opening. The width of the hori-

TABLE 406.5.4
OPEN PARKING GARAGES AREA AND HEIGHT

TYPE OF CONSTRUCTION	AREA PER TIER (square feet)	HEIGHT (in tiers)		
		Ramp access	Mechanical access	
			Automatic sprinkler system	
			No	Yes
IA	Unlimited	Unlimited	Unlimited	Unlimited
IB	Unlimited	12 tiers	12 tiers	18 tiers
IIA	50,000	10 tiers	10 tiers	15 tiers
IIB	50,000	8 tiers	8 tiers	12 tiers
IV	50,000	4 tiers	4 tiers	4 tiers

For SI: 1 square foot = 0.0929 m^2.

zontal clear space shall be maintained from grade down to the bottom of the lowest required opening.

406.5.3 Uses. Mixed uses shall be allowed in the same building as an *open parking garage* subject to the provisions of Sections 402.4.2.3, 406.5.11, 508.1, 510.3, 510.4 and 510.7.

406.5.4 Area and height. Area and height of *open parking garages* shall be limited as set forth in Chapter 5 for Group S-2 occupancies and as further provided for in Section 508.1.

406.5.4.1 Single use. Where the *open parking garage* is used exclusively for the parking or storage of private motor vehicles, with no other uses in the building, the area and height shall be permitted to comply with Table 406.5.4, along with increases allowed by Section 406.5.5.

Exception: The grade-level tier is permitted to contain an office, waiting and toilet rooms having a total combined area of not more than 1,000 square feet (93 m^2). Such area need not be separated from the *open parking garage*.

In *open parking garages* having a spiral or sloping floor, the horizontal projection of the structure at any cross section shall not exceed the allowable area per parking tier. In the case of an *open parking garage* having a continuous spiral floor, each 9 feet 6 inches (2896 mm) of height, or portion thereof, shall be considered a tier.

The clear height of a parking tier shall be not less than 7 feet (2134 mm), except that a lower clear height is permitted in mechanical-access *open parking garages* where *approved* by the *building official*.

406.5.5 Area and height increases. The allowable area and height of *open parking garages* shall be increased in accordance with the provisions of this section. Garages with sides open on three-fourths of the building's perimeter are permitted to be increased by 25 percent in area and one tier in height. Garages with sides open around the entire building's perimeter are permitted to be increased by 50 percent in area and one tier in height. For a side to be considered open under the above provisions, the total area of openings along the side shall not be less than 50 percent of the interior area of the side at each tier and such openings shall be equally distributed along the length of the tier. For purposes of calculating the interior area of the side, the height shall not exceed 7 feet (2134 mm).

Allowable tier areas in Table 406.5.4 shall be increased for *open parking garages* constructed to heights less than the table maximum. The gross tier area of the garage shall not exceed that permitted for the higher structure. No fewer than three sides of each such larger tier shall have continuous horizontal openings not less than 30 inches (762 mm) in clear height extending for not less than 80 percent of the length of the sides and no part of such larger tier shall be more than 200 feet (60 960 mm) horizontally from such an opening. In addition, each such opening shall face a street or *yard* accessible to a street with a width of not less than 30 feet (9144 mm) for the full length of the opening, and standpipes shall be provided in each such tier.

Open parking garages of Type II construction, with all sides open, shall be unlimited in allowable area where the *building height* does not exceed 75 feet (22 860 mm). For a side to be considered open, the total area of openings along the side shall not be less than 50 percent of the interior area of the side at each tier and such openings shall be equally distributed along the length of the tier. For purposes of calculating the interior area of the side, the height shall not exceed 7 feet (2134 mm). All portions of tiers shall be within 200 feet (60 960 mm) horizontally from such openings or other natural *ventilation* openings as defined in Section 406.5.2. These openings shall be permitted to be provided in *courts* with a minimum dimension of 20 feet (6096 mm) for the full width of the openings.

406.5.6 Fire separation distance. *Exterior walls* and openings in *exterior walls* shall comply with Tables 601 and 602. The distance to an adjacent *lot line* shall be determined in accordance with Table 602 and Section 705.

406.5.7 Means of egress. Where persons other than parking attendants are permitted, *open parking garages* shall meet the *means of egress* requirements of Chapter 10. Where no persons other than parking attendants are permitted, there shall be no fewer than two *exit stairways.* Each *exit stairway* shall be not less than 36 inches (914 mm) in width. Lifts shall be permitted to be installed for use of employees only, provided they are completely enclosed by noncombustible materials.

[F] 406.5.8 Standpipe system. An *open parking garage* shall be equipped with a standpipe system as required by Section 905.3.

406.5.9 Enclosure of vertical openings. Enclosure shall not be required for vertical openings except as specified in Section 406.5.7.

406.5.10 Ventilation. *Ventilation*, other than the percentage of openings specified in Section 406.5.2, shall not be required.

406.5.11 Prohibitions. The following uses and alterations are not permitted:

1. Vehicle repair work.
2. Parking of buses, trucks and similar vehicles.
3. Partial or complete closing of required openings in exterior walls by tarpaulins or any other means.
4. Dispensing of fuel.

406.6 Enclosed parking garages. Enclosed parking garages shall comply with Sections 406.6.1 through 406.6.3.

406.6.1 Heights and areas. Enclosed vehicle parking garages and portions thereof that do not meet the definition of *open parking garages* shall be limited to the allowable heights and areas specified in Table 503 as modified by Sections 504, 506 and 507. Roof parking is permitted.

406.6.2 Ventilation. A mechanical *ventilation* system shall be provided in accordance with the *Florida Building Code, Mechanical*.

[F] 406.6.3 Automatic sprinkler system. An enclosed parking garage shall be equipped with an *automatic sprinkler system* in accordance with Section 903.2.10.

406.7 Motor fuel-dispensing facilities. Motor fuel-dispensing facilities shall comply with the *Florida Fire Prevention Code* and Sections 406.7.1 and 406.7.2.

406.7.1 Vehicle fueling pad. The vehicle shall be fueled on noncoated concrete or other *approved* paving material having a resistance not exceeding 1 megohm as determined by the methodology in EN 1081.

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, wood of Type IV sizes or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or wood of Type IV sizes;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smoke-developed index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m^2). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m^2).

406.7.2.1 Canopies used to support gaseous hydrogen systems. *Canopies* that are used to shelter dispensing operations where flammable compressed gases are located on the roof of the *canopy* shall be in accordance with the following:

1. The *canopy* shall meet or exceed Type I construction requirements.
2. Operations located under *canopies* shall be limited to refueling only.
3. The *canopy* shall be constructed in a manner that prevents the accumulation of hydrogen gas.

406.8 Repair garages. Repair garages shall be constructed in accordance with the *Florida Fire Prevention Code* and Sections 406.8.1 through 406.8.6. This occupancy shall not include motor fuel-dispensing facilities, as regulated in Section 406.7.

406.8.1 Mixed uses. Mixed uses shall be allowed in the same building as a repair garage subject to the provisions of Section 508.1.

406.8.2 Ventilation. Repair garages shall be mechanically ventilated in accordance with the *Florida Building Code, Mechanical*. The *ventilation* system shall be controlled at the entrance to the garage.

406.8.3 Floor surface. Repair garage floors shall be of concrete or similar noncombustible and nonabsorbent materials.

Exception: Slip-resistant, nonabsorbent, *interior floor finishes* having a critical radiant flux not more than 0.45 W/cm^2, as determined by NFPA 253, shall be permitted.

406.8.4 Heating equipment. Heating equipment shall be installed in accordance with the *Florida Building Code, Mechanical*.

[F] 406.8.5 Gas detection system. Repair garages used for the repair of vehicles fueled by nonodorized gases such as hydrogen and nonodorized LNG, shall be provided with a flammable gas detection system.

[F] 406.8.5.1 System design. The flammable gas detection system shall be *listed* or *approved* and shall be calibrated to the types of fuels or gases used by vehicles to be repaired. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammable limit (LFL). Gas detection shall be provided in lubrication or chassis service pits of repair garages used for repairing nonodorized LNG-fueled vehicles.

[F] 406.8.5.1.1 Gas detection system components. Gas detection system control units shall be *listed* and *labeled* in accordance with UL 864 or UL 2017. Gas detectors shall be *listed* and *labeled* in accordance with UL 2075 for use with the gases and vapors being detected.

[F] 406.8.5.2 Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals in the repair garage.
2. Deactivation of all heating systems located in the repair garage.
3. Activation of the mechanical *ventilation* system, where the system is interlocked with gas detection.

[F] 406.8.5.3 Failure of the gas detection system. Failure of the gas detection system shall result in the deactivation of the heating system, activation of the mechanical *ventilation* system where the system is inter-locked with the gas detection system and cause a trouble signal to sound in an *approved* location.

[F] 406.8.6 Automatic sprinkler system. A repair garage shall be equipped with an *automatic sprinkler system* in accordance with Section 903.2.9.1.

SECTION 407
GROUP I-2

407.1 General. Occupancies in Group I-2 shall comply with the provisions of Sections 407.1 through 407.10 and other applicable provisions of this code.

407.2 Corridors continuity and separation. *Corridors* in occupancies in Group I-2 shall be continuous to the *exits* and shall be separated from other areas in accordance with Section 407.3 except spaces conforming to Sections 407.2.1 through 407.2.4.

407.2.1 Waiting and similar areas. Waiting areas and similar spaces constructed as required for *corridors* shall be permitted to be open to a *corridor*, only where all of the following criteria are met:

1. The spaces are not occupied as care recipient's sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses.
2. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
3. The *corridors* onto which the spaces open, in the same *smoke compartment*, are protected by an automatic fire detection system installed in accordance with Section 907, or the *smoke compartment* in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
4. The space is arranged so as not to obstruct access to the required *exits*.

407.2.2 Care providers' stations. Spaces for care providers', supervisory staff, doctors' and nurses' charting, communications and related clerical areas shall be permitted to be open to the *corridor*, where such spaces are constructed as required for *corridors.*

407.2.3 Psychiatric treatment areas. Areas wherein psychiatric care recipients who are not capable of self-preservation are housed, or group meeting or multipurpose therapeutic spaces other than incidental uses in accordance with Section 509, under continuous supervision by facility staff, shall be permitted to be open to the *corridor*, where the following criteria are met:

1. Each area does not exceed 1,500 square feet (140 m^2).
2. The area is located to permit supervision by the facility staff.
3. The area is arranged so as not to obstruct any access to the required *exits*.
4. The area is equipped with an automatic fire detection system installed in accordance with Section 907.2.
5. Not more than one such space is permitted in any one *smoke compartment*.
6. The walls and ceilings of the space are constructed as required for *corridors*.

407.2.4 Gift shops. Gift shops and associated storage that are less than 500 square feet (455 m^2) in area shall be permitted to be open to the *corridor* where such spaces are constructed as required for *corridors.*

407.3 Corridor wall construction. *Corridor* walls shall be constructed as smoke partitions in accordance with Section 710.

407.3.1 Corridor doors. *Corridor* doors, other than those in a wall required to be rated by Section 509.4 or for the enclosure of a vertical opening or an *exit*, shall not have a required *fire protection rating* and shall not be required to be equipped with *self-closing* or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. Roller latches are not permitted. Other doors shall conform to Section 716.5.

407.4 Means of egress. Group I-2 occupancies shall be provided with means of egress complying with Chapter 10 and Sections 407.4.1 through 407.4.3. **

407.4.1 Direct access to a corridor. Habitable rooms in Group I-2 occupancies shall have an *exit access* door leading directly to a *corridor*.

Exceptions:

1. Rooms with *exit* doors opening directly to the outside at ground level.
2. Rooms arranged as *care suites* complying with Section 407.4.3.

407.4.1.1 Locking devices. Locking devices that restrict access to a care recipient's room from the *corridor* and that are operable only by staff from the *corridor* side shall not restrict the *means of egress* from the care recipient's room.

Exceptions:

1. This section shall not apply to rooms in psychiatric treatment and similar care areas.
2. Locking arrangements in accordance with Section 1008.1.9.6.

407.4.2 Travel distance. The travel distance between any point in a Group I-2 occupancy sleeping room and an *exit access* door in that room shall be not greater than 50 feet (15 240 mm).

407.4.3 Group I-2 care suites. *Care suites* in Group I-2 shall comply with Section 407.4.3.1 through 407.4.3.4 and either Section 407.4.3.5 or 407.4.3.6.

407.4.3.1 Exit access through care suites. *Exit access* from all other portions of a building not classified as a *care suite* shall not pass through a *care suite*. In a *care suite* required to have more than one *exit*, one *exit access* is permitted to pass through an adjacent *care suite* provided all of the other requirements of Sections 407.4 and 1014.2 are satisfied.

407.4.3.2 Separation. *Care suites* shall be separated from other portions of the building by a smoke partition complying with Section 710.

407.4.3.3 One intervening room. For rooms other than sleeping rooms located within a *care suite*, *exit access* travel from the *care suite* shall be permitted through one intervening room where the travel distance to the *exit access* door from the *care suite* is not greater than 100 feet (30 480 mm).

407.4.3.4 Two intervening rooms. For rooms other than sleeping rooms located within a *care suite*, *exit access* travel within the *care suite* shall be permitted through two intervening rooms where the travel distance to the *exit access* door from the *care suite* is not greater than 50 feet (15 240 mm).

407.4.3.5 Care suites containing sleeping room areas. Sleeping rooms shall be permitted to be grouped into *care suites* with one intervening room if one of the following conditions is met:

1. The intervening room within the *care suite* is not used as an *exit access* for more than eight care recipient beds.
2. The arrangement of the *care suite* allows for direct and constant visual supervision by care providers.

407.4.3.5.1 Area. *Care suites* containing sleeping rooms shall be not greater than 5,000 square feet (465 m^2) in area.

407.4.3.5.2 Exit access. Any sleeping room, or any *care suite* that contains sleeping rooms, of more than 1,000 square feet (93 m^2) shall have no fewer than two *exit access* doors from the *care suite* located in accordance with Section 1015.2.

407.4.3.5.3 Travel distance. The travel distance between any point in a *care suite* containing sleeping rooms and an *exit access* door from that *care suite* shall be not greater than 100 feet (30 480 mm).

407.4.3.6 Care suites not containing sleeping rooms. Areas not containing sleeping rooms, but only treatment areas and the associated rooms, spaces or circulation space shall be permitted to be grouped into *care suites* and shall conform to the limitations in Section 407.4.3.6.1 and 407.4.3.6.2.

407.4.3.6.1 Area. *Care suites* of rooms, other than sleeping rooms, shall have an area not greater than 10,000 square feet (929 m^2).

407.4.3.6.2 Exit access. *Care suites*, other than sleeping rooms, with an area of more than 2,500 square feet (232 m^2) shall have no fewer than two *exit access* doors from the *care suite* located in accordance with Section 1015.2.

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m^2) and the travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

407.5.1 Refuge area. Refuge areas shall be provided within each *smoke compartment*. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining *smoke compartment*. Where a *smoke compartment* is adjoined by two or more *smoke compartments*, the minimum area of the refuge area shall accommodate the largest *occupant load* of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m^2) for each care recipient confined to bed or litter.
2. Not less than 6 square feet (0.56 m^2) for each ambulatory care recipient not confined to bed or litter and for other occupants.

Areas or spaces permitted to be included in the calculation of refuge area are *corridors*, sleeping areas, treatment rooms, lounge or dining areas and other low-hazard areas.

407.5.2 Independent egress. A *means of egress* shall be provided from each *smoke compartment* created by *smoke barriers* without having to return through the smoke compartment from which *means of egress* originated.

407.5.3 Horizontal assemblies. *Horizontal assemblies* supporting *smoke barriers* required by this section shall be designed to resist the movement of smoke and shall comply with Section 711.9.

[F] 407.6 Automatic sprinkler system. *Smoke compartments* containing sleeping rooms shall be equipped throughout with an *automatic sprinkler* system in accordance with Sections 903.3.1.1 and 903.3.2**.**

[F] 407.7 Fire alarm system. A *fire alarm* system shall be provided in accordance with Section 907.2.6.

[F] 407.8 Automatic fire detection. *Corridors* in *nursing homes*, long-term care facilities, *detoxification facilities* and spaces permitted to be open to the *corridors* by Section 407.2 shall be equipped with an automatic fire detection system. Hospitals shall be equipped with smoke detection as required in Section 407.2.

Exceptions:

1. *Corridor* smoke detection is not required where sleeping rooms are provided with *smoke detectors* that comply with UL 268. Such detectors shall provide a visual display on the *corridor* side of each sleeping room and an audible and visual alarm at the care provider's station attending each unit.
2. *Corridor* smoke detection is not required where sleeping room doors are equipped with automatic door-closing devices with integral *smoke detectors* on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

407.9 Secured yards. Grounds are permitted to be fenced and gates therein are permitted to be equipped with locks, provided that safe dispersal areas having 30 net square feet (2.8 m^2) for bed and litter care recipients and 6 net square feet (0.56 m^2) for ambulatory care recipients and other occupants are located between the building and the fence. Such provided safe dispersal area shall be located not less than 50 feet (15 240 mm) from the building they serve.

407.10 Hyperbaric facilities. Hyperbaric facilities in Group I-2 occupancies shall meet the requirements contained in Chapter 20 of NFPA 99.

SECTION 408
GROUP I-3

408.1 General. Occupancies in Group I-3 shall comply with the provisions of Sections 408.1 through 408.11 and other applicable provisions of this code (see Section 308.5).

408.1.1 Definitions. The following terms are defined in Chapter 2:

CELL.

CELL TIER.

HOUSING UNIT.

SALLYPORT.

408.2 Other occupancies. Buildings or portions of buildings in Group I-3 occupancies where security operations necessitate the locking of required *means of egress* shall be permitted to be classified as a different occupancy. Occupancies classified as other than Group I-3 shall meet the applicable requirements of this code for that occupancy provided provisions are made for the release of occupants at all times.

Means of egress from detention and correctional occupancies that traverse other use areas shall, as a minimum, conform to requirements for detention and correctional occupancies.

Exception: It is permissible to exit through a *horizontal exit* into other contiguous occupancies that do not conform to detention and correctional occupancy egress provisions but that do comply with requirements set forth in the appropriate occupancy, as long as the occupancy is not a Group H use.

408.3 Means of egress. Except as modified or as provided for in this section, the *means of egress* provisions of Chapter 10 shall apply.

408.3.1 Door width. Doors to resident *sleeping units* shall have a clear width of not less than 28 inches (711 mm).

408.3.2 Sliding doors. Where doors in a *means of egress* are of the horizontal-sliding type, the force to slide the door to its fully open position shall be not greater than 50 pounds (220 N) with a perpendicular force against the door of 50 pounds (220 N).

408.3.3 Guard tower doors. A hatch or trap door not less than 16 square feet (610 m^2) in area through the floor and having dimensions of not less than 2 feet (610 mm) in any direction shall be permitted to be used as a portion of the *means of egress* from guard towers.

408.3.4 Spiral stairways. *Spiral stairways* that conform to the requirements of Section 1009.12 are permitted for access to and between staff locations.

408.3.5 Ship ladders. Ship ladders shall be permitted for egress from control rooms or elevated facility observation rooms in accordance with Section 1009.14.

408.3.6 Exit discharge. *Exits* are permitted to discharge into a fenced or walled courtyard. Enclosed *yards* or *courts* shall be of a size to accommodate all occupants, be located not less than 50 feet (15 240 mm) from the building and have an area of not less than 15 square feet (1.4 m^2) per person.

408.3.7 Sallyports. A *sallyport* shall be permitted in a *means of egress* where there are provisions for continuous and unobstructed passage through the *sallyport* during an emergency egress condition.

408.3.8 Interior exit stairway and ramp construction. One *interior exit stairway* or *ramp* in each building shall be permitted to have glazing installed in doors and interior walls at each landing level providing access to the *interior exit stairway or ramp*, provided that the following conditions are met:

1. The *interior exit stairway or ramp* shall not serve more than four floor levels.
2. *Exit* doors shall be not less than $^3/_4$-hour *fire door assemblies* complying with Section 716.5
3. The total area of glazing at each floor level shall not exceed 5,000 square inches (3.2 m^2) and individual panels of glazing shall not exceed 1,296 square inches (0.84 m^2).
4. The glazing shall be protected on both sides by an *automatic sprinkler system*. The sprinkler system shall be designed to wet completely the entire surface of any glazing affected by fire when actuated.
5. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
6. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

408.4 Locks. Egress doors are permitted to be locked in accordance with the applicable use condition. Doors from a refuge area to the outside are permitted to be locked with a key in lieu of locking methods described in Section 408.4.1. The keys to unlock the exterior doors shall be available at all times and the locks shall be operable from both sides of the door.

408.4.1 Remote release. Remote release of locks on doors in a *means of egress* shall be provided with reliable means of operation, remote from the resident living areas, to

release locks on all required doors. In Occupancy Conditions 3 or 4, the arrangement, accessibility and security of the release mechanisms required for egress shall be such that with the minimum available staff at any time, the lock mechanisms are capable of being released within 2 minutes.

Exception: Provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required provided that not more than 10 locks are necessary to be unlocked in order to move occupants from one smoke compartment to a refuge area within 3 minutes. The opening of necessary locks shall be accomplished with not more than two separate keys.

408.4.2 Power-operated doors and locks. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door, and either emergency power or a remote mechanical operating release shall be provided.

Exception: Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.

408.4.3 Redundant operation. Remote release, mechanically operated sliding doors or remote release, mechanically operated locks shall be provided with a mechanically operated release mechanism at each door, or shall be provided with a redundant remote release control.

408.4.4 Relock capability. Doors remotely unlocked under emergency conditions shall not automatically relock when closed unless specific action is taken at the remote location to enable doors to relock.

408.5 Protection of vertical openings. Any vertical opening shall be protected by a *shaft enclosure* in accordance with Section 713, or shall be in accordance with Section 408.5.1.

408.5.1 Floor openings. Openings in floors within a *housing unit* are permitted without a *shaft enclosure*, provided all of the following conditions are met:

1. The entire normally occupied areas so interconnected are open and unobstructed so as to enable observation of the areas by supervisory personnel;
2. *Means of egress* capacity is sufficient for all occupants from all interconnected *cell tiers* and areas;
3. The height difference between the floor levels of the highest and lowest *cell tiers* shall not exceed 23 feet (7010 mm); and
4. Egress from any portion of the *cell tier* to an *exit* or *exit access* door shall not require travel on more than one additional floor level within the *housing unit.*

408.5.2 Shaft openings in communicating floor levels. Where a floor opening is permitted between communicating floor levels of a *housing unit* in accordance with Section 408.5.1, plumbing chases serving vertically staked individual *cells* contained with the *housing unit* shall be permitted without a *shaft enclosure*.

408.6 Smoke barrier. Occupancies in Group I-3 shall have *smoke barriers* complying with Sections 408.7 and 709 to divide every *story* occupied by residents for sleeping, or any other *story* having an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments.*

Exception: Spaces having a direct *exit* to one of the following, provided that the locking arrangement of the doors involved complies with the requirements for doors at the *smoke barrier* for the use condition involved:

1. A *public way*.
2. A building separated from the resident housing area by a 2-hour fire-resistance-rated assembly or 50 feet (15 240 mm) of open space.
3. A secured y*ard* or *court* having a holding space 50 feet (15 240 mm) from the housing area that provides 6 square feet (0.56 m^2) or more of refuge area per occupant, including residents, staff and visitors.

408.6.1 Smoke compartments. The number of residents in any *smoke compartment* shall be not more than 200. The travel distance to a door in a *smoke barrier* from any room door required as *exit access* shall be not greater than 150 feet (45 720 mm). The travel distance to a door in a *smoke barrier* from any point in a room shall be not greater than 200 feet (60 960 mm).

408.6.2 Refuge area. Not less than 6 net square feet (0.56 m^2) per occupant shall be provided on each side of each *smoke barrier* for the total number of occupants in adjoining *smoke compartments*. This space shall be readily available wherever the occupants are moved across the *smoke barrier* in a fire emergency.

408.6.3 Independent egress. A *means of egress* shall be provided from each *smoke compartment* created by *smoke barriers* without having to return through the *smoke compartment* from which *means of egress* originates.

408.7 Security glazing. In occupancies in Group I-3, windows and doors in 1-hour *fire barriers* constructed in accordance with Section 707, *fire partitions* constructed in accordance with Section 708 and *smoke barriers* constructed in accordance with Section 709 shall be permitted to have security glazing installed provided that the following conditions are met.

1. Individual panels of glazing shall not exceed 1,296 square inches (0.84 m^2).
2. The glazing shall be protected on both sides by an *automatic sprinkler system*. The sprinkler system shall be designed to, when actuated, wet completely the entire surface of any glazing affected by fire.
3. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
4. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

408.8 Subdivision of resident housing areas. Sleeping areas and any contiguous day room, group activity space or other common spaces where residents are housed shall be separated

from other spaces in accordance with Sections 408.8.1 through 408.8.4.

408.8.1 Occupancy Conditions 3 and 4. Each sleeping area in Occupancy Conditions 3 and 4 shall be separated from the adjacent common spaces by a smoke-tight partition where the travel distance from the sleeping area through the common space to the *corridor* exceeds 50 feet (15 240 mm).

408.8.2 Occupancy Condition 5. Each sleeping area in Occupancy Condition 5 shall be separated from adjacent sleeping areas, *corridors* and common spaces by a smoke-tight partition. Additionally, common spaces shall be separated from the *corridor* by a smoke-tight partition.

408.8.3 Openings in room face. The aggregate area of openings in a solid sleeping room face in Occupancy Conditions 2, 3, 4 and 5 shall not exceed 120 square inches (0.77 m^2). The aggregate area shall include all openings including door undercuts, food passes and grilles. Openings shall be not more than 36 inches (914 mm) above the floor. In Occupancy Condition 5, the openings shall be closeable from the room side.

408.8.4 Smoke-tight doors. Doors in openings in partitions required to be smoke tight by Section 408.8 shall be substantial doors, of construction that will resist the passage of smoke. Latches and door closures are not required on *cell* doors.

408.9 Windowless buildings. For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows. Windowless buildings shall be provided with an engineered smoke control system to provide a tenable environment for exiting from the *smoke compartment* in the area of fire origin in accordance with Section 909 for each windowless *smoke compartment.*

[F] 408.10 Fire alarm system. A *fire alarm* system shall be provided in accordance with Section 907.2.6.3.

[F] 408.11 Automatic sprinkler system. Group I-3 occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.6.

SECTION 409
MOTION PICTURE PROJECTION ROOMS

409.1 General. The provisions of Sections 409.1 through 409.5 shall apply to rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40.

409.1.1 Projection room required. Every motion picture machine projecting film as mentioned within the scope of this section shall be enclosed in a projection room. Appurtenant electrical equipment, such as rheostats, transformers and generators, shall be within the projection room or in an adjacent room of equivalent construction.

409.2 Construction of projection rooms. Every projection room shall be of permanent construction consistent with the construction requirements for the type of building in which the projection room is located. Openings are not required to be protected.

The room shall have a floor area of not less than 80 square feet (7.44 m^2) for a single machine and not less than 40 square feet (3.7 m^2) for each additional machine. Each motion picture projector, floodlight, spotlight or similar piece of equipment shall have a clear working space of not less than 30 inches by 30 inches (762 mm by 762 mm) on each side and at the rear thereof, but only one such space shall be required between two adjacent projectors. The projection room and the rooms appurtenant thereto shall have a ceiling height of not less than 7 feet 6 inches (2286 mm). The aggregate of openings for projection equipment shall not exceed 25 percent of the area of the wall between the projection room and the auditorium. Openings shall be provided with glass or other *approved* material, so as to close completely the opening.

409.3 Projection room and equipment ventilation. *Ventilation* shall be provided in accordance with the *Florida Building Code, Mechanical*.

409.3.1 Supply air. Each projection room shall be provided with adequate air supply inlets so arranged as to provide well-distributed air throughout the room. Air inlet ducts shall provide an amount of air equivalent to the amount of air being exhausted by projection equipment. Air is permitted to be taken from the outside; from adjacent spaces within the building, provided the volume and infiltration rate is sufficient; or from the building air-conditioning system, provided it is so arranged as to provide sufficient air when other systems are not in operation.

409.3.2 Exhaust air. Projection rooms are permitted to be exhausted through the lamp exhaust system. The lamp exhaust system shall be positively interconnected with the lamp so that the lamp will not operate unless there is the required airflow. Exhaust air ducts shall terminate at the exterior of the building in such a location that the exhaust air cannot be readily recirculated into any air supply system. The projection room *ventilation* system is permitted to also serve appurtenant rooms, such as the generator and rewind rooms.

409.3.3 Projection machines. Each projection machine shall be provided with an exhaust duct that will draw air from each lamp and exhaust it directly to the outside of the building. The lamp exhaust is permitted to serve to exhaust air from the projection room to provide room air circulation. Such ducts shall be of rigid materials, except for a flexible connector *approved* for the purpose. The projection lamp or projection room exhaust system, or both, is permitted to be combined but shall not be interconnected with any other exhaust or return system, or both, within the building.

409.4 Lighting control. Provisions shall be made for control of the auditorium lighting and the *means of egress* lighting systems of theaters from inside the projection room and from not less than one other convenient point in the building.

409.5 Miscellaneous equipment. Each projection room shall be provided with rewind and film storage facilities.

SECTION 410
STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS

410.1 Applicability. The provisions of Sections 410.1 through 410.8 shall apply to all parts of buildings and structures that contain *stages* or *platforms* and similar appurtenances as herein defined.

410.2 Definitions. The following terms are defined in Chapter 2:

PLATFORM.

PROCENIUM WALL.

STAGE.

TECHNICAL PRODUCTION AREA.

410.3 Stages. *Stage* construction shall comply with Sections 410.3.1 through 410.3.8.

410.3.1 Stage construction. *Stages* shall be constructed of materials as required for floors for the type of construction of the building in which such *stages* are located.

Exception: *Stages* need not be constructed of the same materials as required for the type of construction provided the construction complies with one of the following:

1. *Stages* of Type IIB or IV construction with a nominal 2-inch (51 mm) wood deck, provided that the *stage* is separated from other areas in accordance with Section 410.3.4.
2. In buildings of Type IIA, IIIA and VA construction, a fire-resistance-rated floor is not required, provided the space below the *stage* is equipped with an *automatic sprinkler system or fire-extinguishing system* in accordance with Section 903 or 904.
3. In all types of construction, the finished floor shall be constructed of wood or *approved* noncombustible materials. Openings through *stage* floors shall be equipped with tight-fitting, solid wood trap doors with *approved* safety locks.

410.3.1.1 Stage height and area. *Stage* areas shall be measured to include the entire performance area and adjacent backstage and support areas not separated from the pqerformance area by fire-resistance-rated construction. *Stage* height shall be measured from the lowest point on the *stage* floor to the highest point of the roof or floor deck above the *stage*.

410.3.2 Technical production areas: galleries, gridirons and catwalks. Beams designed only for the attachment of portable or fixed theater equipment, gridirons, galleries and catwalks shall be constructed of *approved* materials consistent with the requirements for the type of construction of the building; and a *fire-resistance rating* shall not be required. These areas shall not be considered to be floors, *stories*, *mezzanines* or levels in applying this code.

Exception: Floors of fly galleries and catwalks shall be constructed of any *approved* material.

410.3.3 Exterior stage doors. Where protection of openings is required, exterior *exit* doors shall be protected with *fire door assemblies* that comply with Section 716. Exterior openings that are located on the *stage* for *means of egress* or loading and unloading purposes, and that are likely to be open during occupancy of the theater, shall be constructed with vestibules to prevent air drafts into the auditorium.

410.3.4 Proscenium wall. Where the *stage* height is greater than 50 feet (15 240 mm), all portions of the *stage* shall be completely separated from the seating area by a proscenium wall with not less than a 2-hour *fire-resistance rating* extending continuously from the foundation to the roof.

410.3.5 Proscenium curtain. Where a proscenium wall is required to have a *fire-resistance rating*, the *stage* opening shall be provided with a fire curtain complying with NFPA 80 or an *approved* water curtain complying with Section 903.3.1.1 or, in facilities not utilizing the provisions of smoke-protected assembly seating in accordance with Section 1028.6.2, a smoke control system complying with Section 909 or natural *ventilation* designed to maintain the smoke level not less than 6 feet (1829 mm) above the floor of the *means of egress*.

410.3.6 Scenery. Combustible materials used in sets and scenery shall meet the fire propagation performance criteria of NFPA 701, in accordance with Section 806 and the *Florida Fire Prevention Code*. Foam plastics and materials containing foam plastics shall comply with Section 2603 and the *Florida Fire Prevention Code*.

410.3.7 Stage ventilation. Emergency *ventilation* shall be provided for *stages* larger than 1,000 square feet (93 m^2) in floor area, or with a *stage* height greater than 50 feet (15 240 mm). Such *ventilation* shall comply with Section 410.3.7.1 or 410.3.7.2.

410.3.7.1 Roof vents. Two or more vents constructed to open automatically by *approved* heat-activated devices and with an aggregate clear opening area of not less than 5 percent of the area of the *stage* shall be located near the center and above the highest part of the *stage* area. Supplemental means shall be provided for manual operation of the ventilator. Curbs shall be provided as required for skylights in Section 2610.2. Vents shall be labeled.

[F] 410.3.7.2 Smoke control. Smoke control in accordance with Section 909 shall be provided to maintain the smoke layer interface not less than 6 feet (1829 mm) above the highest level of the assembly seating or above the top of the proscenium opening where a proscenium wall is provided in compliance with Section 410.3.4.

410.4 Platform construction. Permanent *platforms* shall be constructed of materials as required for the type of construc-

tion of the building in which the permanent *platform* is located. Permanent *platforms* are permitted to be constructed of *fire-retardant-treated wood* for Types I, II and IV construction where the *platforms* are not more than 30 inches (762 mm) above the main floor, and not more than one-third of the room floor area and not more than 3,000 square feet (279 m^2) in area. Where the space beneath the permanent *platform* is used for storage or any purpose other than equipment, wiring or plumbing, the floor assembly shall be not less than 1-hour fire-resistance-rated construction. Where the space beneath the permanent *platform* is used only for equipment, wiring or plumbing, the underside of the permanent *platform* need not be protected.

410.4.1 Temporary platforms. *Platforms* installed for a period of not more than 30 days are permitted to be constructed of any materials permitted by the code. The space between the floor and the *platform* above shall only be used for plumbing and electrical wiring to *platform* equipment.

410.5 Dressing and appurtenant rooms. Dressing and appurtenant rooms shall comply with Sections 410.5.1 and 410.5.2.

410.5.1 Separation from stage. The *stage* shall be separated from dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the *stage* and other parts of the building by *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than 2 hours for *stage* heights greater than 50 feet (15 240 mm) and not less than 1 hour for *stage* heights of 50 feet (15 240 mm) or less.

** **410.5.2 Separation from each other.** Dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the *stage* shall be separated from each other by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

➡ **410.6 Means of egress.** Except as modified or as provided for in this section, the provisions of Chapter 10 shall apply.

410.6.1 Arrangement. Where two or more *exits* or *exit access doorways* from the *stage* are required in accordance with Section 1015.1, no fewer than one *exit* or *exit access doorway* shall be provided on each side of a *stage*.

410.6.2 Stairway and ramp enclosure. *Exit access stairways* and *ramps* serving a *stage* or *platform* are not required to be enclosed. *Exit access stairways* serving *technical production areas* are not required to be enclosed.

410.6.3 Technical production areas. *Technical production areas* shall be provided with means of egress and means of escape in accordance with Sections 410.6.3.1 through 410.6.3.5.

410.6.3.1 Means of egress. No fewer than one *means of egress* shall be provided from *technical production areas*.

410.6.3.2 Travel distance. The length of *exit access* travel shall be not greater than 300 feet (91 440 mm) for buildings without a sprinkler system and 400 feet (121 900 mm) for buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

410.6.3.3 Two means of egress. Where two *means of egress* are required, the *common path of travel* shall be not greater than 100 feet (30 480 mm).

Exception: A means of escape to a roof in place of a second *means of egress* is permitted.

410.6.3.4 Path of egress travel. The following *exit access* components are permitted where serving *technical production areas:*

1. *Stairways.*
2. *Ramps.*
3. *Spiral stairways.*
4. Catwalks.
5. *Alternating tread devices*.
6. Permanent ladders.

410.6.3.5 Width. The path of egress travel within and from technical support areas shall be not less than 22 inches (559 mm).

[F] 410.7 Automatic sprinkler system. *Stages* shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the *stage*. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such *stages.*

Exceptions:

1. Sprinklers are not required under *stage* areas less than 4 feet (1219 mm) in clear height that are utilized exclusively for storage of tables and chairs, provided the concealed space is separated from the adjacent spaces by Type X gypsum board not less than $^5/_8$ inch (15.9 mm) in thickness.
2. Sprinklers are not required for *stages* 1,000 square feet (93 m^2) or less in area and 50 feet (15 240 mm) or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.
3. Sprinklers are not required within portable orchestra enclosures on *stages*.

[F] 410.8 Standpipes. Standpipe systems shall be provided in accordance with Section 905.

SECTION 411
SPECIAL AMUSEMENT BUILDINGS

411.1 General. Special *amusement buildings* having an *occupant load* of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections 411.1

through 411.8. Amusement buildings having an *occupant load* of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.8.

Exception: Amusement buildings or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

For flammable *decorative materials*, see the *Florida Fire Prevention Code*.

411.2 Definition. The following term is defined in Chapter 2:

SPECIAL AMUSEMENT BUILDING.

[F] 411.3 Automatic fire detection. *Special amusement buildings* shall be equipped with an automatic fire detection system in accordance with Section 907.

[F] 411.4 Automatic sprinkler system. *Special amusement buildings* shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. Where the *special amusement building* is temporary, the sprinkler water supply shall be of an *approved* temporary means.

Exception: Automatic sprinklers are not required where the total floor area of a temporary *special amusement building* is less than 1,000 square feet (93 m^2) and the travel distance from any point to an *exit* is less than 50 feet (15 240 mm).

[F] 411.5 Alarm. Actuation of a single *smoke detector*, the *automatic sprinkler system* or other automatic fire detection device shall immediately sound an alarm at the building at a *constantly attended location* from which emergency action can be initiated including the capability of manual initiation of requirements in Section 907.2.12.2.

[F] 411.6 Emergency voice/alarm communications system. An *emergency voice/alarm communications system* shall be provided in accordance with Sections 907.2.12 and 907.5.2.2, which is also permitted to serve as a public address system and shall be audible throughout the entire *special amusement building*.

411.7 Exit marking. Exit signs shall be installed at the required *exit* or *exit access doorways* of amusement buildings in accordance with this section and Section 1011. *Approved* directional exit markings shall also be provided. Where mirrors, mazes or other designs are utilized that disguise the path of egress travel such that they are not apparent, *approved* and *listed* low-level exit signs that comply with Section 1011.5, and directional path markings *listed* in accordance with UL 1994, shall be provided and located not more than 8 inches (203 mm) above the walking surface and on or near the path of egress travel. Such markings shall become visible in an emergency. The directional exit marking shall be activated by the automatic fire detection system and the *automatic sprinkler system* in accordance with Section 907.2.12.2.

411.7.1 Photo luminescent exit signs. Where photo luminescent exit signs are installed, activating light source and viewing distance shall be in accordance with the listing and markings of the signs.

411.8 Interior finish. The *interior finish* shall be Class A in accordance with Section 803.1.

SECTION 412
AIRCRAFT-RELATED OCCUPANCIES

412.1 General. Aircraft-related occupancies shall comply with Sections 412.1 through 412.7 and the *Florida Fire Prevention Code.*

412.2 Definitions. The following terms are defined in Chapter 2:

FIXED BASE OPERATOR (FBO).

HELIPORT.

HELISTOP.

RESIDENTIAL AIRCRAFT HANGAR.

TRANSIENT AIRCRAFT.

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.5 shall apply to airport traffic control towers not exceeding 1,500 square feet (140 m^2) per floor occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height and area limitations of Table 412.3.2.

TABLE 412.3.1
HEIGHT AND AREA LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS

TYPE OF CONSTRUCTION	HEIGHT[a] (feet)	MAXIMUM AREA (square feet)
IA	Unlimited	1,500
IB	240	1,500
IIA	100	1,500
IIB	85	1,500
IIIA	65	1,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

a. Height to be measured from grade plane to cab floor.

412.3.2 Egress. Not less than one *exit stairway* shall be permitted for airport traffic control towers of any height provided that the *occupant load* per floor is not greater than 15. The *stairway* shall conform to the requirements of Section 1009. The *stairway* shall be separated from elevators by a distance of not less than one-half of the diagonal of the area served measured in a straight line. The *exit stairway* and elevator hoistway are permitted to be located in the same *shaft enclosure*, provided they are separated from each other by a 4-hour *fire barrier* having no openings. Such *stairway* shall be pressurized to not less than 0.15 inch of water column (43 Pa) and not greater than 0.35 inch of water column (101 Pa) in the *shaft* relative to the building with *stairway* doors closed. *Stairways* need not extend to the roof as specified in Section 1009.16. The provisions of Section 403 do not apply.

Exception: *Smokeproof enclosures* as set forth in Section 1022.10 are not required where required *stairways* are pressurized.

[F] 412.3.3 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

[F] 412.3.4 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. *Fire alarm* and smoke detection systems.

412.3.5 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

412.4 Aircraft hangars. Aircraft hangars shall be in accordance with Sections 412.4.1 through 412.4.6.

412.4.1 Exterior walls. *Exterior walls* located less than 30 feet (9144 mm) from *lot lines* or a *public way* shall have a *fire-resistance rating* not less than 2 hours.

412.4.2 Basements. Where hangars have *basements,* floors over *basements* shall be of Type IA construction and shall be made tight against seepage of water, oil or vapors. There shall be no opening or communication between *basements* and the hangar. Access to *basements* shall be from outside only.

412.4.3 Floor surface. Floors shall be graded and drained to prevent water or fuel from remaining on the floor. Floor drains shall discharge through an oil separator to the sewer or to an outside vented sump.

Exception: Aircraft hangars with individual lease spaces not exceeding 2,000 square feet (186 m^2) each in which servicing, repairing or washing is not conducted and fuel is not dispensed shall have floors that are graded toward the door, but shall not require a separator.

412.4.4 Heating equipment. Heating equipment shall be placed in another room separated by 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. Entrance shall be from the outside or by means of a vestibule providing a two-doorway separation.

Exceptions:

1. Unit heaters and vented infrared radiant heating equipment suspended not less than 10 feet (3048 mm) above the upper surface of wings or engine enclosures of the highest aircraft that are permitted to be housed in the hangar need not be located in a separate room provided they are mounted not less than 8 feet (2438 mm) above the floor in shops, offices and other sections of the hangar communicating with storage or service areas.
2. Entrance to the separated room shall be permitted by a single interior door provided the sources of ignition in the appliances are not less than 18 inches (457 mm) above the floor.

412.4.5 Finishing. The process of "doping," involving use of a volatile flammable solvent, or of painting, shall be carried on in a separate *detached building* equipped with *automatic fire-extinguishing equipment* in accordance with Section 903.

[F] 412.4.6 Fire suppression. Aircraft hangars shall be provided with a fire suppression system designed in accordance with NFPA 409, based upon the classification for the hangar given in Table 412.4.6.

Exception: Where a *fixed base operator* has separate repair facilities on site, Group II hangars operated by a *fixed base operator* used for storage of *transient air-*

[F] TABLE 412.4.6
HANGAR FIRE SUPPRESSION REQUIREMENTS[a, b, c]

MAXIMUM SINGLE FIRE AREA (square feet)	TYPE OF CONSTRUCTION								
	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
≥ 40,001	Group I	Group I	Group I	Group I	Group I	Group I	Group I	Group I	Group I
40,000	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II
30,000	Group III	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II
20,000	Group III	Group III	Group II	Group II	Group II	Group II	Group II	Group II	Group II
15,000	Group III	Group III	Group III	Group II	Group III	Group II	Group III	Group II	Group II
12,000	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group II	Group II
8,000	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group II
5,000	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

a. Aircraft hangars with a door height greater than 28 feet shall be provided with fire suppression for a Group I hangar regardless of maximum fire area.

b. Groups shall be as classified in accordance with NFPA 409.

c. Membrane structures complying with Section 3102 shall be classified as a Group IV hangar.

craft only shall have a fire suppression system, but the system is exempt from foam requirements.

[F] 412.4.6.1 Hazardous operations. Any Group III aircraft hangar according to Table 412.4.6 that contains hazardous operations including, but not limited to, the following shall be provided with a Group I or II fire suppression system in accordance with NFPA 409 as applicable:

1. Doping.
2. Hot work including, but not limited to, welding, torch cutting and torch soldering.
3. Fuel transfer.
4. Fuel tank repair or maintenance not including defueled tanks in accordance with NFPA 409, inerted tanks or tanks that have never been fueled.
5. Spray finishing operations.
6. Total fuel capacity of all aircraft within the unsprinklered single *fire area* in excess of 1,600 gallons (6057 L).
7. Total fuel capacity of all aircraft within the maximum single *fire area* in excess of 7,500 gallons (28 390 L) for a hangar with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

[F] 412.4.6.2 Separation of maximum single fire areas. Maximum single *fire areas* established in accordance with hangar classification and construction type in Table 412.4.6 shall be separated by 2-hour *fire walls* constructed in accordance with Section 706. In determining the maximum single *fire area* as set forth in Table 412.4.6, ancillary uses which are separated from aircraft servicing areas by a *fire barrier* of not less than one hour, constructed in accordance with Section 707 shall not be included in the area.

412.5 Residential aircraft hangars. *Residential aircraft hangars* shall comply with Sections 412.5.1 through 412.5.5.

412.5.1 Fire separation. A hangar shall not be attached to a *dwelling* unless separated by a *fire barrier* having a *fire-resistance rating* of not less than 1 hour. Such separation shall be continuous from the foundation to the underside of the roof and unpierced except for doors leading to the *dwelling unit*. Doors into the *dwelling unit* shall be equipped with *self-closing* devices and conform to the requirements of Section 716 with a noncombustible raised sill not less than 4 inches (102 mm) in height. Openings from a hanger directly into a room used for sleeping purposes shall not be permitted.

412.5.2 Egress. A hangar shall provide two *means of egress*. One of the doors into the dwelling shall be considered as meeting only one of the two *means of egress*.

[**F] 412.5.3 Smoke alarms.** *Smoke alarms* shall be provided within the hangar in accordance with Section 907.2.21.

412.5.4 Independent systems. Electrical, mechanical and plumbing drain, waste and vent (DWV) systems installed within the hangar shall be independent of the systems installed within the dwelling. Building sewer lines shall be permitted to be connected outside the structures.

Exception: *Smoke detector* wiring and feed for electrical subpanels in the hangar.

412.5.5 Height and area limits. *Residential aircraft hangars* shall be not greater than 2,000 square feet (186 m^2) in area and 20 feet (6096 mm) in *building height*.

[F] 412.6 Aircraft paint hangars. Aircraft painting operations where flammable liquids are used in excess of the maximum allowable quantities per *control area* listed in Table 307.1(1) shall be conducted in an aircraft paint hangar that complies with the provisions of Sections 412.6.1 through 412.6.6.

[F] 412.6.1 Occupancy group. Aircraft paint hangars shall be classified as Group H-2. Aircraft paint hangars shall comply with the applicable requirements of this code and the *Florida Fire Prevention Code* for such occupancy.

412.6.2 Construction. The aircraft paint hangar shall be of Type I or II construction.

[F] 412.6.3 Operations. Only those flammable liquids necessary for painting operations shall be permitted in quantities less than the maximum allowable quantities per *control area* in Table 307.1(1). Spray equipment cleaning operations shall be conducted in a liquid use, dispensing and mixing room.

[F] 412.6.4 Storage. Storage of flammable liquids shall be in a liquid storage room.

[F] 412.6.5 Fire suppression. Aircraft paint hangars shall be provided with fire suppression as required by NFPA 409.

[F] 412.6.6 Ventilation. Aircraft paint hangars shall be provided with *ventilation* as required in the *Florida Building Code, Mechanical*.

[F] 412.7 Heliports and helistops. *Heliports* and *helistops* shall be permitted to be erected on buildings or other locations where they are constructed in accordance with Sections 412.7.1 through 412.7.5.

[F] 412.7.1 Size. The landing area for helicopters less than 3,500 pounds (1588 kg) shall be not less than 20 feet (6096 mm) in length and width. The landing area shall be surrounded on all sides by a clear area having a minimum average width at roof level of 15 feet (4572 mm) but with no width less than 5 feet (1524 mm).

[F] 412.7.2 Design. Helicopter landing areas and the supports thereof on the roof of a building shall be noncombustible construction. Landing areas shall be designed to confine any flammable liquid spillage to the landing area itself and provisions shall be made to drain such spillage away from any *exit* or *stairway* serving the helicopter landing area or from a structure housing such *exit* or *stairway*. For structural design requirements, see Section 1605.4.

[F] 412.7.3 Means of egress. The *means of egress* from *heliports* and *helistops* shall comply with the provisions of Chapter 10. Landing areas located on buildings or struc-

tures shall have two or more *means of egress*. For landing areas less than 60 feet (18 288 mm) in length or less than 2,000 square feet (186 m^2) in area, the second *means of egress* is permitted to be a fire escape, *alternating tread device* or ladder leading to the floor below.

[F] 412.7.4 Rooftop heliports and helistops. Rooftop *heliports* and *helistops* shall comply with NFPA 418.

[F] 412.7.5 Standpipe system. In buildings equipped with a standpipe system, the standpipe shall extend to the roof level in accordance with Section 905.3.6.

SECTION 413
COMBUSTIBLE STORAGE

413.1 General. High-piled stock or rack storage in any occupancy group shall comply with the *Florida Fire Prevention Code.*

413.2 Attic, under-floor and concealed spaces. *Attic*, under-floor and concealed spaces used for storage of combustible materials shall be protected on the storage side as required for 1-hour fire-resistance-rated construction. Openings shall be protected by assemblies that are *self-closing* and are of noncombustible construction or solid wood core not less than $1^3/_4$ inch (45 mm) in thickness.

Exception: Neither fire-resistant-rated construction nor opening protectives are required in any of the following locations:

1. Areas protected by *approved automatic sprinkler systems*.
2. Group R-3 and U occupancies.

SECTION 414
HAZARDOUS MATERIALS

[F] 414.1 General. The provisions of Sections 414.1 through 414.7 shall apply to buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials.

[F] 414.1.1 Other provisions. Buildings and structures with an occupancy in Group H shall comply with this section and the applicable provisions of Section 415 and the *Florida Fire Prevention Code*.

[F] 414.1.2 Materials. The safe design of hazardous material occupancies is material dependent. Individual material requirements are also found in Sections 307 and 415, and in the *Florida Building Code, Mechanical* and the *Florida Fire Prevention Code.*

[F] 414.1.2.1 Aerosols. Level 2 and 3 aerosol products shall be stored and displayed in accordance with the *Florida Fire Prevention Code*. See Section 311.2 and the *Florida Fire Prevention Code* for occupancy group requirements.

[F] 414.1.3 Information required. A report shall be submitted to the *building official* identifying the maximum expected quantities of hazardous materials to be stored, used in a *closed system* and used in an *open system*, and subdivided to separately address hazardous material classification categories based on Tables 307.1(1) and 307.1(2). The methods of protection from such hazards, including but not limited to *control areas*, fire protection systems and Group H occupancies shall be indicated in the report and on the *construction documents*. The opinion and report shall be prepared by a qualified person, firm or corporation *approved* by the *building official* and provided without charge to the enforcing agency.

For buildings and structures with an occupancy in Group H, separate floor plans shall be submitted identifying the locations of anticipated contents and processes so as to reflect the nature of each occupied portion of every building and structure.

[F] 414.2 Control areas. *Control areas* shall comply with Sections 414.2.1 through 414.2.5 and the *Florida Fire Prevention Code*.

[F] TABLE 414.2.2
DESIGN AND NUMBER OF CONTROL AREAS

FLOOR LEVEL		PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA[a]	NUMBER OF CONTROL AREAS PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS[b]
Above grade plane	Higher than 9	5	1	2
	7-9	5	2	2
	6	12.5	2	2
	5	12.5	2	2
	4	12.5	2	2
	3	50	2	1
	2	75	3	1
	1	100	4	1
Below grade plane	1	75	3	1
	2	50	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

a. Percentages shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2), with all increases allowed in the notes to those tables.

b. Separation shall include fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

[F] 414.2.1 Construction requirements. *Control areas* shall be separated from each other by *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

[F] 414.2.2 Percentage of maximum allowable quantities. The percentage of maximum allowable quantities of hazardous materials per *control area* permitted at each floor level within a building shall be in accordance with Table 414.2.2.

[F] 414.2.3 Number. The maximum number of *control areas* within a building shall be in accordance with Table 414.2.2.

[F] 414.2.4 Fire-resistance-rating requirements. The required *fire-resistance rating* for *fire barriers* shall be in accordance with Table 414.2.2. The floor assembly of the *control area* and the construction supporting the floor of the *control area* shall have a *fire-resistance rating* of not less than 2 hours.

Exception: The floor assembly of the *control area* and the construction supporting the floor of the *control area* are allowed to be 1-hour fire-resistance rated in buildings of Types IIA, IIIA and VA construction, provided that both of the following conditions exist:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1; and
2. The building is three or fewer *stories above grade plane*.

[F] 414.2.5 Hazardous material in Group M display and storage areas and in Group S storage areas. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials permitted within a single *control area* of a Group M display and

[F] TABLE 414.2.5(1)
MAXIMUM ALLOWABLE QUANTITY PER INDOOR AND OUTDOOR CONTROL AREA IN GROUP M AND S OCCUPANCIES NONFLAMMABLE SOLIDS AND NONFLAMMABLE AND NONCOMBUSTIBLE LIQUIDS[d,e,f]

CONDITION		MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA	
Material[a]	Class	Solids pounds	Liquids gallons
A. Health-hazard materials—nonflammable and noncombustible solids and liquids			
1. Corrosives[b,c]	Not Applicable	9,750	975
2. Highly toxics	Not Applicable	20[b,c]	2[b,c]
3. Toxics[b,c]	Not Applicable	1,000	100
B. Physical-hazard materials—nonflammable and noncombustible solids and liquids			
1. Oxidizers[b,c]	4	Not Allowed	Not Allowed
	3	1,150[g]	115
	2	2,250[h]	225
	1	18,000 [i, j]	1,800 [i, j]
2. Unstable (reactives)[b,c]	4	Not Allowed	Not Allowed
	3	550	55
	2	1,150	115
	1	Not Limited	Not Limited
3. Water reactives	3[b,c]	550	55
	2[b,c]	1,150	115
	1	Not Limited	Not Limited

For SI: 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. Hazard categories are as specified in the *Florida Fire Prevention Code.*

b. Maximum allowable quantities shall be increased 100 percent in buildings that are sprinklered in accordance with Section 903.3.1.1. When Note c also applies, the increase for both notes shall be applied accumulatively.

c. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, in accordance with the *Florida Fire Prevention Code*. When Note b also applies, the increase for both notes shall be applied accumulatively.

d. See Table 414.2.2 for design and number of control areas.

e. Allowable quantities for other hazardous material categories shall be in accordance with Section 307.

f. Maximum quantities shall be increased 100 percent in outdoor control areas.

g. Maximum amounts are permitted to be increased to 2,250 pounds when individual packages are in the original sealed containers from the manufacturer or packager and do not exceed 10 pounds each.

h. Maximum amounts are permitted to be increased to 4,500 pounds when individual packages are in the original sealed containers from the manufacturer or packager and do not exceed 10 pounds each.

i. The permitted quantities shall not be limited in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

j. Quantities are unlimited in an outdoor control area.

[F] TABLE 414.2.5(2)
MAXIMUM ALLOWABLE QUANTITY OF FLAMMABLE AND COMBUSTIBLE LIQUIDS IN WHOLESALE AND RETAIL SALES OCCUPANCIES PER CONTROL AREA[a]

TYPE OF LIQUID	MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA (gallons)		
	Sprinklered in accordance with note b densities and arrangements	Sprinklered in accordance with the *Florida Fire Prevention Code*	Nonsprinklered
Class IA	60	60	30
Class IB, IC, II and IIIA	7,500[c]	15,000[c]	1,600
Class IIIB	Unlimited	Unlimited	13,200

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 gallon = 3.785 L, 1 gallon per minute per square foot = 40.75 L/min/m^2.

a. Control areas shall be separated from each other by not less than a 1-hour fire barrier wall.

b. To be considered as sprinklered, a building shall be equipped throughout with an approved automatic sprinkler system with a design providing minimum densities as follows:

1. For uncartoned commodities on shelves 6 feet or less in height where the ceiling height does not exceed 18 feet, quantities are those permitted with a minimum sprinkler design density of Ordinary Hazard Group 2.
2. For cartoned, palletized or racked commodities where storage is 4 feet 6 inches or less in height and where the ceiling height does not exceed 18 feet, quantities are those permitted with a minimum sprinkler design density of 0.21 gallon per minute per square foot over the most remote 1,500-square-foot area.

c. Where wholesale and retail sales or storage areas exceed 50,000 square feet in area, the maximum allowable quantities are allowed to be increased by 2 percent for each 1,000 square feet of area in excess of 50,000 square feet, up to a maximum of 100 percent of the table amounts. A control area separation is not required. The cumulative amounts, including amounts attained by having an additional control area, shall not exceed 30,000 gallons.

storage area, a Group S storage area or an outdoor *control area* is permitted to exceed the maximum allowable quantities per *control area* specified in Tables 307.1(1) and 307.1(2) without classifying the building or use as a Group H occupancy, provided that the materials are displayed and stored in accordance with the *Florida Fire Prevention Code* and quantities do not exceed the maximum allowable specified in Table 414.2.5(1).

In Group M occupancy wholesale and retail sales uses, indoor storage of flammable and combustible liquids shall not exceed the maximum allowable quantities per *control area* as indicated in Table 414.2.5(2), provided that the materials are displayed and stored in accordance with the *Florida Fire Prevention Code.*

The maximum quantity of aerosol products in Group M occupancy retail display areas, storage areas adjacent to retail display areas and retail storage areas shall be in accordance with the *Florida Fire Prevention Code*.

[F] 414.3 Ventilation. Rooms, areas or spaces of Group H in which explosive, corrosive, combustible, flammable or highly toxic dusts, mists, fumes, vapors or gases are or may be emitted due to the processing, use, handling or storage of materials shall be mechanically ventilated as required by the *Florida Fire Prevention Code* and the *Florida Building Code, Mechanical*.

Ducts conveying explosives or flammable vapors, fumes or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts and plenums.

Exception: Ducts conveying vapor or fumes having flammable constituents less than 25 percent of their lower flammable limit (LFL) are permitted to pass through other spaces.

Emissions generated at workstations shall be confined to the area in which they are generated as specified in the *Florida Fire Prevention Code* and the *Florida Building Code, Mechanical*.

The location of supply and exhaust openings shall be in accordance with the *Florida Building Code, Mechanical*. Exhaust air contaminated by *highly toxic* material shall be treated in accordance with the *Florida Fire Prevention Code*.

A manual shutoff control for *ventilation* equipment required by this section shall be provided outside the room adjacent to the principal access door to the room. The switch shall be of the break-glass type and shall be labeled: VENTILATION SYSTEM EMERGENCY SHUTOFF.

[F] 414.4 Hazardous material systems. Systems involving hazardous materials shall be suitable for the intended application. Controls shall be designed to prevent materials from entering or leaving process or reaction systems at other than the intended time, rate or path. Automatic controls, where provided, shall be designed to be fail safe.

[F] 414.5 Inside storage, dispensing and use. The inside storage, dispensing and use of hazardous materials shall be in accordance with Sections 414.5.1 through 414.5.4 of this code and the *Florida Fire Prevention Code.*

[F] 414.5.1 Explosion control. Explosion control shall be provided in accordance with the *Florida Fire Prevention Code* as required by Table 414.5.1 where quantities of hazardous materials specified in that table exceed the maximum allowable quantities in Table 307.1(1) or where a structure, room or space is occupied for purposes involving explosion hazards as required by Section 415 or the *Florida Fire Prevention Code*.

[F] 414.5.2 Monitor control equipment. Monitor control equipment shall be provided where required by the *Florida Fire Prevention Code.*

[F] 414.5.3 Emergency or standby power. Where mechanical *ventilation*, treatment systems, temperature control, alarm, detection or other electrically operated systems are required by the *Florida Fire Prevention Code* or this code, such systems shall be provided with an emergency or standby power system in accordance with Chapter 27.

Exceptions:

1. Emergency or standby power are not required for the following storage areas:
   1.1. Mechanical *ventilation* for storage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding 6.5 gallons (25 L) capacity.
   1.2. Storage areas for Class 1 and 2 oxidizers.
   1.3. Storage areas for Class II, III, IV and V organic peroxides.
   1.4. Storage, use and handling areas for asphyxiant, irritant and radioactive gases.
   1.5. For storage, use and handling areas for highly toxic or toxic materials, see the *Florida Fire Prevention Code*.
2. Standby power for mechanical *ventilation*, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

[F] 414.5.4 Spill control, drainage and containment. Rooms, buildings or areas occupied for the storage of solid and liquid hazardous materials shall be provided with a means to control spillage and to contain or drain off spillage and fire protection water discharged in the storage area where required in the *Florida Fire Prevention Code*. The

[F] TABLE 414.5.1
EXPLOSION CONTROL REQUIREMENTS[a]

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems[b]
HAZARD CATEGORY			
Combustible dusts[c]	—	Not Required	Required
Cryogenic flammables	—	Not Required	Required
Explosives	Division 1.1 Division 1.2 Division 1.3 Division 1.4 Division 1.5 Division 1.6	Required Required Not Required Not Required Required Required	Not Required Not Required Required Required Not Required Not Required
Flammable gas	Gaseous Liquefied	Not Required Not Required	Required Required
Flammable liquid	IA[d] IB[e]	Not Required Not Required	Required Required
Organic peroxides	U I	Required Required	Not Permitted Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric gas	—	Not Required	Required
Unstable (reactive)	4 3 Detonable 3 Nondetonable	Required Required Not Required	Not Permitted Not Permitted Required
Water-reactive liquids and solids	3 2[g]	Not Required Not Required	Required Required
SPECIAL USES			
Acetylene generator rooms	—	Not Required	Required
Grain processing	—	Not Required	Required
Liquefied petroleum gas-distribution facilities	—	Not Required	Required
Where explosion hazards exist[f]	Detonation Deflagration	Required Not Required	Not Permitted Required

a. See Section 414.1.3.
b. See the *Florida Fire Prevention Code*.
c. As generated during manufacturing or processing.
d. Storage or use.
e. In open use or dispensing.
f. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.
g. A method of explosion control shall be provided when Class 2 water-reactive materials can form potentially explosive mixtures.

methods of spill control shall be in accordance with the *Florida Fire Prevention Code*.

[F] 414.6 Outdoor storage, dispensing and use. The outdoor storage, dispensing and use of hazardous materials shall be in accordance with the *Florida Fire Prevention Code*.

[F] 414.6.1 Weather protection. Where weather protection is provided for sheltering outdoor hazardous material storage or use areas, such areas shall be considered outdoor storage or use when the weather protection structure complies with Sections 414.6.1.1 through 414.6.1.3.

[F] 414.6.1.1 Walls. Walls shall not obstruct more than one side of the structure.

Exception: Walls shall be permitted to obstruct portions of multiple sides of the structure, provided that the obstructed area is not greater than 25 percent of the structure's perimeter.

[F] 414.6.1.2 Separation distance. The distance from the structure to buildings, *lot lines*, *public ways* or *means of egress* to a *public way* shall be not less than the distance required for an outside hazardous material storage or use area without weather protection.

[F] 414.6.1.3 Noncombustible construction. The overhead structure shall be of *approved* noncombustible construction with a maximum area of 1,500 square feet (140 m^2).

Exception: The maximum area is permitted to be increased as provided by Section 506.

[F] 414.7 Emergency alarms. Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as set forth herein.

[F] 414.7.1 Storage. An *approved* manual *emergency alarm system* shall be provided in buildings, rooms or areas used for storage of hazardous materials. Emergency alarm-initiating devices shall be installed outside of each interior *exit* or *exit access* door of storage buildings, rooms or areas. Activation of an emergency alarm-initiating device shall sound a local alarm to alert occupants of an emergency situation involving hazardous materials.

[F] 414.7.2 Dispensing, use and handling. Where hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704 are transported through *corridors*, *interior exit stairways* or *ramps*, or *exit passageways* there shall be an emergency telephone system, a local manual alarm station or an *approved* alarm-initiating device at not more than 150-foot (45 720 mm) intervals and at each *exit* and *exit access doorway* throughout the transport route. The signal shall be relayed to an *approved* central, proprietary or remote station service or constantly attended on-site location and shall initiate a local audible alarm.

[F] 414.7.3 Supervision and monitoring. *Emergency alarm*, detection and automatic fire-extinguishing *systems* required by Sections 414.7.1 and 414.7.2 shall be electrically supervised and monitored by an *approved* supervising station or, when approved, shall initiate an audible and visual signal at a constantly attended on-site location.

SECTION 415
GROUPS H-1, H-2, H-3, H-4 AND H-5

*Section 415 has been completely reorganized from the 2009 code; therefore, the * and ** margin indicators have not been included for clarity.*

[F] 415.1 Scope. The provisions of Sections 415.1 through 415.10 shall apply to the storage and use of hazardous materials in excess of the maximum allowable quantities per *control area* listed in Section 307.1. Buildings and structures with an occupancy in Group H shall also comply with the applicable provisions of Section 414 and the *Florida Fire Prevention Code*.

[F] 415.2 Definitions. The following terms are defined in Chapter 2:

CONTINUOUS GAS DETECTION SYSTEM.

DETACHED BUILDING.

EMERGENCY CONTROL STATION.

EXHAUSTED ENCLOSURE.

FABRICATION AREA.

FLAMMABLE VAPORS OR FUMES.

GAS CABINET.

GASROOM.

HAZARDOUS PRODUCTION MATERIAL (HPM).

HPM FLAMMABLE LIQUID.

HPM ROOM.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH).

LIQUID.

LIQUID STORAGE ROOM.

LIQUID USE, DISPENSING AND MIXING ROOM.

LOWER FLAMMABLE LIMIT (LFL).

NORMAL TEMPERATURE AND PRESSURE (NTP).

PHYSIOLOGICAL WARNING THRESHOLD LEVEL.

SERVICE CORRIDOR.

SOLID.

STORAGE, HAZARDOUS MATERIALS.

USE (MATERIAL).

WORKSTATION.

[F] 415.3 Automatic fire detection systems. Group H occupancies shall be provided with an automatic fire detection system in accordance with Section 907.2.

[F] 415.4 Automatic sprinkler system. Group H occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.

[F] 415.5 Fire separation distance. Group H occupancies shall be located on property in accordance with the other provisions of this chapter. In Groups H-2 and H-3, not less than 25 percent of the perimeter wall of the occupancy shall be an *exterior wall*.

Exceptions:

1. *Liquid use, dispensing and mixing rooms* having a floor area of not more than 500 square feet (46.5 m^2) need not be located on the outer perimeter of the building where they are in accordance with the *Florida Fire Prevention Code* and NFPA 30.
2. *Liquid storage rooms* having a floor area of not more than 1,000 square feet (93 m^2) need not be located on the outer perimeter where they are in accordance with the *Florida Fire Prevention Code* and NFPA 30.
3. Spray paint booths that comply with the *Florida Fire Prevention Code* need not be located on the outer perimeter.

[F] 415.5.1 Group H occupancy minimum fire separation distance. Regardless of any other provisions, buildings containing Group H occupancies shall be set back to the minimum *fire separation distance* as set forth in Sections 415.5.1.1 through 415.5.1.4. Distances shall be measured from the walls enclosing the occupancy to *lot lines*, including those on a public way. Distances to assumed *lot lines* established for the purpose of determining exterior wall and opening protection are not to be used to establish the minimum *fire separation distance* for buildings on sites where explosives are manufactured or used when separation is provided in accordance with the quantity distance tables specified for explosive materials in the *Florida Fire Prevention Code.*

[F] 415.5.1.1 Group H-1. Group H-1 occupancies shall be set back not less than 75 feet (22 860 mm) and not less than required by the *Florida Fire Prevention Code*.

Exception: Fireworks manufacturing buildings separated in accordance with NFPA 1124.

[F] 415.5.1.2 Group H-2. Group H-2 occupancies shall be set back not less than 30 feet (9144 mm) where the area of the occupancy is greater than 1,000 square feet (93 m^2) and it is not required to be located in a *detached building*.

[F] 415.5.1.3 Groups H-2 and H-3. Group H-2 and H-3 occupancies shall be set back not less than 50 feet (15 240 mm) where a *detached building* is required (see Table 415.5.2).

[F] 415.5.1.4 Explosive materials. Group H-2 and H-3 occupancies containing materials with explosive characteristics shall be separated as required by the *Florida Fire Prevention Code.* Where separations are not specified, the distances required shall be deter-

[F] TABLE 415.5.2
DETACHED BUILDING REQUIRED

A DETACHED BUILDING IS REQUIRED WHEN THE QUANTITY OF MATERIAL EXCEEDS THAT LISTED HEREIN *Florida Fire Prevention Code*			
Material	**Class**	**Solids and Liquids (tons)[a, b]**	**Gases (cubic feet)[a, b]**
Explosives	Division 1.1 Division 1.2 Division 1.3 Division 1.4 Division 1.4[c] Division 1.5 Division 1.6	Maximum Allowable Quantity Maximum Allowable Quantity Maximum Allowable Quantity Maximum Allowable Quantity 1 Maximum Allowable Quantity Maximum Allowable Quantity	Not Applicable
Oxidizers	Class 4	Maximum Allowable Quantity	Maximum Allowable Quantity
Unstable (reactives) detonable	Class 3 or 4	Maximum Allowable Quantity	Maximum Allowable Quantity
Oxidizer, liquids and solids	Class 3 Class 2	1,200 2,000	Not Applicable Not Applicable
Organic peroxides	Detonable Class I Class II Class III	Maximum Allowable Quantity Maximum Allowable Quantity 25 50	Not Applicable Not Applicable Not Applicable Not Applicable
Unstable (reactives) nondetonable	Class 3 Class 2	1 25	2,000 10,000
Water reactives	Class 3 Class 2	1 25	Not Applicable Not Applicable
Pyrophoric gases	Not Applicable	Not Applicable	2,000

For SI: 1 ton = 906 kg, 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg.

a. For materials that are detonable, the distance to other buildings or lot lines shall be in accordance with the *Florida Fire Prevention Code* based on trinitrotoluene (TNT) equivalence of the material. For materials classified as explosives, see the *Florida Fire Prevention Code.*

b. "Maximum Allowable Quantity" means the maximum allowable quantity per control area set forth in Table 307.1(1).

c. Limited to Division 1.4 materials and articles, including articles packaged for shipment, that are not regulated as an explosive under Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF) regulations or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles, provided the net explosive weight of individual articles does not exceed 1 pound.

mined by a technical report issued in accordance with Section 414.1.3.

[F] 415.5.2 Detached buildings for Group H-1, H-2 or H-3 occupancy. The storage or use of hazardous materials in excess of those amounts listed in Table 415.5.2 shall be in accordance with the applicable provisions of Sections 415.6 and 415.7.

[F] 415.5.2.1 Wall and opening protection. Where a *detached building* is required by Table 415.5.2, there are no requirements for wall and opening protection based on *fire separation distance.*

[F] 415.6 Special provisions for Group H-1 occupancies. Group H-1 occupancies shall be in buildings used for no other purpose, shall not exceed one *story* in height and be without *basements*, crawl spaces or other under-floor spaces. Roofs shall be of lightweight construction with suitable thermal insulation to prevent sensitive material from reaching its decomposition temperature. Group H-1 occupancies containing materials that are in themselves both physical and health hazards in quantities exceeding the maximum allowable quantities per *control area* in Table 307.1(2) shall comply with requirements for both Group H-1 and H-4 occupancies.

[F] 415.6.1 Floors in storage rooms. Floors in storage areas for organic peroxides, pyrophoric materials and unstable (reactive) materials shall be of liquid-tight, noncombustible construction.

[F] 415.7 Special provisions for Group H-2 and H-3 occupancies. Group H-2 and H-3 occupancies containing quantities of hazardous materials in excess of those set forth in Table 415.5.2 shall be in *detached buildings* used for manufacturing, processing, dispensing, use or storage of hazardous materials. Materials listed for Group H-1 occupancies in Section 307.3 are permitted to be located within Group H-2 or H-3 *detached buildings* provided the amount of materials per *control area* do not exceed the maximum allowed quantity specified in Table 307.1(1).

[F] 415.7.1 Detached buildings. *Detached buildings* shall not exceed one *story* in height and shall be without *basements*, crawl spaces or other under-floor spaces.

[F] 415.7.2 Multiple hazards. Group H-2 or H-3 occupancies containing materials which are in themselves both physical and health hazards in quantities exceeding the maximum allowable quantities per *control area* in Table 307.1(2) shall comply with requirements for Group H-2, H-3 or H-4 occupancies as applicable.

[F] 415.7.3 Separation of incompatible materials. Hazardous materials other than those listed in Table 415.5.2 shall be allowed in manufacturing, processing, dispensing, use or storage areas when separated from incompatible materials in accordance with the provisions of the *Florida Fire Prevention Code.*

[F] 415.7.4 Water reactives. Group H-2 and H-3 occupancies containing water-reactive materials shall be resistant to water penetration. Piping for conveying liquids shall not be over or through areas containing water reactives, unless isolated by *approved* liquid-tight construction.

Exception: Fire protection piping shall be permitted over or through areas containing water reactives without isolating it with liquid-tight construction.

[F] 415.7.5 Floors in storage rooms. Floors in storage areas for organic peroxides, oxidizers, pyrophoric materials, unstable (reactive) materials and water-reactive solids and liquids shall be of liquid-tight, noncombustible construction.

[F] 415.7.6 Waterproof room. Rooms or areas used for the storage of water-reactive solids and liquids shall be constructed in a manner that resists the penetration of water through the use of waterproof materials. Piping carrying water for other than *approved automatic sprinkler systems* shall not be within such rooms or areas.

[F] 415.8 Group H-2. Occupancies in Group H-2 shall be constructed in accordance with Sections 415.8.1 through 415.8.4 and the *Florida Fire Prevention Code*.

[F] 415.8.1 Combustible dusts, grain processing and storage. The provisions of Sections 415.8.1.1 through 415.8.1.6 shall apply to buildings in which materials that produce combustible dusts are stored or handled. Buildings that store or handle combustible dusts shall comply with the applicable provisions of NFPA 61, NFPA 85, NFPA 120, NFPA 484, NFPA 654, NFPA 655 and NFPA 664, and the *Florida Fire Prevention Code*.

[F] 415.8.1.1 Type of construction and height exceptions. Buildings shall be constructed in compliance with the height and area limitations of Table 503 for Group H-2; except that where erected of Type I or II construction, the heights and areas of grain elevators and similar structures shall be unlimited, and where of Type IV construction, the maximum *building height* shall be 65 feet (19 812 mm) and except further that, in isolated areas, the maximum *building height* of Type IV structures shall be increased to 85 feet (25 908 mm).

[F] 415.8.1.2 Grinding rooms. Every room or space occupied for grinding or other operations that produce combustible dusts shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* of the enclosure shall be not less than 2 hours where the area is not more than 3,000 square feet (279 m^2), and not less than 4 hours where the area is greater than 3,000 square feet (279 m^2).

[F] 415.8.1.3 Conveyors. Conveyors, chutes, piping and similar equipment passing through the enclosures of rooms or spaces shall be constructed dirt tight and vapor tight, and be of *approved* noncombustible materials complying with Chapter 30.

[F] 415.8.1.4 Explosion control. Explosion control shall be provided as specified in the *Florida Fire Prevention Code*, or spaces shall be equipped with the equivalent mechanical *ventilation* complying with the *Florida Building Code, Mechanical*.

[F] 415.8.1.5 Grain elevators. Grain elevators, malt houses and buildings for similar occupancies shall not

be located within 30 feet (9144 mm) of interior *lot lines* or structures on the same *lot*, except where erected along a railroad right-of-way.

[F] 415.8.1.6 Coal pockets. Coal pockets located less than 30 feet (9144 mm) from interior *lot lines* or from structures on the same *lot* shall be constructed of not less than Type IB construction. Where more than 30 feet (9144mm) from interior *lot lines*, or where erected along a railroad right-of-way, the minimum type of construction of such structures not more than 65 feet (19 812 mm) in *building height* shall be Type IV.

[F] 415.8.2 Flammable and combustible liquids. The storage, handling, processing and transporting of flammable and combustible liquids in Groups H-2 and H-3 occupancies shall be in accordance with Sections 415.8.2.1 through 415.8.2.9, the *Florida Building Code, Mechanical* and the *Florida Fire Prevention Code.*

[F] 415.8.2.1 Mixed occupancies. Where the storage tank area is located in a building of two or more occupancies and the quantity of liquid exceeds the maximum allowable quantity for one *control area*, the use shall be completely separated from adjacent occupancies in accordance with the requirements of Section 508.4.

[F] 415.8.2.1.1 Height exception. Where storage tanks are located within a building no more than one *story above grade plane*, the height limitation of Section 503 shall not apply for Group H.

[F] 415.8.2.2 Tank protection. Storage tanks shall be noncombustible and protected from physical damage. *Fire barriers* or *horizontal assemblies* or both around the storage tanks shall be permitted as the method of protection from physical damage.

[F] 415.8.2.3 Tanks. Storage tanks shall be *approved* tanks conforming to the requirements of the *Florida Fire Prevention Code*.

[F] 415.8.2.4 Leakage containment. A liquid-tight containment area compatible with the stored liquid shall be provided. The method of spill control, drainage control and secondary containment shall be in accordance with the *Florida Fire Prevention Code*.

Exception: Rooms where only double-wall storage tanks conforming to Section 415.8.2.3 are used to store Class I, II and IIIA flammable and combustible liquids shall not be required to have a leakage containment area.

[F] 415.8.2.5 Leakage alarm. An *approved* automatic alarm shall be provided to indicate a leak in a storage tank and room. The alarm shall sound an audible signal, 15 dBa above the ambient sound level, at every point of entry into the room in which the leaking storage tank is located. An *approved* sign shall be posted on every entry door to the tank storage room indicating the potential hazard of the interior room environment, or the sign shall state: WARNING, WHEN ALARM SOUNDS, THE ENVIRONMENT WITHIN THE ROOM MAY BE HAZARDOUS. The leakage alarm shall also be supervised in accordance with Chapter 9 to transmit a trouble signal.

[F] 415.8.2.6 Tank vent. Storage tank vents for Class I, II or IIIA liquids shall terminate to the outdoor air in accordance with the *Florida Fire Prevention Code*.

[F] 415.8.2.7 Room ventilation. Storage tank areas storing Class I, II or IIIA liquids shall be provided with mechanical *ventilation*. The mechanical *ventilation* system shall be in accordance with the *Florida Building Code, Mechanical* and the *Florida Fire Prevention Code*.

[F] 415.8.2.8 Explosion venting. Where Class I liquids are being stored, explosion venting shall be provided in accordance with the *Florida Fire Prevention Code*.

[F] 415.8.2.9 Tank openings other than vents. Tank openings other than vents from tanks inside buildings shall be designed to ensure that liquids or vapor concentrations are not released inside the building.

[F] 415.8.3 Liquefied petroleum gas facilities. The construction and installation of liquefied petroleum gas facilities shall be in accordance with the requirements of this code, the *Florida Fire Prevention Code*, the *Florida Building Code, Mechanical*, the *Florida Building Code, Fuel Gas* and NFPA 58.

[F] 415.8.4 Dry cleaning plants. The construction and installation of dry cleaning plants shall be in accordance with the requirements of this code, the *Florida Building Code, Mechanical*, the *Florida Building Code, Plumbing* and NFPA 32. Dry cleaning solvents and systems shall be classified in accordance with the *Florida Fire Prevention Code*.

[F] 415.9 Groups H-3 and H-4. Groups H-3 and H-4 shall be constructed in accordance with the applicable provisions of this code and the *Florida Fire Prevention Code.*

[F] 415.9.1 Flammable and combustible liquids. The storage, handling, processing and transporting of flammable and combustible liquids in Group H-3 occupancies shall be in accordance with Section 415.8.2.

[F] 415.9.2 Gas rooms. Where gas rooms are provided, such rooms shall be separated from other areas by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

[F] 415.9.3 Floors in storage rooms. Floors in storage areas for corrosive liquids and highly toxic or toxic materials shall be of liquid-tight, noncombustible construction.

[F] 415.9.4 Separation-highly toxic solids and liquids. Highly toxic solids and liquids not stored in *approved* hazardous materials storage cabinets shall be isolated from other hazardous materials storage by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

[F] 415.10 Group H-5. In addition to the requirements set forth elsewhere in this code, Group H-5 shall comply with the provisions of Sections 415.10.1 through 415.10.11 and the *Florida Fire Prevention Code.*

[F] 415.10.1 Fabrication areas. *Fabrication areas* shall comply with Sections 415.10.1.1 through 415.10.1.8.

[F] 415.10.1.1 Hazardous materials. Hazardous materials and hazardous production materials (HPM) shall comply with Sections 415.10.1.1.1 and 415.10.1.1.2.

[F] 415.10.1.1.1 Aggregate quantities. The aggregate quantities of hazardous materials stored and used in a single *fabrication area* shall not exceed the quantities set forth in Table 415.10.1.1.1.

Exception: The quantity limitations for any hazard category in Table 415.10.1.1.1 shall not apply where the *fabrication area* contains quantities of hazardous materials not exceeding the maximum allowable quantities per *control area* established by Tables 307.1(1) and 307.1(2).

[F] 415.10.1.1.2 Hazardous production materials. The maximum quantities of hazardous production materials (HPM) stored in a single *fabrication area* shall not exceed the maximum allowable quantities per *control area* established by Tables 307.1(1) and 307.1(2).

[F] 415.10.1.2 Separation. *Fabrication areas*, whose sizes are limited by the quantity of hazardous materials allowed by Table 415.10.1.1.1, shall be separated from each other, from *corridors* and from other parts of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

Exceptions:

1. Doors within such *fire barrier* walls, including doors to *corridors*, shall be only *self-closing fire door assemblies* having a *fire protection rating* of not less than $^3/_4$ hour.
2. Windows between *fabrication areas* and *corridors* are permitted to be fixed glazing *listed* and labeled for a *fire protection rating* of not less than $^3/_4$ hour in accordance with Section 716.

[F] 415.10.1.3 Location of occupied levels. Occupied levels of *fabrication areas* shall be located at or above the first *story above grade plane*.

[F] 415.10.1.4 Floors. Except for surfacing, floors within *fabrication areas* shall be of noncombustible construction.

Openings through floors of *fabrication areas* are permitted to be unprotected where the interconnected levels are used solely for mechanical equipment directly related to such *fabrication areas (*see also Section 415.10.1.5).

Floors forming a part of an occupancy separation shall be liquid tight.

[F] 415.10.1.5 Shafts and openings through floors. Elevator hoistways, vent *shafts* and other openings through floors shall be enclosed where required by Sections 712 and 713. Mechanical, duct and piping penetrations within a *fabrication area* shall not extend through more than two floors. The *annular space* around penetrations for cables, cable trays, tubing, piping, conduit or ducts shall be sealed at the floor level to restrict the movement of air. The *fabrication area*, including the areas through which the ductwork and piping extend, shall be considered a single conditioned environment.

[F] 415.10.1.6 Ventilation. Mechanical exhaust *ventilation* at the rate of not less than 1 cubic foot per minute per square foot [0.0051 $m^3/(s \cdot m^2)$] of floor area shall be provided throughout the portions of the *fabrication area* where HPM are used or stored. The exhaust air duct system of one *fabrication area* shall not connect to another duct system outside that *fabrication area* within the building.

A *ventilation* system shall be provided to capture and exhaust gases, fumes and vapors at workstations.

Two or more operations at a workstation shall not be connected to the same exhaust system where either one or the combination of the substances removed could constitute a fire, explosion or hazardous chemical reaction within the exhaust duct system.

Exhaust ducts penetrating *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711 shall be contained in a *shaft* of equivalent fire-resistance-rated construction. Exhaust ducts shall not penetrate *fire walls*.

Fire dampers shall not be installed in exhaust ducts.

[F] 415.10.1.7 Transporting hazardous production materials to fabrication areas. HPM shall be transported to *fabrication areas* through enclosed piping or tubing systems that comply with Section 415.10.6, through *service corridors* complying with Section 415.10.3, or in *corridors* as permitted in the exception to Section 415.10.2. The handling or transporting of HPM within *service corridors* shall comply with the *Florida Fire Prevention Code*.

[F] 415.10.1.8 Electrical. Electrical equipment and devices within the *fabrication area* shall comply with NFPA 70. The requirements for hazardous locations need not be applied where the average air change is at least four times that set forth in Section 415.10.1.6 and where the number of air changes at any location is not less than three times that required by Section 415.10.1.6. The use of recirculated air shall be permitted.

[F] 415.10.1.8.1 Workstations. Workstations shall not be energized without adequate exhaust *ventilation*. See Section 415.10.1.6 for workstation exhaust *ventilation* requirements.

[F] 415.10.2 Corridors. *Corridors* shall comply with Chapter 10 and shall be separated from *fabrication area*s as specified in section 415.10.1.2. *Corridors* shall not contain HPM and shall not be used for transporting such

[F] TABLE 415.10.1.1.1
QUANTITY LIMITS FOR HAZARDOUS MATERIALS IN A SINGLE FABRICATION AREA IN GROUP H-5[a]

HAZARD CATEGORY		SOLIDS (pounds per square foot)	LIQUIDS (gallons per square foot)	GAS (cubic feet @ NTP/square foot)
PHYSICAL-HAZARD MATERIALS				
Combustible dust		Note b	Not Applicable	Not Applicable
Combustible fiber	Loose Baled	Note b Notes b, c	Not Applicable	Not Applicable
Combustible liquid Combination Class	II IIIA IIIB I, II and IIIA	Not Applicable	0.01 0.02 Not Limited 0.04	Not Applicable
Cryogenic gas	Flammable Oxidizing	Not Applicable	Not Applicable	Note d 1.25
Explosives		Note b	Note b	Note b
Flammable gas	Gaseous Liquefied	Not Applicable	Not Applicable	Note d Note d
Flammable liquid Combination Class Combination Class	IA IB IC IA, IB and IC I, II and IIIA	Not Applicable	0.0025 0.025 0.025 0.025 0.04	Not Applicable
Flammable solid		0.001	Not Applicable	Not Applicable
Organic peroxide	Unclassified detonable Class I Class II Class III Class IV Class V	Note b Note b 0.025 0.1 Not Limited Not Limited	Not Applicable	Not Applicable
Oxidizing gas Combination of gaseous and liquefied	Gaseous Liquefied	Not Applicable	Not Applicable	1.25 1.25 1.25
Oxidizer Combination Class	Class 4 Class 3 Class 2 Class 1 1, 2, 3	Note b 0.003 0.003 0.003 0.003	Note b 0.03 0.03 0.03 0.03	Not Applicable
Pyrophoric materials		0.01	0.00125	Notes d and e
Unstable (reactive)	Class 4 Class 3 Class 2 Class 1	Note b 0.025 0.1 Not Limited	Note b 0.0025 0.01 Not Limited	Note b Note b Note b Not Limited
Water reactive	Class 3 Class 2 Class 1	Note b 0.25 Not Limited	0.00125 0.025 Not Limited	Not Applicable
HEALTH-HAZARD MATERIALS				
Corrosives		Not Limited	Not Limited	Not Limited
Highly toxic		Not Limited	Not Limited	Note d
Toxics		Not Limited	Not Limited	Note d

For SI: 1 pound per square foot = 4.882 kg/m^2, 1 gallon per square foot = 40.7 L/m^2, 1 cubic foot @ NTP/square foot = 0.305 m^3 @ NTP/m^2, 1 cubic foot = 0.02832 m^3.

a. Hazardous materials within piping shall not be included in the calculated quantities.

b. Quantity of hazardous materials in a single fabrication shall not exceed the maximum allowable quantities per control area in Tables 307.1(1) and 307.1(2).

c. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.

d. The aggregate quantity of flammable, pyrophoric, toxic and highly toxic gases shall not exceed 9,000 cubic feet at NTP.

e. The aggregate quantity of pyrophoric gases in the building shall not exceed the amounts set forth in Table 415.5.2.

materials except through closed piping systems as provided in Section 415.10.6.4

Exception: Where existing *fabrication areas* are altered or modified, HPM is allowed to be transported in existing *corridors*, subject to the following conditions:

1. Nonproduction HPM is allowed to be transported in *corridors* if utilized for maintenance, lab work and testing.
2. Where existing *fabrication areas* are altered or modified, HPM is allowed to be transported in existing *corridors*, subject to the following conditions:

2.1. Corridors. *Corridors* adjacent to the *fabrication area* where the alteration work is to be done shall comply with Section 1018 for a length determined as follows:

2.1.1. The length of the common wall of the *corridor* and the *fabrication area*; and

2.1.2. For the distance along the *corridor* to the point of entry of HPM into the *corridor* serving that *fabrication area*.

2.2. *Emergency alarm system.* There shall be an emergency telephone system, a local manual alarm station or other *approved* alarm-initiating device within *corridors* at not more than 150-foot (45 720 mm) intervals and at each *exit* and doorway. The signal shall be relayed to an *approved* central, proprietary or remote station service or the emergency control station and shall also initiate a local audible alarm.

2.3. Pass-throughs. *Self-closing* doors having a *fire protection rating* of not less than 1 hour shall separate pass-throughs from existing *corridors.* Pass-throughs shall be constructed as required for the *corridors* and protected by an *approved automatic sprinkler system.*

[F] 415.10.3 Service corridors. *Service corridors* within a Group H-5 occupancy shall comply with Sections 415.10.3.1 through 415.10.3.4.

[F] 415.10.3.1 Use conditions. *Service corridors* shall be separated from *corridors* as required by Section 415.10.1.2. *Service corridors* shall not be used as a required *corridor*.

[F] 415.10.3.2 Mechanical ventilation. *Service corridors* shall be mechanically ventilated as required by Section 415.10.1.6 or at not less than six air changes per hour, whichever is greater.

[F] 415.10.3.3 Means of egress. The distance of travel from any point in a *service corridor* to an *exit*, *exit access corridor* or door into a *fabrication area* shall be not greater than 75 feet (22 860 mm). Dead ends shall be not greater than 4 feet (1219 mm) in length. There shall be not less than two *exits*, and not more than one-half of the required *means of egress* shall require travel into a *fabrication area*. Doors from *service corridors* shall swing in the direction of egress travel and shall be *self-closing*.

[F] 415.10.3.4 Minimum width. The clear width of a *service corridor* shall be not less than 5 feet (1524 mm), or 33 inches (838 mm) wider than the widest cart or truck used in the *service corridor*, whichever is greater.

[F] 415.10.3.5 Emergency alarm system. *Emergency alarm systems* shall be provided in accordance with this section and Sections 414.7.1 and 414.7.2. The maximum allowable quantity per *control area* provisions shall not apply to *emergency alarm systems* required for HPM.

[F] 415.10.3.5.1 Service corridors. An *emergency alarm system* shall be provided in *service corridors*, with no fewer than one alarm device in each *service corridor*.

[F] 415.10.3.5.2 Corridors and interior exit stairways and ramps. Emergency alarms for *corridors*, *interior exit stairways* and *ramps* and *exit passageways* shall comply with Section 414.7.2.

[F] 415.10.3.5.3 Liquid storage rooms, HPM rooms and gas rooms. Emergency alarms for liquid storage rooms, HPM rooms and gas rooms shall comply with Section 414.7.1.

[F] 415.10.3.5.4 Alarm-initiating devices. An *approved* emergency telephone system, local alarm manual pull stations, or other *approved* alarm-initiating devices are allowed to be used as emergency alarm-initiating devices.

[F] 415.10.3.5.5 Alarm signals. Activation of the *emergency alarm system* shall sound a local alarm and transmit a signal to the emergency control station.

[F] 415.10.4 Storage of hazardous production materials. Storage of hazardous production materials (HPM) in *fabrication areas* shall be within *approved* or *listed* storage cabinets or gas cabinets or within a workstation. The storage of HPM in quantities greater than those listed in the *Florida Fire Prevention Code* shall be in liquid storage rooms, HPM rooms or gas rooms as appropriate for the materials stored. The storage of other hazardous materials shall be in accordance with other applicable provisions of this code and the *Florida Fire Prevention Code*.

[F] 415.10.5 HPM rooms, gas rooms, liquid storage room construction. HPM rooms, gas rooms and liquid shall be constructed in accordance with Sections 415.10.5.1 through 415.10.5.9.

[F] 415.10.5.1 HPM rooms and gas rooms. HPM rooms and gas rooms shall be separated from other areas by *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in

accordance with Section 711, or both. The *fire-resistance rating* shall be not less than 2 hours where the area is 300 square feet (27.9 m^2) or more and not less than 1 hour where the area is less than 300 square feet (27.9 m^2).

[F] 415.10.5.2 Liquid storage rooms. Liquid storage rooms shall be constructed in accordance with the following requirements:

1. Rooms greater than 500 square feet (46.5 m^2) in area, shall have no fewer than one exterior door *approved* for fire department access.
2. Rooms shall be separated from other areas by *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than 1 hour for rooms up to 150 square feet (13.9 m^2) in area and not less than 2 hours where the room is more than 150 square feet (13.9 m^2) in area.
3. Shelving, racks and wainscotting in such areas shall be of noncombustible construction or wood of not less than 1-inch (25 mm) nominal thickness or fire-retardant-treated wood complying with Section 2303.2.
4. Rooms used for the storage of Class I flammable liquids shall not be located in a *basement*.

[F] 415.10.5.3 Floors. Except for surfacing, floors of HPM rooms and liquid storage rooms shall be of noncombustible liquid-tight construction. Raised grating over floors shall be of noncombustible materials.

[F] 415.10.5.4 Location. Where HPM rooms, liquid storage rooms and gas rooms are provided, they shall have no fewer than one *exterior wall* and such wall shall be not less than 30 feet (9144 mm) from *lot lines*, including *lot lines* adjacent to *public ways*.

[F] 415.10.5.5 Explosion control. Explosion control shall be provided where required by Section 414.5.1.

[F] 415.10.5.6 Exits. Where two *exits* are required from HPM rooms, liquid storage rooms and gas rooms, one shall be directly to the outside of the building.

[F] 415.10.5.7 Doors. Doors in a *fire barrier* wall, including doors to *corridors*, shall be *self-closing fire door assemblies* having a *fire protection rating* of not less than $^3/_4$ hour.

[F] 415.10.5.8 Ventilation. Mechanical exhaust *ventilation* shall be provided in liquid storage rooms, HPM rooms and gas rooms at the rate of not less than 1 cubic foot per minute per square foot (0.044 L/s/m^2) of floor area or six air changes per hour, whichever is greater, for categories of material.

Exhaust *ventilation* for gas rooms shall be designed to operate at a negative pressure in relation to the surrounding areas and direct the exhaust *ventilation* to an exhaust system.

[F] 415.10.5.9 Emergency alarm system. An *approved emergency alarm system* shall be provided for HPM rooms, liquid storage rooms and gas rooms.

Emergency alarm-initiating devices shall be installed outside of each interior *exit* door of such rooms.

Activation of an emergency alarm-initiating device shall sound a local alarm and transmit a signal to the emergency control station.

An *approved* emergency telephone system, local alarm manual pull stations or other *approved* alarm-initiating devices are allowed to be used as emergency alarm-initiating devices.

[F] 415.10.6 Piping and tubing. Hazardous production materials piping and tubing shall comply with this section and ASME B31.3.

[F] 415.10.6.1 HPM having a health-hazard ranking of 3 or 4. Systems supplying HPM liquids or gases having a health-hazard ranking of 3 or 4 shall be welded throughout, except for connections, to the systems that are within a ventilated enclosure if the material is a gas, or an *approved* method of drainage or containment is provided for the connections if the material is a liquid.

[F] 415.10.6.2 Location in service corridors. Hazardous production materials supply piping or tubing in *service corridors* shall be exposed to view.

[F] 415.10.6.3 Excess flow control. Where HPM gases or liquids are carried in pressurized piping above 15 pounds per square inch gauge (psig) (103.4 kPa), excess flow control shall be provided. Where the piping originates from within a liquid storage room, HPM room or gas room, the excess flow control shall be located within the liquid storage room, HPM room or gas room. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

[F] 415.10.6.4 Installations in corridors and above other occupancies. The installation of HPM piping and tubing within the space defined by the walls of *corridors* and the floor or roof above, or in concealed spaces above other occupancies, shall be in accordance with Sections 415.10.6.1 through 415.10.6.3 and the following conditions:

1. Automatic sprinklers shall be installed within the space unless the space is less than 6 inches (152 mm) in the least dimension.
2. *Ventilation* not less than six air changes per hour shall be provided. The space shall not be used to convey air from any other area.
3. Where the piping or tubing is used to transport HPM liquids, a receptor shall be installed below such piping or tubing. The receptor shall be designed to collect any discharge or leakage and drain it to an *approved* location. The 1-hour enclosure shall not be used as part of the receptor.

4. HPM supply piping and tubing and nonmetallic waste lines shall be separated from the *corridor* and from occupancies other than Group H-5 by *fire barriers* that have a *fire-resistance rating* of not less than 1 hour. Where gypsum wallboard is used, joints on the piping side of the enclosure are not required to be taped, provided the joints occur over framing members. Access openings into the enclosure shall be protected by *approved* fire protection-rated assemblies.
5. Readily accessible manual or automatic remotely activated fail-safe emergency shutoff valves shall be installed on piping and tubing other than waste lines at the following locations:
    5.1. At branch connections into the *fabrication area*.
    5.2. At entries into *corridors*.

Exception: Transverse crossings of the *corridors* by supply piping that is enclosed within a ferrous pipe or tube for the width of the *corridor* need not comply with Items 1 through 5.

[F] 415.10.6.5 Identification. Piping, tubing and HPM waste lines shall be identified in accordance with ANSI A13.1 to indicate the material being transported.

[F] 415.10.7 Continuous gas detection systems. A *continuous gas detection system* shall be provided for HPM gases where the physiological warning threshold level of the gas is at a higher level than the accepted permissible exposure limit (PEL) for the gas and for flammable gases in accordance with Sections 415.10.7.1 and 415.10.7.2.

[F] 415.10.7.1 Where required. A *continuous gas detection system* shall be provided in the areas identified in Sections 415.10.7.1.1 through 415.10.7.1.4.

[F] 415.10.7.1.1 Fabrication areas. A *continuous gas detection system* shall be provided in *fabrication areas* where gas is used in the *fabrication area*.

[F] 415.10.7.1.2 HPM rooms. A *continuous gas detection system* shall be provided in HPM rooms where gas is used in the room.

[F] 415.10.7.1.3 Gas cabinets, exhausted enclosures and gas rooms. A *continuous gas detection system* shall be provided in gas cabinets and exhausted enclosures. A *continuous gas detection system* shall be provided in gas rooms where gases are not located in gas cabinets or exhausted enclosures.

[F] 415.10.7.1.4 Corridors. Where gases are transported in piping placed within the space defined by the walls of a *corridor* and the floor or roof above the *corridor*, a *continuous gas detection system* shall be provided where piping is located and in the *corridor*.

Exception: A *continuous gas detection system* is not required for occasional transverse crossings of the *corridors* by supply piping that is enclosed in a ferrous pipe or tube for the width of the *corridor*.

[F] 415.10.7.2 Gas detection system operation. The *continuous gas detection system* shall be capable of monitoring the room, area or equipment in which the gas is located at or below all the following gas concentrations:

1. Immediately dangerous to life and health (IDLH) values where the monitoring point is within an exhausted enclosure, ventilated enclosure or gas cabinet.
2. Permissible exposure limit (PEL) levels where the monitoring point is in an area outside an exhausted enclosure, ventilated enclosure or gas cabinet.
3. For flammable gases, the monitoring detection threshold level shall be vapor concentrations in excess of 25 percent of the lower flammable limit (LFL) where the monitoring is within or outside an exhausted enclosure, ventilated enclosure or gas cabinet.
4. Except as noted in this section, monitoring for highly toxic and toxic gases shall also comply with the *Florida Fire Prevention Code*.

[F] 415.10.7.2.1 Alarms. The gas detection system shall initiate a local alarm and transmit a signal to the emergency control station when a short-term hazard condition is detected. The alarm shall be both visual and audible and shall provide warning both inside and outside the area where the gas is detected. The audible alarm shall be distinct from all other alarms.

[F] 415.10.7.2.2 Shutoff of gas supply. The gas detection system shall automatically close the shutoff valve at the source on gas supply piping and tubing related to the system being monitored for which gas is detected when a short-term hazard condition is detected. Automatic closure of shutoff valves shall comply with the following:

1. Where the gas detection sampling point initiating the gas detection system alarm is within a gas cabinet or exhausted enclosure, the shutoff valve in the gas cabinet or exhausted enclosure for the specific gas detected shall automatically close.
2. Where the gas detection sampling point initiating the gas detection system alarm is within a room and compressed gas containers are not in gas cabinets or an exhausted enclosure, the shutoff valves on all gas lines for the specific gas detected shall automatically close.
3. Where the gas detection sampling point initiating the gas detection system alarm is within a piping distribution manifold enclosure, the shutoff valve supplying the manifold for the compressed gas container of the specific gas detected shall automatically close.

Exception: Where the gas detection sampling point initiating the gas detection system alarm is at the use location or within a gas valve enclosure of a branch line downstream of a piping distribution manifold, the shutoff valve for the branch line located in the piping distribution manifold enclosure shall automatically close.

[F] 415.10.8 Manual fire alarm system. An *approved* manual *fire alarm* system shall be provided throughout buildings containing Group H-5. Activation of the alarm system shall initiate a local alarm and transmit a signal to the emergency control station. The *fire alarm* system shall be designed and installed in accordance with Section 907.

[F] 415.10.9 Emergency control station. An emergency control station shall be provided in accordance with Sections 415.10.9.1 through 415.10.9.3.

[F] 415.10.9.1 Location. The emergency control station shall be located on the premises at an *approved* location outside the *fabrication area*.

[F] 415.10.9.2 Staffing. Trained personnel shall continuously staff the emergency control station.

[F] 415.10.9.3 Signals. The emergency control station shall receive signals from emergency equipment and alarm and detection systems. Such emergency equipment and alarm and detection systems shall include, but not be limited to, the following where such equipment or systems are required to be provided either in this chapter or elsewhere in this code:

1. *Automatic sprinkler system* alarm and monitoring systems.
2. Manual *fire alarm* systems.
3. *Emergency alarm systems.*
4. *Continuous gas detection systems.*
5. Smoke detection systems.
6. Emergency power system.
7. Automatic detection and alarm systems for pyrophoric liquids and Class 3 water-reactive liquids required in the *Florida Fire Prevention Code.*
8. Exhaust *ventilation* flow alarm devices for pyrophoric liquids and Class 3 water-reactive liquids cabinet exhaust *ventilation* systems required in the *Florida Fire Prevention Code.*

[F] 415.10.10 Emergency power system. An emergency power system shall be provided in Group H-5 occupancies where required in Section 415.10.10.1. The emergency power system shall be designed to supply power automatically to required electrical systems when the normal electrical supply system is interrupted.

[F] 415.10.10.1 Required electrical systems. Emergency power shall be provided for electrically operated equipment and connected control circuits for the following systems:

1. HPM exhaust *ventilation* systems.
2. HPM gas cabinet *ventilation* systems.
3. HPM exhausted enclosure *ventilation* systems.
4. HPM gas room *ventilation* systems.
5. HPM gas detection systems.
6. *Emergency alarm systems.*
7. Manual *fire alarm* systems.
8. *Automatic sprinkler system* monitoring and alarm systems.
9. Automatic alarm and detection systems for pyrophoric liquids and Class 3 water-reactive liquids required in the *Florida Fire Prevention Code.*
10. Flow alarm switches for pyrophoric liquids and Class 3 water-reactive liquids cabinet exhaust *ventilation* systems required in the *Florida Fire Prevention Code.*
11. Electrically operated systems required elsewhere in this code or in the *Florida Fire Prevention Code* applicable to the use, storage or handling of HPM.

[F] 415.10.10.2 Exhaust ventilation systems. Exhaust *ventilation* systems are allowed to be designed to operate at not less than one-half the normal fan speed on the emergency power system where it is demonstrated that the level of exhaust will maintain a safe atmosphere.

[F] 415.10.11 Automatic sprinkler system protection in exhaust ducts for HPM. An *approved automatic sprinkler system* shall be provided in exhaust ducts conveying gases, vapors, fumes, mists or dusts generated from HPM in accordance with Sections 415.10.11.1 through 415.10.11.3 and the *Florida Building Code, Mechanical*.

[F] 415.10.11.1 Metallic and noncombustible nonmetallic exhaust ducts. An *approved automatic sprinkler system* shall be provided in metallic and noncombustible nonmetallic exhaust ducts where all of the following conditions apply:

1. Where the largest cross-sectional diameter is equal to or greater than 10 inches (254 mm).
2. The ducts are within the building.
3. The ducts are conveying flammable gases, vapors or fumes.

[F] 415.10.11.2 Combustible nonmetallic exhaust ducts. *Automatic sprinkler system* protection shall be provided in combustible nonmetallic exhaust ducts where the largest cross-sectional diameter of the duct is equal to or greater than 10 inches (254 mm).

Exception: Duct need not be provided with automatic sprinkler protection as follows:

1. Ducts *listed* or *approved* for applications without *automatic sprinkler system* protection.
2. Ducts not more than 12 feet (3658 mm) in length installed below ceiling level.

[F] 415.10.11.3 Automatic sprinkler locations. Sprinkler systems shall be installed at 12-foot (3658 mm)

intervals in horizontal ducts and at changes in direction. In vertical ducts, sprinklers shall be installed at the top and at alternate floor levels.

SECTION 416
APPLICATION OF FLAMMABLE FINISHES

[F] 416.1 General. The provisions of this section shall apply to the construction, installation and use of buildings and structures, or parts thereof, for the application of flammable finishes. Such construction and equipment shall comply with the *Florida Fire Prevention Code*.

[F] 416.2 Spray rooms. Spray rooms shall be enclosed with not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. Floors shall be waterproofed and drained in an *approved* manner.

[F] 416.2.1 Surfaces. The interior surfaces of spray rooms shall be smooth and shall be so constructed to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning, and shall be so designed to confine residues within the room. Aluminum shall not be used.

[F] 416.2.2 Ventilation. Mechanical *ventilation* and interlocks with the spraying operation shall be in accordance with the *Florida Building Code, Mechanical*.

[F] 416.3 Spraying spaces. Spraying spaces shall be ventilated with an exhaust system to prevent the accumulation of flammable mist or vapors in accordance with the *Florida Building Code, Mechanical*. Where such spaces are not separately enclosed, noncombustible spray curtains shall be provided to restrict the spread of flammable vapors.

[F] 416.3.1 Surfaces. The interior surfaces of spraying spaces shall be smooth and continuous without edges; shall be so constructed to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning; and shall be so designed to confine residues within the spraying space. Aluminum shall not be used.

[F] 416.4 Spray booths. Spray booths shall be designed, constructed and operated in accordance with the *Florida Fire Prevention Code*.

[F] 416.5 Fire protection. An *automatic sprinkler system* or *fire-extinguishing system* shall be provided in all spray, dip and immersing spaces and storage rooms and shall be installed in accordance with Chapter 9.

SECTION 417
DRYING ROOMS

[F] 417.1 General. A drying room or dry kiln installed within a building shall be constructed entirely of *approved* noncombustible materials or assemblies of such materials regulated by the *approved* rules or as required in the general and specific sections of this chapter for special occupancies and where applicable to the general requirements of the *Florida Building Code, Mechanical*.

[F] 417.2 Piping clearance. Overhead heating pipes shall have a clearance of not less than 2 inches (51 mm) from combustible contents in the dryer.

[F] 417.3 Insulation. Where the operating temperature of the dryer is 175°F (79°C) or more, metal enclosures shall be insulated from adjacent combustible materials by not less than 12 inches (305 mm) of airspace, or the metal walls shall be lined with $^1/_4$-inch (6.35 mm) insulating mill board or other *approved* equivalent insulation.

[F] 417.4 Fire protection. Drying rooms designed for high-hazard materials and processes, including special occupancies as provided for in Chapter 4, shall be protected by an *approved automatic fire-extinguishing system* complying with the provisions of Chapter 9.

SECTION 418
ORGANIC COATINGS

[F] 418.1 Building features. Manufacturing of organic coatings shall be done only in buildings that do not have pits or *basements.*

[F] 418.2 Location. Organic coating manufacturing operations and operations incidental to or connected therewith shall not be located in buildings having other occupancies.

[F] 418.3 Process mills. Mills operating with close clearances and that process flammable and heat-sensitive materials, such as nitrocellulose, shall be located in a *detached building* or noncombustible structure.

[F] 418.4 Tank storage. Storage areas for flammable and combustible liquid tanks inside of structures shall be located at or above grade and shall be separated from the processing area by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

[F] 418.5 Nitrocellulose storage. Nitrocellulose storage shall be located on a detached pad or in a separate structure or a room enclosed with not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

[F] 418.6 Finished products. Storage rooms for finished products that are flammable or combustible liquids shall be separated from the processing area by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

SECTION 419
LIVE/WORK UNITS

419.1 General. A *live/work unit* shall comply with Sections 419.1 through 419.9.

Exception: Dwelling or sleeping units that include an office that is less than 10 percent of the area of the *dwelling unit* are permitted to be classified as *dwelling units* with accessory occupancies in accordance with Section 508.2.

419.1.1 Limitations. The following shall apply to all live/work areas:

1. The *live/work unit* is permitted to be not greater than 3,000 square feet (279 m^2) in area;
2. The nonresidential area is permitted to be not more than 50 percent of the area of each *live/work unit*;
3. The nonresidential area function shall be limited to the first or main floor only of the *live/work unit*; and
4. Not more than five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.

419.2 Occupancies. *Live/work units* shall be classified as a Group R-2 occupancy. Separation requirements found in Sections 420 and 508 shall not apply within the *live/work unit* where the *live/work unit* is in compliance with Section 419. Nonresidential uses which would otherwise be classified as either a Group H or S occupancy shall not be permitted in a *live/work unit*.

Exception: Storage shall be permitted in the *live/work unit* provided the aggregate area of storage in the nonresidential portion of the *live/work unit* shall be limited to 10 percent of the space dedicated to nonresidential activities.

419.3 Means of egress. Except as modified by this section, the *means of egress* components for a *live/work unit* shall be designed in accordance with Chapter 10 for the function served.

419.3.1 Egress capacity. The egress capacity for each element of the *live/work unit* shall be based on the *occupant load* for the function served in accordance with Table 1004.1.2.

419.3.2 Spiral stairways. *Spiral stairways* that conform to the requirements of Section 1009.12 shall be permitted.

419.4 Vertical openings. Floor openings between floor levels of a *live/work unit* are permitted without enclosure.

[F] 419.5 Fire protection. The *live/work unit* shall be provided with a monitored *fire alarm* system where required by Section 907.2.9 and an *automatic sprinkler system* in accordance with Section 903.2.8.

419.6 Structural. Floor loading for the areas within a *live/work unit* shall be designed to conform to Table 1607.1 based on the function within the space.

419.7 Accessibility. Accessibility shall be designed in accordance with Chapter 11 for the function served.

419.8 Ventilation. The applicable *ventilation* requirements of the *Florida Building Code, Mechanical* shall apply to each area within the *live/work unit* for the function within that space.

419.9 Plumbing facilities. The nonresidential area of the *live/work unit* shall be provided with minimum plumbing facilities as specified by Chapter 29, based on the function of the nonresidential area. Where the nonresidential area of the *live/work unit* is required to be *accessible* by the *Florida Building Code, Accessibility*, the plumbing fixtures specified by Chapter 29 shall be *accessible*.

SECTION 420
GROUPS I-1, R-1, R-2, R-3

420.1 General. Occupancies in Groups I-1, R-1, R-2 and R-3 shall comply with the provisions of Sections 420.1 through 420.5 and other applicable provisions of this code.

420.2 Separation walls. Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.

420.3 Horizontal separation. Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711.

[F] 420.4 Automatic sprinkler system. Group R occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.8. Group I-1 occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.6. Quick-response or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.

[F] 420.5 Smoke detection and fire alarm systems. *Fire alarm* systems and *smoke alarms* shall be provided in Group I-1, R-1 and R-2 occupancies in accordance with Sections 907.2.6, 907.2.8 and 907.2.9, respectively. Single-or multiple-station *smoke alarms* shall be in accordance with Section 907.2.11.

SECTION 421
HYDROGEN CUTOFF ROOMS

[F] 421.1 General. Where required by the *Florida Fire Prevention Code*, hydrogen cutoff rooms shall be designed and constructed in accordance with Sections 421.1 through 421.8.

[F] 421.2 Definitions. The following terms are defined in Chapter 2:

GASEOUS HYDROGEN SYSTEM.

HYDROGEN CUTOFF ROOM.

[F] 421.3 Location. Hydrogen cutoff rooms shall not be located below grade.

[F] 421.4 Design and construction. Hydrogen cutoff rooms shall be classified with respect to occupancy in accordance with Section 302.1 and separated from other areas of the building by not less than 1-hour *fire barriers* constructed in

accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both; or as required by Section 508.2, 508.3 or 508.4, as applicable.

[F] 421.4.1 Opening protectives. Doors within the *fire barriers*, including doors to *corridors*, shall be *self-closing* in accordance with Section 716. Interior door openings shall be electronically interlocked to prevent operation of the hydrogen system when doors are opened or ajar or the room shall be provided with a mechanical exhaust *ventilation* system designed in accordance with Section 421.4.1.1.

[F] 421.4.1.1 Ventilation alternative. Where an exhaust system is used in lieu of the interlock system required by Section 421.4.1, exhaust *ventilation* systems shall operate continuously and shall be designed to operate at a negative pressure in relation to the surrounding area. The average velocity of *ventilation* at the face of the door opening with the door in the fully open position shall not be less than 60 feet per minute (0.3048 m/s) and not less than 45 feet per minute (0.2287 m/s) at any point in the door opening.

[F] 421.4.2 Windows. Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716.

[F] 421.5 Ventilation. Cutoff rooms shall be provided with mechanical *ventilation* in accordance with the applicable provisions for repair garages in Chapter 5 of the *Florida Building Code, Mechanical*.

[F] 421.6 Gas detection system. Hydrogen cutoff rooms shall be provided with an *approved* flammable gas detection system in accordance with Sections 421.6.1 through 421.6.3.

[F] 421.6.1 System design. The flammable gas detection system shall be *listed* for use with hydrogen and any other flammable gases used in the room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

[F] 421.6.2 Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the cutoff room.
2. Activation of the mechanical *ventilation* system.

[F] 421.6.3 Failure of the gas detection system. Failure of the gas detection system shall result in activation of the mechanical *ventilation* system, cessation of hydrogen generation and the sounding of a trouble signal in an *approved* location.

[F] 421.7 Explosion control. Explosion control shall be provided in accordance with the *Florida Fire Prevention Code*.

[F] 421.8 Standby power. Mechanical *ventilation* and gas detection systems shall be connected to a standby power system in accordance with Chapter 27.

SECTION 422
AMBULATORY CARE FACIILITIES

422.1 General. Occupancies classified as *ambulatory care facilities* shall comply with the provisions of Sections 422.1 through 422.7 and other applicable provisions of this code.

422.2 Separation. *Ambulatory care facilities* where the potential for four or more care recipients are to be *incapable of self-preservation* at any time, whether rendered incapable by staff or staff accepted responsibility for a care recipient already incapable, shall be separated from adjacent spaces, *corridors* or tenants with a *fire partition* installed in accordance with Section 708.

422.3 Smoke compartments. Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m^2) on one *story*, the *story* shall be provided with a *smoke barrier* to subdivide the *story* into no fewer than two *smoke compartments*. The area of any one such *smoke compartment* shall be not greater than 22,500 square feet (2092 m^2). The travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be installed in accordance with Section 709 with the exception that *smoke barriers* shall be continuous from outside wall to an outside wall, a floor to a floor, or from a *smoke barrier* to a *smoke barrier* or a combination thereof.

422.4 Refuge area. Not less than 30 net square feet (2.8 m^2) for each nonambulatory care recipient shall be provided within the aggregate area of *corridors*, care recipient rooms, treatment rooms, lounge or dining areas and other low-hazard areas within each *smoke compartment.* Each occupant of an *ambulatory care facility* shall be provided with access to a refuge area without passing through or utilizing adjacent tenant spaces.

422.5 Independent egress. A *means of egress* shall be provided from each *smoke compartment* created by smoke barriers without having to return through the *smoke compartment* from which *means of egress* originated.

[F] 422.6 Automatic sprinkler systems. *Automatic sprinkler systems* shall be provided for *ambulatory care facilities* in accordance with Section 903.2.2.

[F] 422.7 Fire alarm systems. A *fire alarm system* shall be provided for *ambulatory care facilities* in accordance with Section 907.2.2.

SECTION 423
STORM SHELTERS

423.1 General. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC-500.

423.1.1 Scope. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.

423.2 Definitions. The following terms are defined in Chapter 2:

STORM SHELTER.

Community storm shelter.

Residential storm shelter.

**

SECTION 424
CHILDREN'S PLAY STRUCTURES

424.1 Children's play structures. Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in height and 150 square feet (14 m^2) in area shall comply with Sections 424.2 through 424.5.

424.2 Materials. Children's play structures shall be constructed of noncombustible materials or of combustible materials that comply with the following:

1. *Fire-retardant-treated* wood complying with Section 2303.2.
2. Light-transmitting plastics complying with Section 2606.
3. Foam plastics (including the pipe foam used in soft-contained play equipment structures) having a maximum heat-release rate not greater than 100 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289, using the 20 kW ignition source.
4. Aluminum composite material (ACM) meeting the requirements of Class A *interior finish* in accordance with Chapter 8 when tested as an assembly in the maximum thickness intended for use.
5. Textiles and films complying with the flame propagation performance criteria contained in NFPA 701.
6. Plastic materials used to construct rigid components of soft-contained play equipment structures (such as tubes, windows, panels, junction boxes, pipes, slides and decks) exhibiting a peak rate of heat release not exceeding 400 kW/ m^2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation at a thickness of 6 mm.
7. Ball pool balls, used in soft-contained play equipment structures, having a maximum heat-release rate not greater than 100 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289, using the 20 kW ignition source. The minimum specimen test size shall be 36 inches by 36 inches (914 mm by 914 mm) by an average of 21 inches (533 mm) deep, and the balls shall be held in a box constructed of galvanized steel poultry netting wire mesh.
8. Foam plastics shall be covered by a fabric, coating or film meeting the flame propagation performance criteria of NFPA 701.
9. The floor covering placed under the children's play structure shall exhibit a Class I interior floor finish classification, as described in Section 804, when tested in accordance with NFPA 253.

[F] 424.3 Fire protection. Children's play structures shall be provided with the same level of *approved* fire suppression and detection devices required for other structures in the same occupancy.

424.4 Separation. Children's play structures shall have a horizontal separation from building walls, partitions and from elements of the *means of egress* of not less than 5 feet (1524 mm). Children's playground structures shall have a horizontal separation from other children's play structures of not less than 20 feet (6090 mm).

424.5 Area limits. Children's play structures shall be not greater than 300 square feet (28 m^2) in area, unless a special investigation, acceptable to the building official, has demonstrated adequate fire safety.

SECTIONS 425 through 448
RESERVED

SECTION 449
HOSPITALS

449.1 Scope.

449.1.1 All newly licensed or newly constructed hospitals, all hospital outpatient facilities and hospital mobile and transportable units unless exempted by Chapter 395.0163, *Florida Statutes* and all additions, alterations or renovations to an existing licensed hospital shall comply with all applicable requirements of this code and the minimum standards of design, construction and specified minimum essential utilities and facilities of this section and shall have plans reviewed and construction surveyed by the state agency authorized to do so by Chapter 553.80(1)(c), *Florida Statutes* to assure compliance with all applicable requirements of this code.

449.1.2 A change of ownership of an existing licensed hospital or a change to an existing hospital's license or functional use that does not require new physical plant or design revisions or changes shall not require compliance with this section.

449.1.3 The *Florida Building Code, Existing Building,* Section 101.2, Scope exempts state licensed hospitals from compliance with that code. Any repair, alteration, change of occupancy, addition and relocation of an existing state licensed hospital shall comply with the applicable requirements of this code and this section.

449.1.4 For project submission and fee requirements, and other administrative, licensure, and programmatic provisions for hospitals, see Agency for Health Care Administration [AHCA] Chapter 59A-3 *Florida Administrative Code* (F.A.C.) and Chapter 395, *Florida Statutes*.

449.1.5 For state licensure purposes, these codes and standards shall be applicable to the project on the effective date of this code at the time of preliminary plan approval by the Agency for Health Care Administration (the Agency) or at the first construction document review if there has been no previous preliminary plan approval for that project.

449.2 Additional codes and standards for the design and construction of general, rehabilitative, and psychiatric hospitals, including intensive residential treatment facilities (IRTF) for children and adolescents, and unless exempted by Chapter 395.0163, *Florida Statutes*, all hospital outpatient facilities and hospital mobile and transportable units. In addition to the minimum standards required by Section 449 of this code, Chapter 59A-3 *Florida Administrative Code*, or by Chapter 395, *Florida Statutes*, all new hospital facilities and all additions, alterations or renovations to an existing licensed hospital, as listed in Section 449.2 of this code shall also be in compliance with the following codes and standards on the effective date of this code, as described in Section 449.1.5 of this code**.**

449.2.1 The fire codes described in Chapter 69A-53, Uniform Fire Safety Standards for Hospitals and Nursing Homes, *Florida Administrative Code*.

449.2.2 *The Guidelines for Design and Construction of Health Care Facilities* (*The Guidelines*), as reference in Chapter 35 of this code.

449.3 Additional physical plant requirements for general, rehabilitation, and psychiatric hospitals, including intensive residential treatment facilities (IRTF) for children and adolescents, and unless exempted by Chapter 395.0163, *Florida Statutes*, all hospital outpatient facilities and hospital mobile and transportable units. In addition to the codes and standards referenced in Section 449.2 of this code, the following minimum standards of construction and specified minimum essential facilities, shall apply to all new hospitals and all additions, alterations or renovations to an existing licensed hospital, as described in Section 449.1 of this code and listed in this section.

449.3.1 Critical care units. (Reference *The Guidelines* for other requirements.)

449.3.1.1 Sliding doors used for access to critical care rooms may be either manual or power operated and if located on an exit access corridor shall be smoke resistive and equipped with latching hardware.

449.3.2 Newborn intensive care units. (Reference *The Guidelines* for other requirements.)

449.3.2.1 General categories of neonatal services in the state of Florida are Level I, newborn nursery; Level II, intermediate care unit; and Level III, intensive care unit. Facilities which offer obstetrical services shall provide at a minimum a Level I newborn nursery or a holding nursery that shall meet the requirements of *The Guidelines*, and facilities that offer neonatal care for Level II and Level III neonatal services shall meet the requirements of *The Guidelines* for a newborn intensive care unit.

449.3.3 Mobile testing and treatment facilities.

449.3.3.1 In addition to any other state of Florida required permits, mobile facilities shall be approved in advance by the Agency for Health Care Administration before they may be utilized for patient services.

449.3.3.2 The mobile facility shall comply with the applicable requirements of the *Florida Building Code, Building, The Guidelines*, Part 5 Other Health Care Facilities, Chapter 5.1 Mobile, Transportable, and Relocatable Units, and with Section 449 of this code for the type of service to be provided.

449.3.3.3 Mobile or transportable units that are limited to providing noninvasive, diagnostic and treatment services without the use of anesthetics shall not be required to comply with other sections of *The Guidelines* as described in *The Guidelines* Chapter 5.1, Section 5.1–1.1.2.1.

449.3.3.4 Electrical connection to the hospital electrical system shall be permitted only when the mobile facility complies with appropriate requirements of the *Florida Building Code, Building.*

449.3.3.5 When units provide critical care procedures, there shall be a "code blue" code call station in the unit connected to an attended location to summon assistance from the hospital emergency resuscitation response team.

449.3.4 Architectural details, surfaces, and furnishings. (Reference *The Guidelines* for other requirements.)

449.3.4.1 Each patient sleeping room shall have a window(s) with a view to the outside of the building that is visible from the patient's bed except when a cubicle curtain is closed. The clear opening of the window's width and height shall have a minimum of 20 feet (6.10 m) unobstructed vista to any permanent structure or equipment, and a minimum of 15 feet (4.57 m) unobstructed vista to any vehicular driveway or property line measured horizontally from the plane of the window.

449.3.4.2 Ceilings in rooms with ceiling-mounted surgical light fixtures and in kitchens shall be a minimum height of 9 feet (2.7 m).

449.3.4.3 A pair of doors opening to a room or closet that is located on an exit access corridor shall be equipped with automatic positive latching for both the active and inactive door leaf and shall be equipped with rabbets, bevels, or an astragal at the meeting edges of the doors. The inactive door leaf shall be equipped with either an automatic or semiautomatic flush bolt to provide positive latching. Where the doors are not required to be equipped with closers, a door coordinator is not required.

449.3.4.4 Toilet compartment partitions and urinal screens shall be constructed of products that do not rust, corrode or delaminate.

449.3.4.5 All smoke barriers, horizontal exits and exit passageway partitions shall be constructed prior to the construction of all intervening walls.

449.3.4.6 Smoke barriers shall be constructed so as to provide a continuous smoke-tight membrane from exterior wall to exterior wall and from the floor to the underside of the deck above. This includes interstitial space and the area above solid fire-tested membranes.

449.3.4.7 Where it is not possible to visually inspect a fire-rated partition, wall or barrier or a smoke barrier that extends through the attic or interstitial space to the roof or floor deck above because of the location of a monolithic ceiling membrane, ceiling access panel(s) shall be installed adjacent to each side of the partition, wall or barrier at intervals not exceeding 30 feet (9.00 m) and in such locations as necessary to view all surfaces of the partition, wall or barrier. Other ceiling access panels shall only be installed as required by other sections of the code. Partitions, walls and barriers requiring protected openings or penetrations shall be identified in accordance with Section 703 of this code.

449.3.4.8 Where electrical conduits, cable trays, ducts and utility pipes pass through the smoke barrier, the utilities shall be located so that access is maintained to adjacent wall surfaces and to all damper access panels. The details shall show the studs and reinforcing half studs so that proper support is provided for the wall surfacing material. There shall be a minimum clearance of 6 inches (152 mm) between all conduits, piping and duct work that are parallel or adjacent to all fire and fire/smoke-rated walls to facilitate the inspection of these walls.

449.3.4.9 The use of pocket sliding or folding doors to patient use toilet, baths, or showers shall not be permitted. A sliding door equipped with sliding door hardware located on the patient room side of the wall and not equipped with a bottom door track shall be permitted.

449.3.5 Elevators where required. (Reference *The Guidelines* for other requirements.)

449.3.5.1 All elevators shall be in compliance with the requirements of Chapter 30 of the *Florida Building Code, Building* and Chapter 69A-47, *Florida Administrative Code*, "Uniform Fire Safety Standards for Elevators."

449.3.6 Heating, ventilating and air-conditioning systems. (Reference *The Guidelines* for other requirements.)

449.3.6.1 Air-handling equipment shall be installed exterior of the building, to include the roof, in a designated equipment room(s), or in a space(s) located in an attic(s**).** If the equipment serves only one room, it may be located above the ceiling and shall be accessible through an access opening in accordance with this code. Access panels are not required for lay-in ceiling installations, provided the service functions are not obstructed by other above-ceiling construction, such as electrical conduits, piping, audio visual cabling and like equipment components or supports.

449.3.6.2 All new hospital, outpatient surgery and cardiac catheterization facility construction shall have completely ducted air-supply, return, outside air and exhaust systems. In hospital buildings with multiple uses, tenants or occupancies, located on a separate floor or floors within the building, or located in a medical office building, only the licensed health care areas where invasive procedures, as defined by *The Guidelines*, are performed shall be required to be served by separate ducted mechanical air-supply, return and exhaust systems.

449.3.6.3 In new construction, horizontal offsets of duct system risers penetrating more than one floor shall not be allowed.

449.3.6.4 Flexible ducts shall be listed and labeled to the UL181 *Standard for Factory-Made Air Ducts and Air Connectors* and shall be Class 0 or Class 1. Flexible ducts shall meet the following additional performance rating criteria:

449.3.6.4.1 The duct shall have a minimum rated air velocity of 4,000 feet per minute, a minimum positive pressure rating of 4 inches water gauge, and a minimum negative pressure rating of 1 inch water gauge.

449.3.6.4.2 The outer vapor barrier shall have a perm rating not greater than 0.05 perms when tested in accordance with ASTM E 96, Procedure A.

449.3.6.4.3 Flexible air connectors shall be limited to 14 feet (4267 mm) maximum installed length and shall not pass through any wall, partition, or enclosure of a vertical shaft that is required to have a fire resistance rating of 1 hour or more. Flexible air ducts shall not be limited in length.

449.3.6.5 Variable air volume systems shall not be permitted for use in surgical departments, obstetrical departments, laboratories, isolation rooms and critical care units and rooms.

449.3.6.6 Filter housing frame blank-off panels shall be permanently attached to the frame, constructed of rigid materials and have sealing surfaces equal to or greater than the filter media installed in the filter frame. All joints between the blank-off panels, filter housing frames and filter support structure shall be caulked airtight.

449.3.7 Fan and damper control during fire alarm.

449.3.7.1 During an automatic fire alarm activation or the activation of a duct smoke detector, fan systems and fan equipment serving more than one room shall be stopped to prevent the movement of smoke by mechanical means from the zone in alarm to adjacent smoke zones.

449.3.7.2 Fan control shall be designed so as to minimize the interruption of heating, ventilating and air conditioning in compartments remote from the compartment in alarm.

449.3.7.3 Fan control shall not interfere with the continuous operation of exhaust systems conveying ethylene oxide or other hazardous chemicals and fumes or systems required to operate continuously for the health and safety of occupants. Such systems shall include fume hood exhaust deemed by the governing body of the hospital to present a hazard to occupants if exhaust airflow is stopped. Air-handling systems shall be designed to allow for continuous operation of all such

systems and to minimize movement of smoke by mechanical means from the zone in alarm.

449.3.8 Carbon monoxide detector. (See Section 908.7 of this code.)

449.3.9 Plumbing. (Reference *The Guidelines* for other requirements.)

449.3.9.1 All plumbing systems shall be designed and installed in accordance with the *Florida Building Code, Plumbing.*

449.3.10 Fire pump. Where required in new construction, fire pumps and ancillary equipment shall be separated from other functions by construction having a 2-hour fire-resistance rating.

449.3.10.1 The fire pump normal service disconnect shall be rated to hold locked rotor current indefinitely. If the approved normal service disconnect is located on the exterior, it shall be supervised by connection to the fire pump remote annunciator and shall provide a separate fire alarm system trouble indication.

449.3.10.2 When the fire pump is placed on the emergency system in addition to the normal supply, the emergency feeder protective device shall be sized in accordance with maximum rating or settings of Chapter 27 of the *Florida Building Code, Building.*

449.3.10.3 The fire pump transfer switch may be either manual or automatic. If located on the line side of the controller as a separate unit, the switch must be rated for the pump motor locked rotor current indefinitely and must be located in the pump room.

449.3.10.4 Combination fire pump controller and transfer switch units listed by the Underwriter's Laboratories, Inc., as prescribed by Chapter 27 of the *Florida Building Code, Building* are acceptable when the transfer switch has exposable and replaceable contacts, not circuit breaker types, rated for the available short-circuit current.

449.3.10.5 The fire pump shall be installed in a readily accessible location. When it is located on the grade level floor, there shall be direct access from the exterior.

449.3.11 Electrical requirements. (Reference *The Guidelines* for other requirements.)

449.3.11.1 All material, including equipment, conductors, controls, and signaling devices, shall be installed to provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facility requirements as shown in the specifications and as indicated on the plans.

449.3.11.2 All materials and equipment shall be factory listed as complying with applicable standards of Underwriter's Laboratories, Inc. or other similarly established standards of a nationally recognized testing laboratory (NRTL) that has been certified by the Occupational Safety and Health Administration (OSHA) for that referenced standard.

449.3.11.3 Field labeling of equipment and materials shall be permitted only when provided by a nationally recognized testing laboratory that has been certified by the Occupational Safety and Health Administration (OSHA) for that referenced standard.

449.3.11.4 Nonmetallic sheathed cable or similar systems are not permitted for power and lighting wiring in any facility.

449.3.11.5 Panel boards located in spaces subject to storage shall have the clear working space in accordance with Chapter 27 of this code. "ELECTRICAL ACCESS - NOT FOR STORAGE" shall be permanently marked on the floor and wall about the panel. Panel boards shall not be located in an exit access corridor or in an unenclosed space or area that is open to an exit access corridor. Panel boards may be located inside of a room or closet that opens into an exit access corridor only when the room or closet is separated from the exit access corridor by a partition and door that comply with this code.

449.3.11.6 There shall be documentation for equipotential grounding in all patient care areas, building service ground electrode systems, lightning protection ground terminals and special systems such as fire alarm, nurse call, paging, generator, emergency power, fault analysis and breaker coordination.

449.3.11.7 All spaces occupied by people, machinery and equipment within buildings and approaches to buildings shall have electric lighting.

449.3.11.8 Operating rooms and delivery rooms shall have general lighting for the room in addition to local high intensity, specialized lighting provided by special fixtures at the surgical and obstetrical tables. Each special lighting unit for local lighting at the tables shall be connected to an independent circuit and shall be powered from the critical branch. A minimum of one general purpose lighting fixture shall be powered from a normal circuit in an operating room, delivery or similar room.

449.3.11.9 There shall be a maximum of six duplex receptacles on a circuit in general patient care areas.

449.3.11.10 The circuitry of all receptacles required by *The Guidelines* in critical care areas, in all emergency treatment rooms or areas, and other areas including, angiographic laboratories, cardiac catheterization laboratories, coronary care units, hemodialysis rooms or areas, human physiology laboratories, intensive care units and postoperative recovery rooms, shall be provided as follows:

449.3.11.10.1 All electrical receptacles at the head of the bed shall be connected to the critical branch of the essential electrical system, except two of the required number shall be connected to a normal power circuit or to a critical branch circuit from a different transfer switch.

449.3.11.10.2 There shall be no more than two duplex or four single receptacles per circuit.

449.3.11.11 All receptacles shall have engraved cover plates to indicate the panel board and circuit numbers powering the device.

449.3.11.12 Branch circuit over-current devices shall be readily accessible to nursing staff and other authorized personnel.

449.3.11.13 The electrical system shall have coordinated short circuit protection.

449.3.11.14 Provide color coding for the junction boxes for the branches of the essential electrical system.

449.3.12 Fire alarm systems. (Reference *The Guidelines* for other requirements.)

449.3.12.1 Fire alarm systems. A fire alarm annunciator panel shall be provided at a 24-hour monitored location. The panel shall indicate the zone of actuation of the alarm, and there shall be a trouble signal indicator. Each smoke compartment shall be annunciated as a separate fire alarm zone. A fire alarm system zone shall not include rooms or spaces in other smoke compartments and shall be limited to a maximum area of 22,500 square feet (2090 m^2).

449.3.13 Nurse call system. (Reference *The Guidelines* for other requirements.)

449.3.13.1 A nurse call system shall be provided that will register a call from each patient bed to the nurse station and activate a visual signal at the patient room door and activate a visual and audible signal in the clean workroom, the soiled workroom, the nourishment station and the master station of the nursing unit. In multicorridor nursing units, additional visible signals shall be installed at corridor intersections in the vicinity of nurse stations. In rooms containing two or more calling stations, indicating lights shall be provided for each calling station.

449.3.13.2 Master staff and duty stations may include volume controls, provided the minimum setting provides audibility of 15 decibels above normal ambient noise levels where the station is located.

449.3.13.3 An emergency calling station of the pull cord type shall be provided and shall be conveniently located for patient use at each patient toilet, bath or shower room but not inside of the shower unless the nurse call device is listed for wet locations. The call signal shall be cancelled only at the emergency calling station. The emergency station shall activate distinctive audible and visual signals immediately.

449.3.13.4 An emergency resuscitation alarm (Code Blue) calling station shall be provided for staff use in each operating, delivery, recovery LDR, LDRP, emergency, cardiac and intensive nursing care rooms, nurseries and similar rooms.

449.3.13.5 A staff call station, or similar device, shall be located within each psychiatric seclusion room and shall be of hands free operation.

449.3.13.6 The emergency resuscitative alarm panels (Code Blue) that receive the code call station signal, shall be located as required by *The Guidelines* and at other locations outside of the unit as determined by the facility that are staffed 24 hours per day. Audible signals may be silenced temporarily for a call provided subsequent calls automatically reactivate the audible signal immediately. The alarm panel at the 24-hour staffed station may indicate the nurse station/suite where the call originated in lieu of identifying the bed only when a 24-hour station is not one and the same as the attending nurse station.

449.3.14 Emergency electric service. (Reference *The Guidelines* for other requirements.)

449.3.14.1 A Type 1 essential electrical system shall be provided in all hospitals as described in NFPA 99, Health Care Facilities. The emergency power for this system shall meet the requirements of a Level 1, Type 10, Class 48 generator as described in NFPA 110, Emergency Standby Power Systems.

449.3.14.2 In new construction, the normal main service equipment shall be separated from the emergency distribution equipment by locating it in a separate room. Transfer switches shall be considered emergency distribution equipment for this purpose.

449.3.14.3 Switches for critical branch lighting shall be totally separate from normal switching. Critical branch switches may be adjacent to normal switches. Switches for life safety lighting are not permitted except as required for dusk-to-dawn automatic control of exterior lighting fixtures.

449.3.14.4 The generator remote annunciator shall be located at a designated 24-hour staffed location.

449.3.14.5 There shall be selected life safety lighting provided at a minimum of 1 footcandle (10 lux) and designed for automatic dusk-to-dawn operation along the travel paths from the exits to the public way or to safe areas located a minimum of 30 feet (9.144 m) from the building.

449.3.14.6 A minimum of one elevator per bank serving any patient use floor shall be connected to the equipment branch of the essential electric system and arranged for manual or automatic operation during loss of normal power.

449.3.14.7 If a day tank is provided, it shall be equipped with a dedicated low-level fuel alarm and a manual pump. The alarm shall be located at the generator derangement panel.

449.3.14.8 Transfer switch contacts shall be of the open type and shall be accessible for inspection and replacement.

449.3.14.9 If required by the facility's emergency food plan, there shall be power connected to the equipment branch of the essential electrical system for kitchen refrigerators, freezers and range hood exhaust fans. Selected lighting within the kitchen and dry storage areas shall be connected to the critical branch of the

essential electrical system.

449.3.14.10 Outpatient surgery facilities, cardiac catheterization facilities, or pain management facilities that utilize intravenous (IV) drip sedation located in a separate building or on another campus shall have a Type 1 essential electrical system in compliance with NFPA 99, Health Care Facilities. The emergency power for this system shall meet the requirements of a Level 1, Type 10, Class 8 generator as described in NFPA 110, Emergency Standby Power System.

449.3.15 Lightning protection.

449.3.15.1 A lightning protection system shall be provided for all new buildings and additions in accordance with NFPA 780, Installation of Lightning Protection Systems.

449.3.15.2 Where additions are constructed to existing buildings, the existing building's lightning protection system, if connected to the new lightning protection system, shall be inspected and brought into compliance with current standards.

449.3.15.3 A lightning protection system shall be installed on all buildings in which outpatient surgical procedures, cardiac catheterization procedures, or pain management procedures that utilize IV drip sedation are provided.

449.3.15.4 There shall be surge protection for all normal and emergency electrical services.

449.3.15.5 Additional surge protection shall be provided for all low-voltage and power connections to all electronic equipment in critical care areas and life safety systems and equipment such as fire alarm, nurse call and other critical systems. Protection shall be in accordance with appropriate IEEE Standards for the type of equipment protected.

449.3.15.6 All low-voltage system main or branch circuits entering or exiting the structure shall have surge suppressors installed for each pair of conductors and shall have visual indication for protector failure to the maximum extent feasible.

449.4 Physical plant requirements for disaster preparedness of new hospital construction.

449.4.1 Definitions. The following definitions shall apply specifically to all new facilities as used herein:

449.4.1.1 NEW FACILITY. A hospital which has not received a Stage II Preliminary Plan approval from the Agency for Health Care Administration pursuant to this section.

449.4.1.2 NET SQUARE FOOTAGE. The clear floor space of an area excluding cabinetry and other fixed furniture or equipment.

449.4.1.3 DURING AND IMMEDIATELY FOLLOWING. A period of 72 hours following the loss of normal support utilities to the facility.

449.4.1.4 OCCUPIED PATIENT AREA(S). The location of patients inside of the new facility or in the addition of a wing or floor to an existing facility during and immediately following a disaster. If these patients are to be relocated into an area of the existing facility during and immediately following a disaster, then for purposes of this code, that location will be defined as the "occupied patient area."

449.4.1.5 PATIENT SUPPORT AREA(S). The area(s) required to ensure the health, safety and well-being of patients during and immediately following a disaster, such as a nursing station, clean and soiled utility areas, food preparation area, and other areas as determined by the facility to be kept operational during and immediately following a disaster.

449.4.1.6 ON-SITE. Either in, immediately adjacent to, or on the campus of the facility, or addition of a wing or floor to an existing facility.

449.4.2 Disaster preparedness construction standards. The following construction standards are in addition to the physical plant requirements described in Sections 449.2 through 449.3. These minimum standards are intended to increase the ability of the facility to be structurally capable of serving as a shelter for patients, staff and the family of patients and staff and equipped to be self-supporting during and immediately following a disaster.

449.4.2.1 Space standards.

449.4.2.1.1 For planning purposes, each new facility shall provide a minimum of 30 net square feet (2.79 m^2) per patient served in the occupied patient area(s). The number of patients to be served is to be determined by the facility administrator.

449.4.2.1.2 As determined by the facility, space for administrative and support activities shall be provided for use by facility staff to allow for care of patients in the occupied patient area(s).

449.4.2.1.3 As determined by the facility, space shall be provided for staff and family members of patients and staff.

449.4.2.2 Site standards.

449.4.2.2.1 Except as permitted by Section 1612 of this code, the lowest floor of all new facilities shall be elevated to the base flood elevation as defined in Section 1612, plus 2 feet (609.6 mm), or to the height of hurricane Category 3 (Saffir-Simpson scale) surge inundation elevation, as described by the Sea, Lake, and Overland Surge (SLOSH) from Hurricanes model developed by the Federal Emergency Management Agency (FEMA), United States Army Corps of Engineers (USACE), and the National Weather Service (NWS), whichever is higher.

449.4.2.2.2 For all existing facilities, the lowest floor elevations of all additions, and all patient support areas including food service, and all patient support utilities, including mechanical, and electrical (except fuel storage as noted in Section 449.4.2.9.3 of this code) for the additions shall be at or above the elevation of the existing building, if the

existing building was designed and constructed to comply with either the site standards of Section 449.4 or local flood-resistant requirements, in effect at the time of construction, whichever requires the higher elevation, unless otherwise permitted by Section 1612 of this code. If the existing building was constructed prior to the adoption of either the site standards of Section 449.4 or local flood-resistant requirements, then the addition and all patient support areas and utilities for the addition as described in this section shall either be designed and constructed to meet the requirements of Section 449.4.2.2.1 or be designed and constructed to meet the dry flood proofing requirements of Section 1612.

449.4.2.2.3 Substantial improvement, as defined by Section 1612, to all existing facilities located within flood areas as defined in Section 1612 of this code or within a Category 3 surge inundation zone as described in Section 449.4.2.2.1 of this code, shall be designed and constructed in compliance with Section 1612.

449.4.2.2.4 Where an off-site public access route is available to the new facility at or above the base flood elevation, a minimum of one on-site emergency access route shall be provided that is located at the same elevation as the public access route.

449.4.2.2.5 New landscaping elements shall be located so if damaged they will not block the on-site emergency access route to the facility. Outdoor signs and their foundations shall be designed to meet the wind load criteria of the *Florida Building Code, Building.*

449.4.2.2.6 New light standards and their foundations used for lighting the on-site emergency access route shall be designed to meet the wind load criteria of ASCE 7 with wind speeds determined from Figure 26.5-1B with appropriate exposure category dependent on site location.

449.4.2.3 Structural standards. Wind load design of the building structure and exterior envelope including exterior wall systems shall be designed in accordance with the code.

449.4.2.4 Roofing standards.

449.4.2.4.1 Roofing membrane material shall resist the uplift forces specified in the code. Roof coverings shall be installed according to the specifications provided by the manufacturer.

449.4.2.4.2 Loose-laid ballasted roofs shall not be permitted.

449.4.2.4.3 All new roof appendages such as ducts, tanks, ventilators, receivers, dx condensing units and decorative mansard roofs and their attachment systems shall be structurally engineered to meet the wind load requirements of the applicable building code. All of these attachment systems shall be connected directly to the underlying roof structure or roof support structure.

449.4.2.5 Exterior unit standards.

449.4.2.5.1 All exterior window units, skylights, exterior louvers and exterior door units including vision panels and their anchoring systems shall be impact resistant or protected with an impact-resistant covering meeting the requirements of the Testing Application Standards (TAS) 201, 202 and 203 of this code in accordance with the requirements of Sections 1626.2 through 1626.4 of this code. The impact resistant coverings may be either permanently attached or may be removable if stored on site of the facility.

449.4.2.5.2 The location or application of exterior impact protective systems shall not prevent required exit egress from the building.

449.4.2.5.3 When not being utilized to protect the windows, the permanently attached impact-resistant coverings shall not reduce the percentage of the clear window opening below that required by this code for the patient room.

449.4.2.6 Heating, ventilation and air-conditioning (HVAC) standards.

449.4.2.6.1 All new air-moving equipment, dx condensing units, through-wall units and other HVAC equipment located outside of, partially outside of, or on the roof of the facility and providing service to the new facility shall be permitted only when either of the following are met:

449.4.2.6.1.1 They are located inside a penthouse designed to meet the wind load requirements of the *Florida Building Code, Building*; or

449.4.2.6.1.2 Their fastening systems are designed to meet the wind load requirements of the *Florida Building Code, Building* and they and all associated equipment are protected as required by TAS 201, 202 and 203 in accordance with the requirements of Sections 1626.2 through 1626.4 of this code from damage by horizontal impact by a separate and independent structure that allows access to all parts of the equipment at all times; or

449.4.2.6.1.3 They are completely protected by the equipment shrouding that meets the requirements of TAS 201, 202 and 203 in accordance with the requirements of Sections 1626.2 through1626.4 of this code.

449.4.2.6.2 All occupied patient areas and patient support areas shall be supplied with sufficient HVAC as determined by the facility to ensure the health, safety and well-being of all patients and staff during and immediately following a disaster.

449.4.2.6.3 As determined by the facility these selected HVAC systems and their associated support equipment, such as a control air compressor essential to the maintenance of the occupied patient and patient support area(s), shall receive their power from the emergency power supply system(s).

449.4.2.6.4 Ventilation air change rates in occupied patient areas shall be maintained as specified in this section during and immediately following a disaster by connection to the essential electrical system.

449.4.2.6.5 Auxiliary equipment and specialties such as hydronic supply piping and pneumatic control piping shall be located, routed and protected in such a manner as determined by the facility to ensure the equipment receiving the services will not be interrupted.

449.4.2.7 Plumbing standards.

449.4.2.7.1 There shall be an independent on-site supply (i.e., water well) or on-site storage capability (i.e., empty water storage containers or bladders) of potable water at a minimum quantity of 3 gallons (14 L) per in-patient in the new facility or wing or floor addition to an existing facility per day during and immediately following a disaster. For planning purposes, the number of in-patients shall be determined in writing by the facility. Hot water in boilers or tanks shall not be counted to meet this requirement.

449.4.2.7.2 There shall be an independent on-site supply or storage capability of potable water at a minimum quantity of 1 gallon (3.7 L) per facility staff, and other personnel in the new facility or wing or floor addition to an existing facility per day during and immediately following a disaster. For planning purposes, the number of these personnel shall be determined in writing by the facility. Hot water in boilers or tanks shall not be counted to meet this requirement.

449.4.2.7.3 The facility shall determine what amount of water will be sufficient to provide for patient services, and shall maintain an on-site supply or on-site storage of the determined amount.

449.4.2.7.4 When utilized to meet the minimum requirements of this rule, selected system appurtenances such as water pressure maintenance house pumps, and emergency water supply well pumps shall take power from the emergency power supply system(s).

449.4.2.8 Medical gas systems standards. The storage, distribution piping system and appurtenances serving the occupied patient area(s) and patient support area(s) shall be contained within a protected area(s) designed and constructed to meet the structural requirements of the code and debris impact requirements as specified by Sections 1626.2 through 1626.4.

449.4.2.9 Emergency electrical generator and essential electrical system standards.

449.4.2.9.1 There shall be an on-site Level 1 emergency electrical generator system designed to support the occupied patient area(s) and patient support area(s) with at least the following support services:

449.4.2.9.1.1 Ice-making equipment to produce ice for the patients served, or freezer storage equipment for the storage of ice for the patients served.

449.4.2.9.1.2 Refrigerator unit(s) and food service equipment if required by the emergency food plan.

449.4.2.9.1.3 At a minimum, there shall be one clothes washer and one clothes dryer for laundry service.

449.4.2.9.1.4 Selected HVAC systems as determined by the facility and other systems required by this code.

449.4.2.9.1.5 Electric lighting required to provide care and service to the patient occupied areas and the necessary patient support areas shall be connected to the essential electrical system**.**

449.4.2.9.2 The emergency generator system shall be fueled by a fuel supply stored on-site sized to fuel the generator for 100 percent load for 64 hours or 72 hours for actual demand load of the occupied patient area(s) and patient support area(s) and patient support utilities during and immediately following a disaster, whichever is greater.

449.4.2.9.3 The fuel supply shall either be located below ground or contained within a protected area that is designed and constructed to meet the structural requirements of the code and debris impact requirements of Sections 1626.2 through 1626.4. If an underground system is utilized, it shall be designed so as to exclude the entrance of any foreign solids or liquids.

449.4.2.9.4 All fuel lines supporting the generator system(s) for the occupied patient area(s) and patient support area(s) shall be protected also with a method designed and constructed to meet the structural requirements of the code and debris impact requirements of Sections 1626.2 through 1626.4.

449.4.2.9.5 All panel boards, transfer switches, disconnect switches, enclosed circuit breakers or emergency system raceway systems required to support the occupied patient area(s), patient support area(s) or support utilities shall be contained within a protected area(s) designed and constructed to meet the structural requirements of the code and debris impact requirements of Sections 1626.2 through 1626.4, and shall not rely on systems or devices outside of this protected area(s) for their reliability or continuation of service. The equipment system shall be kept entirely independent of all other wiring and equipment and shall not enter the same raceways, boxes, or cabinets with other wiring.

449.4.2.9.6 The emergency generator(s) shall be air or self-contained liquid cooled and it and other essential electrical equipment shall be installed in a protected area(s) designed and constructed to meet the structural requirements of the code and debris impact requirements of Sections 1626.2 through 1626.4.

449.4.2.9.7 If the facility does not have a permanent on-site optional stand-by generator to operate the normal branch electrical system, there shall be a permanently installed predesigned electrical service entry for the normal branch electrical system that will allow a quick connection to a temporary electrical generator. This quick connection shall be installed inside of a permanent metal enclosure rated for this purpose and may be located on the exterior of the building.

449.4.2.10 Fire protection standards.

449.4.2.10.1 If the facility requires fire sprinklers as part of its fire protection, either of the following shall be met:

449.4.2.10.1.1 On-site water storage capacity to continue sprinkler coverage, in accordance with the requirements of NFPA 13, Sprinkler Systems, or a fire watch, conducted in accordance with the requirements of Chapter 59A-3.081(a), *Florida Administrative Code.*

449.4.2.10.2 If the facility provides a fire watch in lieu of water storage to continue sprinkler coverage, then one type 4-A fire extinguisher or equivalent shall be provided for every three or less 2-A fire extinguishers required by NFPA 10, Portable Extinguishers. These additional extinguishers shall be equally distributed throughout the area they are protecting.

449.4.2.11 External emergency communications standards. (Reference Chapter 59A-3.081 *Florida Administrative Code* for requirements.)

SECTION 450
NURSING HOMES

450.1 Scope. All newly licensed or newly constructed nursing homes and all additions, alterations or renovations to an existing licensed nursing home shall comply with all applicable requirements of this code and the minimum standards of design, construction and specified minimum essential utilities and facilities of this section and shall have plans reviewed and construction surveyed by the state agency authorized to do so by Chapter 553.80(1)(c), *Florida Statutes* to assure compliance with all applicable requirements of this code.

450.1.1 A change of ownership of an existing licensed nursing home shall not require compliance with this section.

450.1.2 A facility licensed as a nursing home that only admits children 0 years through 20 years of age shall meet these minimum standards as they are required by the functional program of the facility. This functional program shall be developed in accordance with the requirements of *The Guidelines* as referenced in Section 450.2.2 of this code.

450.1.3 The *Florida Building Code, Existing Building,* Section 101.2, Scope, exempts state licensed nursing homes from compliance with that code. Any repair, alteration, change of occupancy, addition and relocation of an existing state licensed nursing home shall comply with the applicable requirements of this code and this section.

450.1.4 For project submission and fee requirements, codes and standards for existing facilities, and other administrative, licensure, and programmatic provisions for nursing homes, see Agency for Health Care Administration (AHCA) Chapter 59A-4, *Florida Administrative Code* (FAC) and Chapter 400 Part II, *Florida Statutes*.

450.1.5 For state licensure purposes, these codes and standards shall be applicable to the project on the effective date of this code at the time of preliminary plan approval by the Agency for Health Care Administration (the Agency) or at the first construction document review if there has been no previous preliminary plan approval for that project.

450.2 Additional codes and standards for the design and construction of nursing homes. In addition to the minimum design and construction standards required by Section 450 of this code, Chapter 59A-4, Minimum Standards for Nursing Homes, *Florida Administrative Code* or by Chapter 400 Part II, *Florida Statutes*, the following codes and standards shall also be met on the effective date of this code as described in Section 450.1.5 of this code:

450.2.1 The fire codes described in Chapter 69A-53, Uniform Fire Safety Standards for Hospitals and Nursing Homes, *Florida Administrative Code*.

450.2.2 *The Guidelines for Design and Construction of Health Care Facilities* (*The Guidelines*), Part 1, General and Part 6, Ventilation of Health Care Facilities as referenced in Chapter 35 of this code.

450.3 Additional physical plant requirements for nursing homes. In addition to the codes and standards referenced in Section 450.2 the following minimum standards of construction and specified minimum essential facilities shall apply to all new nursing homes, and all additions, alterations or renovations to an existing licensed nursing home, as described in Section 450.1 and listed in this section.

450.3.1 Alternate design models. Because nursing homes may provide care utilizing two basic organizational models, two alternate design models are permitted to meet some of the specific physical plant requirements of this section. These alternate design models, the institutional design model and the household design model for person-centered care, are described in Sections 450.3.2.1 and 450.3.2.2 of this code and are further defined by the physical plant requirements for each model as described in the applicable paragraphs of Section 450.3.

450.3.1.1 Either one or both of these design models may be used in the design of the nursing home as described by the functional program of the facility.

450.3.1.2 An institutional design model may utilize specific physical plant requirements of a household design model without being required to incorporate all of the household design elements.

450.3.1.3 Where no alternate design model is permitted, all nursing homes shall meet the described requirement.

450.3.2 Resident unit. Each resident unit shall consist of the resident rooms and support areas, and shall be arranged to avoid unnecessary and unrelated travel through the unit. It shall be designed to meet the organizational patterns of staffing, functional operations, and care programs as described in the functional program of the facility. Based on these aspects of the functional program, the resident unit may be designed to meet one of the following models:

450.3.2.1 Institutional design model. This model is based on an institutionalized medical program similar in arrangement to that found in some hospitals. If this model is utilized for the design of the resident unit, it shall consist of the resident rooms, nurse station(s), and resident support areas and services as described in Section 450.3.4.1. Dining, activity, and social areas may be centralized and located away from the resident unit.

450.3.2.1.1 Each resident unit shall be limited to a maximum of 60 beds.

450.3.2.1.2 Travel distance from the entrance to a nurses' station, and from a clean utility and a soiled utility room(s) or function(s) to the middle of the entrance door of the farthest resident room served shall be a maximum of 150 feet (45.72 m).

450.3.2.2 Household design model for person-centered care. This model is based on a home-like environment similar in arrangement to that found in a typical home. If this model is utilized for the design of the resident unit, it shall consist of the resident rooms and resident support areas and services as described in Section 450.3.4.2. Dining, activity, and social areas shall be decentralized and included within the resident household.

450.3.2.2.1 Each resident household (unit) shall be limited to a maximum of 20 residents.

450.3.2.2.2 Two individual resident households (units) may be grouped into a distinct neighborhood with a maximum of 40 residents. This neighborhood, composed of the two resident households, may share the required resident support areas and services as described in Section 450.3.4.2.

450.3.2.2.3 If an access corridor is utilized as part of this design, it shall be designed to include an open resident sitting and resting area(s) located along the corridor at least every 100 feet (30.48 m) of corridor length.

450.3.3 Resident rooms. Each resident room shall meet the following minimum standards:

450.3.3.1 In new construction and additions, the maximum room capacity of each resident room shall be two persons.

450.3.3.2 Nursing homes designed to serve only for children 0 through 20 years of age may have a maximum room capacity of four persons.

450.3.3.3 Where renovation work of an existing resident room alters the physical configuration of the room and the present capacity of the room is more than two persons, the maximum room capacity shall be no more than two persons at the conclusion of the renovation.

450.3.3.4 Each resident room shall have a minimum of 100 square feet (9.29 m^2) of clear floor area per bed in a double occupancy resident room and 120 square feet (11.15 m^2) of clear floor area in a single occupancy resident room, exclusive of the space consumed by the toilet room, closet(s), wardrobe(s), lavatory(ies), alcove(s), and either the space for the door swing(s) into the room or the space for entrance vestibule, whichever is greater. For the purpose of determining the minimum clear floor area, the entrance vestibule is defined as that floor area located between the room entrance door and the room floor area containing the resident bed(s).

450.3.3.5 Where renovation work is undertaken that alters the room configuration, every effort shall be made to meet these minimum space standards. When this is not possible due to existing physical conditions or constraints, and with the approval of the Agency, a resident room shall have no less than 80 square feet (7.43 m^2) of clear floor area per bed in a double occupancy resident room and 100 square feet (9.29 m^2) of clear floor area in a single occupancy resident room. Clear floor area is as described in Section 450.3.3.4.

450.3.3.6 For planning purposes, a full-size bed is assumed to be 3 feet 6 inches (1.07 m) wide by 8 feet (2.43 m) long.

450.3.3.7 A 3 feet (0.91 m) wide clear access space to each bed shall be provided along at least 75 percent of the length of one side of the bed and shall be designed to allow access for the use of a wheelchair and other portable equipment.

450.3.3.8 For a bed equipped with a piped in medical gas headwall unit, there shall be a minimum of 3 feet clearance (0.91 m) along the entire length of the bed between both sides and foot of the bed and any other bed, wall or any other fixed obstruction.

450.3.3.9 The dimensions and arrangement of each resident room shall be such that at least two bed locations are designed to accommodate resident personal choice. All such alternate bed locations shall meet the clearance requirements of Section 450.3.3.7 and shall be designed so the bed will not obstruct access to the supporting utilities serving the bed including the nurse call station, individual reading lamp or fixture, and the required electrical outlets that provide service for the bed or other equipment. In a double occupancy resident room, only one bed must meet this requirement and any bed equipped with a piped in medical gas headwall unit shall meet the requirements of Section 450.3.3.8 and is exempt from this requirement.

450.3.3.10 The configuration of each resident room shall be designed to meet one of the following models:

450.3.3.10.1 Institutional design model. If a double occupancy resident room is designed where the beds are located side by side, there shall be a minimum clearance of 3 feet (0.91 m) between both sides of each bed and any wall or any other fixed furniture, fixed obstruction or adjacent bed for at least 75 percent of the length of the bed, and a clearance of 3 feet 8 inches (1.11 m) to any fixed furniture, fixed obstruction, or adjacent bed at the foot of each bed to permit the passage of equipment or beds.

450.3.3.10.1.1 At a minimum, visual privacy shall be provided for each person by the installation of flame-retardant cubicle curtains or equivalent built-in devices.

450.3.3.10.1.2 The design for privacy shall not restrict resident access at any time to the room entrance, resident armchair, toilet or bathroom, wardrobe, or closet.

450.3.3.10.2 Household design model for person-centered care. Individual resident sleeping areas in a double occupancy resident room shall be separated from each other by a full height wall or a permanently installed sliding or folding door or partition that provides visual privacy for each person.

450.3.3.10.2.1 Either doors or cubicle curtains to these individual resident sleeping areas shall be provided.

450.3.3.10.2.2 The design for privacy shall not restrict resident access at any time to the room entrance, resident armchair, toilet room, bathroom, window, wardrobe, or closet.

450.3.3.11 Each resident room shall be provided with a bedside table or equivalent furniture, a reading lamp, a well-constructed appropriate bed, and a nonfolding type armchair for each individual resident. As determined by the functional program of the facility, there shall be a number of over-bed tables available to bed restricted residents.

450.3.3.12 Each new resident room, and each individual resident sleeping area, as described in Section 450.3.3.10.2, shall have an exterior window(s) to the outside that is physically accessible to each resident at all times and visible from the resident's bed except when a cubicle curtain is closed. The window shall be sized with a clear opening of 8 percent of the gross square footage of the resident sleeping room or individual resident sleeping area as described in Section 450.3.3.10.2. The clear opening of the window width and height shall have a minimum of 20 feet (6.10 m) unobstructed vista to any permanent structure, or equipment, and 15 feet (4.57 m) unobstructed vista to any vehicular driveway or property line measured horizontally from the plane of the window.

450.3.3.13 A handwashing facilily complete with mixing faucet shall be provided within each resident toilet room and within each resident room that shares a toilet room with another resident room. Separate resident sleeping areas, as described in Section 450.3.3.10.2, do not constitute a separate resident room.

450.3.3.14 Each resident shall have access to a toilet room without having to enter the general corridor area or another resident bed area in a double occupancy resident room. One toilet room shall serve no more than two residents and no more than two resident rooms. A plumbing connection for a rinsing device shall be provided at the resident toilet within each resident toilet room unless the functional program provides a method for disposing of bedpans, urinals, and emesis basins after each and every use and is approved by AHCA.

450.3.3.15 The door to the toilet room shall be side hinged, and either swing out from the toilet room or be equipped with emergency release hardware. A sliding door equipped with sliding door hardware located on the resident room side of the wall and not equipped with a bottom door track shall be permitted. Unless otherwise required by this code, the door shall be at least 32 inches (813 mm) in clear width opening. The toilet room door that swings open into the resident room shall not impede the swing of any other door that opens into the resident room.

450.3.3.16 Each resident room shall be provided with a wardrobe or closet for each resident. Each wardrobe or closet shall have minimum inside dimensions of 1 foot 10 inches (0.55 m) in depth by 2 feet 6 inches (0.58 m) in width. Each wardrobe or closet shall be accessible to the resident at all times and shall have an adjustable shelf(s) and an adjustable clothes rod that is adjustable in a maximum of 4 inches (10.16 cm) increments from 4 feet (1.22 m) to 5 feet 8 inches (1.73 m) above finished floor or higher as wardrobe or closet size permits. When the wardrobe or closet is designed to meet the requirements for accessibility in accordance with the *Florida Building Code, Accessibility*, it shall include additional accessible storage area(s) for full-length garments. The shelf may be omitted if the clothing unit provides at least two drawers. Locked storage for a resident's personal items shall be provided within the resident sleeping room if required by the functional program.

450.3.4 Resident support areas and services. The size and features of each resident support area will depend upon the number and type of residents served. The resident support areas shall be located inside of or readily accessible to each resident unit. The support areas and services shall be designed in accordance with one of the following design models.

450.3.4.1 Institutional design model.

450.3.4.1.1 Staff work area(s) (nurse station). A central and/or decentralized staff work area(s) shall be provided. Where a centralized staff work model is utilized it shall have space for supervisory administrative work activities, charting, and storage. The minimum area required shall be equal to 2 square

feet (0.19 m^2) for each resident bed served. Where a decentralized staff work model is utilized it shall provide for charting or transmitting charted data and for any storage of administrative activities.

450.3.4.1.2 A clean utility or clean holding room for storage and distribution of clean supply materials shall be provided. If the room is used for preparing resident care items, it shall contain a work counter, a hand-washing facility, and storage facilities for clean and sterile supplies. If the room is used only for storage and holding as a part of a system for distribution of clean and sterile supply materials, the work counter and handwashing facility requirements may be omitted. The minimum size of the room shall be 60 square feet (5.57 m^2).

450.3.4.1.3 A clean linen storage room, closet or area shall be provided. This area may be located within the clean utility or clean holding room. It shall be large enough to accommodate the storage of linen carts. If in compliance with the *Florida Fire Prevention Code* a closed-cart system may be used and stored in an alcove open to the corridor.

450.3.4.1.4 A soiled utility or soiled holding room(s) shall be provided. The soiled utility function shall be comprised of a flushing rim clinical service sink or deep bowl utility fixture with bedpan rinsing device, a double compartment sink, soiled linen receptacles, waste receptacles and a work counter with a usable minimum work surface area of 6 square feet (0.56 m^2). The total minimum size of the function shall be 80 square feet (7.43 m^2) and may be allocated among several soiled utility or soiled holding rooms. Rooms used only for the holding of soiled materials need contain only a handwashing facility.

450.3.4.1.5 Medication storage and distribution. A medicine preparation room or a self-contained medicine dispensing unit shall be provided for the provision of medication storage and distribution.

450.3.4.1.5.1 If a medicine preparation room is utilized, it shall be equipped with a lockable door, have a minimum area of 50 square feet (4.55 m^2) and shall contain a refrigerator, locked storage for controlled drugs, a handwashing facility, and a work counter with a minimum of 6 square feet (0.56 m^2) of work surface.

450.3.4.1.5.2 If a self-contained medicine dispensing unit is utilized, it shall be under the visual control of the staff and may be located at the nurses' station, in the clean utility room, in an alcove, or in other spaces convenient for staff control provided the area occupied by the unit does not encroach upon required minimum areas. The dispensing unit may be used in a medicine preparation room as locked storage for controlled drugs within the minimum area of 50 square feet (4.55 m^2); however, the standard "cup sinks" provided in many self-contained units shall not be a substitute for the required handwashing facility.

450.3.4.1.5.3 If there is no linen storage in the clean utility room, medicine preparation may be part of the clean utility room, in which case an additional 20 square feet (1.8 m^2) dedicated for this purpose shall be required. A refrigerator shall also be required if medicine preparation is included in this room.

450.3.4.1.6 A nourishment room for serving nourishments between meals shall be provided that shall contain a work counter, refrigerator, storage cabinets, and sink.

450.3.4.1.6.1 Ice for residents' consumption shall be provided by an icemaker unit that may serve more than one nourishment station if the nourishment stations are in close proximity to each other. Where the icemaker unit is accessible to residents or the public, it shall be a self-dispensing type.

450.3.4.1.6.2 The nourishment room shall include space for trays and dishes used for non-scheduled meal service. Hand-washing facilities shall be in or immediately accessible from the nourishment room.

450.3.4.2 Household design model for person-centered care.

450.3.4.2.1 The functions of administrative work, charting and storage may be located among several separate direct care staff work areas located within the resident household. The administrative work area(s) shall be designed and located so it is not visually or physically separated from the normal use areas of residents and family members.

450.3.4.2.2 A clean utility or clean holding room, as described in Section 450.3.4.1.2, shall be provided but may be sized in accordance with the functional program and allocated among several rooms or closets within the resident household.

450.3.4.2.3 A clean linen storage room, closet or area shall be provided in accordance with Section 450.3.4.1.3 and shall be located within the resident household.

450.3.4.2.4 A soiled utility or soiled holding room as described in Section 450.3.4.1.4 shall be provided but may be sized in accordance with the functional program and allocated among several rooms or closets within the resident household.

450.3.4.2.5 A medicine preparation room or a self-contained medicine dispensing unit as described in Section 450.3.4.1.5 shall be provided. Non-controlled prescription drugs may be stored inside the resident's sleeping room, area, or toilet room if they are secured inside of an automatic closing and automatic locking dispensing unit that is secured in place.

450.3.4.2.6 A nourishment room as described in Section 450.3.4.1.6 shall be provided but resident dietary facilities as described in Section 450.3.8.1.13 may substitute for this function.

450.3.4.3 The following resident support areas, utilities, or services shall be provided in all nursing homes. Unless specifically required, these support areas may be either within the nursing unit, adjacent to the nursing unit or on the same floor as the nursing unit.

450.3.4.3.1 An equipment storage room(s) shall be provided for storage of nursing unit equipment. The minimum area required shall be equal to 2 square feet (0.19 m^2) for each resident, with no room being less than 20 square feet (1.86 m^2) in area.

450.3.4.3.2 A housekeeping room(s) shall be provided for storage and use of housekeeping supplies and equipment.

450.3.4.3.3 If required by the functional program of the facility, a hot water or chemical type sanitizer shall be provided per facility.

450.3.4.3.4 Storage alcove space for a wheelchair(s) shall be provided in an area located out of the required means of exit egress.

450.3.4.3.5 Resident bathing facilities.

450.3.4.3.5.1 A centralized resident bathing room(s) shall be provided with a minimum of one bathtub, hydro tub, or shower for every 20 residents or fraction thereof not otherwise served by bath or shower facilities connected directly to the resident rooms.

450.3.4.3.5.2 A separate private toilet room shall be provided that is directly accessible to each central bathing area with multiple bathing fixtures without requiring entry into the general corridor. This toilet may also serve as a toilet training facility.

450.3.4.3.5.3 All showers located in bathing rooms connected directly to the resident rooms shall be designed so that a shower chair can be easily rolled in and out of the shower area.

450.3.4.3.5.4 If the institutional design model is utilized, in addition to bathing facilities connected to the resident rooms, residents shall have access to at least one bathing room per floor or unit sized to permit assisted bathing in a tub or shower. The bathtub in this room shall be accessible to residents in wheelchairs and if a shower is used it shall be large enough to accommodate a person in a recumbent position. Other tubs or showers located within the bathing room shall be located inside of individual rooms or curtained enclosures with space for private use of the bathing fixture, for drying and dressing and access to a grooming location containing a sink, mirror and counter or shelf. If every resident sleeping room has a bathing room directly connected to it that is equipped with a 3 feet × 5 feet (0.914 m × 1.52 m) roll in shower, the central bathing room shall be as required by the functional program.

450.3.4.3.5.5 If the household design model for person-centered care is utilized, in addition to the bathing facilities connected to the resident rooms, residents within each household shall have access to at least one bathing room located in or directly adjacent to the household and sized to permit assisted bathing in a tub or shower. This bathing room may be shared between two households if it is located so that it is directly adjacent to each household. The bathtub in this room shall be accessible to residents in wheelchairs and if a shower is used it shall be large enough to accommodate a person in a recumbent position. Other tubs or showers located within the bathing room shall be located inside of individual rooms or curtained enclosures with space for private use of the bathing fixture, for drying and dressing and access to a grooming location containing a sink, mirror and counter or shelf. If every resident sleeping room has a bathing room directly connected to it that is equipped with a 3 feet × 5 feet (0.914 m × 1.52 m) roll in shower, the central bathing room shall be as required by the functional program.

450.3.5 Resident living, social, and treatment areas.

450.3.5.1 Dining, lounges, recreation areas, and social areas for residents shall be provided. The total area of these spaces shall be a minimum of 35 square feet (3.25 m^2) per bed with a minimum total area of 225 square feet (20.90 m^2). At least 20 square feet (1.86 m^2) per resident shall be available for dining. Additional space may be required for resident day care programs. Storage for supplies and equipment shall be provided in the recreation area.

450.3.5.1.1 If the institutional design model is utilized, these areas may be grouped together and centrally located.

450.3.5.1.2 If a household design model for person-centered care is utilized, these areas shall be decentralized and provided within each resident household or can be shared between a maximum of two households.

450.3.5.1.3 Storage for supplies, resident needs, and recreation shall be provided. This area shall be on site but not necessarily in the same building as the resident rooms, provided access is convenient. The minimum required area shall be 5 square feet (0.46 m^2) per bed up to 600 square feet (55.74 m^2).

450.3.5.2 Outdoor area(s) shall be provided for the use of all residents and shall include walking paths of durable materials, benches, shaded areas, and visual focusing element(s) such as landscaping, sculpture, or fountain(s). Security fencing if used shall be of a residential design and provide some visual connection to the exterior of the secured area. If an exterior visual connection is not possible or desirable then the interior

of the outside area shall be landscaped to be visually interesting.

450.3.5.3 If required by the functional program of the facility, physical, speech, and occupational therapy units shall be provided and contain the following.

450.3.5.3.1 Space for files, records and administrative activities.

450.3.5.3.2 Provisions for storage of wheelchairs.

450.3.5.3.3 Storage for supplies and equipment.

450.3.5.3.4 Hand-washing facilities within the therapy unit.

450.3.5.3.5 Space and equipment for carrying out each of the types of therapy that the facility will provide.

450.3.5.3.6 Provisions for resident privacy.

450.3.5.3.7 Housekeeping rooms, in or near the unit.

450.3.5.3.8 Resident toilet room(s) usable by wheelchair residents.

450.3.5.4 A barber/beauty room shall be provided with facilities and equipment for resident hair care and grooming. The area of the room shall be a minimum of 120 square feet (11.15 m^2) with the least dimension of 10 feet (3.05 m).

450.3.6 Staff support areas.

450.3.6.1 If required by the functional program of the facility, a staff lounge area(s) shall be provided. It may be shared by multiple resident units if the lounge is located so it is accessible without requiring the user to enter into or through any other resident unit.

450.3.6.2 A staff toilet room with hand-washing facilities shall be provided conveniently located to each resident unit.

450.3.6.3 Lockable closets, drawers or compartments shall be provided on the resident unit for staff and may be located in the lounge for safekeeping of staff personal effects.

450.3.6.4 A conference or consultation room for resident and family use shall be provided and may be shared between resident units.

450.3.7 Administrative and public area. Each administrative and public area shall meet the following standards:

450.3.7.1 A covered vehicular drop-off and pedestrian entrance that is located at grade level and that provides shelter from inclement weather shall be provided.

450.3.7.2 An administrative/lobby area shall be provided that shall include a counter or desk for reception and information, a public waiting area. This function may be located in a separate building on the campus of the facility. Public toilet facilities, a public telephone and an electric drinking fountain for this area shall be provided in accordance with the *Florida Building Code, Plumbing*. Residents shall have access to toilet facilities in public areas.

450.3.7.3 General offices shall be provided for business transactions, admissions, social services, private interviews, medical and financial records, and administrative and professional staff. Clerical files and staff office space shall be provided as needed. At a minimum there shall be a private office for the administrator and director of nursing.

450.3.7.4 At least one multipurpose room per nursing home facility shall be provided for conferences, meetings, and health education purposes, and shall include provisions for the use of visual aids. This room may be remotely located on the campus and shall have a minimum area of 120 square feet (11.15 m^2).

450.3.7.5 Storage for office equipment and supplies shall be provided.

450.3.8 Facility support areas. Each facility support area shall meet the following standards.

450.3.8.1 Facility dietary. A facility dietary area shall be provided for dietary service to residents and others as may be appropriate. No part of the kitchen area may be used as a pass through to the linen/laundry area. The facility dietary area shall contain the following facilities, in the size and number appropriate for the type of food service selected:

450.3.8.1.1 Storage space, including cold storage, for at least a seven-day supply of food shall be provided.

450.3.8.1.2 Food preparation facilities for cook to serve, cook to chill or a proprietary system of food preparation and adequate space and equipment for production shall be provided.

450.3.8.1.3 Employee dining and serving lines shall not be permitted in the dietary facilities area.

450.3.8.1.4 Hand-washing facilities shall be conveniently located in the food preparation area.

450.3.8.1.5 Facilities for assembly and distribution of resident meals shall be provided.

450.3.8.1.6 Ware washing space shall be located in a room or an alcove separate from the food preparation and serving area. Commercial-type ware washing equipment shall be provided. Space shall also be provided for receiving, scraping, sorting, and stacking soiled tableware and for transferring clean tableware to the use areas. Convenient handwashing facilities shall be available on the soiled dish side of the ware washing area.

450.3.8.1.7 Pot washing facilities shall be provided.

450.3.8.1.8 Storage areas and cleaning facilities for cans, carts, and mobile-tray conveyors shall be provided.

450.3.8.1.9 An office for the food service manager shall be provided.

450.3.8.1.10 A toilet, handwashing facility and lockers for dietary staff shall be located within the dietary facilities area. A vestibule shall be provided between the toilet and the kitchen.

450.3.8.1.11 A housekeeping room located within the dietary facilities area shall be provided and shall include a service sink and storage space for housekeeping equipment and supplies.

450.3.8.1.12 An icemaker unit shall be provided and may be located in the food preparation area or in a separate room.

450.3.8.1.13 If the household design for the person-centered care model is utilized and if required by the functional program, a resident dietary area including cooking equipment, counter tops, kitchen sink, and storage areas shall be provided within the resident household for the use by staff, residents, and family. The cooking equipment shall be designed or secured in such a way to insure resident safety and shall meet all applicable fire safety codes. This dietary area may substitute for the nourishment requirement of Section 450.3.4.2.5.

450.3.8.2 Facility laundry. A facility laundry area shall be provided that shall have provisions for the storing and processing of clean and soiled linen for appropriate resident care. Processing may be done within the facility, in a separate building on or off site, or in a commercial or shared laundry. Where soiled linen is processed as part of a facility laundry area, at a minimum, the following elements shall be included:

450.3.8.2.1 A separate room for receiving and holding soiled linen until ready for pickup or processing shall be provided. Discharge from soiled linen chutes may be received within this room or in a separate room. A handwashing facility and a utility sink shall be provided.

450.3.8.2.2 A central, clean linen storage and issuing room(s), in addition to the linen storage required at the nursing units shall be provided.

450.3.8.2.3 Parking of clean and soiled linen carts in separate areas from each other and out of traffic shall be provided.

450.3.8.2.4 Hand-washing facilities in each area where untagged, soiled linen is handled shall be provided.

450.3.8.2.5 When linen is processed off site, a service entrance protected from inclement weather for loading and unloading of linen shall be provided.

450.3.8.2.6 When linen is processed in a laundry facility located on site, the following additional elements shall be provided:

450.3.8.2.6.1 A laundry processing room(s), separated by walls from other elements of the laundry, with commercial-type laundry equipment for washing and drying. Walls separating the functions of washing and drying are not required.

450.3.8.2.6.2 Storage for laundry supplies.

450.3.8.2.6.3 Arrangement of the laundry processes shall generally provide for an orderly workflow from dirty to clean to minimize cross traffic that might mix clean and soiled operations.

450.3.8.2.7 If the household design model for person-centered care is utilized and if required by the functional program, resident laundry facilities including washing and drying equipment shall be provided for staff, family or individual resident use for the laundering only of a resident's personal items. If these laundry facilities are provided, they shall be readily accessible from each resident household without requiring the user to enter another resident unit, or floor and may be shared between two resident households. These resident laundry facilities shall not have to meet the requirements of the facility laundry described in Section 450.3.8.2 and may utilize residential laundry equipment. Each resident laundry room or area shall contain a handwash facility and if required by the functional program a single deep bowl utility sink.

450.3.9 Housekeeping rooms/janitor's closets.

450.3.9.1 Housekeeping rooms or janitor's closets shall be provided throughout the facility as required to maintain a clean and sanitary environment, but not less than one housekeeping room/janitor's closet shall be provided for each floor in addition to the housekeeping room required in the facility dietary area. Each room has storage space for housekeeping equipment and supplies. A service sink shall be provided in at least one housekeeping room or janitor's closet on each floor.

450.3.10 Engineering service and equipment areas.

450.3.10.1 Room(s) or separate building(s) for boilers, mechanical and electrical equipment shall be provided as required.

450.3.10.2 Room(s) for the storage of building maintenance supplies and solvents shall be provided. On-site safe and secure storage for the facility drawings, records and manuals shall be provided.

450.3.10.3 A general maintenance area for repair and maintenance shall be provided as required.

450.3.10.4 Yard equipment and supply storage room, if provided, shall be located so that equipment may be moved directly to the exterior.

450.3.11 Details and finishes.

450.3.11.1 Potential hazards such as sharp corners, loose laid rugs or carpets, shall not be permitted.

450.3.11.2 Doors to all rooms containing bathtubs, showers, and water closets for resident use located in double occupancy rooms or are shared between two single occupancy rooms, shall be equipped with privacy hardware that permits emergency access without the use of keys. When such room has only one entrance and is equipped with a swing door, the door shall open outward, or be equipped with emergency release hardware. When emergency release hardware is utilized on a swing door located in a public area, it shall provide visual privacy for the resident and if required by other sections of this code, be smoke resistive.

450.3.11.3 Interior corridor doors, except those to small closets, janitor's closets, electrical or mechanical rooms, housekeeping closets and other small rooms not subject to occupancy, shall not swing into the corridor. A door located on the exit access corridor, and required to swing outward, shall open into an alcove.

450.3.11.4 A sliding door equipped with sliding hardware located on the resident room side of the wall shall be permitted on an individual resident toilet or bathroom. If a sliding door is used on a resident toilet or bathroom, a D-shaped handle at least 4 inches (10.16 cm) long shall be provided to open the door.

450.3.11.5 Door thresholds, except where required at exterior doors, and expansion joint covers shall be designed to facilitate use of wheelchairs and carts and to prevent tripping and shall provide a smooth and level transition from surface-to-surface.

450.3.11.6 All resident room windows shall have a minimum net glazed area of not less than 8 percent of the gross floor area of the room or bed area served. Operable windows are not required but if they are provided they shall be equipped with insect screens.

450.3.11.7 Handrails shall be provided on both sides of all corridors that are defined by walls and normally used by residents. Mounting height shall be between 36 inches (0.91 m) and 42 inches (1.57 m). A clearance of $1^1/_2$ inches (38 mm) shall be provided between the handrail and the wall. Handrails shall be designed without sharp corners, edges or hardware and shall permit easy grasping by the resident with a maximum diameter of 1.5 inches (38 mm). It shall be designed to provide a profile with a surface wide enough for the resident to be able to lean on the rail to rest. Rail ends shall return to the wall.

450.3.11.8 Grab bars, $1\ ^1/_2$ inches (38 mm) in diameter, either permanent or flip down, shall be installed in all resident showers, tubs, and baths and on any two sides of all resident use toilets. Wall-mounted grab bars shall provide an $1^1/_2$ inch (38 mm) clearance from walls and shall sustain a concentrated load of 250 pounds (113.4 kg). Where flip down grab bars are used, the toilet does not need to be located within 18 inches (455 mm) of an adjacent wall, except as required by the *Florida Building Code, Accessibility*.

450.3.11.9 Each resident handwashing facility shall have a mirror unless prohibited by the nursing program. Mirror placement shall allow for convenient use by both wheelchair occupants and ambulatory persons. Tops and bottoms may be at levels usable by individuals either sitting or standing. Additional mirrors may be provided for wheelchair occupants, or one separate full-length mirror located in the resident room may be provided to meet the needs of wheelchair occupants.

450.3.11.10 Provisions for soap dispensing and hand drying shall be included at all handwashing facilities. Those in resident use areas shall be paper or cloth towels enclosed to protect against dust or soil and shall be single-unit dispensing.

450.3.11.11 Reserved.

450.3.11.12 Towel bars shall be provided at each bathing facility.

450.3.11.13 All resident use plumbing fixtures and door operating hardware shall be equipped with lever-type hardware for easy gripping and turning.

450.3.11.14 Toilet compartment partitions and urinal screens shall be constructed of product that do not rust, corrode or delaminate.

450.3.11.15 The minimum ceiling height throughout the facility shall be 8 feet (2.44 m) above the finished floor with the following exceptions:

450.3.11.15.1 Steam boiler and hot water generator rooms shall have ceiling clearances of at least 2 feet 6 inches (0.76 m) above the main header and connecting pipe.

450.3.11.15.2 Ceilings in storage rooms, resident room entrance vestibules and toilet rooms shall be at least 7 feet 6 inches (2.33 m) above the finished floor.

450.3.11.15.3 Ceilings in normally unoccupied spaces and alcoves may be reduced to 7 feet (2.13 m) above the finished floor.

450.3.11.15.4 Ceilings in exit access corridors and exit passageways shall be a minimum of 8 feet (2.44 m) above the finished floor.

450.3.11.16 In addition to the electric drinking fountain or water and cup dispenser in the administrative/lobby area in Section 450.3.7.2, a minimum of one electric drinking fountain or water and cup dispenser shall be provided per resident floor unless drinking water is available from the resident dietary area.

450.3.11.17 Floor material shall be readily cleanable and appropriate for the location. Floor surfaces in resident-use areas shall be nonglossy to minimize glare. If composition floor tiles are used, the interstices shall be tight.

450.3.11.17.1 In residential care and sleeping areas, a base shall be provided at the floor line.

450.3.11.17.2 Floors in areas used for food preparation and assembly shall be water resistant. Floor surfaces, including tile joints, shall be resistant to food acids. In all areas subject to frequent wet-cleaning methods, floor materials shall not be physically affected by germicidal cleaning solutions.

450.3.11.17.3 Floors subject to traffic while wet, such as shower and bath areas, kitchens, and similar work areas, shall have a slip-resistant surface and floor-to-base intersections shall be watertight.

450.3.11.17.4 Carpet and padding in resident areas shall be stretched tight, in good repair and free of loose edges or wrinkles that might create hazards or interfere with the operation of wheelchairs, walkers or wheeled carts.

450.3.11.18 Wall finishes shall be washable and, if near plumbing fixtures, shall be smooth and have a moisture-resistant finish. Finish, trim, walls, and floor constructions in dietary and food storage areas shall be free from rodent and insect harboring spaces.

450.3.11.18.1 Basic wall construction in areas not subject to conditioned air shall be constructed of masonry, cement plaster or moisture-resistant gypsum wallboard.

450.3.11.18.2 The finishes of all exposed ceilings and ceiling structures in the dietary facilities area shall be readily cleanable with routine housekeeping equipment.

450.3.11.18.3 Highly polished walls or wall finishes that create glare shall be avoided.

450.3.11.18.4 Wall coverings that promote the growth of mold and mildew shall be avoided on exterior walls or on walls that are located in normally wet locations.

450.3.11.19 All smoke partitions, horizontal exits and exit passageway partitions shall be constructed prior to the construction of intervening walls.

450.3.11.20 Smoke barriers shall be constructed so as to provide a continuous smoke-tight membrane from exterior wall to exterior wall and from the floor to the underside of the deck above. This includes interstitial space and the area above solid fire-tested membranes.

450.3.11.21 Where it is not possible to visually inspect a fire-rated partition, wall or barrier or a smoke barrier that extends through the attic or interstitial space to the roof or floor deck above because of the location of a monolithic ceiling membrane, ceiling access panel(s) shall be installed adjacent to each side of the partition, wall or barrier at intervals not exceeding 30 feet (9.0 m) and in such locations as necessary to view all surfaces of the partition, wall or barrier. Other ceiling access panels shall only be installed as required by other sections of the code. Partitions, walls and barriers requiring protected openings or penetrations shall be identified in accordance with Section 703 of this code.

450.3.11.22 Where electrical conduits, cable trays, ducts and utility pipes pass through the smoke partition, the utilities shall be located so that access is maintained to adjacent wall surfaces and to all damper access panels. The details shall show the studs and reinforcing half studs so that proper support is provided for the wall surfacing material. There shall be a minimum clearance of 6 inches (152 mm) between all conduits, piping, and duct work at corridor walls to facilitate the inspection of these walls.

450.3.12 Elevators. (Where required.)

450.3.12.1 All buildings having resident use areas on more than one floor shall have hospital-type electric or hydraulic elevator(s) that shall be in compliance with the requirements of Chapter 30 of this code and Chapter 69A-47, *Florida Administrative Code*, Uniform Fire Safety Standards for Elevators.

450.3.12.2 In the absence of an engineered traffic study, the minimum number of elevators shall be as follows:

450.3.12.2.1 At least one elevator shall be installed where resident beds are located on any floor other than the main entrance floor.

450.3.12.2.2 When 60 to 200 resident beds are located on floors other than the main entrance floor, at least two elevators, one of which shall be of the hospital-type and capacity, shall be installed.

450.3.12.2.3 When 201 to 350 resident beds are located on floors other than the main entrance floor, at least three elevators, two of which shall be of the hospital-type and capacity, shall be installed.

450.3.12.2.4 For facilities with more than 350 resident beds above the main entrance floor, the number of elevators shall be determined from a facility plan study and from the estimated vertical transportation requirements.

450.3.12.3 Cars of elevators shall have inside dimensions that accommodate a resident bed with attendants. Cars shall be at least 5 feet (1.52 m) wide by 7 feet 6 inches (2.29 m) deep. The car door shall have a clear opening of not less than 4 feet (1.22 m).

450.3.12.4 Elevator call buttons shall not be activated by heat or smoke. If employed, light beam door activators shall be used in combination with door-edge safety devices and shall be connected to a system of smoke detectors such that the light control feature will disengage or be overridden if it encounters smoke at any landing.

450.3.13 Water supply and sewage disposal.

450.3.13.1 An approved, accessible, adequate, safe and potable supply of water shall be provided. The water supply shall be accessible and available at all times for drinking, fire protection, culinary, bathing, cleaning and laundry purposes.

450.3.13.2 Hot water shall be supplied to all lavatory and sink plumbing fixtures available for use by residents and staff.

450.3.13.3 An approved, adequate and safe method of sewage collection, treatment and disposal shall be provided for each nursing home.

450.3.14 Heating, ventilating and air-conditioning (HVAC) systems. In addition to the basic HVAC system requirements as described by Part 6, ANSI/ASHRAE/ASHE Standard 170-2008, Ventilation of Health Care Facilities of *The Guidelines*, the following specific elements are also required.

450.3.14.1 Mechanical equipment shall be defined as equipment utilized in air-conditioning, heating, ventilating systems and associated electrical, electronic and pneumatic components required for the mechanical equipment to provide the function intended by the application of the equipment. New and existing equip-

ment replacements shall comply with these requirements.

450.3.14.2 Mechanical equipment shall be installed exterior of the building, to include the roof, in a designated equipment room(s), or in a space(s) located in an attic(s**)**.

450.3.14.3 If the unit serves only one room, it may be located above the ceiling and shall be accessible through an access opening in accordance with this code. Access panels are not required for lay-in ceiling installations, provided the service functions are not obstructed by other above-ceiling construction, such as electrical conduits, piping, audio visual cabling and like equipment components or supports.

450.3.14.4 Ventilation shall be provided by mechanical means in all rooms in new facilities and in all renovated or remodeled rooms. The minimum air quantities and filtration efficiencies shall be met as set forth in Part 6 of *The Guidelines* and Table 4.1-1, Ventilation Requirements for Areas Affecting Resident Care in Nursing Homes of *The Guidelines* for those spaces that are listed.

450.3.14.5 For spaces listed in the minimum ventilated rate table, central station-type air-handling equipment shall be used. Package terminal air-conditioning units or fan coils may be used to serve resident rooms and shall be provided with MERV 8 filters minimum.

450.3.14.6 System designs utilizing fan coil or package terminal air-conditioning units shall have the outdoor air ventilation damper permanently closed. The ventilation requirement shall be satisfied by a central station-type air handling unit provided with MERV 8 filter minimum or as required by the listed space served. Spaces designated for the exclusive use of physical plant personnel need not comply with this requirement.

450.3.14.7 Administrative and other staff-only areas shall be provided with outside air at the minimum rate of 20 cfm (9.43 L/s) per person, and the central system shall have a minimum of 30-percent ASHRAE dust spot efficiency filter.

450.3.14.8 All outdoor air intakes shall be located a minimum of 3 feet (0.91 m) above surrounding surfaces and a minimum of 10 feet (3.05 m) horizontally from any exhaust air or plumbing vent.

450.3.14.9 All filters in systems in excess of 1,000 cfm (28.32 m^3/min) capacity shall be installed with differential pressure gauges. The filter gauge shall have the range of acceptable filter operation clearly and permanently indicated.

450.3.14.10 Filter housings for MERV 13 efficiency filters shall be fully gasketed and sealed with mechanical latching devices capable of exerting and maintaining a continuous, uniform sealing pressure on the filter media when in the latched, closed position.

450.3.14.11 The transfer of air quantities through one space to an adjacent space is not permitted except that the transfer of air to maintain space relative pressure by the under cutting of doors is permitted. The maximum allowable air quantity for door undercuts shall be 75 cfm (35.38 L/s) for single door widths up to 44 inches (1117 mm).

450.3.14.12 Space relative pressure requirements shall be maintained throughout the entire system control range where variable volume systems are utilized.

450.3.14.13 Spaces having exhaust hoods shall have sufficient make-up supply air such that the required pressure relationship will not be affected by the operation of the hood.

450.3.14.14 All supply, return and exhaust ventilation fans shall operate continuously. Dietary hood, laundry area, administrative areas that are separated from all resident areas and support areas and maintenance area supply and exhaust fans shall be exempted from continuous operation.

450.3.14.15 Cooling coil condensate shall be piped to a roof drain, floor drain or other approved location.

450.3.14.16 Each new resident sleeping room or resident sleeping area that is separated by a permanent partition and door shall be provided with a separate thermostat to provide individual adjustment of room or area temperature.

450.3.15 Exhaust.

450.3.15.1 Exhaust fans and other fans operating in conjunction with a negative duct system pressure shall be located at the discharge end of the system. Fans located immediately within the building located at the end of all exhaust ducts shall be permitted. Existing, nonconforming systems need not be brought into compliance when equipment is replaced due to equipment failure.

450.3.15.2 Exhaust hoods in food preparation areas shall be listed or certified by a nationally recognized testing laboratory (NRTL).

450.3.16 Ducts.

450.3.16.1 All new facility construction shall have totally ducted supply, return, exhaust and outside air systems including areas of all occupancy classifications.

450.3.16.2 In new construction, duct system risers penetrating more than one floor shall be installed in vertical fire-rated shafts. Horizontal offsets of the risers shall not be allowed. Fire/smoke dampers shall be installed at duct penetrations of the chase. Existing nonconforming systems shall be brought into compliance when remodel or renovation work is proposed.

450.3.17 Fan and damper control during fire alarm.

450.3.17.1 During an automatic fire alarm or the activation of a duct smoke detector, fan systems and fan equipment serving more than one room shall be stopped to prevent the movement of smoke by mechanical means from the zone in alarm to adjacent smoke zones.

450.3.17.2 Air-handling and fan coil units serving exit access corridors for the zone in alarm shall shut down upon fire alarm.

450.3.17.3 Smoke or fire/smoke dampers shall close upon fire alarm and upon manual shutdown of the associated supply, return or exhaust fan.

450.3.18 Plumbing.

450.3.18.1 All plumbing fixtures provided in spaces shall conform to the requirements of Table 450.3.18.1 of plumbing fixtures and minimum trim.

450.3.18.2 The temperature of hot water supplied to resident and staff use lavatories, showers and bath shall be between 105°F (41°C) and 115°F (46°C) at the discharge end of the fixture.

450.3.18.3 Wall-mounted water closets, lavatories, drinking fountains and hand-washing facilities shall be attached to floor-mounted carriers and shall withstand an applied vertical load of a minimum of 250 pounds (113.39 kg) to the front of the fixture.

450.3.18.4 Grease interceptors shall be located outside of the building.

450.3.18.5 Provide deep seal traps for floor drains in resident showers.

450.3.18.6 Food preparation sinks, pot washing, dishwashers, janitor sinks, floor drains, and cart and can

TABLE 450.3.18.1
PLUMBING FIXTURES AND MINIMUM TRIM

ROOM/FUNCTION	FIXTURE, FITTING, AND TRIM
Barber and beauty	G-6
Bed pan sanitizer	K-7
Clean utility room	C-2
Per resident floor	I-5
Eye wash station(s)	L-5
Exam/treatment room	A-2
Housekeeping/janitor's closet	E-6
Laundry	A-1; H-1
Medication preparation room	C-2
Nourishment room	C-2
Staff handwashing facilities	C-2
Resident baths	J-1
Resident bedrooms with three or more beds	A-1
Resident room bath	A-1; B-4; J-1
Resident toilet rooms	A-1; B-4
Soiled utility room(s)	D-2; F-3 AND 4; K-5
Therapy areas	A-2
Toilet rooms, public	A-1; B-5

FIXTURE LEGEND	
A. Lavatory	G. Sink, shampoo
B. Water closet	H. Sink, laundry
C. Sink, single compartment	I. Electric drinking fountain or water with cup dispenser
D. Sink, double compartment	J. Bathing Facilities or shower (Note 1)
E. Sink or receptor, janitor	K. Sanitizer w/ rinse water at 140°F (60°C) or chemical rinse. (If required by the functional program of the facility.)
F. Sink, clinical service and rinsing device	L. Eye wash fixtures

FIXTURE LEGEND
1. Hot and cold supplies
2. Hot and cold supplies with wrist blades from 3 $^1/_2$ inches (89 mm) to 4 $^1/_2$ inches (114 mm) in length or foot or knee control and a gooseneck spout with discharge a minimum of 5 inches (127 mm) above the fixture rim
3. Hot and cold supplies with elbow blades a minimum of 6 inches (152 mm) long or foot or knee control
4. Bedpan rinsing attachment, cold water only (If required by the functional program of the facility.)
5. Cold supply
6. Hot and cold supplies with hose connection and backflow preventer
7. Hot water supply

NOTES:

1. Mixing valves used in shower applications shall be of the balanced-pressure type design.
2. If eye wash stations are provided, they shall be installed in accordance with American National Standards Institute (ANSI) Z358.1 for Emergency Eyewash and Shower Equipment.

wash drains shall run through the grease trap. Garbage disposers shall not run through the grease trap.

450.3.18.7 Ice machines, rinse sinks, dishwashers, and beverage dispenser drip receptacles shall be indirectly wasted.

450.3.18.8 Each water service main, branch main, riser and branch to a group of fixtures shall have valves. Stop valves shall be provided for each fixture. Panels for valve access shall be provided at all valves.

450.3.18.9 Backflow preventers (vacuum breakers) shall be installed on bedpan-rinsing attachments, hose bibs and supply nozzles used for connection of hoses or tubing in housekeeping sinks and similar applications.

450.3.18.10 A backflow preventer shall be installed on the facility main water source(s).

450.3.18.11 All piping, except control-line tubing, shall be identified. All valves shall be tagged, and a valve schedule shall be provided to the facility owner for permanent record and reference.

450.3.19 Medical gas and vacuum systems.

450.3.19.1 Provide a medical gas and vacuum system in conformance with the requirements for a nursing Home as described in NFPA 99, *Health Care Facilities.*

450.3.19.2 Provide a dedicated area for the location of the oxygen system emergency supply source with an impervious, noncombustible, nonpetroleum-based surface located adjacent to the emergency low pressure gaseous oxygen inlet connection. Provision shall be made for securing the vessel to protect it from accidental damage.

450.3.20 Fire pump. (Where required.)

450.3.20.1 Fire pumps and ancillary equipment shall be separated from other functions by construction having a 2-hour fire-resistance rating.

450.3.20.2 The fire pump normal service disconnect shall be rated to hold locked rotor current. If the approved normal service disconnect is located on the exterior, it shall be supervised by connection to the fire pump remote annunciator and shall provide a separate fire alarm system trouble indication.

450.3.20.3 When the fire pump is placed on the emergency system in addition to the normal supply, the emergency feeder protective device shall be sized in accordance with maximum rating or settings of Chapter 27 of the *Florida Building Code, Building*.

450.3.20.4 The fire pump transfer switch may be either manual or automatic. If located on the line side of the controller as a separate unit, the switch must be rated for the pump motor locked rotor current indefinitely and must be located in the pump room.

450.3.20.5 Combination fire pump controller and transfer switch units listed by the Underwriter's Laboratories, Inc., as prescribed by Chapter 27 of the *Florida Building Code, Building* are acceptable when the transfer switch has exposable and replaceable contacts, not circuit breaker types, rated for the available short-circuit current.

450.3.20.6 The fire pump shall be installed in a readily accessible location. When it is located on the grade level floor, there shall be direct access from the exterior.

450.3.21 Electrical requirements.

450.3.21.1 All material, including equipment, conductors, controls, and signaling devices, shall be installed to provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facility requirements as shown in the specifications and as indicated on the plans. All materials and equipment shall be listed as complying with applicable standards of Underwriter's Laboratories, Inc., or other nationally recognized testing facilities. Field labeling of equipment and materials will be permitted only when provided by a nationally recognized testing laboratory (NRTL) that has been certified by the Occupational Safety and Health Administration (OSHA) for that referenced standard.

450.3.21.2 For purposes of this section, a resident room, a resident therapy area or an examination room shall be considered a "patient care area" as described in NFPA 99 *Health Care Facilities*, and Chapter 27, Electrical Systems, of this code.

450.3.21.3 Panels located in spaces subject to storage shall have the clear working space in accordance with Chapter 27, permanently marked "ELECTRICAL—NOT FOR STORAGE" with a line outlining the required clear working space on the floor and wall.

450.3.21.4 Panel boards shall not be located in an exit access corridor or in an unenclosed space or area that is open to an exit access corridor. Panel boards may be located inside of a room or closet that opens into an exit access corridor only when the room or closet is separated from the exit access corridor by a partition and door that comply with this code.

450.3.21.5 There shall be documentation for equipotential grounding in all patient care areas, building service ground electrode systems, lightning protection ground terminals and special systems such as fire alarm, nurse call, paging, generator, emergency power and breaker coordination.

450.3.22 Lighting.

450.3.22.1 All spaces occupied by people, machinery and equipment within buildings, approaches to buildings and parking lots shall have electric lighting.

450.3.22.2 Resident bedrooms shall have general lighting from ceiling mounted fixtures, floor lamp fixtures or table mounted fixtures. Separate fixed night lighting shall be provided. The night-light shall have a switch at the entrance to each resident's room or separate sleeping area. A reading light shall be provided for each resident. Resident reading lights and other fixed lights not switched at the door shall have switch controls conve-

nient for use at the luminary. Wall-mounted switches for control of lighting in resident areas shall be of quiet operating type.

450.3.22.3 All lighting in the resident use areas including corridors, shared spaces, treatment areas, sleeping areas, social areas and living areas shall meet the recommendations of ANSI/IES RP-28-07 Lighting and the Visual Environment for Senior Living as referenced in Chapter 35 of this code.

450.3.22.4 All general resident room lighting and all corridor lighting used by residents shall be designed to minimize glare such as indirect lighting.

450.3.23 Receptacles.

450.3.23.1 Provide one general purpose duplex receptacle on another wall to serve each resident and one additional duplex receptacle at the head of the bed if a motorized bed is provided.

450.3.23.2 Duplex receptacles for general use shall be installed in all general purpose corridors, approximately 50 feet (15.24 m) apart and within 25 feet (7.52 m) of corridor ends.

450.3.24 Fire alarm systems.

450.3.24.1 A fire alarm annunciator panel shall be provided at a single designated 24-hour monitored location. The panel shall indicate audibly and visually, the zone of actuation of the alarm and system trouble. As a minimum, devices located in each smoke compartment shall be interconnected as a separate fire alarm zone. Annunciator wiring shall be supervised. The annunciator shall clearly indicate the zone location of the alarm. Provide an adjacent zone location map to quickly locate alarm condition.

450.3.25 Nurse call systems. Wired or wireless type nurse call systems shall be permitted if they have been tested and approved by a national recognized testing laboratory (NRTL) to meet the requirements of UL 1069, 7th edition, published October 12, 2007, as referenced in Chapter 35 of this code. All wireless systems shall be been tested and approved by a national recognized testing laboratory (NRTL) to meet the requirements of Section 49, Wireless Systems of UL 1069, 7th edition as referenced in Chapter 35 of this code. All nurse call systems whether wired or wireless shall have electronically supervised visual and audible annunciation in accordance with the supervision criteria of UL 1069, 7th edition for nurse call systems and tested and approved by a nationally recognized testing laboratory (NRTL) to meet those requirements.

450.3.25.1 A nurse call system shall be provided that will register a call from each resident bed to the related staff work area(s) by activating a visual signal at the resident room door or wireless pager and activating a visual and audible signal in the clean utility, soiled utility, nourishment station, medication prep or mobile nurse station receiver and the master station of the resident. If a mobile nurse station receiver is utilized to receive the resident call, it will be worn by all staff who are assigned to the resident unit and shall identify the specific resident and or room from which the call was placed. Audible signals may be temporarily silenced, provided subsequent calls automatically reactivate the audible signal. In rooms containing two or more calling stations, indicating lights shall be provided for each calling station. In multicorridor nursing units, corridor zone lights shall be installed at corridor intersections in the vicinity of staff work areas.

450.3.25.2 An emergency calling station of the pull cord-type shall be provided and shall be conveniently located for resident use at each resident toilet, bath or shower room but not inside of the shower unless the nurse call device is listed for wet locations. The call signal shall be the highest priority and shall be cancelled only at the emergency calling station. The emergency calling station shall activate distinctive audible and visual signals immediately at the resident room door or wireless pager, and activate a visual and audible signal in the clean utility, soiled utility, nourishment station, medication prep or mobile nurse station receiver and the master station of the resident unit. If a mobile nurse station receiver is utilized to receive the resident call, it will be worn by all staff who are assigned to the resident unit and shall identify the specific resident and or room from which the call was placed.

450.3.25.3 The nurse call master station shall be located inside the resident unit at a staff administrative area and shall not block any incoming resident calls. The master station control settings shall not prevent the activation of the incoming audible and visual signals. In wireless systems, all orphaned calls to mobile nurse station receivers will register at the nurse call master station.

450.3.25.4 Activation of an emergency call shall not cancel a normal call from the same room.

450.3.25.5 A corridor dome light shall be located directly outside of any resident care area that is equipped with a wired nurse call system.

450.3.26 Essential electrical system.

450.3.26.1 A Type 1 essential electrical system shall be provided in all nursing homes as described in NFPA 99, *Health Care Facilities*. The emergency power for this system shall meet the requirements of a Level 1, Type 10, Class 48 generator as described in NFPA 110, *Emergency Standby Power Systems*.

450.3.26.2 In new construction, the normal main service equipment shall be separated from the emergency distribution equipment by locating it in a separate room. Transfer switches shall be considered emergency distribution equipment for this purpose.

450.3.26.3 The generator remote annunciator shall be located at a designated 24-hour staffed location.

450.3.26.4 Switches for critical branch lighting shall be completely separate from normal switching. Critical branch switches may be adjacent to normal switches. Switches for life safety lighting are not permitted

except as required for dusk-to-dawn automatic control of exterior lighting fixtures.

450.3.26.5 There shall be selected life safety lighting provided at a minimum of 1 footcandle (10 lux) and designed for automatic dusk-to-dawn operation along the travel paths from the exits to the public way or to safe areas located a minimum of 30 feet (9.14 m) from the building.

450.3.26.6 A minimum of one elevator per bank serving any patient use floor shall be connected to the equipment branch of the essential electric system and arranged for manual or automatic operation during loss of normal power. Elevator cab lighting, controls, and communication and signal systems shall be connected to the life safety branch.

450.3.26.7 If a day tank is provided, it shall be equipped with a dedicated low-level fuel alarm and a manual pump. The alarm shall be located at the generator derangement panel.

450.3.26.8 Transfer switch contacts shall be of the open type and shall be accessible for inspection and replacement**.**

450.3.26.9 If required by the facility's emergency food plan, there shall be power connected to the equipment branch of the essential electrical system for kitchen refrigerators, freezers and range hood exhaust fans. Selected lighting within the kitchen and dry storage areas shall be connected to the critical branch of the essential electrical system.

450.3.27 Lightning protection.

450.3.27.1 A lightning protection system shall be provided for all new buildings and additions in accordance with NFPA 780, *Installation of Lightning Protection Systems.*

450.3.27.2 Where additions are constructed to existing buildings, the existing building's lightning protection system, if connected to the new lightning protection system, shall be inspected and brought into compliance with current standards.

450.3.27.3 There shall be surge protection for all normal and emergency electrical services.

450.3.27.4 Additional surge protection shall be provided for all low-voltage and power connections to all electronic equipment in critical care areas and life safety systems and equipment such as fire alarm, nurse call and other critical systems. Protection shall be in accordance with appropriate IEEE Standards for the type of equipment protected.

450.3.27.5 All low-voltage system main or branch circuits entering or exiting the structure shall have surge suppressors installed for each pair of conductors and shall have visual indication for protector failure to the maximum extent feasible.

450.4 Physical plant requirements for disaster preparedness of new nursing home construction.

450.4.1 Definitions. The following definitions shall apply specifically to this section:

450.4.1.1 NEW FACILITY. A nursing home which has not received a Stage II Preliminary Plan approval from the Agency for Health Care Administration pursuant to this section.

450.4.1.2 NET SQUARE FOOTAGE. The clear floor space of an area excluding cabinetry and other fixed furniture or equipment.

450.4.1.3 DURING AND IMMEDIATELY FOLLOWING. A period of 72 hours following the loss of normal support utilities to the facility.

450.4.1.4 OCCUPIED RESIDENT AREA(S). The location of residents inside of the new facility or in the addition of a wing or floor to an existing facility during and immediately following a disaster. If these residents are to be relocated into an area of the existing facility during and immediately following a disaster, then for these purposes, that location will be defined as the "occupied resident area."

450.4.1.5 RESIDENT SUPPORT AREA(S). The area(s) required to ensure the health, safety and well-being of residents during and immediately following a disaster, such as a staff work area, clean and soiled utility areas, food preparation area and other areas as determined by the facility to be kept operational during and immediately following a disaster.

450.4.1.6 ON SITE. Either in, immediately adjacent to, or on the campus of the facility, or addition of a wing or floor to an existing facility.

450.4.1.7 RESIDENT(S) SERVED. The number of residents as determined by the facility that will be served in the occupied resident area(s) during and immediately following a disaster.

450.4.2 Disaster preparedness construction standards. The following construction standards are in addition to the physical plant requirements described in Sections 450.2 through 450.3. These minimum standards are intended to increase the ability of the facility to be structurally capable of serving as a shelter for residents, staff and the family of residents and staff and equipped to be self-supporting during and immediately following a disaster.

450.4.2.1 Space standards.

450.4.2.1.1 For planning purposes, each new facility shall provide a minimum of 30 net square feet (2.79 m^2) per resident served in the occupied resident area(s). The number of residents to be served is to be determined by the facility administration.

450.4.2.1.2 As determined by the facility, space for administrative and support activities shall be provided for use by facility staff to allow for care of residents in the occupied resident area(s).

450.4.2.1.3 As determined by the facility, space shall be provided for all staff and family members of residents and staff.

450.4.2.2 Site standards.

450.4.2.2.1 Except as permitted by Section 1612 of this code, the lowest floor of all new facilities shall be elevated to the base flood elevation as defined in Section 1612, plus 2 feet (607 mm), or to the height of hurricane Category 3 (Saffir-Simpson scale) surge inundation elevation, as described by the Sea, Lake, and Overland Surge (SLOSH) from Hurricanes model developed by the Federal Emergency Management Agency (FEMA), United States Army Corps of Engineers (USACE), and the National Weather Service (NWS), whichever is higher.

450.4.2.2.2 For all existing facilities, the lowest floor elevations of all additions, and all resident support areas including food service, and all resident support utilities, including mechanical, and electrical (except fuel storage as noted in Section 450.4.2.9.3 of this code) for the additions shall be at or above the elevation of the existing building, if the existing building was designed and constructed to comply with either the site standards of Section 450.4 or local flood resistant requirements, in effect at the time of construction, whichever requires the higher elevation, unless otherwise permitted by Section 1612 of this code. If the existing building was constructed prior to the adoption of either the site standards of Section 450.4 or local flood-resistant requirements, then the addition and all resident support areas and utilities for the addition as described in this section shall either be designed and constructed to meet the requirements of Section 450.4.2.2.1 or be designed and constructed to meet the dry flood-proofing requirements of Section 1612.

450.4.2.2.3 Substantial improvement, as defined by Section 1612, to all existing facilities located within flood areas as defined in Section 1612 or within a Category 3 surge inundation zone as described in Section 450.4.2.2.1, shall be designed and constructed in compliance with Section 1612.

450.4.2.2.4 Where an off-site public access route is available to the new facility at or above the base flood elevation, a minimum of one on-site emergency access route shall be provided that is located at the same elevation as the public access route.

450.4.2.2.5 New landscaping elements shall be located so if damaged they will not block the on-site emergency access route to the facility. Outdoor signs and their foundations shall be designed to meet the wind load criteria of this code.

450.4.2.2.6 New light standards and their foundations used for lighting the on-site emergency access route shall be designed to meet the wind load criteria of ASCE 7 with wind speeds determined from Figure 26.5-1B with appropriate exposure category dependent on site location.

450.4.2.3 Structural standards. Wind load design of the building structure and exterior envelope including exterior wall systems shall be designed in accordance with this code.

450.4.2.4 Roofing standards.

450.4.2.4.1 Roofing membrane material shall resist the uplift forces specified in this code. Roof coverings shall be installed according to the specifications provided by the manufacturer.

450.4.2.4.2 Loose-laid ballasted roofs shall not be permitted.

450.4.2.4.3 All new roof appendages such as ducts, tanks, ventilators, receivers, dx condensing units and decorative mansard roofs and their attachment systems shall be structurally engineered to meet the wind load requirements of this code. All of these attachment systems shall be connected directly to the underlying roof structure or roof support structure.

450.4.2.5 Exterior unit standards.

450.4.2.5.1 All exterior window units, skylights, exterior louvers and exterior door units including vision panels and their anchoring systems shall be impact resistant or protected with an impact-resistant covering meeting the requirements of the Testing Application Standards (TAS) 201, 202 and 203 of this code in accordance with the requirements of Sections 1626.2 through 1626.4 of this code. The impact-resistant coverings may be either permanently attached or may be removable if stored on site of the facility.

450.4.2.5.2 The location or application of exterior impact protective systems shall not prevent required exit egress from the building.

450.4.2.5.3 When not being utilized to protect the windows, the permanently attached impact resistant coverings shall not reduce the percentage of the clear window opening below that is required by this code for the patient room.

450.4.2.6 Heating, ventilation and air conditioning (HVAC) standards.

450.4.2.6.1 All new air-moving equipment, dx condensing units, through-wall units and other HVAC equipment located outside of, partially outside of, or on the roof of the facility and providing service to the facility shall be permitted only when either of the following are met.

450.4.2.6.1.1 They are located inside a penthouse designed to meet the wind load requirements of this code; or

450.4.2.6.1.2 Their fastening systems are designed to meet the wind load requirements of this code and they and all associated equipment are protected as required by TAS 201, 202 and 203 in accordance with the requirements of Sections 1626.2 through 1626.4 of this code from damage by horizontal impact by a separate and

independent structure that allows access to all parts of the equipment at all times; or

450.4.2.6.1.3 They are completely protected by the equipment shrouding that meets the requirements of TAS 201, 202 and 203 in accordance with the requirements of Sections 1626.2 through 1626.4 of this code.

450.4.2.6.2 All occupied resident areas and resident support areas shall be supplied with sufficient HVAC as determined by the facility to ensure the health, safety and well-being of all residents and staff during and immediately following a disaster.

450.4.2.6.3 As determined by the facility, these selected HVAC systems and their associated support equipment, such as a control air compressor, essential to the maintenance of the occupied resident and resident support area(s) shall receive their power from the emergency power supply system(s).

450.4.2.6.4 Ventilation air change rates in occupied patient areas shall be maintained as specified in this section during and immediately following a disaster by connection to the essential electrical system.

450.4.2.6.5 Auxiliary equipment and specialties such as hydronic supply piping and pneumatic control piping shall be located, routed and protected in such a manner as determined by the facility to ensure the equipment receiving the services will not be interrupted.

450.4.2.7 Plumbing standards.

450.4.2.7.1 There shall be an independent on-site supply (i.e., water well) or on-site storage capability (i.e., empty water storage containers or bladders) of potable water at a minimum quantity of 3 gallons (11 L) per resident served per day during and immediately following a disaster. For planning purposes, the number of in-patients shall be determined in writing by the facility. Hot water in boilers or tanks shall not be counted to meet this requirement.

450.4.2.7.2 There shall be an independent on-site supply or storage capability of potable water at a minimum quantity of 1 gallon (4 L) per facility staff, and other personnel in the facility per day during and immediately following a disaster. For planning purposes, the number of these personnel shall be estimated by the facility. Hot water in boilers or tanks shall not be counted to meet this requirement.

450.4.2.7.3 The facility shall determine what amount of water will be sufficient to provide for resident services, and shall maintain an on-site supply or on-site storage of the determined amount.

450.4.2.7.4 When used to meet the minimum requirements of this rule, selected system appurtenances such as water pressure maintenance house pumps and emergency water supply well pumps shall take power from the emergency power supply system(s).

450.4.2.8 Medical gas systems standards. The storage, distribution piping system and appurtenances shall be contained within a protected area(s) designed and constructed to meet the structural requirements of this code and debris impact requirements as specified by Sections 1626.2 through 1626.4.

450.4.2.9 Emergency electrical generator and essential electrical system standards.

450.4.2.9.1 There shall be an on-site Level 1 emergency electrical generator system designed to support the occupied resident area(s) and resident support area(s) with at least the following support services.

450.4.2.9.1.1 Ice-making equipment to produce ice for the residents served, or freezer storage equipment for the storage of ice for the residents served.

450.4.2.9.1.2 Refrigerator unit(s) and food service equipment if required by the emergency food plan.

450.4.2.9.1.3 At a minimum, there shall be one clothes washer and one clothes dryer for laundry service.

450.4.2.9.1.4 Selected HVAC systems as determined by the facility and other systems required by this code.

450.4.2.9.1.5 Electric lighting required to provide care and service to the patient occupied areas and the necessary patient support areas shall be connected to the essential electrical system**.**

450.4.2.9.2 The emergency generator system shall be fueled by a fuel supply stored on site, sized to fuel the generator for 100-percent load for 64 hours or 72 hours for actual demand load of the occupied resident area(s) and resident support area(s) and resident support utilities during and immediately following a disaster, whichever is greater.

450.4.2.9.3 The fuel supply shall either be located below ground or contained within a protected area that is designed and constructed to meet the structural requirements of this code and debris impact requirements as specified by Sections 1626.2 through 1626.4. If an underground system is used, it shall be designed so as to exclude the entrance of any foreign solids or liquids.

450.4.2.9.4 All fuel lines supporting the generator system(s) shall be protected also with a method designed and constructed to meet the structural requirements of this code and debris impact requirements as specified by Sections 1626.2 through 1626.4.

450.4.2.9.5 All panel boards, transfer switches, disconnect switches, enclosed circuit breakers or emergency system raceway systems required to support the occupied resident area(s), resident support area(s) or support utilities shall be contained within

a protected area(s) designed and constructed to meet the structural requirements of this code and debris impact requirements as specified by Sections 1626.2 through 1626.4, and shall not rely on systems or devices outside of this protected area(s) for their reliability or continuation of service. The equipment system shall be kept entirely independent of all other wiring and equipment and shall not enter the same raceways, boxes, or cabinets with other wiring.

450.4.2.9.6 The emergency generator(s) shall be air- or self-contained liquid cooled and it and other essential electrical equipment shall be installed in a protected area(s) designed and constructed to meet the structural requirements of this code and debris impact requirements as specified by Sections 1626.2 through 1626.4.

450.4.2.9.7 If the facility does not have a permanent on-site optional stand-by generator to operate the entire normal branch electrical system, there shall be a permanently installed predesigned electrical service entry for the entire normal branch electrical system that will allow a quick connection to a temporary electrical generator. This quick connection shall be installed inside of a permanent metal enclosure rated for this purpose and may be located on the exterior of the building.

450.4.2.10 Fire protection standards.

450.4.2.10.1 If the facility requires fire sprinklers as part of its fire protection, either of the following shall be met.

450.4.2.10.1.1 On-site water storage capacity to continue sprinkler coverage, in accordance with the requirements of NFPA 13, *Sprinkler Systems*, fire watch, conducted in accordance with the requirements of Chapter 59A-4, *Florida Administrative Code*.

450.4.2.10.2 If the facility provides a fire watch in lieu of water storage to continue sprinkler coverage, then one type 4-A fire extinguisher or equivalent shall be provided for every three or less 2-A fire extinguishers required by NFPA 10, *Portable Extinguishers*, for the area served. These additional extinguishers shall be equally distributed throughout the area they are protecting.

450.4.2.11 External emergency communications standards. (Reference Chapter 59A-4, *Florida Administrative Code* for requirements.)

SECTION 451
AMBULATORY SURGICAL CENTERS

451.1 Scope.

451.1.1 All newly licensed or newly constructed ambulatory surgical centers, all ambulatory surgical center outpatient facilities and ambulatory surgical center mobile and transportable units, unless exempted by Chapter 395.0163, *Florida Statutes* and all additions, alterations or renovations to an existing licensed ambulatory surgical center shall comply with all applicable requirements of this code and the minimum standards of design, construction and specified minimum essential utilities and facilities of this section and shall have plans reviewed and construction surveyed by the state agency authorized to do so by Chapter 553.80(1)(c), *Florida Statutes* to assure compliance with all applicable requirements of this code.

451.1.2 A change of ownership of an existing licensed ambulatory surgical center shall not require compliance with this section.

451.1.3 The *Florida Building Code, Existing Building*, Section 101.2, Scope exempts state licensed ambulatory surgical centers from compliance with that code. Any repair, alteration, change of occupancy, addition and relocation of an existing state licensed ambulatory surgical center shall comply with the applicable requirements of this code and this section.

451.1.4 For project submission and fee requirements, and other administrative, licensure, and programmatic provisions for ambulatory surgical centers, see Agency for Health Care Administration, [AHCA] Chapter 59A-5 *Florida Administrative Code* (F.A.C.) and Chapter 395, *Florida Statutes.*

451.1.5 For state licensure purposes, these codes and standards shall be applicable to the project on the effective date of this code at the time of preliminary plan approval by the Agency for Health Care Administration (the Agency) or at the first construction document review if there has been no previous preliminary plan approval for that project.

451.2 Additional codes and standards for the design and construction of ambulatory surgical centers and, unless exempted by Chapter 395.0163, *Florida Statutes*, all ambulatory surgical center outpatient facilities and ambulatory surgical center mobile and transportable units. In addition to the minimum standards required by Section 451 of this code, Chapter 59A-5, *Florida Administrative Code* or by Chapter 395, *Florida Statutes*, all new ambulatory surgical centers and all additions, alterations or renovations to existing ambulatory surgical centers shall also be in compliance with the following codes and standards on the effective date of this code as described in Section 451.1.5 of this code.

451.2.1 The fire codes described in Chapter 69A-3.012, Standards of the National Fire Protection Association Adopted, *Florida Administrative Code.*

451.2.2 *Guidelines for Design and Construction of Health Care Facilities* (*The Guidelines*), as reference in Chapter 35 of this code.

451.3 Additional physical plant requirements for ambulatory surgical centers.

451.3.1 In addition to the codes and standards referenced in Section 451.2, the minimum standards of construction and specified minimum essential facilities described in Section 451.3 shall apply to all ambulatory surgical centers as described in Section 451.1. and to all new addi-

tions, alterations or renovations to existing ambulatory surgical center on the effective date of the code.

451.3.2 Operating rooms. (Reference *The Guidelines* for other requirements.)

451.3.2.1 All ambulatory surgical centers shall be equipped with a minimum of one operating room that is in compliance with the requirements of a Class C operating room as described in *The Guidelines*. Only Class C operating rooms will be listed as operating rooms for purposes of licensure.

451.3.2.2 If provided, all Class A or Class B operating rooms, and all procedure, examination, or treatment rooms shall meet the requirements for these rooms as described in *The Guidelines*.

451.3.3 Recovery area. (Reference *The Guidelines* for other requirements.)

451.3.3.1 Only the post-anesthesia recovery positions, as described in *The Guidelines*, will be listed as recovery positions for purposes of licensure.

451.3.3.1.1 Where it is not possible to inspect a fire-rated partition, wall or barrier or a smoke barrier that extends through the attic or interstitial space to the roof or floor deck above because of the location of a monolithic ceiling membrane, ceiling access panel(s) shall be installed adjacent to each side of the partition, wall or barrier at intervals not exceeding 30 feet (9.00 m) and in such locations as necessary to view all surfaces of the partition, wall or barrier. Other ceiling access panels shall only be installed as required by other sections of the code. Partitions, walls and barriers requiring protected openings or penetrations shall be identified in accordance with Section 703 of this code.

451.3.4 Architectural details, surfaces, and furnishings. (Reference *The Guidelines* for other requirements.)

451.3.4.1 No doors shall swing into the corridor except those to small closets or small mechanical or electrical rooms that cannot be usefully occupied with the doors in the closed position.

451.3.4.2 All exit access corridor doors must be equipped with automatic positive latching hardware.

451.3.4.3 The use of sliding pocket doors to patient use toilets shall not be permitted.

451.3.5 Elevators where required. (Reference *The Guidelines* for other requirements.)

451.3.5.1 All new ambulatory surgical centers located in multistory buildings where patient treatment areas are located on other than the exit floor shall have at least one 2,500 pound (933 kg) capacity elevator that shall be in compliance with the requirements of Section 451.3.13.5 and the requirements of Chapter 30 of the code.

451.3.5.2 This required elevator shall be sized to accommodate an ambulance stretcher 76 inches (1931 mm) long and 24 inches (610 mm) wide in the horizontal position. This elevator shall be identified with a sign indicating it as the ambulance stretcher elevator.

451.3.6 Air-conditioning, heating and ventilating systems. (Reference *The Guidelines* for other requirements.)

451.3.6.1 Air-handling equipment shall be located either on the roof of the building it serves or in mechanical equipment rooms unless it serves only one room and is located in that room. In buildings with multiple uses, tenants or occupancies, the licensed health care areas required by this code to maintain filter efficiencies and relative air pressure relationships shall be served by separate ducted mechanical air supply, return and exhaust systems. This equipment may be located in other areas of the building or in the same room as the building air-handling equipment if access during normal business hours is available.

451.3.6.2 Variable volume systems shall not be permitted in surgical procedures rooms and recovery rooms.

451.3.6.3 Friable duct linings exposed to air movement shall not be used in ducts, terminal boxes or other systems supplying operating rooms and recovery rooms, unless terminal filters of at least 90-percent efficiency are installed downstream of linings. Flexible duct work shall have a continuous metal inner liner encased by insulating material with an outer vapor jacket conforming to UL 181 unless the flexible duct meets the following criteria.

451.3.6.3.1 The duct conforms to UL Class 1 Air Duct, Standard 181 with minimum rated air velocity of 4,000 feet per minute, and is pressure rated for a minimum of 4-inches water gage positive pressure and 1-inch water gage negative pressure.

451.3.6.3.2 The inner core of the duct is constructed of Chlorinated Polyethylene (CPE) material encircling a steel helix bonded to the CPE.

451.3.6.3.3 The duct has a fire-retardant metalized vapor barrier that is reinforced with crosshatched fiberglass scrim having a permanence of not greater than 0.05 perms when tested in accordance with ASTM E 96 Procedure A.

451.3.6.3.4 The duct has passed an impact test similar to the UL 181 standard, conducted by a nationally recognized testing laboratory (NRTL) except it shall use a 25-pound (11 kg) weight dropped from a height of 10 feet (3.048 m). As a result of the test, the inner and outer surfaces of the sample shall not have ruptured, broken, torn, ripped, collapsed or separated in order for the duct to pass the test. In addition, the helix shall rebound to a cross-sectional elliptical area not less than 80 percent of the original test sample diameter. The use of flexible duct shall be limited to flexible air connector applications.

451.3.6.4 Filter housing frame blank-off panels shall be permanently attached to the frame, constructed of rigid materials and have sealing surfaces equal to or greater than the filter media installed in the filter frame. All joints between the blank-off panels, filter housing

frames and filter support structure shall be caulked air tight.

451.3.7 Fan and damper control during fire alarm.

451.3.7.1 During an automatic fire alarm activation, fan systems and fan equipment serving more than one room shall be stopped to prevent the movement of smoke by mechanical means from the zone in alarm to adjacent smoke zones or to adjacent areas within the smoke zone if there is only one zone in the facility.

451.3.7.2 Fan control shall be designed so as to minimize the interruption of heating, ventilating and air conditioning in compartments remote from the compartment in alarm.

451.3.7.3 Fan control shall not interfere with the continuous operation of exhaust systems conveying ethylene oxide or other hazardous chemicals and fumes or systems required to operate continuously for the health and safety of occupants. Air-handling systems shall be designed to allow for continuous operation of all such systems and to minimize movement of smoke by mechanical means from the zone in alarm.

451.3.8 Plumbing fixtures. (Reference *The Guidelines* for other requirements.)

451.3.8.1 Plumbing shall comply with the *Florida Building Code, Plumbing*.

451.3.9 Fire pump.

451.3.9.1 Where required in new construction, fire pumps and ancillary equipment shall be separated from other functions by construction having a 2-hour fire-resistance rating.

451.3.9.2 The fire pump normal service disconnect shall be rated to hold locked rotor current indefinitely. If the approved normal service disconnect is located on the exterior, it shall be supervised by connection to the fire pump remote annunciator and shall provide a separate fire alarm system trouble indication.

451.3.9.3 When the fire pump is placed on the emergency system in addition to the normal supply, the emergency feeder protective device shall be sized in accordance with maximum rating or settings of Chapter 27 of this code.

451.3.9.4 The fire pump transfer switch may be either manual or automatic. If located on the line side of the controller as a separate unit, the switch must be rated for the pump motor locked rotor current indefinitely and must be located in the pump room.

451.3.9.5 Combination fire pump controller and transfer switch units listed by the Underwriter's Laboratories, Inc., as prescribed by Chapter 27 of this code are acceptable when the transfer switch has exposable and replaceable contacts, not circuit-breaker-types, rated for the available short-circuit current.

451.3.9.6 The fire pump shall be installed in a readily accessible location When it is located on the grade level floor, there shall be direct access from the exterior.

451.3.10 Electrical requirements. (Reference *The Guidelines* for other requirements.)

451.3.10.1 All material, including equipment, conductors, controls, and signaling devices, shall be installed to provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facilities shown in the specifications or indicated on the plans.

451.3.10.2 All materials and equipment shall be factory listed as complying with applicable standards of Underwriter's Laboratories, Inc., or other similarly established standards of a nationally recognized testing laboratory (NRTL) that has been certified by the Occupational Safety and Health Administration (OSHA) for that referenced standard.

451.3.10.3 Field labeling of equipment and materials shall be permitted only when provided by a nationally recognized testing laboratory that has been certified by the Occupational Safety and Health Administration (OSHA) for that referenced standard.

451.3.10.4 There shall be documentation for equipotential grounding in all patient care areas, building service ground electrode systems, and special systems such as fire alarm, nurse call, paging, generator, emergency power and breaker coordination.

451.3.10.5 All spaces occupied by people, machinery and equipment within buildings, and the approaches thereto, and parking lots, shall have electric lighting.

451.3.10.6 Patients' recovery rooms shall have general lighting. Fixed lights not switched at the door shall have switch controls convenient for use at the luminaries. All switches for control of lighting in recovery areas shall be of the quiet operating type.

451.3.10.7 Operating rooms shall have general lighting for the room in addition to localized specialized lighting provided by a special lighting unit required at the surgical table. The type of special lighting unit shall be as specified by the functional program of the facility. Each special lighting unit for localized lighting at the surgical table shall be permanently installed and permanently connected to an independent circuit that shall be powered from the critical branch. In addition, a minimum of one general purpose lighting fixture shall be powered from a normal circuit in all operating rooms.

451.3.10.8 The number and circuitry of all duplex receptacles in operating rooms, cardiac catheterization laboratories, and post-operative recovery rooms, shall be provided as follows:

451.3.10.8.1 A minimum of four duplex receptacles shall be connected to the critical branch of the essential electrical system.

451.3.10.8.2 A minimum of two duplex receptacles shall be connected to a normal power circuit or to a critical branch circuit from a different transfer switch.

451.3.10.8.3 There shall be no more than two duplex receptacles per circuit for all receptacles for the areas as listed.

451.3.10.9 All receptacles shall have engraved cover plates to indicate the panel board and circuit numbers powering the device.

451.3.10.10 Branch circuit over-current devices shall be readily accessible to nursing staff and other authorized personnel.

451.3.10.11 Nonmetallic sheathed cable or similar systems are not permitted for power and lighting wiring in any facility.

451.3.10.12 Panel boards located in spaces subject to storage shall have the clear working space in accordance with Chapter 27 of this code. "ELECTRICAL ACCESS—NOT FOR STORAGE" shall be permanently marked on the floor and wall about the panel. Panel boards shall not be located in an exit access corridor or in an unenclosed space or area that is open to an exit access corridor. Panel boards may be located inside of a room or closet that opens into an exit access corridor only when the room or closet is separated from the exit access corridor by a partition and door that comply with this code.

451.3.10.13 The electrical system shall have coordinated short circuit protection.

451.3.10.14 Provide color coding for the junction boxes for the branches of the essential electrical system.

451.3.10.15 Duplex receptacles for general use shall be installed approximately 50 feet (15 240 mm) apart in all general purpose corridors and within 25 feet (7620 mm) of ends of corridors.

451.3.11 Nurses' calling system.

451.3.11.1 Wired-or wireless-type nurse call systems shall be permitted if they have been tested and approved by a national recognized testing laboratory (NRTL) to meet the requirements of UL 1069, 7th edition, published October 12, 2007 as referenced in Chapter 35 of this code. All wireless systems shall be tested and approved by a national recognized testing laboratory (NRTL) to meet the requirements of Section 49, Wireless Systems of UL 1069, 7th edition as referenced in Chapter 35 of this code. All nurse call systems whether wired or wireless shall have electronically supervised visual and audible annunciation in accordance with the supervision criteria of UL 1069, 7th edition, for wireless nurse call systems and tested and approved by a nationally recognized testing laboratory (NRTL) to meet those requirements.

451.3.11.2 In facilities which contain more than eight recovery beds, or where recovery beds are not in view from the nurse's station, a nurses' calling system shall be provided. Each recovery bed shall be provided with a call button. Two call buttons serving adjacent beds may be served by one calling station. Call shall activate a visual and audible signal at the nurses' station and in the clean workroom and soiled workroom. Call shall also activate a corridor dome light located at each patient recovery position.

451.3.11.3 A nurses' call emergency system shall be provided at each patient toilet and dressing room. Activation shall be by a pull cord conveniently located for patient use. This system will activate distinct audible and visual signals in the recovery room nurses' station and in the surgical suite nurses' station. The emergency call system shall be designed so that signal light activation will remain lighted until turned off at patient's calling station.

451.3.11.4 A corridor dome light shall be located directly outside of any patient use area that is equipped with a nurse call system.

451.3.12 Fire alarm systems.

451.3.12.1 A fire alarm annunciator panel shall be provided per facility or building within the Ambulatory Surgical Center (ASC) at a location that is constantly attended during the facility's hours of operation and shall annunciate any fire alarm in the building from any manual or automatic fire alarm device. The panel shall indicate the zone of actuation of the alarm, and there shall be a trouble signal indicator.

451.3.12.2 A shared building fire alarm system shall be permitted.

451.3.12.3 Each smoke compartment shall be annunciated as a separate fire alarm zone. A fire alarm system zone shall not include rooms or spaces in other smoke compartments and shall be limited to a maximum area of 22,500 square feet (2090 m^2).

451.3.13 Emergency Electrical Service. (Reference *The Guidelines* for other requirements.)

451.3.13.1 A Type 1 essential electrical system shall be provided in ambulatory surgical centers as described in NFPA 99, *Health Care Facilities Code*. The emergency power for this system shall meet the requirements of a Level 1, Type 10, Class 8 generator as described in NFPA 110, *Emergency Standby Power Systems.*

451.3.13.2 In new construction, the normal main service equipment shall be separated from the emergency distribution equipment by locating it in a separate room. Transfer switches shall be considered emergency distribution equipment for this purpose.

451.3.13.3 The generator remote annunciator shall be located in a location that is staffed during the hours of operation of the ambulatory surgical center.

451.3.13.4 Switches for critical branch lighting shall be totally separate from normal switching. Critical branch switches may be adjacent to normal switches. Switches for life safety lighting are not permitted except as required for dusk-to-dawn automatic control of exterior lighting fixtures.

451.3.13.5 There shall be selected life safety lighting provided at a minimum of 1 footcandle (10 lux) and designed for automatic dusk-to-dawn operation along

the travel paths from the exits to the public way or to safe areas located a minimum of 30 feet (9.144 m) from the building.

451.3.13.6 A minimum of one elevator serving any patient treatment floor shall be in compliance with Section 451.3.5 and shall be connected to the equipment branch of the essential electric system and arranged for manual or automatic operation during loss of normal power.

451.3.13.7 If a day tank is provided, it shall be equipped with a dedicated low level fuel alarm and a manual pump. The alarm shall be located at the generator derangement panel.

451.3.13.8 Transfer switch contacts shall be of the open type and shall be accessible for inspection and replacement.

451.3.13.9 Electric lighting required to provide care and service to the patient occupied areas and the necessary patient support areas shall be connected to the essential electrical system.

451.3.14 Fire Protection. An ambulatory surgical center (ASC) located in a building containing a fire protection sprinkler system, shall be provided with a dedicated supply main serving only the space occupied by the ASC when the ASC is located on the same floor of the building with other building tenants. The supply main shall originate at the fire main piping riser serving the floor the ASC space is occupying. The ASC supply main shall be equipped with an indicating control valve containing a tamper switch installed at the tap to the building fire riser in a readily accessible location. The valve shall have a permanent tag identifying the supply main as that of the ASC.

451.3.15 Medical Gas. If there is a piped medical gas installation in the ASC, it shall comply with the requirements of NFPA 99, *Health Care Facilities Code*.

SECTION 452
BIRTHING CENTERS

452.1 Scope. All birthing centers shall comply with the following design and construction standards as described herein.

Note: Other administrative and programmatic provisions may apply. See Agency of Health Care Administration [AHCA] Rule 59A-11, *Florida Administrative Code* and Chapter 383, *Florida Statutes*.

452.2 Physical environment, water supply and fire safety.

452.2.1 At least one birthing room shall be maintained which is adequate and appropriate to provide for the equipment, staff, supplies and emergency procedures required for the physical and emotional care of a maternal client, her support person and the newborn during labor, birth, and the recovery period.

452.2.2 The birth center shall be designed to provide adequate space for the following.

452.2.2.1 Birth rooms shall be located to provide unimpeded, rapid access to an exit of the building which will accommodate emergency transportation vehicles.

452.2.2.2 Adequate fixed or portable work surface areas shall be maintained for use in the birth room.

452.2.2.3 A separate space for a clean area and a contaminated area; if it is not feasible to provide such separate areas, special procedures shall be established for the disposal of infectious waste. Sanitary waste containers, soiled linen containers, storage cabinets and an autoclave, pressure cooker or other effective sterilization equipment shall be available.

452.2.2.4 Prenatal and postpartum examinations which will provide privacy for the patient, hand-washing facilities and the appropriate equipment for staff.

452.2.2.5 Medical record storage, client interviews, instruction and waiting rooms.

452.2.3 Toilet and bathing facilities.

452.2.3.1 A toilet and lavatory shall be maintained in the vicinity of the birth room.

452.2.3.2 Hand-washing facilities shall be in or immediately adjacent to the birth room.

452.2.3.3 A bathtub or shower shall be available for client use.

452.2.3.4 All floor surfaces, wall surfaces, water closets, lavatories, tubs and showers shall be kept clean, and all appurtenances of the structures shall be of sound construction, properly maintained, in good repair and free from safety hazards.

452.2.4 There shall be provisions and facilities for secure storage of personal belongings and valuables of clients.

452.2.5 There shall be provisions for visual privacy for each maternal client and her support person.

452.2.6 Hallways and doors providing access and entry into the birth center and birth room shall be of adequate width and conformation to accommodate maneuvering of ambulance stretchers and wheelchairs.

452.2.7 All areas of the facility shall be well lighted and shall have light fixtures capable of providing at least 20 footcandles (200 lux) of illumination at 30 inches (762 mm) from the floor to permit observation, cleaning and maintenance. Light fixtures shall be properly maintained and kept clean.

452.2.8 All housing facilities shall have adequate ventilation and be kept free of offensive odors.

452.2.8.1 If natural ventilation is utilized, the opened window area for ventilation purposes shall be equal to one-tenth of the floor space in the residential area.

452.2.8.2 When mechanical ventilation or cooling systems are employed, the system shall be properly maintained and kept clean. Intake air ducts shall be designed and installed so that dust or filters can be readily removed. In residence areas and segregation rooms with solid doors, mechanical ventilation systems shall provide a minimum of 10 cubic feet (0.3 m^3) of fresh or

filtered recirculated air per minute for each client occupying the area.

452.2.8.3 All toilet rooms shall be provided with direct openings to the outside or provided with mechanical ventilation to the outside.

452.2.9 Adequate heating and cooling facilities shall be provided to maintain a minimum temperature of 68°F (20°C) and maximum temperature of 78°F (26°C) at a point 20 inches (508 mm) above the floor.

452.2.10 All heating devices shall comply with fire prevention provisions found in Rule 69A-3, Fire Prevention, General Provision, *Florida Administrative Code*.

452.2.11 Laundry.

452.2.11.1 Where laundry facilities are provided, laundry facilities shall be of sound construction and shall be in good repair and clean. Adequate space shall be provided and areas shall be designated for the separation of clean and soiled clothing, linen and towels.

452.2.11.2 Laundry rooms shall be well lighted and properly ventilated. Clothes dryers shall be vented to the exterior.

452.2.12 Insect and rodent control. Facilities shall be kept free of all insects and rodents. All outside openings shall be effectively sealed or screened with 16 mesh screening or equivalent to prevent entry of insects or rodents.

452.2.13 Outdoor areas. Outdoor areas shall be well drained. Indoor and outdoor recreational areas shall be provided with safeguards designed for the needs of the residents.

452.2.14 Water supply.

452.2.14.1 Drinking water shall be accessible to all clients. When drinking fountains are available, the jet of the fountain shall issue from a nozzle of nonoxidizing impervious material set at an angle from the vertical. The nozzle and every other opening in the water pipe or conductor leading to the nozzle shall be above the edge of the bowl so that such nozzle or opening will not be flooded in case a drain from the bowl of the fountain becomes clogged. The end of the nozzle shall be protected by nonoxidizing guards to prevent persons using the fountain from coming into contact with the nozzle. Vertical or bubbler drinking fountains shall be replaced with approved-type water fountains or be disconnected. When no approved drinking fountains are available, clients shall be provided with single service cups which shall be stored and dispensed in a manner to prevent contamination. Common drinking cups are prohibited.

452.2.14.2 Hot and cold running water under pressure and at safe temperature, not to exceed 110°F (43°C) to prevent scalding, shall be provided to all restrooms, lavatories and bathing areas.

452.2.15 Sewage disposal.

452.2.15.1 All sanitary facilities shall comply with the requirements of the *Florida Building Code, Plumbing*.

452.2.15.2 For facilities with nine or more birth rooms, mop sinks or curbed areas with floor drains shall be available in convenient locations throughout the facility to facilitate cleaning and for the proper disposal of cleaning water.

452.2.16 Fire control. Each birth center shall provide fire protection through the elimination of fire hazards, the installation of necessary safeguards such as extinguishers and smoke alarms to insure rapid and effective fire control.

452.2.16.1 To safeguard all clients, the birth center shall have:

452.2.16.1.1 "No Smoking**"** signs prominently displayed in those areas where smoking is not permitted.

452.2.16.1.2 Fire regulations and an evacuation route prominently posted.

452.2.16.2 The written fire control plan approved by the appropriate local fire authority shall contain provisions for prompt reporting of all fires, extinguishing fires, protection of personnel and guests, evacuation, and cooperation with fire-fighting authorities.

452.2.16.3 New centers' carpeting must comply with the maximum flame spread rating of 75 in accordance with ASTM E 84 test as required under Chapter 69A-3.012 Standards of the National Fire Protection Association Adopted, *Florida Administrative Code*. Those existing centers not having affirmative evidence of complying with such flame spread rating shall establish fire control measures including the prohibition of smoking in carpeted areas. Such procedures shall be approved by the authority having jurisdiction.

SECTION 453
STATE REQUIREMENTS FOR EDUCATIONAL FACILITIES

453.1 Scope: Public educational facilities. Public educational facilities shall comply with the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal. These are minimum standards; boards may impose more restrictive requirements. Additional requirements for public educational facilities in Florida, including public schools and public Florida colleges, are found in these standards.

Note: Other administrative and programmatic provisions may apply. See Department of Education Rule 6A-2.0010 and Chapter 1013, *Florida Statutes*.

453.2 Public schools and Florida colleges general requirements.

453.2.1 Owner. Each school board and Florida college board of trustees is deemed to be the owner of facilities within its respective jurisdiction. Boards shall provide for enforcement of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal, including standards for health, sanitation, and others as required by law.

453.2.2 Exemption from local requirements. All public educational and ancillary plants constructed by a school board or a Florida college board are exempt from all other state, county, district, municipal, or local building codes, interpretations, building permits, and assessments of fees for building permits, ordinances, road closures, and impact fees or service availability fees as provided in Section 1013.371(1)(a), *Florida Statutes*.

453.3 Code enforcement.

453.3.1 School boards and Florida college boards. Section 553.80(6), *Florida Statutes*, provides options for plan review services and inspections by school boards and Florida college boards.

453.3.2 Owner review and inspection. A school board or Florida college board which undertakes the construction, remodeling, renovation, lease, or lease-purchase of any educational plant or ancillary facility, or day labor project, regardless of cost or fund source, shall review construction documents as required by law in Sections 553.80(6) and 1013.38, *Florida Statutes*, and shall ensure compliance with requirements of law, rule, and the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal. Section 553.80(6), *Florida Statutes*, states that district school boards and Florida college boards shall provide for plan review and inspections for their projects. They shall use personnel certified under Part XII of Chapter 468, *Florida Statutes* to perform the plan reviews and inspections or use one of the options provided in Section 1013.38, *Florida Statutes*. Under this arrangement, school boards and Florida college boards are not subject to local government permitting, plan review, and inspection fees.

453.3.3 Local government review and inspection. As an option to the owner providing plan review and inspection services, school boards and Florida college boards may use local government code enforcement officers who will not charge fees more than the actual labor and administrative costs for the plan review and inspections. Local government code enforcement offices shall expedite permitting. Any action by local government not in compliance with Section 553.80(6), *Florida Statutes*, may be appealed to the Florida Building Commission, which may suspend the authority of that local government to enforce the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal on the facilities of school boards and Florida college boards.

453.3.4 Other regulatory agencies. Boards shall coordinate the planning of projects with state and regional regulatory and permitting agencies, as applicable. Other state or local agencies may inspect new construction or existing facilities when required by law; however, such inspections shall be in conformance with the code as modified by this section.

453.3.5 Day labor projects. Any one construction project estimated to cost $300,000 or less where bonafide board employees or contracted labor provide the work. Day labor projects are subject to the same *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal as new construction.

453.3.6 Routine maintenance. Maintenance projects are subject to the same *Florida Building Code* and *Florida Fire Prevention Code* as adopted by the State Fire Marshal as new construction. Chapter 489, *Florida Statutes*, exempts boards from the use of a licensed general contractor for projects up to $200,000 where bonafide board employees provide the work. Maintenance projects which include construction, renovation and/or remodeling, shall be reviewed for compliance with the code.

453.3.7 Certificate of occupancy. New buildings, additions, renovations, and remodeling shall not be occupied until the building has received a certificate of occupancy for compliance with codes that were in effect on the date of permit application.

453.3.8 Reuse and prototype plans shall be code updated with each new project.

453.4 Reference documents. School Boards and Florida College Boards of Trustees. In addition to complying with the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal, and other adopted standards and this section, public educational facilities and sites shall comply with applicable federal and state laws and rules.

453.4.1 Rule 6A-2.00.10 [State Requirements for Educational Facilities (SREF)]. A Florida Department of Education document which includes required design standards, standards for rehabilitation of historical resources, capital outlay project process requirements, and various agencies having jurisdiction during project planning and construction.

453.4.2 Flood-resistant construction. Educational facilities in flood hazard areas shall comply with ASCE 24.

453.4.3 Florida statutes and state rules. Including, but not limited to, Chapters 255, 468, 471, 481, 489, 553, 633, 1013, and Section 287.055, *Florida Statutes*, and various state rules as applicable to specific projects.

453.4.4 Accessibility requirements for children's environments. U.S. Department of Justice and the U.S. Architectural and Transportation Barriers Compliance Board.

453.4.5 Handbook for public playground safety. Playgrounds and equipment shall be designed and installed using the *Public Playground Safety Handbook* by the U. S. Consumer Product Safety Commission, and the ASTM/ CPSC *Playground Audit Guide* as applicable.

453.4.6 ANSI Z53.1. American National Standard *Safety Color Code for Marking Physical Hazards*, is used in shops where machinery requires marking and safety zones.

453.4.7 ASCE 7. American Society of Civil Engineers.

453.4.8 *Life Cycle Cost Guidelines for Materials and Building Systems for Florida's Public Educational Facilities*, available from the Department of Education, Office of Educational Facilities shall be considered.

453.5 Definitions.

453.5.1 "Assembly" occupancies are buildings or portions of buildings used for gatherings of 50 or more persons, such as auditoriums, gymnasiums, multipurpose rooms, classrooms and labs, cafeterias, stadiums, media centers and interior courtyards. Assembly occupancies include adjacent and related spaces to the main seating area, such as stages, dressing rooms, workshops, lobbies, rest rooms, locker rooms, and store rooms. School board and Florida college facilities shall follow the requirements of *Florida Fire Prevention Code* as adopted by the State Fire Marshal for assembly spaces.

453.5.2 "Board" means a district school board and a Florida college board of trustees.

453.5.3 "Boiler" is a fuel-fired, heat-producing appliance with a minimum input capacity of 60,000 Btu per hour and intended to supply hot water or steam. Boilers and the inspection of boilers shall comply with Section 554, *Florida Statutes*, the *Boiler Safety Act*.

453.5.4 "Certificate of occupancy" is documentation issued by an authority having jurisdiction which indicates inspection and approval of completion of a construction project pursuant to the requirements of Florida law.

453.5.5 "Courtyard" is a court or enclosure adjacent to, or surrounded by, a building(s) and/or walls.

453.5.5.1 "Exterior courtyard" is a courtyard which is not roofed, has a minimum width of 40 feet (1219 mm), and

a. has an opening a minimum width of 40 feet (1219 mm), with no obstructions, on at least one end, or

b. has fences between the buildings for security purposes, and the required exiting capacity of the courtyard is provided for by means of doors or gates from the courtyard.

An exterior courtyard may be considered exterior space and used for exiting of adjacent spaces. For an exterior courtyard with an opening between 40 feet (1219 mm) and 60 feet (18 288 mm) wide, the building walls and wall openings must meet the requirements of this code Tables 601 and 602 and the maximum travel distance to the courtyard opening/exit shall not exceed 150 feet (45 720 mm) from any point within the courtyard. If the minimum courtyard width exceeds 60 feet (18 288 mm), the travel distance to a courtyard opening/exit may exceed 150 feet (945 720 mm).

453.5.5.2 "Enclosed courtyard" is a courtyard which is not roofed by more than 50 percent of the courtyard area and which is substantially surrounded by a building(s) on two sides or more and each opening to the exterior is less than 40 feet (1219 mm) in width. The courtyard area shall be calculated for maximum occupancy as an assembly space and the number and size of remotely located exits shall be calculated for the maximum possible load. The maximum possible load is the greater of the calculated capacity of the courtyard or the load imposed by the surrounding spaces. An enclosed courtyard may be used as a component of exit access provided that the walls and wall openings meet the requirements of Tables 601 and 602 and the maximum travel to the exit discharge does not exceed 150 feet (45 720 mm) from any point within the enclosed courtyard. An enclosed courtyard cannot serve as the exterior for exiting or for emergency rescue openings.

453.5.5.3 "Roofed courtyard" is a courtyard which is roofed by more than 50 percent of the courtyard area in any manner. Roofed courtyards may be used for assembly spaces and shall not be used as a component of exiting from adjacent spaces.

453.5.6 "Facility" is additionally defined as follows:

453.5.6.1 "Ancillary facility" is a building or other facility necessary to provide district-wide support services, such as an energy plant, bus garage, warehouse, maintenance building, or administrative building.

453.5.6.2 "Ancillary plant" is buildings, site, and site improvements necessary to provide district-wide vehicle maintenance, storage, building maintenance activities, or administrative functions necessary to provide support services to an educational program.

453.5.6.3 "Auxiliary facility" consists of the support spaces located at educational facilities and plants which do not contain student stations but are used by students, such as libraries, administrative offices, and cafeterias.

453.5.6.4 "Educational facility" consists of buildings and equipment, structures, and special educational use areas that are built, installed, or established to serve primarily the educational purposes and secondarily the social and recreational purposes of the community.

453.5.6.5 "Educational plant" comprises the educational facilities, site, and site improvements necessary to accommodate students, faculty, administrators, staff, and the activities of the educational program.

453.5.6.6 "Existing facility" is a facility owned, rented or leased.

453.5.6.7 "Leased facility" is a facility not owned, but contracted for use.

453.5.6.8 "Permanent facility" is a facility designed for a fixed location.

453.5.6.9 "Relocatable/portable facility" is a building which is designed with the capability of being moved to a new location.

453.5.6.10 "Modular facility" is a structure which, when combined with other modules and/or demountable roof and/or wall sections, forms a complete building. This facility may be relocatable.

453.5.7 "Maintenance and repair" is the upkeep of educational and ancillary plants including, but not limited to, roof or roofing replacement, short of complete replacement of membrane or structure; repainting of interior or exterior surfaces; resurfacing of floors; repair or replacement of glass and hardware; repair or replacement of electrical and plumbing fixtures; repair of furniture and equipment; replacement of system equipment with equivalent items meeting current code requirements providing

that the equipment does not place a greater demand on utilities, structural requirements are not increased, and the equipment does not adversely affect the function of life safety systems; traffic control devices and signage; and repair or resurfacing of parking lots, roads, and walkways. Does not include new construction, remodeling, or renovation, except as noted above.

453.5.8 "New construction" is any construction of a building or unit of a building in which the entire work is new. An addition connected to an existing building is considered new construction.

453.5.9 "Open plan building" is any building which does not have corridors defined by permanent walls and is entirely open or divided by partitions which may be easily rearranged.

453.5.10 "Open plan instructional space" is an arrangement of two or more class areas with no permanent partitions or wall separations.

453.5.11 "Owner". Each school board and Florida college board of trustees is deemed to be the owner of facilities within its respective jurisdiction.

453.5.12 "Permit" for construction is documentation issued by an authority having jurisdiction which indicates approval of construction plans prepared pursuant to the requirements of Florida law.

453.5.13 "Remodeling" is the changing of existing facilities by rearrangement of space and/or change of use. Only that portion of the building being remodeled must be brought into compliance with the *Florida Building Code* and *Florida Fire Prevention Code* as adopted by the State Fire Marshal unless the remodeling adversely impacts the existing life safety systems of the building.

453.5.14 "Renovation" is the rejuvenating or upgrading of existing facilities by installation or replacement of materials and equipment. The use and occupancy of the spaces remain the same. Only that portion of the building being renovated must be brought into compliance with the *Florida Building Code* and *Florida Fire Prevention Code* as adopted by the State Fire Marshal unless the renovation adversely impacts the existing life safety systems of the building.

453.5.15 "Separate atmosphere" is the individual volumes of air in a building which are divided by smoke-proof barriers to limit contamination of the air by smoke and fumes during a fire.

453.5.16 "Separate building" for the purpose of separate fire alarm systems or sprinkler systems is a structure separated from other buildings by 60 feet (18 288 mm) or more, or as required by other sections of this code.

453.5.17 "Florida college" is a public community college, public college, state college, or public junior college.

453.5.18 "Student-occupied space" is any area planned primarily for use by six or more students.

453.6 Administration of public education projects.

453.6.1 Occupancy during construction. School board and Florida college board facilities, or portions of facilities, shall not be occupied during construction unless exits, fire detection and early warning systems, fire protection, and safety barriers are continuously maintained and clearly marked at all times. Construction on an occupied school board site shall be separated from students and staff by secure barriers. Prior to issuance of the notice to proceed, a safety plan shall be provided by the contractor which clearly delineates areas for construction, safety barriers, exits, construction traffic during the various phases of the project and when conditions change. Where heavy machinery, as is used for earth moving or scraping, is required to work on a school board's occupied site, the work shall be separated from occupants by secure double barriers with a distance of 10 feet (3048 mm) in between. New construction, remodeling or renovations in existing facilities shall not reduce the means of egress below the requirements for new buildings; safe means of egress from a student-occupied space may be accomplished as authorized by NFPA 101, Florida edition as adopted by the *Florida Fire Prevention Code*. New construction (additions) shall not block or reduce safe means of egress.

453.6.2 Contractor toxic substance safety precautions. When hazardous chemicals as defined by 29 CFR 1910.1200, OSHA *Hazard Communication Standard* are to be used during the maintenance, renovation, remodeling, or addition to an existing facility, the contractor shall notify the administrator in writing at least three working days before any hazardous chemical is used. The notice shall indicate the name of each of the hazardous chemicals to be used, where and when they will be used, and a copy of a Material Safety Data Sheet (MSDS) for each hazardous chemical. The contractor shall comply with the safety precautions and handling instructions set forth in the MSDS. Copies of hazardous waste manifests documenting disposal shall be provided to the facility's administrator who will notify occupants of the anticipated presence of toxic substances during the maintenance, renovation, remodeling, or addition to an existing facility.

453.6.3 Flammable or explosive substances. No flammable or explosive substances or equipment shall be introduced during a remodeling or renovation project in a facility of normally low or ordinary hazard classification while the building is occupied.

453.7 Life safety.

453.7.1 Separate exits. In assembly occupancies, each required exit from an assembly space must exit into a separate atmosphere or to the exterior, to be considered as a separate exit.

453.7.2 Exit access. Exit access shall not be through a toilet room, storage room, or similar space, or any space subject to being locked.

453.7.3 Location of fire extinguishers and blankets. Fire extinguishers may be located inside student-occupied spaces provided they are placed adjacent to the primary exit door, and the room door remains unlocked when the facility is occupied, and a permanently affixed sign, with a red background and white letters, reading "FIRE EXTINGUISHER INSIDE" is placed on the outside adjacent to

the door. Fire extinguisher cabinets shall not be locked. Fire blankets shall be located in each laboratory and each shop where a fire hazard may exist. Fire extinguishers and fire blankets shall be readily accessible and suitable for the hazard present and shall not be obstructed or obscured from view. Extinguishers and blankets shall be on hangers or brackets, shelves, or cabinets so that the top of the extinguisher or blanket is not more than 54 inches (1318 mm) above finish floor (AFF) and complies with state and federal accessibility requirements. All extinguishers shall be installed and maintained in accordance with NFPA. Extinguishers shall remain fully charged and operable at all times and have a current tag to indicate compliance.

453.7.4 Common fire alarm. Buildings within 60 feet (18 288 mm) of each other shall have a common fire alarm system. Emergency shelters shall have the fire alarm panel located in the space identified as the shelter manager's office.

453.7.5 Fire alarm sending stations. Sending stations may be located inside student-occupied spaces, adjacent to the primary exit door only if the door to the occupied space is unlocked at all times while the facility is occupied. When located inside a student-occupied space, a permanently affixed sign reading "FIRE ALARM PULL STATION INSIDE" shall be placed outside that space adjacent to the door. This sign shall have a red background with white letters. Sending stations shall be mounted to meet accessibility requirements.

453.7.6 Automatic shut off. The fire alarm system shall shut off gas and fuel oil supplies which serve student-occupied spaces or pass through such spaces. The shutoff valve shall be located on the exterior at the service entrance to the building. The shutoff valve shall be of the manual reset type.

453.7.6.1 Kitchen gas supplies. Kitchen gas supplies shall be shut off by activation of the kitchen hood fire suppression system. The shutoff valve shall be installed in accordance with the manufacturer's instructions and recommendations.

453.7.6.2. Emergency power. The fire alarm system shall not shut off gas supplies which serve emergency power sources.

453.7.7 Unoccupied rooms and concealed spaces. Rooms or spaces for storage, custodial closets, mechanical rooms, spaces under stages with wood structures and other unoccupied or unsupervised spaces in a building shall have automatic fire alarm system detector devices installed. Any concealed space with exposed materials having a flame spread rating greater than Class A, including crawl spaces under floors, interstitial spaces between ceiling and floor or roof above and attic spaces, shall be equipped with heat detector devices. Smoke and heat detector devices shall be installed in accordance with NFPA 72.

453.7.7.1 Fully sprinklered buildings. In fully sprinklered buildings, fire alarm detection devices are not required except where specified in the *Florida Fire Prevention Code*.

453.7.8 Boiler rooms. Each boiler room shall be separated from the remainder of the building by 1-hour fire-resistance-rated construction or shall be separate from other buildings by 60 feet (18 288 mm), and shall have an outswinging door opening directly to the exterior. A fire door swinging into the boiler room shall also be provided for any opening into the interior of the building. There shall be no opening into any corridor or area designed for use by students.

453.7.9 Exit passageways and horizontal exits. Exit passageways referenced in Section 1023 and horizontal exits referenced in Section 1025 of this code shall be prohibited.

453.8 General requirements for new construction, additions, renovation, and remodeling.

453.8.1 Codes and standards. Educational facilities owned by school boards and Florida college boards shall meet the construction requirements of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal, state and federal laws and rules, and this section for Florida's public educational facilities for new construction, remodeling and renovation of existing facilities. This is a minimum standard; boards may impose more restrictive safety and level of quality standards for educational, auxiliary, and ancillary facilities under their jurisdiction, provided they meet or exceed these minimum requirements.

453.8.1.1 Educational occupancy. School board educational facility projects whether owned, lease-purchased or leased shall comply with the educational occupancy and assembly occupancy portions of the above referenced codes as applicable, except where in conflict with this section. The support spaces such as media centers, administrative offices and cafeterias and kitchens located within educational facilities are not separate occupancies.

453.8.1.2 Business occupancy. Florida college board educational facility projects whether owned, lease-purchased or leased shall comply with the business occupancy and the assembly occupancy of the above referenced codes as applicable, except where in conflict with this section.

453.8.1.3 Ancillary facility. School board and Florida college board ancillary facilities such as warehouses or maintenance buildings, shall use the applicable occupancy section of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal. Ancillary facilities on educational plant sites shall be separated from the educational facility as required by code.

453.8.2 Space standards. School board and Florida college board facility sizes shall use standards in the "Size of Space and Occupant Design Criteria Table" found in the Department of Education document, "State Requirements for Educational Facilities (SREF)." Exiting from occupied spaces shall comply with Table 1004.1.2 of this code.

453.8.3 Construction type. School board and Florida college buildings including auxiliary, ancillary and vocational facilities shall comply with the following.

453.8.3.1 Noncombustible Type I, II or IV. The minimum construction type for one- and two-story public educational facilities shall be noncombustible Type I, II or IV construction or better.

453.8.3.1.1 Interior nonload-bearing wood studs or partitions shall not be used in permanent educational and auxiliary facilities or relocatable buildings.

Exception: Historic buildings to maintain the fabric of the historic character of the building.

453.8.3.2 Type I. Facilities three stories or more shall be Type I construction.

453.8.3.3 Type IV. When Type IV construction is used, wood shall be exposed and not covered by ceilings or other construction.

453.8.3.4 Exceptions to types of construction:

1. Covered walkways open on all sides may be Type V construction.
2. Single-story dugouts, press boxes, concession stands, related public toilet rooms, detached covered play areas, and nonflammable storage buildings that are detached from the main educational facility by at least 60 feet (1829 mm) may be Type V construction.

453.8.4 Standards for remodeling and/or renovation projects. Portions of buildings being remodeled and/or renovated shall be brought into compliance with current required *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal as required by the plan review authority in its best judgment.

453.8.4.1 An automatic fire sprinkler system is not required in existing educational buildings unless 50 percent of the aggregate area of the building is being remodeled**.**

453.8.5 Leased facilities. Leased facilities shall be brought into compliance with applicable occupancy requirements of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal prior to occupancy.

453.8.6 Asbestos prohibited. The federal Asbestos Hazard Emergency Response Act, (AHERA) 40 CFR, Part 763, as revised July 1, 1995, prohibits the use of any asbestos containing materials in any public education construction project and requires certification of same by the architect of record.

453.8.7 Life cycle cost guidelines for materials and building systems. An analysis shall be included, as required by Section 1013.37(1), *Florida Statutes*, which evaluates building materials and systems, life cycle costs for maintenance, custodial, operating, and life expectancy against initial costs, as described in Section 1013.37(1)(e)4, *Florida Statutes*. Standards for evaluation of materials are available from the department in a publication entitled *Life Cycle Cost Guidelines for Materials and Building Systems for Florida's Public Educational Facilities.*

453.8.8 Safe school design. School boards should design educational facilities and sites including pre-K through 12, vocational and Florida colleges to enhance security and reduce vandalism through the use of "safe school design" principles. Safe school design strategies are available from the Florida Department of Education, Office of Educational Facilities in a publication titled *Florida Safe School Design Guidelines* and include, but are not limited to, the following:

453.8.8.1 Natural access and control of schools and campuses.

453.8.8.2 Natural surveillance of schools and campuses both from within the facility and from adjacent streets by removing obstructions or trimming shrubbery.

453.8.8.3 School and campus territorial integrity; securing courtyards, site lighting, building lighting.

453.8.8.4 Audio and motion detection systems covering ground floor doors, stairwells, offices and areas where expensive equipment is stored.

453.8.8.5 Designs which will promote the prevention of school crime and violence. Exterior architectural features which do not allow footholds or handholds on exterior walls, tamperproof doors and locks, nonbreakable glass or shelter window protection system; also landscaping and tree placement should be designed so they do not provide access to roofs by unauthorized persons. Sections of schools commonly used after hours should be separated by doors or other devices from adjacent areas to prevent unauthorized access. Install locks on roof hatches; apply slippery finishes to exterior pipes.

453.8.8.6 Exterior stairs, balconies, ramps, and upper level corridors around the perimeter of buildings should have open-type handrails or other architectural features to allow surveillance.

453.8.8.7 Open areas, such as plazas, the building's main entrance, parking lots, and bicycle compounds should be designed so they are visible by workers at workstations inside the buildings.

453.9 Structural design.

453.9.1 Load importance factor. Structural design shall comply with code requirements and wind loads as stipulated by the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal. Design shall be based on ASCE 7, with wind speeds determined from Figure 26.5-1B.

453.10 Site requirements.

453.10.1 Fencing. Fencing for school board educational plants shall be of a material which is nonflammable, safe, durable, and low maintenance, provides structural integrity, strength and aesthetics appropriate for the intended location. Fences shall have no jagged or sharp projections. Fence heights shall be in compliance with local zoning regulations. Access shall be provided for maintenance

machinery. Prohibited materials for nonagricultural educational plants include razor wire, barbed wire and electrically charged systems.

453.10.1.1 Required locations. Fencing is required to separate students from potential harm, and shall be provided in the following locations:

453.10.1.1.1 Kindergarten through grade 12. Exposed mechanical, plumbing, gas, or electrical equipment located on ground level.

453.10.1.1.2 Kindergarten through grade 5. Special hazards as identified by the authority having jurisdiction including retention ponds whose permanent water depth or whose water depth over a 24-hour period exceeds 1 foot (305 mm), deep drainage ditches, canals, highways, and play fields adjacent to roadways.

453.10.1.1.3 Kindergarten through grade 12. All child care and kindergarten play areas.

453.10.2 Walks, roads, drives, and parking areas. Walks, roads, drives, and parking areas on educational and ancillary sites shall be paved. Roads, drives, and parking areas shall be in compliance with Department of Transportation (DOT) road specifications and striped in compliance with DOT paint specifications. All paved areas shall have positive drainage.

453.10.2.1 Covered walks. All buildings in K-12 educational facilities shall be connected by paved walks and accessible under continuous roof cover. New relocatable classroom buildings shall be connected to permanent buildings by paved covered walks where applicable. Roofs for covered walks shall extend 1 foot (305 mm) beyond each side of the designated walkway width. Gutters or other water funneling devices shall prevent storm water from pouring onto or draining across walks.

453.10.2.2 Accessible walks and bridges. Accessible walks shall connect building entrance(s) to accessible parking, public transportation stops, public streets, sidewalks, loading and drop-off zones, and other facilities within the site as required by the accessibility standards. School board sites where educational plants are separated by highways shall be connected by overhead pedestrian bridges.

453.10.2.3 Drainage. The location of all drains, grates, drop inlets, catch basins, other drainage elements and curb cuts shall be out of the main flow of pedestrian traffic.

453.10.2.4 Vertical drops. Walls, railings, or other physical barriers which are at least a minimum 12 inches (305 mm) in height, shall define and protect any vertical drop between joining or abutting surfaces of more than 6 inches (152 mm) but less than 18 inches (457 mm) in height. Any vertical drop of 18 inches (457 mm) or more shall be protected by a wall or guardrail a minimum of 42 inches (1067 mm) in height.

Exception: In assembly seating where guards in accordance with Section 1028.14 are permitted and provided.

453.10.2.5 Roads and streets. Educational and ancillary site access shall consist of a primary road and another means of access to be used in the event the primary road is blocked. Stabilized wide shoulders of the primary road, unobstructed by landscaping, planters, light fixtures, poles, benches, etc., which allow a third lane of traffic, may satisfy the requirement for the other means of access. Driveways shall not completely encircle a school plant, to allow student access to play areas without crossing roads; vehicular and pedestrian traffic shall not cross each other on the site; bus driveways and parent pick-up areas shall be separated.

453.10.2.6 Bus drives. Bus drives on educational sites shall be designed so that buses do not have to back up. The minimum width shall be 24 feet (7315 mm) for two-lane traffic. The turning radius on educational and ancillary sites and for turning off public access streets shall be as follows: one-way traffic, 60 feet (18 288 mm) minimum measured to the outside curb or edge of the traffic lane; two-way traffic, 60 feet (18 288 mm) minimum measured to the centerline of the road.

453.10.2.7 Vehicle parking areas. Vehicle parking areas shall comply with minimum parking space requirements in this section. Except for parking space requirements to meet federal and state accessibility laws, where alternate transportation or parking arrangements are available, the parking area requirements may be reduced from these standards if sufficient justification documentation is provided and if the review authority approves the reduction based on the justification. Overflow parking areas may utilize alternative parking surfaces which facilitate water absorption rather than runoff when approved for use by the review authority. This requirement usually applies to a percentage of the parking spaces, not all of them.

Exception: Accessible parking spaces shall be hard surface.

453.10.2.8 Minimum parking requirements.

453.10.2.8.1 Faculty and staff. One space for each member.

453.10.2.8.2 Visitors. One space for every 100 students.

453.10.2.8.3 Community clinics where provided. Ten spaces, including one accessible space.

453.10.2.8.4 High schools. One space for every 10 students in grades 11 and 12.

453.10.2.8.5 Vocational schools. One space for every two students.

453.10.2.8.6 Florida colleges. One space for every two students.

453.10.2.8.7 Accessible parking. Parking spaces designated for persons with disabilities shall comply

with the ADA, *Florida Building Code, Accessibility*, and Section 316.1955, *Florida Statutes.*

453.10.3 Site lighting required. Design, construction, and installation of exterior security lighting for educational and ancillary facilities shall be provided for:

453.10.3.1 Auto, bus, and service drives and loading areas.

453.10.3.2 Parking areas.

453.10.3.3 Building perimeter.

453.10.3.4 Covered and connector walks between buildings and between buildings and parking.

453.10.3.5 Lighting for parking areas. Parking area lighting standards shall be designed to withstand appropriate wind loads. Parking areas shall be illuminated to an average maintained horizontal footcandle, measured at the surface as follows:

453.10.3.5.1 Parking areas—1 footcandle (10 lux).

453.10.3.5.2 Covered and connector walks—1 footcandle (10 lux).

453.10.3.5.3 Entrances/exits—2 footcandles (20 lux).

453.10.3.6 Building exteriors. Building exteriors, perimeters, and entrances may be illuminated to the minimum number of footcandles, measured at the surface with a suggested uniformity ratio of 2:1 as follows:

453.10.3.6.1 Entrances—5 footcandles (50 lux).

453.10.3.6.2 Building surrounds—1 footcandle (10 lux).

453.10.3.7 Shielding. Exterior lighting shall be shielded from adjacent properties.

453.10.4 Building setbacks. Building setbacks from the property line, including relocatables, shall, at a minimum, be 25 feet (7620 mm) or shall comply with local setback requirements if less than 25 feet (7620 mm).

453.10.5 School board playgrounds, equipment, and athletic fields. Playgrounds, equipment, and athletic fields shall be accessible, compatible with the educational facility served and shall comply with the following:

453.10.5.1 Kindergarten play areas shall be separated from other play areas, fenced, and shall be directly accessed from the kindergarten classrooms.

453.10.5.2 Playgrounds and equipment shall be designed and installed using the *Handbook for Public Playground Safety by the U.S. Consumer Product Safety Commission*, and the ASTM/CPSC *Playground Audit Guide* as applicable, resulting in facilities which are safe, structurally sound, vermin-proof, and do not have jagged or sharp projections.

453.10.5.3 Direct access from the school buildings shall be provided to play areas and athletic fields without crossing public roads, on-site traffic lanes, and parking lots.

453.10.5.4 Related facilities such as toilets, concessions, storage, shower and locker rooms, bleachers, press boxes, observation platforms, scoreboards, and dugouts shall be designed to meet code requirements and the occupant capacity anticipated for the program.

453.10.5.5 Playgrounds shall be evenly graded and sloped to provide surface drainage.

453.10.6 Exterior signage. All permanent and free-standing exterior signs shall be designed to withstand appropriate wind loads. Illuminated signs shall comply with the electrical and installation requirements of the *Florida Building Code* and *Florida Fire Prevention Code* as adopted by the State Fire Marshal.

453.10.6.1 Site signage shall not create visual barriers at entrances, sidewalks, roads or road intersections.

453.10.6.2 Accessible routes, including parking, building directories, building identification, and accessible entrances shall be marked by exterior signage in conformance with federal and state accessibility laws.

453.10.7 Landscaping. Refer to Section 1013.64(5), *Florida Statutes*, for school board and Florida college requirements. Florida-friendly landscaping is defined in Section 373.185, *Florida Statutes*.

453.10.8 Water irrigation systems. Water irrigation systems shall be equipped with soil moisture sensors that will override the irrigation systems cycle when soil contains sufficient moisture.

453.10.9 Transmission line right-of-way. Buildings, play areas, and common use areas shall not be located within a high-voltage power transmission line right-of-way.

453.10.10 School site master plan. New schools shall include, as applicable: facility design capacity; floodplain locations; covered accessible walks; infrastructure locations for, and extensions of, technology, telephone, electricity, fire alarm; and, where applicable, water and sewer utilities, and relocatables.

453.11 Wood: fire-retardant treated wood (FRTW). FRTW shall not be used in permanent educational facilities.

Exception: Only FRTW which does not contain ammonium phosphates, sulfates, or halides, may be used in roof structures of noncombustible Type II ancillary facilities as allowed by the *Florida Building Code*, but only under the following conditions.

453.11.1 Fire-retardant treated wood. All FRTW must meet the requirements of Section 2303.2.

453.11.2 Inspection access panels shall be provided for annual inspection of the condition of the structure and the connectors.

453.11.3 Evidence of compliance shall be provided.

453.12 Roofing.

453.12.1 Class A materials. All roofing materials shall be labeled Class A per ASTM E 108 and shall be certified by a nationally recognized independent testing laboratory. All roofing systems shall be installed within the limitations of the test procedure for surfacing, deck cross slope, and combustibility.

453.12.2 Insulation and moisture protection. Insulation, moisture protection, roofing, thermal requirements, fireproofing and firestopping shall be designed and constructed in compliance with the *Florida Building Code* and *Florida Fire Prevention Code* as adopted by the State Fire Marshal. Cellulose insulation may only be used if it is treated with fire-retardant borate based chemicals; the contractor shall retain bag labels on site for review by building inspector.

453.12.3 Phased installation prohibited. All new installed materials shall be sealed from moisture penetration at the end of each day. The contractor shall provide the architect/engineer (A/E) of record a "final statement of compliance" for the board.

453.12.4 Manufacturer's one-year inspection. The roof shall be inspected by the manufacturer's representative within one year of acceptance by the board.

453.12.5 Exterior stairways. Exterior stairways serving as a means of egress shall be roofed.

453.13 Doors and windows.

453.13.1 Doors. All spaces with an occupant load of six or more students, regardless of use, shall have a door opening directly to the exterior, or as required in the *Florida Fire Prevention Code* as adopted by the State Fire Marshal, in buildings of three stories or less shall have a rescue window opening directly to the exterior, or shall be fully sprinklered. All doors and gates from spaces with an occupant load of six or more students, regardless of use or location, shall swing in the direction of exit travel, shall be of the side-hinged type, and shall always be operable from the inside by a single operation and without a key.

453.13.1.1 Doors for steam rooms, locker rooms, shower rooms and group toilet rooms shall swing in the direction of exit travel, and shall always be operable for exiting from the inside.

453.13.1.2 No mirrors, draperies, curtains, equipment, furnishings, decorations, or other objects which may confuse, obstruct, or conceal the exit or the direction of exit shall be placed to obstruct a means of egress.

453.13.2 Recessed. Doors when fully opened shall not extend into the required exit width of corridors, except for door thickness and required hardware. Doors may either be recessed and hinged to swing 90 degrees, or if flush with corridor wall shall contain a view panel and be hinged to swing 180 degrees.

453.13.3 Special function doors. Special function doors, including balanced doors and overhead doors, shall not be used in a means of egress.

453.13.4 Overhead and sliding security grilles. Security grilles shall have an adjacent side-hinged door swinging in the direction of exit and readily opened from the inside.

453.13.5 Gates. Gates used to secure buildings or used for egress shall be side-hinged and readily opened from the side from which egress is to be made without the use of a key or special tool, or shall have an adjacent side-hinged door, or doors as required for occupant load, swinging in the direction of exit and readily opened from the inside without a key.

453.13.6 Hardware. Doors and gates shall be equipped with hardware which will allow egress at all times without assistance. No padlock, chain, hasp, lock, deadbolt, or other device shall be installed at any time on any door used for exiting. Doors which by code require closers and other doors subject to wind exposure shall be equipped with closers to prevent slamming and uncontrolled opening. All doors opening into smoke-tight exit access corridors shall be self-closing or automatic closing. Smoke doors in walls used to divide corridors into separate atmospheres shall be provided with push-pull plates and are not required to have positive latching. As an exception to Section 1008.1.9.7, delayed egress locks may be used in media centers, alternative education centers, and exceptional student education centers. Delayed egress locks are prohibited at time-out rooms at all locations.

453.13.7 Safety glazing: Panels and storefronts. In addition to the requirements of Section 2406.4, the following is considered a hazardous location and requires safety glazing: Glazed panels within 48 inches (1219 mm) of a door, excluding transoms or vertical panels above 6 feet 8 inches (2031 mm).

453.13.7.1 All glazing in hazardous locations shall be safety glazing meeting the requirements of Section 2406.

453.13.7.2 Large glass panels shall be subdivided by a built-in horizontal member or a permanent chair rail not less than $1^1/_2$ inches (38 mm) in width, located between 24 and 36 inches (610 and 914 mm) above the floor.

453.13.8 Windows.

453.13.8.1 Natural light and ventilation. Natural light and ventilation requirements for new construction shall be satisfied by windows with operable glazing, providing a net free open area equivalent to 5 percent of the floor area, in all classrooms on the perimeter of buildings, where required by Chapter 1013, *Florida Statutes.* Auxiliary spaces, music rooms, gyms, locker and shower facilities, laboratories requiring special climate control, and large group instructional spaces having a capacity of more than 100 persons need not have operable windows for the purpose of providing natural light and ventilation. Emergency access, emergency rescue, and secondary means of egress windows may be included in the calculation to comply with this requirement.

453.13.8.2 Projecting and awning windows. Projecting and awning windows shall not be located below door head height if in, or adjacent to, a play area, a corridor or walkway.

453.13.8.3 Security/storm screens or grilles. If a security/storm screen or grille is installed on the outside of an emergency access, rescue or egress window assembly then that security/storm screen or grille together with the emergency rescue window assembly shall be operable from the inside by a single operation

without the use of tools to allow for exit under emergency conditions. The emergency rescue window shall be identified by signage, and the release device shall be readily identifiable.

453.14 Special safety requirements.

453.14.1 Master control switch. In addition to the regular main supply cut-off, each laboratory-type space (such as biology, industrial, chemistry, physics, home economics, and electronics labs) equipped with unprotected gas cocks, compressed air valves, water or electric services which are easily accessible to students, shall have master control valves or switches with permanently attached handles, located and accessible within 15 feet (4572 mm) of the instructor's station or adjacent to the door within that space to allow for emergency cut-off of services. The cut-offs shall be in a nonlockable place and the location and operation shall be clearly labeled. Valves shall completely shut off with a one-quarter turn. Computer labs are exempted from this requirement. (Also, see "Emergency shutoff switches," and "Emergency disconnects" requirements under "Electrical.")

453.14.2 Interior signage. Signage is required in educational and ancillary facilities. Design, construction, installation, and location of interior signage and graphics shall comply with the *Florida Building Code,* the *Florida Fire Prevention Code* as adopted by the State Fire Marshal and the following:

453.14.2.1 Emergency rescue windows. Windows for emergency rescue shall comply with NFPA 101, Florida Edition, as adopted by the *Florida Fire Prevention Code*, shall be operable from the inside by a single operation, and shall be labeled "EMERGENCY RESCUE—KEEP AREA CLEAR." Hinged emergency rescue windows shall swing in the direction of egress.

453.14.2.2 Maximum capacity signs in each space with a capacity of 50 or more occupants. The signs shall be mounted adjacent to the main entrance door.

453.14.2.3 Room name, room number and, if different, FISH inventory numbers shall be provided for each space.

453.14.2.4 A graphic diagram of primary and emergency evacuation routes shall be posted adjacent to the primary exit door from each space occupied by six or more students. The diagram shall clearly indicate, by contrasting color and number, each route of evacuation.

453.14.2.5 Signs necessary to meet accessibility requirements shall be provided.

453.14.2.6 Hazardous work and storage areas shall be identified by appropriate caution signs.

453.14.3 Other potential hazards. Pipes, ductwork, fans, light fixtures, window projections, protruding sharp corners, or other potential hazards shall not be installed below 6 feet 8 inches (2031 mm) AFF. Audio/visual aids in classrooms may be mounted below 6 feet 8 inches (2031 mm) provided they are marked and padded in accordance with accepted safety standards or have permanent cabinets installed below them.

453.14.4 Storage shelving. Shelving shall not have sharp corners, splinters, or any construction feature that would be hazardous to the occupants. Shelving shall be constructed to carry the loads imposed. Shelving in science, labs, and shop storage rooms, and other places which may contain hazardous materials shall have a $^1/_2$-inch (12.7 mm) lip on the front edge of each shelf and shall be constructed of noncorrosive material.

453.14.5 Vertical platform lifts and inclined wheelchair lifts. The following standards are in addition to the other requirements of the *Florida Building Code*, Florida law, and federal requirements.

453.14.5.1 Lifts shall not reduce the width of required means of egress.

453.14.5.2 Lifts shall have shielding devices to protect users from the machinery or other hazards and obstructions.

453.14.5.3 Lifts shall be key-operated for attendant operation in all facilities housing kindergarten to grade 8.

453.14.5.4 Inclined wheelchair lifts may be installed in facilities provided:

453.14.5.4.1 The platform is equipped with bidirectional ramp sensing to stop travel if obstructions are encountered.

453.14.5.4.2 Guide rails are smooth and continuous with no sharp edges or obstructions, all drive system components contain safety features for protection of users, and cables and pulling devices are shielded.

453.14.6 Color code machinery. Working machinery with component parts shall be color-coded in accordance with ANSI Z53.1, American National Standard *Safety Color Code for Marking Physical Hazards.* Safety zone lines shall be marked on the floor areas surrounding working machinery.

453.14.7 Anchor equipment. All equipment designed to be permanently mounted shall be securely anchored to its supporting surface.

453.14.8 Interior finishes.

453.14.8.1 Floors. Floors in instructional spaces shall be covered with resilient material or carpet. Floors in gymnasium locker rooms, showers, drying areas, toilet rooms, kitchens, sculleries, food storage areas and can wash areas shall be impervious.

453.14.8.2 Walls. Walls in kitchens, sculleries, can wash areas, shower rooms shall be impervious to a height of at least 6 feet (1829 mm) above the floor. Toilet and shower partitions shall be impervious.

453.14.8.3 Ceilings. Ceilings in group toilet rooms, kitchens, sculleries, can wash areas, showers and locker rooms shall be impervious.

453.15 Mechanical.

453.15.1 Gas and fluid piping.

453.15.1.1 Flammable liquids/gases. Piping systems for flammable liquids or gases shall not be installed in interior corridors or stairwells.

Exception: Piping may be located within corridors provided that they are enclosed in a minimum 1-hour fire-rated enclosure.

453.15.1.2 Piping systems. Piping (fluid system) shall not be run where students can access the pipes, or in areas such as on roofs where they can be damaged by routine or periodic maintenance activities.

453.15.1.3 Main supply valve. The main supply cut-offs for flammable liquids or gases shall shut down upon activation of the fire alarm system. Refer to the automatic shutoff requirements of Section 453.7.6.

453.15.2 Air plenums. Corridors shall not be used as a supply, return, exhaust, relief, or ventilation air plenum. The space between the corridor ceiling and the floor or roof structure above, if used as a plenum, shall be constructed with the ceiling, floor and walls as a minimum 1-hour fire-rated assembly or as a 1-hour fire-rated horizontal wall supported by the corridor walls.

Exception: A smoke-tight corridor with a solid ceiling may be used in a fully sprinklered building.

453.15.3 Residential equipment. In home economics instructional spaces, faculty lounges, and similar areas where small residential-type ranges are installed for staff use or student education, residential-type hoods mechanically exhausted to the outside shall be used. Hood fire suppression systems are not required to be installed.

453.15.4 Toilet room ventilation. Toilet rooms shall be continuously ventilated during building occupancy.

Exception: Individual toilet rooms shall be ventilated continuously during building occupancy or ventilation shall turn on with the light switch and run for at least 10 minutes after the light has been turned off.

453.15.5 Ventilation air make-up for HVAC systems. Where peak occupancies of less than 3-hours duration occur, the outdoor air flow may be determined on the basis of average occupancy for school buildings for the duration of operation of the air-conditioning system, provided the average occupancy used is not less than one-half the maximum.

453.16 Plumbing.

453.16.1 Standards. Educational and ancillary facilities shall be provided with toilets, handwashing facilities, and drinking fountains for all occupants, in ratios and accessible as required by the *Florida Building Code*, Florida law, and federal requirements.

Exception: Unisex toilets shall not be provided in addition to group toilets in assembly occupancies.

453.16.1.1 Assembly occupancies. Toilet facilities for assembly occupancies (i.e. media centers, gymnasiums, cafetoriums, and auditoriums) are not required to be in addition to the overall required plumbing fixture count.

453.16.1.2 Location. Student toilets shall be distributed throughout the facility and located on each floor for convenient access and continuous supervision. The path of travel to the nearest toilet facility shall not exceed a distance of 200 feet (60 960 mm).

453.16.2 Public shelter. Refer to the public shelter design criteria of Section 453.25.

453.16.3 Urinals. Trough urinals shall not be installed in any location.

453.16.4 Stall urinals. Stall urinals shall not serve as the required floor drains.

453.16.5 Exterior entries. Exterior entries to toilet rooms shall have outward swinging doors.

453.16.6 Hot water. When hot water is supplied to showers, handwash sinks, lavatories in toilet rooms, a mixing valve shall be installed to control the temperature which shall not exceed 110°F (43°C).

453.16.7 Delayed closing valves. Water supply at toilet room lavatories shall be controlled by delayed-closing valves.

453.16.8 Shower facilities. Showers shall be provided only where required by the district's educational program and, where provided, shall utilize energy saving concepts for hot water as required by Section 1013.44(2), *Florida Statutes*. When provided, shower areas shall comply with the following:

453.16.8.1 Floor finish shall be slip resistant.

453.16.8.2 A master control valve shall be provided to control the shower heads. Showers shall be equipped with flow control devices to limit total flow to a maximum of 3 gpm (0.19 L/s) per shower head.

453.16.9 Kitchens. Kitchens and food service areas shall be provided with toilet and handwashing facilities for employees as required by code, state rule and statute.

453.16.9.1 Toilet rooms shall be completely enclosed, have self-closing doors, and shall open into vestibules with self-closing doors. Toilet rooms shall not open directly into food preparation areas, serving areas, or dining areas. A minimum of one water closet and one lavatory, with hot and cold water, shall be provided in each staff toilet.

453.16.9.2 Floor drains. Floor drains shall be provided in the food serving area, kitchen area, scullery, garbage and rubbish rooms, and can wash area.

453.16.10 Dousing shower and eye wash. Every science room, lab, or shop where instructors and students handle materials or chemicals potentially dangerous to human tissue shall be provided with a dousing shower and eye wash for emergency use, including a floor drain.

453.16.11 Floor drains and plumbing fixtures in equipment rooms. No floor drain or other plumbing fixture shall be installed in a room containing air handling machinery when such room is used as a plenum. When rooms are used as a plenum, equipment drains shall be

conveyed through an indirect waste receptor located outside such rooms or other approved point of disposal.

453.17 Electrical.

453.17.1 Emergency lighting. Emergency lighting shall be provided at internal and external means of egress, in student-occupied areas, in group toilets, and main electrical rooms.

453.17.2 Electrical rooms and closets. Main service panels and switches, electrical distribution panels, cabinets, and rooms shall be lockable and not readily accessible to teachers or students.

453.17.3 Spare capacity. Lighting and power panels shall be provided with a minimum of 20-percent spare breakers and a minimum of 10-percent spare capacity in all main panels and switchboards.

453.17.4 Emergency shutoff switches. Every laboratory space which has electrical receptacles at student workstations shall have an emergency shutoff switch within 15 feet (4572 mm) of the instructor's workstation. The emergency shutoff switch shall be operable by a single motion and shall interrupt power to all receptacles in the room.

Exception: Emergency shutoff switches are not required in computer laboratories.

453.17.5 Emergency disconnect. Each space equipped with electrically powered machinery accessible to students shall have a minimum of two master emergency disconnect switches at convenient locations within the space to shut off all power tool outlets, power to student accessible machines and receptacles in the shop. One emergency shut off or disconnect switch shall be located near the machinery and one emergency shutoff or disconnect switch shall be located in the instructor's office if there is a clear view of the entire shop area, others may be required and located as determined by the authority having jurisdiction. The emergency disconnect or shutoff switch shall be operable by a single motion.

Exception: Ordinary office machines, computers, sewing machines, potter's wheels, residential cooking equipment in home economics labs and other nonhazardous machines do not require emergency disconnect devices.

453.17.6 Sauna and steam rooms. A "panic" switch to deactivate power to heating equipment shall be provided inside sauna and steam rooms. The panic switch shall also be tied into an alarm or other approved warning device in a supervised space in the area of the sauna and/or steam room. The operation of the switch shall be labeled to indicate the intended function.

453.17.7 Lightning. All facilities in high lightning risk areas shall be evaluated using the Risk Assessment Guide in NFPA 780 and other standards which address lightning protection, and shall be protected accordingly.

453.17.8 Ground fault interrupter (GFI) receptacles. GFI receptacles shall be installed as required by NFPA 70 of Chapter 27 and in the following locations:

1. All elementary special needs classroom receptacles.
2. All building entry vestibule receptacles.
3. All mechanical, boiler and electrical room receptacles.

453.18 Assembly occupancies in public educational facilities.

453.18.1 Occupant capacity for egress shall be in accordance with Table 1004.1.2, except as follows:

453.18.1.1 Dressing rooms. Dressing rooms at 20 net square feet (1.86 m^2) per person.

453.18.1.2 Gymnasium. The number of fixed and telescopic bench-type bleacher seats ─plus the main court area at 15 gross square feet (1.4 m^2) per person, plus locker rooms at 5 net square feet (0.5 m^2) per person.

453.18.1.3 Classrooms and labs. If spaces are combined through the use of folding partitions, the capacity and exiting shall be based on the capacity of all the spaces joined.

453.18.1.4 Small group areas in media centers. Small group room or area (view and preview) in media centers at 5 net square feet (0.5 m^2) per person.

453.18.1.5 Closed circuit television production, distribution, and control. The main floor area at 15 net square feet (1.4 m^2) per person.

453.18.1.6 Interior courtyards. The interior courtyard area at 15 gross square feet (1.4 m^2) per person. Raised, dedicated landscape areas may be deducted.

453.19 Shade and green houses.

453.19.1 General. Shade/green houses shall be of Type I or II construction (metal frame) capable of withstanding the appropriate wind load.

453.19.2 Unrestricted exiting. The location of the shade/green house shall not hinder exiting from new and/or existing structures.

453.19.3 Required doors. A minimum of two doors remotely located shall be provided. Doors shall be side-hinged and shall swing in the direction of egress.

453.19.4 Accessibility. Green houses shall meet accessibility requirements. The accessible walkway shall be connected to doors leading to an accessible route to the permanent structure.

453.19.5 Shade cloth. Shade cloth shall be tear-away fabric securely fastened to the structural frame.

453.19.6 Fire extinguisher. A minimum of one Type 2A-10B:C fire extinguisher shall be provided per shade/green house.

453.19.7 Fire alarm. Fire alarm pull stations shall be located within 200 feet (60 960 mm) of any shade or green house. Fire alarm horns mounted on a permanent building must be audible inside the shade/green house.

453.19.8 Space heaters. Space heaters, when provided, shall be mounted at least 6 feet 8 inches (2031 mm) AFF.

453.20 Storage.

453.20.1 General storage. Storage rooms and closets shall not be located over or under exit stairs and ramps whether interior or exterior. General storage space(s) shall be included in every educational facility for the bulk storage of materials, supplies, equipment, and books. Storage rooms shall be separated from mechanical and electrical spaces. Storage spaces shall be mechanically ventilated and conditioned as appropriate for the type of materials to be stored. Sinks located in general storage rooms shall not be used for custodial services.

453.20.2 Custodial work areas and storage. Provide custodial work areas with well supported shelving for supplies, cleaning, and sanitation materials and an office area including male/female lockers and toilet facilities.

453.20.3 Custodial closets and storage. Custodial closets shall be provided with storage shelving and a service sink supplied with both hot and cold water. They shall be located to serve each instructional floor and wing regardless of floor area, and other areas such as stage, kitchen, gym, auditorium, clinic, offices and shops. The travel distance to the nearest custodial closet shall not exceed 150 feet (45.72 m).

453.20.4 Chemical and hazardous materials storage. In addition to the requirements of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal for separation and protection, chemical and hazardous storage facilities shall also include:

453.20.4.1 Chemical storage. Doors shall be lockable from the outside and operable at all times from the inside. Rooms shall be well illuminated. Cabinets shall have shelves with a $^1/_2$-inch (12.7 mm) lip on the front and shall be constructed of noncorrosive material.

453.20.4.2 Hazardous materials storage. Buildings and/or rooms used for the storage, handling and disposal of flammable, poisonous, or hazardous materials or liquids, and equipment powered by internal combustion engines and their fuels shall be separated from adjacent spaces by 1-hour fire-rated assemblies. These requirements also apply to completely detached buildings within 60 feet (18 288 mm) of student-occupied facilities. Doors shall have a C Label and open directly to the exterior. Storage buildings and/or rooms shall be mechanically ventilated. Electrical fixtures, switches, heat detectors and outlets installed in flammable storage rooms shall be explosion proof.

453.20.5 Custodial receiving. Custodial receiving where chemicals that are dangerous to human tissue are stored, handled, or mixed shall be equipped with a dousing shower and eye wash, including a floor drain.

453.21 Child care/day care/prekindergarten facilities.

453.21.1 Child care/day care/prekindergarten facilities located on board-owned property shall comply with *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal and the specific criteria in this section. Child care/day care/prekindergarten facilities requiring a license from another agency may also be required to comply with additional construction requirements imposed by that agency.

453.21.2 Toilet facilities shall meet accessibility requirements and should open into the instructional space. The toilet may be used by both sexes and shall contain a water closet, lavatory and related accessories.

453.21.3 If child care facilities are provided with a bathing area, it shall be within or adjacent to the child care area and shall contain either a shower with hand-held sprayer or a tub. The water temperature shall be controlled by a mixing valve and shall not exceed 110°F (43°C).

453.21.4 Toilet facilities shall have a nonslip impervious floor and 6-foot (1829 mm) impervious wainscot.

453.21.5 Drinking fountain(s) shall be provided for the children and be within close proximity of the child care facility.

453.21.6 A towel and soap dispenser shall be provided at each sink. Hand wash areas for adults shall be provided with warm water; the water temperature shall be controlled by a mixing valve and shall not exceed 110°F (43°C). All electrical receptacles shall be placed out of reach of the children.

453.21.7 When provided, a residential-type kitchen shall include a nonslip floor, a refrigerator, a residential range, a residential-type range hood mechanically exhausted to the outside, and a fire extinguisher located within 15 feet (457 mm) of the range within the same room.

453.21.8 Areas designated for children's sleeping mats, cots or cribs shall include a clearly marked exit passageway.

453.21.9 The child care facility shall not contain any storage of cleaning agents, chemicals, or other hazardous materials in student accessible areas.

453.21.10 Outdoor play areas shall be provided and shall be protected from access to streets or other dangers. The play area shall be fenced or walled to a minimum height of 4 feet (1219 mm) and any latches on maintenance gates shall be secured or beyond the reach of the children.

453.21.11 Shade shall be provided in the play area (a covered play area may be provided).

453.21.12 Play equipment shall be firmly anchored, free of sharp corners or pointed surfaces, and shall have cushioning surfaces such as mats or sand beneath.

453.21.13 The grounds shall be free of undergrowth or harmful plant material.

453.22 Clinics.

453.22.1 Clinics in kindergarten through grade 12 (K-12), vocational-technical centers (VTC), and full service schools shall comply with the general criteria found in the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal, as well as the specific criteria found herein. Clinics shall be located and equipped to provide emergency aid to students. Closets and storage cabinets used for medications and bandages

shall have locks, and shall be designed to be under constant supervision.

453.22.2 School clinics shall include locked storage, toilet room and shower, and bed space.

453.22.3 Sanitary facilities are required as follows.

453.22.3.1 Elementary school clinics, including kindergarten, shall include at a minimum one accessible toilet room, to serve male and female students, complete with a water closet, lavatory, accessible shower, changing table, and accessories.

453.22.3.2 Secondary and VTC school clinics shall include two accessible toilet rooms complete with water closet, lavatory, accessories and shower.

453.22.3.3 Toilet rooms in clinics shall include both hot and cold water at the showers and all lavatories. The water temperature shall be controlled by a mixing valve and shall not exceed 110°F (43°C).

453.22.3.4 Toilet rooms shall have exhaust fans vented to the exterior.

453.22.3.5 A working counter top with lavatory/sink and hot water shall be provided in each clinic.

453.22.4 The bed area shall be designed to maintain constant visual supervision from the office. Space for student beds shall be provided in each clinic at 50 square feet (4.6 m^2) per bed. Space for beds in secondary and VTC schools shall be equally divided for male and female students. Beds shall be provided based on student capacity in the following ratios:

453.22.4.1 Up to 500 students—three beds.

453.22.4.2 501 to 1,000 students—four beds.

453.22.4.3 1,001 to 2,000 students—five beds.

453.22.4.4 Over 2,000—six beds.

453.22.5 Full-service school health clinics.

453.22.5.1 Location. Clinics shall be located to provide a direct accessible route from the exterior and from the interior or by a connecting covered walk.

453.22.5.2 Parking. Clinics shall be provided with 10 designated parking spaces immediately adjacent to the clinic, one of which shall be accessible to persons with disabilities.

453.22.5.3 Sanitary facilities. Sanitary facilities are required as follows.

453.22.5.3.1 Full-service school clinics shall include one accessible toilet room for males and one for females, complete with water closet, lavatory, accessories, and shower. Additional toilets may be required for a full-service school clinic depending on occupant load and program.

453.22.5.3.2 Hot and cold water shall be provided at the showers and lavatories. The water temperature shall be controlled by a mixing valve and shall not exceed 110°F (43°C).

453.22.5.3.3 Toilet rooms shall have exhaust fans vented to the exterior.

453.22.5.3.4 A nurses' station shall be provided with a working counter with lavatory/sink and be located so as to maintain visual supervision of the bed area.

453.22.5.4 Locked storage rooms shall be provided for a refrigerator, files, equipment, and supplies.

453.22.5.5 Data outlets shall be provided for computer hook-ups and computer networking and additional electric outlets shall be provided for hearing and vision testing machines.

453.23 Kilns. Kilns shall not be located near or adjacent to paths of egress or exit and shall be placed in separate rooms when serving students through grade 3. Kiln rooms shall be provided with appropriate smoke/heat detectors connected to the fire alarm system.

453.24 Open plan schools. An open plan building or portion of a building may be subdivided into smaller areas by use of low partitions [maximum 5 feet high (1524 mm)], movable partitions, or movable furnishing, which by location and type do not hinder or obstruct the ability of persons in one area of the plan to be immediately aware of an emergency condition in any other area of the plan. Corridors shall be identified with different color or type of flooring materials, by permanent low partitions or by other means to prevent blockage of the path of egress to exits by partitions or furniture. When open plan schools are partitioned, the work shall conform to the code requirements for new construction. Demountable or movable partitions in open plan classroom areas shall be a maximum of 5 feet (1524 mm) in height and shall terminate a minimum of 5 feet (1524 mm) from any permanent wall. All circulation openings in open plan areas shall be a minimum of 5 feet (1524 mm) wide. Movable furnishings shall not exceed 5 feet (1524 mm) in height and shall have a stable base.

453.25 Public shelter design criteria.

453.25.1 New facilities. New educational facilities for school boards and Florida college boards, unless specifically exempted by the board with the written concurrence of the applicable local emergency management agency or the Florida Division of Emergency Management (DEM) shall have appropriate areas designed as enhanced hurricane protection areas (EHPAs) in compliance with this section.

Exception: Facilities located, or proposed to be located, in a Category A, B or C evacuation zone shall not be subject to these requirements.

453.25.1.1 Enhanced hurricane protection areas (EHPA). The EHPA areas shall provide emergency shelter and protection for people for a period of up to 8 hours during a hurricane.

453.25.1.1.1 The EHPA criteria apply only to the specific portions of (K-12) and Florida college educational facilities that are designated as EHPAs.

453.25.1.2 The EHPAs and related spaces shall serve the primary educational or auxiliary use during non-shelter occupancy.

453.25.2 Site. Factors such as low evacuation demand, size, location, accessibility and storm surge may be considered by the board, with written concurrence of the local emergency management agency or the DEM, in exempting a particular facility.

453.25.2.1 Emergency access. EHPAs shall have at least one route for emergency vehicle access. The emergency route shall be above the 100-year floodplain. This requirement may be waived by the board, with concurrence of the local emergency management agency or the DEM.

453.25.2.2 Landscaping. Landscaping around the EHPAs shall be designed to preserve safety and emergency access. Trees shall not conflict with the functioning of overhead or underground utility lines, or cause laydown or impact hazard to the building envelope.

453.25.2.3 Parking. During an emergency condition, vehicle parking shall be prohibited within 50 feet (15 240 mm) of an EHPA. Designated EHPA parking areas may be unpaved.

453.25.2.4 Signage. Floor plans of the facility, indicating EHPAs, shall be mounted in the emergency manager's office/area.

453.25.3 Design. EHPAs may be above or below ground and may have more than one story, provided the design satisfies the wind load and missile impact criteria. Modular and open-plan buildings may serve as EHPAs provided the design satisfies the wind load and missile impact criteria.

453.25.3.1 Excluded spaces. Spaces such as mechanical and electrical rooms, storage rooms, open corridors, kitchens, science rooms and labs, vocational shop areas and labs, computer rooms, attic and crawl spaces shall not be used as EHPAs.

453.25.3.2 Capacity. Fifty percent of the net square feet of a designated educational facility shall be constructed as EHPAs. The net square feet shall be determined by subtracting from the gross square feet those spaces, such as mechanical and electrical rooms, storage rooms, open corridors, kitchens, science rooms and labs, vocational shop areas and labs, computer rooms, attic and crawl spaces that shall not be used as EHPAs. The board, with concurrence of the applicable local emergency management agency or DEM, may adjust this requirement if it is determined to be in its best interest. The capacity of an EHPA shall be calculated at 20 square feet (1.86 m^2) per occupant (adults and children five years or older).

453.25.3.3 Toilets. Toilet and hand washing facilities should be located within the EHPAs and provided at one toilet and one sink per 40 occupants. These required toilet and hand-washing facilities are not in addition to those required for normal school occupancy and shall be included in the overall facility fixture count.

453.25.3.3.1 Support systems for the toilets, e.g., bladders, portable toilets, water storage tanks, etc., shall be capable of supplying water and containing waste, for the designed capacity of the EHPAs.

453.25.3.3.2 Plumbing and valve systems of "normal" toilets within the EHPAs may be designed for conversion to emergency operation to meet the required demand.

453.25.3.4 Food service. Where feasible, include counter tops for food distribution functions in the EHPAs.

453.25.3.5 Manager's office. An administration office normally used by a school administrator shall be identified as the EHPA manager's office and shall be located within the EHPA. The office shall have provisions for standby power, lighting, communications, main fire alarm control panel and storage for the manager's equipment.

453.25.4 Structural standard for wind loads. At a minimum, EHPAs shall be designed for wind loads in accordance with ASCE 7, Minimum Design Loads for Buildings and Other Structures, Risk Category IV (Essential Buildings). Openings shall withstand the impact of wind-borne debris missiles in accordance with the impact and cyclic loading criteria per ASTM E 1886, and ASTM E 1996 or SBC/SSTD 12. Based on a research document, *Emergency Shelter Design Criteria for Educational Facilities*, by the University of Florida for the DOE, it is highly recommended by the department that the shelter be designed using the map wind speed plus 40 mph.

453.25.4.1 Missile impact criteria. The building enclosure, including walls, roofs, glazed openings, louvers and doors, shall not be perforated or penetrated by a flying object. For walls and roofs, the missile criteria are as provided in ASTM E 1886 and ASTM E 1996 or SBC/SSTD 12.

453.25.4.1.1 Materials used for walls, roofs, windows, louvers, and doors shall be certified for resistance to missile impact criteria.

453.25.4.1.2 The glazed openings or permanent protective systems over glazed openings shall be designed for cyclic loading.

453.25.4.2 Roofs. Roof decks shall be cast-in-place 4-inch (102 mm) or more, normal weight concrete. Concrete decks shall be waterproof. Systems other than cast-in-place concrete shall have adequate bearing, anchorage against wind uplift, diaphragm action, and resistance to rain that are equivalent to a cast-in-place system.

Exception: Structural precast concrete roofs, composite metal decks with normal weight concrete roofs, or other systems and materials that meet the wind load and missile impact criteria may be used.

453.25.4.2.1 Light weight concrete or insulating concrete may be used on roof decks of EHPAs provided the roof decks are at least 4-inch (102 mm) cast-in-place normal weight concrete or other structural systems of equivalent strength.

453.25.4.2.2 Roof openings (e.g., HVAC fans, ducts, skylights) shall be designed to meet the wind load and missile impact criteria.

453.25.4.2.3 Roof coverings shall be specified and designed according to the latest ASTM and Factory Mutual Standards for materials and wind uplift forces. Roofs shall be inspected by a licensed engineer/architect and a representative of the roofing manufacturer.

453.25.4.2.4 Roofs shall have adequate slope and drains sized for normal use and shall have emergency overflow scuppers.

4253.25.4.2.5 Parapets shall satisfy the wind load and missile impact criteria; roof overhangs shall resist uplift forces.

453.25.4.3 Windows. All unprotected window assemblies and their anchoring systems shall be designed and installed to meet the wind load and missile impact criteria.

453.25.4.3.1 Windows may be provided with permanent protective systems, provided the protective system is designed and installed to meet the wind load and missile impact criteria and completely covers the window assembly and anchoring system.

453.25.4.3.2 EHPAs shall have mechanical ventilation systems. Ventilation shall be provided at a minimum rate of 2 cfm per square foot (0.6 m^3/min. per square meter) of EHPA floor area. The mechanical ventilation system shall be connected to the EHPA's emergency power.

453.25.4.4 Doors. All exterior and interior doors subject to possible wind exposure and/or missile impact shall have doors, frames, anchoring devices, and vision panels designed and installed to resist the wind load and missile impact criteria or such doors, frames, anchoring devices, and vision panels shall be covered with permanent protective systems designed and installed to resist the wind load and missile impact criteria.

453.25.4.5 Exterior envelope. The exterior envelope, louvers over air intakes and vents, and gooseneck-type intakes and vents of EHPAs shall be designed and installed to meet the wind load and missile impact criteria.

453.25.4.5.1 HVAC equipment mounted on roofs and anchoring systems shall be designed and installed to meet the wind load criteria.

453.25.4.5.2 Roof mounted HVAC equipment shall have a 12-inch-high (305 mm) curb around the roof opening and be designed to prevent the entry of rain water.

453.25.4.6 Foundations and floor slabs. Foundations shall be designed to resist all appropriate loads and load combinations, including overturning moments due to wind. The floor elevation and necessary life safety and other emergency support systems of EHPAs shall be elevated above the maximum storm surge inundation elevation associated with a Category 4 hurricane event. Storm surge elevations shall be identified by the most current edition of the regional Sea Lake and Overland Surges from Hurricanes (SLOSH) studies and atlases.

453.25.5 Electrical and standby emergency power system. The EHPA shall be provided with a standby emergency electrical power system, in accordance with Chapter 27, NFPA 70 Articles 700 and 701, which shall have the capability of being connected to a backup generator or other optional power source. Where economically feasible, an equivalent photovoltaic system may be provided. The EHPA's emergency systems include, but are not limited to: (1) an emergency lighting system, (2) illuminated exit signs, (3) fire protection system(s), alarm (campus wide) and sprinkler, and (4) minimum ventilation for health/safety purposes. The fire alarm panel shall be located in the EHPA manager's office. A remote annunciator panel shall be located in or adjacent to the school administrator's office. When generators are installed, the facility housing the generator, permanent or portable, shall be an enclosed area designed to protect the generators from wind and missile impact. Air intakes and exhausts shall be designed and installed to meet the wind load and missile impact criteria. Generators hardened by the manufacturer to withstand the area's design wind and missile impact criteria shall be exempt from the enclosed area criteria requirement.

453.25.5.1 EHPA lighting. Emergency lighting shall be provided within the EHPA area, EHPA manager's office, toilet rooms, main electrical room and generator spaces and shall be at least 10 footcandles (100 lux) of general illumination, which can be reduced to $^1/_2$ footcandle (5 lux) in the sleeping areas during the night.

453.25.5.2 Optional standby circuits. Additional non-life safety systems, as defined by Chapter 27, NFPA 70 Article 702 (optional standby circuits), may be supplied power, if available, by the Standby Emergency Power System. These systems shall be connected to the Standby Emergency Power System via an electrical subpanel to the Standby Electrical Power System's main electrical panel. This will allow selective or total load shedding of power if required. The fire alarm, emergency lighting and illuminated exit signs throughout the entire campus shall receive first priority to power provided by the Standby Emergency Power System in accordance with Chapter 27, NFPA 70 Article 700. The systems listed are not all encompassing but are in order of priority. Local officials may request additional non-life safety systems they deem necessary for health, welfare and safety of the public during occupancy:

1. Remainder of the school's campus security lighting (building and site).
2. Additional ventilation systems within the EHPA, including heat.
3. Intercom system.
4. Food storage equipment.

5. Additional electric receptacles, other than those required by Section 453.25.5.3.

453.25.5.3 Receptacle outlets. A minimum of four electrical outlets, served with power from the standby circuits, shall be provided in the EHPA manager's office.

453.25.6 Inspections. EHPAs shall be considered "threshold buildings" in accordance with Section 553.71(11), *Florida Statutes*, and shall comply with Sections 553.79(5), 553.79(7), and 553.79(8), *Florida Statutes*.

453.25.6.1 Construction of EHPAs shall be inspected during the construction process by certified building code inspectors or the design architect/engineer(s) certified pursuant to Part XII Chapter 468, *Florida Statutes* and threshold inspectors for compliance with applicable rules and laws.

453.25.6.2 The emergency electrical systems shall be inspected during the construction process by certified electrical inspector or Florida-registered professional engineers certified pursuant to Part XII Chapter 468, *Florida Statutes*, skilled in electrical design.

453.25.6.3 EHPAs shall be inspected and recertified for compliance with the structural requirements of this section every five years by a Florida-registered professional engineer skilled in structural design. If any structural system, as specified in this section, is damaged or replaced, the recertification shall be obtained prior to the beginning of the next hurricane season.

453.25.6.4 All shutter systems, roofs, overflow scuppers, and structural systems of EHPAs shall be inspected and maintained annually prior to hurricane season and after a major event. All emergency generators shall be inspected under load conditions including activation of the fire alarms, emergency lights as per applicable equipment codes and NFPA standards, and including mechanical systems and receptacles connected to the emergency power.

453.26 Time-out rooms.

453.26.1 Locking an individual inside a space without a means of opening the door from within that space is contrary to the exiting philosophy of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal for educational facilities. The educational program which requires containment of the out-of-control student can be accommodated within this context only if the following are met.

453.26.2 Electromagnetic locking device. When a time-out room is to be locked, an electromagnetic locking device may be used and shall have the following features:

453.26.2.1 The lock shall remain engaged only when a push button mounted outside the time-out room adjacent to the door frame is continuously depressed by hand. Upon release of pressure, the door shall unlock. The locking device shall be designed so that it cannot be engaged by leverage of an inanimate object or in any other manner except by constant human contact.

453.26.2.2 The push button, or similar device, shall be recessed from the face of the unit housing, or in some other way designed to prevent taping or wedging the button in the engaged mode.

453.26.2.3 The device shall have an interface relay with the fire alarm system and shall automatically release upon activation of the fire alarm.

453.26.2.4 The locking device shall automatically disengage in the event of a power failure.

453.26.2.5 Timers shall not be used on the locking device.

453.26.3 Door requirements. The door shall have only a push plate exposed on the interior of the room.

453.26.3.1 The door shall swing out of the room and shall be equipped with a fully concealed track type closer.

453.26.3.2 A vision panel shall be provided in the door, and it shall be no larger than 144 square inches (0.093 m^2). The view panel shall consist of a clear $^1/_4$-inch-thick (6 mm) unbreakable plastic panel flush with the inside face of the door on the inside of the room. The panel shall be positioned in the door so that a staff member may continuously keep the student under surveillance.

453.26.3.3 The door frame and jamb/head reveal on the inside shall be minimal. If provided, a flat metal threshold shall be used.

453.26.4 Finishes. The floor and walls shall be durable, vandal-resistant materials. The ceiling shall be of a solid and moisture-resistant material. There shall be no projections or protrusions from the walls, ceiling, or floor. All surfaces shall be smooth and no electrical outlets, switches, plumbing clean-outs or similar items shall be inside the room. The room shall not contain anything that can be set on fire, torn, shredded or otherwise used for self-harm.

453.26.5 Minimum size. The room shall be designed for a single occupant only and shall be a minimum of 6 feet by 6 feet (1828 mm by 1828 mm).

453.26.6 Lighting. The room shall have a recessed vandalproof light fixture in the ceiling capable of being dimmed. The light switch shall be located outside the room adjacent to the door jamb.

453.26.7 HVAC required. Time-out rooms shall be mechanically heated and cooled. Registers shall be ceiling mounted and vandalproof.

453.27 New relocatable buildings.

453.27.1 Relocatables. The terms "relocatable" and "portable" are interchangeable and both terms are used to describe buildings which are constructed to the same building codes as permanent public school buildings, except they are designed to be moved. These buildings may be manufactured in a plant, constructed on site, may be made of demountable components, and may be combined. All new relocatable or portable classrooms shall be designed and constructed in compliance with the *Florida*

Building Code, the *Florida Fire Prevention Code* as adopted by the State Fire Marshal and the Department of Business and Professional Regulation rules for factory-built school buildings (see Section 458). The requirements for new relocatables contained herein are in addition to the minimum requirements of the *Florida Building Code* and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal. New relocatables which do not comply with the building codes, fire codes and these standards shall not be used as classrooms or for any other student occupancy.

453.27.1.1 Factory-built school shelter means any site-assembled or factory-built school building that is designed to be portable, relocatable, demountable or reconstructable and that complies with the provisions for enhanced hurricane protection areas, as required by the applicable code (see Section 453.25).

453.27.2 Design, plan approval, construction. Regardless of cost or fund source, whether used for classroom, auxiliary or ancillary space, whether leased, purchased, contracted, or constructed by the school board or Florida college board, plans and documents for relocatables, portables and modular schools shall be prepared by Florida registered design professionals and submitted to the authority having jurisdiction for review and approval for compliance with Florida laws, rules, building and life safety codes. The buildings shall be constructed and inspected by personnel licensed, certified or trained as required by Florida construction industry licensing laws.

453.27.2.1 District-wide foundation plans. District-wide foundation plans for tie down and wind resistance for each type of relocatable and each type of known soil condition in the district, shall be prepared and reviewed at the time of the design and shall be required as a part of the approval of any relocatable. These documents shall be kept on file in the district, with an additional copy in each relocatable filed together with current annual local fire inspection reports, as required by law. The foundation plans shall be reviewed and updated when necessary for compliance with current code for subsequent installations of the relocatable. Relocatables which do not meet the requirements of code for tie down and wind resistance shall not be occupied.

453.27.2.2 DOT Requirements. Relocatable units designed to be moved on state roads shall comply with the maximum unit height, length and width requirements of the DOT.

453.27.2.3 Inventory/construction date signage. A FISH inventory room number and the date of construction shall be noted on an inventory sign permanently affixed outside, beside or above the door, on all relocatables owned or leased by a district.

453.27.3 Construction type. All new relocatables constructed, purchased or otherwise acquired by a board shall be noncombustible Type I, II or IV construction.

453.27.4 Accessibility. All relocatables constructed, purchased or otherwise acquired by a board after the effective date of these standards shall comply with the Americans with Disabilities Act as modified by Chapter 553, *Florida Statutes, Florida Building Code Accessibility*. Relocatables intended for use at facilities housing up to grades 5 or 6, shall also conform to the federal criteria ADA *Accessibility Guidelines for Building Elements Designed for Children's Use*, which is available from the U.S. Architectural and Transportation Barriers Compliance Board.

453.27.5 Site standards/site plan. Relocatables placed on educational plant sites shall comply with federal and state laws and rules relating to the placement of structures on sites, as well as building code, fire code site requirements.

453.27.5.1 Floodplain. Compliance with floodplain standards is required for the initial and subsequent installation of public educational relocatable units. The finished floor shall be 12 inches (305 mm) above base flood elevation, the structure shall be designed to meet the *Florida Building Code* and anchored to resist buoyant forces.

453.27.5.2 Covered walks and technology. New relocatables and "modular schools" acquired by a board which are intended for long term use, shall be connected from exit door to the core facilities by accessible covered walkways, and shall contain wiring and computer technologies which connect to the facility's technology, communications and fire alarms infrastructure.

Exceptions:

1. Covered walks and public address systems are not required Florida college facilities.
2. Temporary relocatables constructed after the date of this standard shall meet all construction requirements of this code, except that covered walks may be installed. The term "temporary relocatable" means relocatables which are used for less than three years to provide temporary housing while permanent replacement classrooms and related facilities are under construction, renovation or remodeling. The term "temporary relocatable" does not apply to relocatables which have been located on a school site for more than two years and used for classrooms or for student occupancy, where there is no identifiable permanent facility which is under construction, being remodeled, or renovated to house the students.

453.27.5.3 Separation of units. Type I, II or IV, (noncombustible) relocatable units shall be separated as required by the *Florida Building Code* and the school site plan.

453.27.6 Structure. Relocatable structures shall be positively anchored and designed to comply with *Florida Building Code* requirements.

453.27.7 Fire-retardant-treated wood (FRTW). Only FRTW which does not contain ammonium phosphates, sulfates, or halides may be used in the roof structure of Type II construction, as authorized by other sections of the *Florida Building Code*. FRTW shall comply with the specific requirements found elsewhere in these public educa-

tional facilities requirements. Contractors shall provide evidence of compliance to inspectors. Inspection access panels shall be provided to facilitate initial and annual inspections for general condition assessment of FRTW and connectors.

453.27.8 Doors. Exit doors shall swing in the direction of exit travel.

453.27.8.1 Classroom locksets. Each door shall be equipped with a lockset, which is readily opened from the side from which egress is to be made at all times, a threshold, heavy duty hinges, and closer to control door closing. Each door shall have a view panel, with minimum dimensions of 8 inches (203 mm) by 42 inches (1067 mm) and a maximum of 1,296 square inches (0.84 m^2), of $^1/_4$-inch (6 mm) tempered or safety glass installed with the bottom edge of the panel at 30 inches (762 mm) AFF. Each exterior door shall be protected from the elements by a roof overhang.

453.27.8.2 Roofed platform. All exterior doors shall open onto a minimum 5 foot by 5 foot (1524 mm by 1524 mm) roofed platform with handrails, which is level with the interior floor.

453.27.9 Operable windows. Classrooms shall have operable windows equal to at least 5 percent of the floor area of the unit where required by Section 1013.44, *Florida Statutes*. Exterior doors may be included in computing the required 5 percent. Awning, casement, or projecting windows shall not be placed in walls with adjacent walks, ramps, steps or platforms.

453.27.9.1 Rescue. Windows for emergency rescue shall comply with NFPA 101, Florida edition as adopted by the *Florida Fire Prevention Code*, shall be operable from the inside by a single operation and shall be labeled "EMERGENCY RESCUE–KEEP AREA CLEAR."

453.27.10 Finishes. Finishes in relocatable units shall comply with the following.

453.27.10.1 Interior walls and ceilings. Interior wall and ceiling finishes in classrooms and other student use spaces shall be Class A or B as defined in NFPA 101, Florida edition as adopted by the *Florida Fire Prevention Code*. Corridor finishes shall be Class A. Formaldehyde levels shall not exceed the minimum HUD standards for manufactured housing.

453.27.10.2 Floors. Floors shall be covered with resilient material, carpet, or other finished product. Carpet in classrooms shall be tested and certified by the manufacturer as passing the Radiant Panel Test Class II. Carpet in corridors shall be tested and certified by the manufacturer as passing the Radiant Panel Test Class I.

453.27.10.3 Toilet rooms, showers and bathing facilities. Partitions and walls separating group toilet rooms shall be extended to the bottom of the roof deck.

453.27.10.3.1 Toilet room floors and base shall be finished with impervious nonslip materials. Toilet room walls shall be finished with impervious materials which shall be extended to a minimum height of 6 feet (1828 mm).

453.27.10.3.2 Ceilings shall be of solid-type moisture-resistant materials.

453.27.11 Fire extinguishers. At least one appropriate fire extinguisher shall be provided in each relocatable classroom unit and in each classroom of a multiclassroom building.

453.27.12 Document storage. Provision shall be made to secure foundation plans and to post the annual fire inspection report within each relocatable unit.

453.27.13 Time-out rooms. Time-out rooms are not recommended but, when provided, shall comply with the specific requirements for time-out rooms found elsewhere in these public educational facilities code requirements.

453.27.14 Child care/day care units. Standard classroom units intended to house birth to age 3 children, including Teenage Parent Programs (TAP), shall meet the additional criteria under the title of *Child Care/Day Care/Prekindergarten Facilities* for permanent buildings contained in these public educational facilities requirements, as well as the following:

453.27.14.1 All TAP spaces where residential kitchens are provided shall have two doors exiting directly to the outside and remotely located from each other. Areas designated for children's sleeping mats, cots or cribs, shall have a clearly marked exit passageway.

453.27.15 Illumination required. Illumination in classroom units shall be designed to provide an average maintained 50 footcandles (500 lux) at desk top.

453.27.15.1 Emergency lighting. Each classroom unit shall be equipped with emergency lighting.

453.27.15.2 Exterior lighting. Exterior lighting shall be provided as required elsewhere in these public educational facilities code requirements.

453.27.15.3 Exit lighting. Exit lights shall be provided as required by the *Florida Fire Prevention Code* adopted by the State Fire Marshal.

453.27.16 Air conditioning, heating and ventilation. Relocatable facilities shall meet *Florida Building Code* requirements.

453.27.17 Technology. Relocatables shall contain wiring and computer technology appropriate for the programs to be housed.

453.27.18 Fire safety requirements. New relocatables shall be provided with fire alarm devices meeting the code requirements for permanent educational facilities and shall be connected to the facility's main fire alarm system as required by code.

453.27.19 Inspection of units during construction. Boards shall provide for the inspection of relocatables during construction, as required by the *Florida Building Code*, as authorized by statute.

453.27.20 Inspection of units prior to occupancy. Prior to occupancy new relocatables shall be inspected and

approved for compliance to the *Florida Building Code*. New units shall have foundation plans provided and secured, in the relocatable along with the local fire inspector report. Certification of such inspection shall remain on file with the district. Inventory/date of construction signage shall be affixed to the relocatable. Where FRTW is used, inspection access panels shall be provided and within easy reach to facilitate inspection for general condition assessment of FRTW and connectors.

SECTION 454
SWIMMING POOLS AND BATHING PLACES (PUBLIC AND PRIVATE)

454.1 Public swimming pools and bathing places. Public swimming pools and bathing places shall comply with the design and construction standards of this section.

454.1.1 Flood hazard areas. Public swimming pools installed in flood hazard areas established in Section 1612.3 shall comply with Section 1612.

NOTE: Other administrative and programmatic provisions apply. See Department of Health (DOH) Rule 64E-9, *Florida Administrative Code* and Chapter 514, *Florida Statutes*. The regulation and enforcement of the initial and annual operation permit for public pools are preempted to the DOH. The construction permit holder is responsible for obtaining an operation permit issued by DOH, as a public swimming pool shall not be put into operation without an inspection and operation permit issued from the DOH. DOH may grant variances from the provisions of the *Florida Building Code* specifically pertaining to public swimming pools and bathing places as authorized by Section 514.0115, *Florida Statutes*. Building officials shall recognize and enforce variance orders issued by the Department of Health pursuant to Section 514.0115(5), *Florida Statutes* including any conditions attached to the granting of the variance.

"Bathing load" means the maximum number of persons allowed in the pool or bathing place at one time.

"Collector tank" means a reservoir, with a minimum of 2.25-square feet water (0.2 m^2) surface area open to the atmosphere, from which the recirculation or feature pump takes suction, which receives the gravity flow from the main drain line and surface overflow system or feature water source line, and that is cleanable.

"Department" means the permitting/inspection authority.

"Effective barrier." A barrier which consists of a building, or equivalent structure, plus a 48-inch (1219 mm) minimum height fence on the remaining sides or a continuous 48-inch (1219 mm) minimum height fence. All access through the barrier must have one or more of the following safety features: alarm, key lock or self-locking doors and gates. Safety covers that comply with the American Society for Test Materials Standard F1346-91 (2003) may also be considered as an effective barrier.

"D.E." is the diatomaceous earth that is used as a filter aid in D.E.-type filters. For the purpose of this rule, it also includes alternative filter aids that have been approved under NSF/ANSI Standard 50-2007, and accepted by the filter manufacturer.

"Interactive water features" means a structure designed to allow for recreational activities with recirculated, filtered, and treated water; but having minimal standing water. Water from the interactive fountain type features is collected by gravity below grade in a collector tank or sump. The water is filtered, disinfected and then pumped to the feature spray discharge heads.

"Modification" means any act which changes or alters the original characteristics of the pool as approved. For example, changes in the recirculation systems, decking, treatment systems, disinfection system and pool shape are modifications.

"Marking" or "Markings" refers to the placement and installation of visual marking cues to help patrons identify step, bench and swimout outlines, slope break location, depth designations and NO ENTRY and NO DIVING warnings. When markings are specified by code to be dark, the term "dark" shall mean a Munsell color value from zero to four.

"Perimeter overflow gutter" means a level trough or ledge around the inside perimeter of the pool containing drains to clean the pool water surface.

"Plunge pool" means the receiving body of water located at the terminus of a recreational water slide.

"Pool floor" means the interior pool bottom surface which consists of that area from a horizontal plane up to a maximum of a 45-degree slope.

"Pool wall" means the interior pool side surfaces which consist of that area from a vertical plane to a 45-degree slope.

"Pool turnover" means the circulation of the entire pool volume through the filter system. Pool volume shall be determined from the design water level which is the normal operating water level; for gutter-type pools it is the horizontal plane of the upper lip of the gutter and for skimmer pools it is the centerline of the skimmer opening.

"Precoat pot" means a container with a valved connection to the suction side of the recirculation pump of a pressure diatomaceous earth-(D.E.) type filter system used for coating the filter with D. E. powder or NSF/ANSI Standard 50-2007 and manufacturer approved substitute filter aid.

A **"public swimming pool**" or **"public pool"** means a watertight structure of concrete, masonry, or other approved materials which is located either indoors or outdoors, used for bathing or swimming

by humans, and filled with a filtered and disinfected water supply, together with buildings, appurtenances, and equipment used in connection therewith. A public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose pool, or water recreation attraction, to which admission may be gained with or without payment of a fee and includes, but is not limited to, pools operated by or serving camps, churches, cities, counties, day care centers, group home facilities for eight or more clients, health spas, institutions, parks, state agencies, schools, subdivisions, or the cooperative living-type projects of five or more living units, such as apartments, boarding-houses, hotels, mobile home parks, motels, recreational vehicle parks, and townhouses. The term does not include a swimming pool located on the grounds of a private residence.

"Recirculation system" means the system of piping and mechanics designed to remove the water from the pool then filter, disinfect and return it to the pool.

"Slip resistant" means having a textured surface which is not conducive to slipping under contact of bare feet unlike glazed tile or masonry terrazzo and nontextured plastic materials. manufactured surface products shall be designated by the manufacturer as suitable for walking surfaces in wet areas.

"Spa pool" means a pool used in conjunction with high-velocity air or water.

"Special purpose pool" means a public pool used exclusively for a specific, supervised purpose, including springboard or platform diving training, SCUBA diving instruction, and aquatic programs for persons with disabilities, preschool or kindergarten children.

"Swimming pool slide" is a slide designed by its manufacturer to discharge over the sidewall of a swimming pool.

"Swim spa" is a pool used in conjunction with a directional flow of water against which one swims.

"Wading pool" means a shallow pool designed to be used by children.

"Water recreation attraction" means a facility with design and operational features that provide patron recreational activity and purposefully involves immersion of the body partially or totally in the water. Water recreation attractions include water slides, river rides, water course rides, water activity pools, interactive water features, wave pools and any additional pool within the boundaries of the attraction.

"Water activity pool" means a water recreation attraction which has water-related activities such as rope ladders, rope swings, cargo nets and other similar activities.

"Water slides" means a water recreation attraction ride which is characterized by having trough-like or tubular flumes or chutes.

"Water theme park" means a complex with controlled access, a fenced and gated attraction where guests enter through a limited number of entrances upon purchase of a ticket. These facilities are permanent and consist of multiple water recreation attractions. Lifeguards are present during all operating hours.

"Water therapy facilities," as that term is used in Section 514.0115, Item 1, *Florida Statutes*, are pools used exclusively for water therapy to treat a diagnosed injury, illness or medical condition, wherein the therapy is provided under the direct supervision of a Florida licensed physical therapist, occupational therapist or athletic trainer; pursuant to prescription by a physician or a physician's assistant (PA) licensed pursuant to Chapters 458 or 459, *Florida Statutes*, a podiatrist licensed pursuant to Chapter 461, *Florida Statutes*. or an advanced registered nurse practitioner (ARNP) licensed pursuant to Chapter 464, *Florida Statutes*; and the prescribing physician, PA, podiatrist or ARNP authorizes a plan of treatment justifying use of the pool for health care purposes.

"Wade pool" means a water recreation attraction ride which is characterized by having trough-like or tubular flumes or chutes.

"Wave pool" means a water recreation attraction that is characterized by wave action.

"Wet deck area" means the 4-foot-wide (1219 mm) unobstructed pool deck area around the outside of the pool water perimeter, curb, ladders, handrails, diving boards, diving towers, or pool slides, waterfalls, water features, starting blocks, planters or lifeguard chairs.

"Zero depth entry pool" means a pool where the pool floor continues to slope upward to a point where it meets the surface of the water and the pool deck.

454.1.1.1 Sizing. The bathing load for conventional swimming pools, wading pools, interactive water features, water activity pools less than 24 inches (610 mm) deep and special purpose pools shall be computed on the basis of one person per 5 gpm (.32 L/s) of recirculation flow. The bathing load for spa-type pools shall be based on one person per each 10 square feet (0.9 m^2) of surface area. The filtration system for swimming pools shall be capable of meeting all other requirements of these rules while providing a flow rate of at least 1 gpm (0.06 L/s) for each living unit at transient facilities and $^3/_4$ gpm (0.04 L/s) at nontransient facilities. Recre-

ational vehicle sites, campsites and boat slips designated for live-aboards shall be considered a transient living unit. For properties with multiple pools, this requirement includes the cumulative total gpm of all swimming pools, excluding spas, wading pools and interactive water features. All other types of projects shall be sized according to the anticipated bathing load and proposed uses. For the purpose of determining minimum pool size only, the pool turnover period used cannot be less than 3 hours.

454.1.2 Swimming pool construction standards.

454.1.2.1 Pool structure. Pools shall be constructed of concrete or other impervious and structurally rigid material. All pools shall be watertight, free from structural cracks and shall have a nontoxic smooth and slip-resistant finish. All materials shall be installed in accordance with manufacturer's specifications unless such specifications violate Chapter 64E-9, *Florida Administrative Code*, rule requirements or the approval criteria of NSF/ANSI Standard 50 or NSF/ANSI Standard 60.

(a) Floors and walls shall be white or pastel in color and shall have the characteristics of reflecting rather than absorbing light. Tile used in less than 5 feet (1524 mm) of water must be slip resistant. A minimum 4-inch (102 mm) tile line, each tile a minimum size of 1 inch (25 mm) on all sides, shall be installed at the water line, but shall not exceed 12 inches (305 mm) in height if a dark color is used. Gutter type pools may substitute 2-inch (51 mm) tile, each a minimum size of 1 inch (25 mm) on all sides, along the pool wall edge of the gutter lip.

(b) One-inch (25 mm) square tile may be used if the manufacturer has specified the adhesive for use underwater to adhere the type of tile used [vitreous (glass) or ceramic]. Tiles shall not have sharp edges exposed that could cause bather injury.

454.1.2.2 Dimensions.

454.1.2.2.1 Dimensional standards. Dimensional standards for competition type pools shall be those published by the National Collegiate Athletic Association, 1990; Federation Internationale de Natation Amateur (FINA), 1998–2000 Handbook; 1998–1999 Official Rules of Diving & Code Regulation of United States Diving Inc.; 1998 United States Swimming Rules and Regulations, and National Federation of State High School Associations, 1997–1998, which are incorporated by reference in this code.

454.1.2.2.2 Walls and corners. All pool walls shall have a clearance of 15 feet (4572 mm) perpendicular to the wall (as measured at design water level from gutter lip to gutter lip, or on skimmer pools, from vertical wall to vertical wall). Offset steps spa coves, spa pools and wading pools are exempt from this clearance requirement. Where interior steps protrude into the pool resulting in less than 15 feet (4572 mm) of clearance from any wall, such protrusion shall not exceed 6 feet (1828 mm) on any perpendicular line from a tangent to any pool wall from which the steps emanate. The upper part of pool walls in areas 5 feet (1524 mm) deep or less shall be within 5 degrees (4572 mm) vertical for a minimum depth of $2^1/_2$ feet (762 mm) from which point the wall may join the floor with a maximum radius equal to the difference between the pool depth and $2^1/_2$ feet. The upper part of pool walls in areas over 5 feet deep shall be within 5 degrees vertical for a minimum depth equal to the pool water depth minus $2^1/_2$ feet (762 mm) from which point the wall may join the floor with a maximum radius of $2^1/_2$ feet (762 mm). Corners shall be a minimum 90-degree angle. The corner intersections of walls which protrude or angle into the pool water area shall be rounded with a minimum radius of 2 inches (51 mm). This radius shall be continued through the top of the gutter edge; chamfering is allowed, pool coping shall not overhang into the pool more than $1^1/_2$ inches (38 mm).

454.1.2.2.3 Pool floor slope and slope transition. The radius of curvature between the floor and walls is excluded from these requirements. multiple floor levels in pools are prohibited.

454.1.2.2.3.1 Floor slope shall be uniform. The floor slope shall be a maximum 1 unit vertical in 10 units horizontal and a minimum of 1 unit vertical in 60 units horizontal in areas 5 feet (1524 mm) deep or less. The floor slope shall be a maximum 1 unit vertical in 3 units horizontal in areas more than 5 feet (1524 mm) deep.

454.1.2.2.3.2 Any transition in floor slope shall occur at a minimum of 5 feet (1524 mm) of water depth. A slope transition must have a 2 to 6 inch (51 to 152 mm) wide dark contrasting tile marking across the bottom and must extend up both sides of the pool at the transition point. The marking shall be continuous except for recessing grouting. A slope transition must have a safety line mounted by use of recessed cup anchors, 2 feet (610 mm) before the contrasting marking, towards the shallow end. The safety line shall have visible floats at maximum 7-foot (2134 mm) intervals.

454.1.2.2.4 Pool depths. The minimum water depth shall be 3 feet (914 mm) in shallow areas and 4 feet (1219 mm) in deep areas.

454.1.2.3 Markings.

454.1.2.3.1 Depth and markings. Depth and markings shall meet the following criteria.

1. The minimum water depth shall be 3 feet (914 mm) in shallow areas and 4 feet (1219 mm) in deep areas.
2. Permanent depth markings followed by the appropriate full or abbreviated words "FEET," "FT," or "INCHES," "IN," shall be installed

in minimum 4-inch-high (102 mm) numbers and letters on a contrasting background. Depth markers shall indicate the actual pool depth, within 3 inches (76 mm), at normal operating water level when measured 3 feet (914 mm) from the pool wall. Symmetrical pool designs with the deep point at the center may be allowed provided a dual marking system is used which indicates the depth at the wall and at the deep point.

3. At a minimum, the markings shall be located on both sides of the pool at the shallow end, slope break, deep end wall and deep point (if located more than 5 feet (1524 mm) from the deep end wall). Depth markings shall be legible from inside the pool and also from the pool deck. The maximum perimeter distance between depth markings is 25 feet (7620 mm). Pool size and geometry may necessitate additional depth marking placements about all sides of the pool to meet this requirement.

4. When a curb is provided, the depth markings shall be installed on the inside and outside or top of the pool curb. When a pool curb is not provided, the depth markings shall be located on the inside vertical wall at or above the water level and on the edge of the deck within 2 feet (610 mm) of the pool water. When open type gutter designs are utilized, depth markers shall be located on the back of the gutter wall.

5. When deck level perimeter overflow systems are utilized, additional depth marking signs shall be posted nearby or placed on adjacent fencing or walls and the size shall be increased so they are recognizable from inside the swimming pool. Alternatively, tile depth markers may be placed at the top of the pool wall just under the water level. Depth markers placed on the pool deck shall be within 3 feet (914 mm) of the water.

6. Those areas of the pool that are not part of an approved diving bowl shall have dark contrasting tile, 4-inch-high (102 mm) "NO DIVING" markings installed along the perimeter of the pool on the top of the pool curb or deck within 2 feet (610 mm) of the pool water with a maximum perimeter distance of 25 feet (7620 mm) between markings. A 6-inch (152 mm) tile with a 4-inch (102 mm) or larger red, international "NO DIVING" symbol may be substituted for the "NO DIVING" markings.

7. All markings shall be tile, except that pools constructed of fiberglass, thermoplastic or stainless steel may substitute other type markings when it can be shown that said markings are permanent and will not fade over time. This exemption does not extend to concrete pools that are coated with fiberglass. Tile alternative examples include stone or manufactured plaques with engraved or sandblasted numbers and characters with permanent paint. Permanent appliqués may be used for fiberglass, thermoplastics or stainless steel pools. All markings installed on horizontal surfaces shall have a slip-resistant finish. Markings shall be flush with the surrounding area where placed and recessed if necessary to provide a smooth finish that will avoid creation of an injury hazard to bathers. Pools that are not conducive to tile can employ other equivalent markings as stated above.

454.1.2.3.2 Designs or logos. Any design or logo on the pool floor or walls shall be such that it will not hinder the detection of a human in distress, algae, sediment, or other objects in the pool.

454.1.2.3.3 Lane markings. Pools that are not intended to be utilized for officially sanctioned competition may install lap lane markings provided they meet the following criteria: the markings must be 2 to 6 inches (51 to 152 mm) wide, they must terminate 5 feet (1524 mm) from the end wall in a "T" with the "T" bar at least 18 inches (1524 mm) long, they must be placed at 7-foot (2134 mm) intervals on center and be no closer than 4 feet (1219 mm) from any side wall, steps or other obstructions. Floating rope lines associated with lap lanes must not obstruct the entrance or exit from the pool and are prohibited when the pool is open for general use.

454.1.2.3.4 Targets. Pools that are not intended for officially sanctioned competition may have a 2 to 6 inch (51 to 152 mm) wide 18-inch by 18-inch (457 mm by 457 mm) targets (+) installed on the pool wall.

454.1.2.3.5 Rules and regulations signage. Rules and regulations for bathers shall be installed in minimum 1-inch (25.4 mm) letters which must be legible from the pool deck, and shall contain the following:

1. No food or beverages in pool or on pool wet deck.
2. No glass or animals in the fenced pool area (or 50 feet (15 240 mm) from unfenced pool).
3. Bathing load: ___ persons.
4. Pool hours: __ a.m. to __ p.m.
5. Shower before entering.
6. Pools of 200 square feet (18.58 m^2) in area or greater without an approved diving well configuration shall have "NO DIVING", in 4-inch (102 mm) letters included with the above listed pool rules.
7. Do not swallow the pool water. This statement shall be added to signs at pools that conduct modifications as that term is defined.

454.1.2.4 Color. Pool floors and walls shall be white or light pastel in color and shall have the characteristic of reflecting rather than absorbing light.

Exception: A dark color may be used if (1) a tile line [minimum 4 inches (102 mm), maximum 12 inches (305 mm)] is installed at the water line or (2) if 2-inch (51 mm) tile is installed along the pool wall edge of the gutter lip for gutter type pools.

454.1.2.5 Access. All pools shall have a means of access every 75 feet (22 860 mm) of pool perimeter with a minimum of two, located so as to serve both ends of the pool. In addition, an access point shall be provided at the deep portion, if the deep portion is not at one end of the pool. When the deep portion of the pool is over 30 feet (9144 mm) wide, both sides of this area shall have a means of access. Access shall consist of ladders, stairs, recessed treads or swimouts and may be used in combination. All treads shall have a slip-resistant surface.

454.1.2.5.1 Ladders. Ladders shall be of the cross-braced type and shall be constructed of corrosion-resistant materials and be securely anchored into the pool deck. Clearance between the ladder and pool wall shall be between 3 to 6 inches (76 mm to 152 mm). Ladders shall extend at least 28 inches (711 mm) and no more than 40 inches (1016 mm) above the pool deck. Ladder bottom braces shall have intact end caps or bumpers that rest firmly against the pool wall. The top rung of the ladder shall be at or below the water level on open gutter pools and not more than 12 inches (305 mm) below the deck or curb top on all other type pools.

454.1.2.5.2 Recessed treads. Recessed treads shall be installed flush with the wall and shall be a minimum 5 inches (127 mm) wide, 10 inches (254 mm) long, with a maximum vertical distance of 12 inches (305 mm) between treads.

454.1.2.5.3 Stairs. Stairs shall have a minimum tread width of 10 inches (254 mm) and a maximum width of 48 inches (1219 mm) for a minimum tread length of 24 inches (610 mm) and a maximum riser height of 10 inches (254 mm). Treads and risers between the top and bottom treads shall be uniform to within $^1/_2$ inch (12.7 mm) in width and height. The riser heights shall be measured at the marked step edges and the differences in elevation shall be considered the riser heights. The front $^3/_4$ to 2 inches (19.1 to 51 mm) of the tread and the top 2 inches (51 mm) of the riser shall be tile, dark in color, contrasting with the interior of the pool. Tile shall be slip resistant. Bullnose tile that is slip resistant may be used when the $^3/_4$-inch (19 mm) segment is placed on the tread or horizontal surface and the 2-inch (51 mm) segment is placed on the riser or vertical surface. Where the gutter is used as the top step, the tile on the gutter for the width of the steps shall be slip resistant. Vinyl liner and fiberglass pools may use other material for the step edge marking, provided the material is permanent, permanently secured, dark in color, nonfading and slip resistant.

454.1.2.5.4 Swimouts. Swimouts shall extend 18 to 24 inches (457 mm to 610 mm) back from the pool wall, shall be 4 to 5 feet (1219 mm to 1524 mm) wide, shall be a maximum of 12 inches (305 mm) below the deck, unless stairs are provided in the swimout, and shall be located only in areas of the pool greater than 5 feet (1524 mm) deep. Pools that do not utilize a continuous perimeter overflow system must provide a wall return inlet in the swimout for circulation. A permanent dark contrasting colored band of tile shall be installed at the intersection of the pool wall and the swimout and must extend 2 inches (51 mm) on the horizontal and vertical surfaces. Tile must be slip resistant. Bullnose tile may be substituted and installed in accordance with Section 454.1.2.5.3.

454.1.2.5.5 Handrails and grabrails. Handrails shall be provided for all stairs, shall be anchored in the bottom step and the deck. Where "figure 4" deck-mounted-type handrails are used, they shall be anchored in the deck and extend laterally to any point vertically above the bottom step. Grabrails must be mounted in the pool deck at each side of recessed steps. Handrails and grabrails shall extend between 28 and 40 inches (711 mm and 1016 mm) above the step edge and deck.

454.1.2.5.6 Disabled access. Permanent or portable steps, ramps, handrails, lifts or other devices designed to accommodate handicapped individuals in swimming pools may be provided. Lifts mounted into the pool deck shall have a minimum 4-foot-wide (1219 mm) deck behind the lift mount.

454.1.2.6 Obstructions. The pool water area shall be unobstructed by any type structure unless justified by engineering design as a part of the recirculation system. Engineering design and material specifications shall show that such structures will not endanger the pool patron, can be maintained in a sanitary condition and will not create a problem for sanitary maintenance of any part of the pool, pool water, or pool facilities. Structures in accord with the above shall not be located in a diving bowl area or within 15 feet (4572 mm) of any pool wall.

Exceptions:

1. Stairs, ladders and ramps, necessary for entrance/exit from the pool are not considered obstructions.
2. Underwater seat benches may be installed in areas less than 5 feet (1524 mm) deep. Bench seats must be 14 to 18 inches (356 to 457 mm) wide and must have a dark contrasting tile marking on the seat edge extending two inches (51 mm) on the horizontal and vertical surface. Tile shall be slip resistant. Bullnose tile may be substituted and installed in accordance with Section 454.1.2.5.3. Vinyl liner, stainless

steel and fiberglass pools may use other material for the bench edge marking as detailed in Section 454.1.2.3.1, Item 7, provided the material is permanently secured, dark in color, nonfading and slip resistant. Benches shall not protrude into the 15-foot (4572 mm) clearance requirement of Section 454.1.2.6.

454.1.2.7 Diving areas. Diving facilities shall meet the minimum requirements of the FINA dimensions for diving facilities in accordance with the 2005-2009 FINA Handbook and include the following:

1. Diving boards or platforms with heights of less than the established standard shall meet the dimensional requirements of the next greater height.
2. Diving boards, platforms and ladders shall have a nonabsorbent, slip-resistant finish and be of sufficient strength to safely carry the anticipated loads. Diving equipment one meter and greater shall have guard rails which extend to the edge of the pool wall. All diving boards over 21 inches (533 mm) from the deck shall be provided with a ladder. Diving boards or platforms shall not be installed on curved walls where the wall enters into the defined rectangular diving area specified in this section. Adjacent platform and diving boards shall be parallel.
3. The location of pool ladders shall be such that the distance from the ladder to any point on a diving board or platform centerline is not less than the plummet to side wall dimension (b) indicated in the FINA standards. Trampoline-type diving facilities are prohibited.
4. Diving targets may be installed in accordance with FINA standards.

454.1.3 Pool appurtenances.

454.1.3.1 Decks and walkways.

454.1.3.1.1 Pool wet decks shall be constructed of concrete or other nonabsorbent material having a smooth slip-resistant finish. Wet deck area finishes shall be designed for such use and shall be installed in accordance with the manufacturer's specifications. Wooden decks and walkways are prohibited.

454.1.3.1.2 Pool wet decks shall be uniformly sloped at a minimum of 2 percent to a maximum of 4 percent away from the pool or to deck drains to prevent standing water. Textured deck finishes that provide pitting and crevices of more than $^{3}/_{16}$ inch (4.8 mm) deep that accumulate soil are prohibited. If settling or weathering occurs that would cause standing water, the original slopes shall be restored or corrective drains installed. When a curb is provided, the deck shall not be more than 10 inches (254 mm) below the top of the curb.

454.1.3.1.3 Pool wet decks shall have a minimum unobstructed width of 4 feet (1219 mm) around the perimeter of the pool, pool curb, ladders, handrails, diving boards, diving towers and slides.

454.1.3.1.4 Traffic barriers shall be provided as needed so that parked vehicles do not extend over the deck area.

454.1.3.1.5 Walkways shall be provided between the pool and the sanitary facilities, and shall be constructed of concrete or other nonabsorbent material having a smooth slip-resistant finish for the first 15 feet (4572 mm) of the walkway measured from the nearest pool water's edge. A hose bibb with a vacuum breaker shall be provided to allow the deck to be washed down with potable water.

454.1.3.1.6 Twenty percent of the deck along the pool perimeter may be obstructed as long as any one obstruction does not exceed ten percent or ten feet (3048 mm), whichever is less, in any one area. Obstructions shall have a wet deck area behind or through them, with the near edge of the walk within 15 feet (4572 mm) of the water except approved slide obstructions shall have the near edge of the walk within 35 feet (10 668 mm) of the water. These obstructions must be protected by a barrier or must be designed to discourage patron access. Obstructions shall not include pool exit points. When an obstruction exists in multiple areas around the pool, the minimum distance between obstructions shall be 4 feet (1219 mm).

454.1.3.1.7 Food or drink service facilities shall not be located within 12 feet (3658 mm) of the water's edge.

454.1.3.1.8 The vertical clearance above the pool deck shall be at least 7 feet (2137 mm).

454.1.3.1.9 All public pools shall be surrounded by a minimum 48 inch (1219 mm) high fence or other approved substantial barrier. The fence shall be continuous around the perimeter of the pool area that is not otherwise blocked or obstructed by adjacent buildings or structures and shall adjoin with itself or abut to the adjacent members. Access through the barrier or fence from dwelling units, such as homes, apartments, motel rooms and hotel rooms, shall be through self-closing, self-latching lockable gates of 48 inch (1219 mm) minimal height from the floor or ground with the latch located a minimum of 54 inches (1372 mm) from the bottom of the gate or at least 3 inches (76 mm) below the top of the gate on the pool side. If the self-closing, self-latching gate is also self-locking and is operated by a key lock, electronic opener or integral combination lock, then the operable parts of such locks or openers shall be 34 inches minimum (864 mm) and 48 inches maximum (1219 mm) above the finished floor or ground. Doored access points from public rooms such as lobbies or club houses need not be through gates if the door(s) meet the same self-closing, self-latching requirements as a gate. Gates shall open outward away from the pool area. A latched, lockable gate

shall be placed in the fence within ten feet (3048 mm) of the closest point between the pool and the equipment area for service access.

Instead of a fence, permanent natural or man-made features such as bulkheads, canals, lakes, navigable waterways, etc., adjacent to a pool may be permitted as a barrier when approved. When evaluating such barrier features, the applicable governing body may perform on-site inspections, and review evidence, such as surveys, aerial photographs, water management agency standards and specifications, and any other similar documentation to verify at minimum, the following: the barrier feature is not subject to natural changes, deviations or alterations and is capable of providing an equivalent level of protection as that provided by a structure, and the barrier feature clearly impedes, prohibits or restricts access to the pool.

Screened pool enclosures must be hardened on the bottom 3 feet (914 mm). Fencing consideration shall be given to the U.S. Consumer Product Safety Commission (CPSC) Publication, No. 362, March 2005, guidelines available from CPSC.gov; or Sections 454.2.17.1.1 through 454.2.17.1.8. Safety covers that comply with ASTM F 1346-91 (Reapproved 2003), titled *Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs*, and available from ASTM.org, do not satisfy this requirement.

454.1.3.2 Bridges and overhead obstructions or river rides. Bridges and overhead obstructions over the pool shall be designed so they will not introduce any contamination to the pool water. The minimum height of the bridge or obstruction shall be at least 4 feet (1219 mm) above the surface of the pool in all cases except when the pool is a river ride where it shall be at least 5 feet above the surface of the pool. Minimum 42-inch-high (1067 mm) handrails shall be provided along each side of the bridge. The walking surfaces shall be constructed of concrete or other nonabsorbent material having a smooth slip-resistant finish. Pool coping shall not overhang into the pool more than 1 $^{1}/_{2}$ inches (38 mm).

454.1.3.3 Safety.

454.1.3.3.1 All swimming pools shall be installed with a shepherd's hook securely attached to a one piece pole not less than 16 feet (4877 mm) in length, and at least one 18-inch (5486 mm) diameter lifesaving ring with sufficient rope attached to reach all parts of the pool from the pool deck. Safety equipment shall be mounted in a conspicuous place and be readily available for use. Pools greater than 50 feet (15 240 mm) in length shall have multiple units with at least one shepherd's hook and one lifesaving ring located along each of the longer sides of the pools. Spa pools under 200 square feet (18. 58 m^2)of surface area, and interactive water features or wading pools with 2 feet (610 mm) or less of water depth are exempt from this requirement.

454.1.3.3.2 All pools with a slope transition shall have safety line anchors as required by Section 454.1.2.2.3.2.

454.1.3.3.3 If a pool cover or solar blanket is installed, it shall be secured around the entire perimeter and is designed to support a live load of an adult person, OR the pool area shall be inaccessible to unauthorized individuals during times of cover or blanket use.

454.1.3.3.4 A room or space shall be provided for chemicals to be stored in a cool, dry, and well-ventilated area under a roof and the area shall be inaccessible to the public.

454.1.3.3.5 Swimming pool slides shall be installed in accordance with manufacturer's specifications and sound engineering practice. Pools with slides designed for swimming pools are not required to satisfy those of slide plunge pools in Section 454.1.9.2.1.

454.1.3.3.6 Floating and climb-on devices, objects or toys that are not a part of the approved pool design shall not be tethered in the pool or installed without engineering modification application and department's approval.

454.1.4 Electrical systems.

454.1.4.1 Electrical equipment and wiring. Electrical equipment wiring and installation, including the grounding of pool components shall conform with Chapter 27 of this code.

454.1.4.2 Lighting. Artificial lighting shall be provided at all swimming pools which are to be used at night or which do not have adequate natural lighting so that all portions of the pool, including the bottom, may be readily seen without glare.

454.1.4.2.1 Outdoor pool lighting. Lighting shall provide a minimum of 3 footcandles (30 lux) of illumination at the pool water surface and the pool wet deck surface. Underwater lighting shall be a minimum of $^{1}/_{2}$ watt per square foot of pool water surface area.

454.1.4.2.2 Indoor pool lighting. Lighting shall provide a minimum of 10 foot candles (100 lux) of illumination at the pool water surface and the pool wet deck surface. Underwater lighting shall be a minimum of $^{8}/_{10}$ watt per square foot of pool surface area.

454.1.4.2.3 Underwater lighting. Underwater lighting shall utilize transformers and low-voltage circuits with each underwater light being grounded. The maximum voltage for each light shall be 15 volts and the maximum incandescent lamp size shall be 300 watts. The location of the underwater lights shall be such that the underwater illumination is as uniform as possible and shall not be less than 18

inches (457 mm) below the normal operating water level determined by the center-line of the skimmer or top lip of the gutter. All underwater lights which depend upon submersion for safe operation shall have protection from overheating when not submerged. Underwater lighting requirements can be waived when the overhead lighting provides at least 15 footcandles (150 lux) of illumination at the pool water surface and pool wet deck surface. Alternative lighting systems which use 15 volts or less, or use no electricity in the pool or on the pool deck, such as LED (light emitting diode) fiber-optic systems, may be utilized if the manufactures specifications provide for the equivalency in watt output.

454.1.4.2.4 Overhead wiring. Overhead service wiring shall not pass within an area extending a distance of 10 feet (3048 mm) horizontally away from the inside edge of the pool walls, diving structures, observation stands, towers or platforms. Allowances for overhead conductor clearances to pools that meet the safety standards in the *National Electrical Code* may be used instead. Electrical equipment wiring and installation, including the grounding of pool components, shall comply with Chapter 27 of this code.

454.1.5 Equipment area or rooms.

454.1.5.1 Equipment. Equipment designated by the manufacturer for outdoor use may be located in an equipment area, all other equipment must be located in an equipment room or enclosure. Plastic pipe subject to a period of prolonged sunlight exposure must be coated to protect it from ultraviolet light degradation. An equipment area shall be surrounded with a fence at least 4 feet (1219 mm) high on all sides not confined by a building or equivalent structure. A self-closing and self-latching gate with a permanent locking device shall be provided if necessary for access. An equipment room shall be protected on at least three sides and overhead. Any fence or gate installed shall use members spacing that shall not allow passage of a 4-inch (102 mm) diameter sphere. The fourth side may be a gate, fence, or open if otherwise protected from unauthorized entrance. An equipment enclosure shall be lockable or otherwise protected from unauthorized access.

454.1.5.2 Indoor equipment. Equipment not designated by the manufacturer for outdoor use shall be located in an equipment room. An equipment room shall be protected on at least three sides and overhead. The fourth side may be a gate, fence or open if otherwise protected from unauthorized entrance.

454.1.5.3 Materials. The equipment enclosure, area or room floor shall be of concrete or other nonabsorbent material having a smooth slip-resistant finish and shall have positive drainage, including a sump pump if necessary. Ancillary equipment, such as a heater, not contained in an equipment enclosure or room shall necessitate an equipment area as described above.

454.1.5.4 Ventilation. Equipment rooms shall have either forced draft or cross ventilation. All below-grade equipment rooms shall have a stairway access with forced draft ventilation or a fully louvered door and powered intake within 6 inches (152 mm) of the floor. Where stairway access is not necessary to carry heavy items into the below grade room or vault, a "ship's ladder" may be used if specified by the design engineer who must consider anticipated workload including equipment removal; and the ladder slope, tread height and width; and construction material of the ladder.

454.1.5.5 Access. The opening to an equipment room or area shall be a minimum 3 feet by 6 feet (914 mm by 1829 mm) and shall provide easy access to the equipment.

454.1.5.6 Size. The size of the equipment enclosure, room or area shall provide working space to perform routine operations. Clearance shall be provided for all equipment as prescribed by the manufacturer to allow normal maintenance operation and removal without disturbing other piping or equipment. In rooms with fixed ceilings, the minimum height shall be 7 feet (2137 mm).

454.1.5.7 Lighting. Equipment rooms or areas shall be lighted to provide 30 footcandles (300 lux) of illumination at floor level.

454.1.5.8 Storage. Equipment enclosures, rooms or areas shall not be used for storage of chemicals emitting corrosive fumes or for storage of other items to the extent that entrance to the room for inspection or operation of the equipment is impaired.

454.1.5.9 Hose bibbs. A hose bibb with vacuum breaker shall be located in the equipment room or area.

454.1.6 Plumbing systems.

454.1.6.1 Sanitary facilities. Swimming pools with a bathing load of 20 persons or less may utilize a unisex restroom. Pools with bathing loads of 40 persons or less may utilize two unisex restrooms or meet the requirements of Table 454.1.6.1. Unisex restrooms shall meet all the requirements for materials, drainage and signage as indicated in Sections 454.1.6.1.1 through 454.1.6.1.4. Each shall include a water closet, a diaper change table, a urinal and a lavatory. Pools with a bathing load larger than 40 persons shall provide separate sanitary facilities labeled for each sex. The entry doors of all restrooms shall be located within a 200-foot (60 960 mm) walking distance of the nearest water's edge of each pool served by the facilities.

Exception: Where a swimming pool serves only a designated group of residential dwelling units and not the general public, poolside sanitary facilities are not required if all living units are within a 200-foot (60 960 mm) horizontal radius of the nearest water's edge, are not over three stories in height unless serviced by an elevator, and are each equipped with private sanitary facilities.

454.1.6.1.1 Required fixtures. Fixtures shall be provided as indicated in Table 454.1.6.1. The fixture count in this chart is deemed to be adequate for the pool and pool deck area that is up to three times the area of the pool surface provided. When multiple fixture sets are required and separate facilities are provided for each sex, the fixtures used in ancillary family-style restrooms can be used to meet the requirements of this section.

One diaper changing table shall be provided at each restroom. Diaper changing tables are not required at restrooms where all pools served are restricted to adult use only. Swim diapers are recommended for use by children that are not toilet trained. Persons that are ill with diarrhea cannot enter the pool.

Exception: When a public swimming pool meets all of the following conditions, the following shall apply:

1. The pool serves only a designated group of dwelling units,
2. The pool is not for the use of the general public, and
3. A building provides sanitary facilities.

The fixture requirement for the building shall be determined and if it exceeds the requirement in Table 454.1.6.1, then the building requirement shall regulate the fixture count, otherwise the fixture count shall be based on the requirement for the pool. Under no circumstances shall the fixture counts be cumulative.

TABLE 454.1.6.1
PUBLIC SWIMMING POOL—REQUIRED FIXTURE COUNT

SIZE OF POOL (square feet)	MEN'S RESTROOM			WOMEN'S RESTROOM	
	Urinals	WC	Lavatory	WC	Lavatory
0 – 2,500	1	1	1	1	1
2,501 – 5,000	2	1	1	5	1
5,001 – 7,500	2	2	2	6	2
7,501 – 10,000	3	2	3	8	3

For SI: 1 square foot = 0.0929 m^2.

An additional set of fixtures shall be provided in the men's restroom for every 7,500 square feet (697 m^2) or major fraction thereof for pools greater than 10,000 square feet (929 m^2).

Women's restrooms shall have a ratio of three to two water closets provided for women as the combined total of water closets and urinals provided for men.

Lavatory counts shall be equal.

454.1.6.1.2 Outside access. Outside access to facilities shall be provided for bathers at outdoor pools. Where the restrooms are located within an adjacent building and the restroom doors do not open to the outside, the restroom doors shall be within 50 feet (15 240 mm) of the building's exterior door. If the restrooms are not visible from any portion of the pool deck, signs shall be posted showing directions to the facilities. Directions shall be legible from any portion of the pool deck; letters shall be a minimum of 1 inch (25 mm) high.

454.1.6.1.3 Sanitary facility floors. Floors of sanitary facilities shall be constructed of concrete or other nonabsorbent materials, shall have a smooth, slip-resistant finish, and shall slope to floor drains. Carpets, duckboards and footbaths are prohibited. The intersection between the floor and walls shall be coved where either floor or wall is not made of waterproof materials such as tile or vinyl.

454.1.6.1.4 Hose bibb. A hose bibb with vacuum breaker shall be provided in or within 25 feet (7620 mm) of each restroom to allow for ease of cleaning.

454.1.6.2 Rinse shower. A minimum of one rinse shower shall be provided on the pool deck of all outdoor pools within the perimeter of the fence.

454.1.6.3 Cross-connection prevention. An atmospheric break or approved back flow prevention device shall be provided in each pool water supply line that is connected to a public water supply. Vacuum breakers shall be installed on all hose bibbs.

454.1.6.4 Plastic pipes. Plastic pipe subject to a period of prolonged sunlight exposure shall be coated to protect it from ultraviolet light degradation.

454.1.6.5 Recirculation and treatment systems.

454.1.6.5.1 Equipment testing. Recirculation and treatment equipment such as filters, recessed automatic surface skimmers, ionizers, ozone generators, disinfection feeders and chlorine generators shall be tested and approved using the NSF/ANSI Standard 50, *Circulation System Components and Related Materials for Swimming Pool, Spas/Hot Tubs*, dated April 2007, which is incorporated by reference.

454.1.6.5.2 Volume. The recirculation system shall be designed to provide a minimum of four turnovers of the pool volume per day. Pools that are less than 1,000 square feet (93 m^2) at health clubs shall be required to provide eight turnovers per day.

454.1.6.5.3 System design. The design pattern of recirculation flow shall be 100 percent through the main drain piping and 100 percent through the perimeter overflow system or 60 percent through the skimmer system.

454.1.6.5.3.1 Perimeter overflow gutters. The lip of the gutter shall be uniformly level with a maximum tolerance of $^1/_4$ inch (6 mm) between the high and low areas. The bottom of the gutter shall be level or slope to the drains. The spacing between drains shall not exceed 10 feet (3048 mm) for 2-inch (51 mm) drains or 15 feet (4572 mm) for $2^1/_2$-inch (64 mm) drains, unless hydraulically justified by the design engineer. Gutters may be eliminated along pool edges for no more than 15 feet (4572 mm) and this shall not exceed

10 percent of the perimeter (at least 90 percent of the perimeter shall be guttered). In areas where gutters are eliminated, handholds shall be provided within 9 inches (229 mm) of the water surface. Handhold design shall be approved by the jurisdictional building department prior to construction.

454.1.6.5.3.1.1 Either recessed-type or open-type gutters shall be used. Special designs can be approved provided they are within limits of sound engineering practice. Recessed-type gutters shall be at least 4 inches (102 mm) deep and 4 inches (102 mm) wide. No part of the recessed gutter shall be visible from a position directly above the gutter sighting vertically down the edge of the deck or curb. Open-type gutters shall be at least 6 inches (150 mm) deep and 12 inches (305 mm) wide. The gutter shall slope 2 inches (51 mm), +/-$^1/_4$ inch (+/-6 mm), from the lip to the drains. The gutter drains shall be located at the deepest part of the gutter.

454.1.6.5.3.1.2 All gutter systems shall discharge into a collector tank.

454.1.6.5.3.1.3 The gutter lip shall be tiled with a minimum of 2-inch (51 mm) tile on the pool wall, each a minimum size of 1 inch (25 mm) on all sides. The back vertical wall of the gutter shall be tiled with glazed tile.

Exception: Stainless steel gutter systems when it can be shown that the surfaces at the waterline and back of the gutter are easily cleanable.

454.1.6.5.3.2 Recessed automatic surface skimmers. Recessed automatic surface skimmers may be utilized when the pool water surface area is 1,000 square feet (93 m^2) or less excluding offset stairs and swimouts and the width of the pool is not over 20 feet (6096 mm).

454.1.6.5.3.2.1 Volume. The recessed automatic surface skimmer piping system shall be designed to carry 60 percent of the pool total design flow rate with each skimmer carrying a minimum 30 gpm (2 L/s). One skimmer for every 400 square feet (37 m^2) or fraction thereof of pool water surface area shall be provided.

454.1.6.5.3.2.2 Location. Prevailing wind direction and the pool outline shall be considered by the designer in the selection of skimmer locations. The location of skimmers shall be such that the interference of adjacent inlets and skimmers is minimized. Recessed automatic surface skimmers shall be installed so that there is no protrusion into the pool water area. The deck or curb shall provide for a handhold around the entire pool perimeter and shall not be located more than 9 inches (229 mm) above the midpoint of the opening of the skimmer.

454.1.6.5.3.2.3 Equalizers. Recessed automatic surface skimmers shall be installed with an equalizer valve and an equalizer line when the skimmer piping system is connected directly to pump suction. If installed, the equalizer valve shall be a spring-loaded vertical check valve which will not allow direct suction on the equalizer line. Float valves are prohibited. The equalizer line inlet shall be installed at least 1 foot (305 mm) below the normal pool water level and the equalizer line inlet shall be protected by an ASME/ANSI A112.19.8 compliant cover/grate. The equalizer line shall be sized to handle the expected flow with a 2-inch (51 mm) minimum line size.

454.1.6.5.3.2.4 Wall-inlet fitting. A wall-inlet fitting shall be provided directly across from each skimmer.

454.1.6.5.3.2.5 Waterline tile. A minimum 6-inch (152 mm) water line tile shall be provided on all pools with automatic skimmer systems, each a minimum size of 1 inch (25 mm) on all sides. Glazed tile that is smooth and easily cleanable shall be utilized.

454.1.6.5.4 Pumps. If the pump or suction piping is located above the water level of the pool, the pump shall be self-priming. Pumps that take suction prior to filtration shall be equipped with a hair and lint strainer. The recirculation pump shall be selected to provide the required recirculation flow against a minimum total dynamic head of 60 feet (18 288 mm) unless hydraulically justified by the design engineer. Vacuum D.E. filter system pumps shall provide at least 50 feet (15 240 mm) of total dynamic head. Should the total dynamic head required not be appropriate for a given project, the design engineer shall provide an alternative.

454.1.6.5.5 Filters. Filters sized to handle the required recirculation flow shall be provided.

454.1.6.5.5.1 Filter capacities. The maximum filtration rate in gallons per minute per square foot of filter area shall be: 15 [20 if so approved using the procedure stated in Section 454.1.6.5.1 for high rate sand filters, 3 for rapid sand filters, 0.375 for pleated cartridge filters and 2 for D.E.-type filters].

454.1.6.5.5.2 Filter appurtenances.

454.1.6.5.5.2.1 Pressure filter systems. Pressure filter systems shall be equipped with an air relief valve, influent and effluent pressure gauges with minimum face size of 2 inches (51 mm) reading 0–60 psi (0–414 kPa), and a sight glass when a backwash line is required.

454.1.6.5.5.2.2 Vacuum filter systems. Vacuum filter systems shall be equipped with a vacuum gauge which has a 2-inch (51 mm) face and reads from 0 to 30 inches of mercury.

454.1.6.5.5.2.3 D.E. systems. A precoat pot or collector tank shall be provided for D.E.-type systems.

454.1.6.5.5.3 Filter tanks and elements. The filter area shall be determined on the basis of effective filtering surfaces with no allowance given for areas of impaired filtration, such as broad supports, folds, or portions which may bridge. D.E.-type filter elements shall have a minimum 1-inch (25 mm) clear spacing between elements up to a 4 square foot (0.4 m^2) effective area. The spacing between filter elements shall increase $^1/_8$ inch (3 mm) for each additional square foot of filter area or fraction thereof above an effective filter area of 4 square feet (0.4 m^2). All cartridges used in public pool filters shall be permanently marked with the manufacturer's name, pore size and area in square feet of filter material. All cartridges with end caps shall have the permanent markings on one end cap. Vacuum filter tanks shall have coved intersections between the wall and the floor and the tank floor shall slope to the filter tank drain. The D.E.-type filter tank and elements shall be installed such that the recirculation flow draw down does not expose the elements to the atmosphere whenever only the main drain valve is open or only the surface overflow gutter system valve is open.

454.1.6.5.6 Piping. All plastic pipe used in the recirculation system shall be imprinted with the manufacturer's name and the NSF-pw logo for potable water applications. Size, schedule and type of pipe shall be included on the drawings. Plastic pipe subject to a period of prolonged sunlight exposure shall be coated to protect it from ultraviolet light degradation.

454.1.6.5.7 Valves. Return lines, main drain lines, and surface overflow system lines, shall each have proportioning valves.

454.1.6.5.8 Flow velocity. Pressure piping shall not exceed 10 feet per second (2038 mm/s), except that precoat lines with higher velocities may be used when necessary for agitation purposes. The flow velocity in suction piping shall not exceed 6 feet per second (1829 mm/s) except that flow velocities up to 10 feet per second (3048 mm/s) in filter assembly headers will be acceptable. Main drain systems and surface overflow systems which discharge to collector tanks shall be sized with a maximum flow velocity of 3 feet per second (914 mm/s). The filter and vacuuming system shall have the necessary valves and piping to allow filtering to pool, vacuuming to waste, vacuuming to filter, complete drainage of the filter tank, backwashing for sand and pressure D.E.-type filters and precoat recirculation for D.E.-type filters.

454.1.6.5.9 Inlets. All inlets shall be adjustable with wall-type inlets being directionally adjustable and floor-type inlets having a means of flow adjustment. Floor inlets shall be designed and installed such that they do not protrude above the pool floor and all inlets shall be designed and installed so as not to constitute sharp edges or protrusions hazardous to pool bathers. Floor inlets, for vinyl liner and fiberglass pools, shall be smooth with no sharp edges, and shall not extend more than $^3/_8$ inches (9.5 mm) above the pool floor. Wall inlets shall be installed a minimum of 12 inches (305 mm) below the normal operating water level unless precluded by the pool depth or intended for a specific acceptable purpose.

454.1.6.5.9.1 Pools 30 feet (9144 mm) in width or less, with wall inlets only, shall have enough inlets such that the inlet spacing does not exceed 20 feet (6096 mm) based on the pool water perimeter.

454.1.6.5.9.2 Pools 30 feet (9144 mm) in width or less, with floor inlets only, shall have a number of inlets provided such that the spacing between adjacent inlets does not exceed 20 feet (6096 mm) and the spacing between inlets and adjacent walls does not exceed 10 feet (3048 mm).

454.1.6.5.9.3 A combination of wall and floor inlets may be used in pools 30 feet (9144 mm) in width or less only if requirements of Section 454.1.6.5.9.1 or 454.1.6.5.9.2 are fully met.

454.1.6.5.9.4 Pools greater than 30 feet (9144 mm) in width shall have either floor inlets only, or a combination of floor inlets and wall inlets. Pools with floor inlets only shall have a number of floor inlets provided such that the spacing between adjacent inlets does not exceed 20 feet (6096 mm) and the spacing between inlets and an adjacent wall does not exceed 10 feet (3048 mm).

454.1.6.5.9.5 Pools greater than 30 feet (9144 mm) in width with a combination of wall and floor inlets shall have the number of wall inlets such that the maximum spacing between the wall inlets is 20 feet (6096 mm) and floor inlets are provided for the pool water area beyond a 15-feet (4572 mm) perpendicular distance from all walls. The number of floor inlets shall be such that the spacing between adjacent inlets does not exceed 20 feet (6096 mm) and the distance from a floor inlet and an adjacent wall does not exceed 25 feet (7620 mm). Floor inlets shall be designed and installed such that they do not protrude more than $^5/_8$ inch (16 mm) above the pool floor and all inlets shall be designed and installed so as not to constitute sharp edges or protrusions hazardous to pool bathers.

454.1.6.5.9.6 The flow rate through each inlet shall not exceed 20 gpm (1 L/s).

454.1.6.5.10 Main drain outlets. All pools shall be provided with an outlet at the deepest point.

454.1.6.5.10.1 The depth at the outlet shall not deviate more than 3 inches (76 mm) from the side wall.

454.1.6.5.10.2 Outlets shall be covered by a secured grating which requires the use of a tool to remove and whose open area is such that the maximum velocity of water passing through the openings does not exceed $1^1/_2$ feet per second (457 mm/s) at 100 percent of the design recirculation flow. Main drain covers/grates shall comply with the requirements of ANSI/APSP 16, and the water velocity of this section.

454.1.6.5.10.3 Multiple outlets, equally spaced from the pool side walls and from each other, shall be installed in pools where the deep portion of the pool is greater than 30 feet (9144 mm) in width.

454.1.6.5.10.4 If the area is subject to high ground water, the pool shall be designed to withstand hydraulic uplift or shall be provided with hydrostatic relief devices.

454.1.6.5.10.5 The main drain outlet shall be connected to a collector tank. The capacity of the collector tank shall be at least 1 minute of the recirculated flow unless justified by the design engineer. Vacuum filter tanks are considered collector tanks.

454.1.6.5.11 Water makeup control. An automatic and manual water makeup control shall be provided to maintain the water level at the lip of the overflow gutter or at the mouth of the recessed automatic surface skimmers and shall discharge through an air gap into a fill pipe or collector tank. Over the rim fill spouts are prohibited.

454.1.6.5.12 Cleaning system. A portable or plumbed in vacuum cleaning system shall be provided. All vacuum pumps shall be equipped with hair and lint strainers. When the system is plumbed in, the vacuum fittings shall be located to allow cleaning the pool with a 50-foot (15 240 mm) maximum length of hose. Vacuum fittings shall be mounted no more than 15 inches (381 mm) below the water level, flush with the pool walls, and shall be provided with a spring-loaded safety cover which shall be in place at all times when the pool is not being vacuumed. Bag-type cleaners, which operate as ejectors on potable water supply pressure, shall be protected by a vacuum breaker. Cleaning devices shall not be used while the pool is open to bathers.

454.1.6.5.13 Rate of flow indicators. A rate of flow indicator, reading in gpm, shall be installed on the return line. The rate of flow indicator shall be properly sized for the design flow rate and shall be capable of measuring from one-half to at least one-and-one-half times the design flow rate. The clearances upstream and downstream from the rate of flow indicator shall comply with manufacturer's installation specifications.

454.1.6.5.14 Heaters. Pool heaters shall comply with nationally recognized standards acceptable to the jurisdictional building department and to the design engineer. Pools equipped with heaters shall have a fixed thermometer mounted in the pool recirculation line downstream from the heater outlet. Thermometers mounted on heater outlets do not meet this requirement. A sketch of any proposed heater installation including valves, thermometer, pipe sizes, and material specifications shall be included in the application for permit prior to installation. Piping and influent, effluent and bypass valves which allow isolation or removal of the heater from the system shall be provided. Materials used in solar and other heaters shall be nontoxic and acceptable for use with potable water. Heaters shall not prevent the attainment of the required turnover rate.

454.1.6.5.15 Pool waste water disposal. Pool waste water shall be discharged through an air gap; disposal shall be to sanitary sewers, storm sewers, drainfields, or by other means, in accordance with local requirements including obtaining all necessary permits. Disposal of water from pools using D.E. powder shall be accomplished through separation tanks which are equipped with air bleed valves, bottom drain lines, and isolation valves, or through a settling tank with final disposal being acceptable to local authorities. D.E. separator tanks shall have a capacity as rated by the manufacturer, equal to the square footage of the filter system. All lines shall be sized to handle the expected flow. There shall not be a direct physical connection between any drain from a pool or recirculation system and a sewer line.

454.1.6.5.16 Addition of chemicals. Disinfection and ph adjustment shall be added to the pool recirculation flow using automatic feeders meeting the requirement of ANSI/NSF 50-2007. All chemicals shall be fed into the return line after the pump, heater and filters unless the feeder was designed by the manufacturer and approved by the NSF to feed to the collector tank or to the suction side of the pump.

454.1.6.5.16.1 Gas chlorination. When gas chlorination is utilized, the chlorinator shall be capable of continuously feeding a chlorine dosage of 6 mg/L to the recirculated flow of the filtration system. The application point for chlorine shall be located in the return line downstream of the filter, recirculation pump, heater, and flow meter, and as far as possible from the pool.

454.1.6.5.16.1.1 Gas chlorinators shall be located in above-grade rooms and in areas which are inaccessible to unauthorized persons.

454.1.6.5.16.1.1.1 Chlorine rooms shall have continuous forced draft ventilation capable of a minimum of one air change per minute with an exhaust at floor level to the outside, a minimum of 30 footcandles (300 lux) of illumination with the switch located outside and the door shall open out and shall not be located adjacent to the filter room entrance or the pool deck. A shatterproof gas-tight inspection window shall be provided.

454.1.6.5.16.1.1.2 Chlorine areas shall have a roof and shall be enclosed by a chain-link-type fence at least 6 feet (1829 mm) high to allow ventilation and prevent vandalism.

454.1.6.5.16.1.2 When booster pumps are used with the chlorinator, the pump shall use recirculated pool water supplied via the recirculation filtration system. The booster pump shall be electrically interlocked with the recirculation pump to prevent the feeding of chlorine when the recirculation pump is not operating.

454.1.6.5.16.1.3 A means of weighing chlorine containers shall be provided. When 150-pound (68 kg) cylinders are used, platform-type scales shall be provided and shall be capable of weighing a minimum of two full cylinders at one time. The elevation of the scale platform shall be within 2 inches (51 mm) of the adjacent floor level, and the facilities shall be constructed to allow easy placement of full cylinders on the scales.

454.1.6.5.16.2 Hypohalogenation and electrolytic chlorine generators. The hypohalogenation-type feeder and electrolytic chlorine generators shall be adjustable from 0 to full range. A rate of flow indicator is required on erosion-type feeders. The feeders shall be capable of continuously feeding a dosage of 6 mg/L to the minimum required turnover flow rate of the filtration systems. Solution feeders shall be capable of feeding the above dosage using a 10-percent sodium hypochlorite solution, or 5-percent calcium hypochlorite solution, whichever disinfectant is to be utilized at this facility. To prevent the disinfectant from siphoning or feeding directly into the pool or pool piping under any type failure of the recirculation equipment, an electrical interlock with the recirculation pump shall be incorporated into the system for electrically operated feeders. The minimum size of the solution reservoirs shall be at least 50 percent of the maximum daily capacity of the feeder. The solution reservoirs shall be marked to indicate contents.

454.1.6.5.16.3 Feeders for pH adjustment. Feeders for pH adjustment shall be provided on all pools. pH adjustment feeders shall be positive displacement type, shall be adjustable from 0 to full range, and shall have an electrical interlock with the circulation pump to prevent discharge when the recirculation pump is not operating. When soda ash is used for pH adjustment, the maximum concentration of soda ash solution to be fed shall not exceed $^1/_2$-pound (.2 kg) soda ash per gallon of water. Feeders for soda ash shall be capable of feeding a minimum of 3 gallons (11 L) of the above soda ash solution per pound of gas chlorination capacity. The minimum size of the solution reservoirs shall not be less than 50 percent of the maximum daily capacity of the feeder. The solution reservoirs shall be marked to indicate the type of contents.

454.1.6.5.16.4 Ozone generating equipment. Ozone generating equipment may be used for supplemental water treatment on public swimming pools subject to the conditions of this section.

454.1.6.5.16.4.1 Ozone generating equipment electrical components and wiring shall comply with the requirements of Chapter 27 of this code and the manufacturer shall provide a certificate of conformance. The process equipment shall be provided with an effective means to alert the user when a component of this equipment is not operating.

454.1.6.5.16.4.2 Ozone generating equipment shall meet NSF/ANSI Standard 50.

454.1.6.5.16.4.3 The concentration of ozone in the return line to the pool shall not exceed 0.1 mg/L.

454.1.6.5.16.4.4 The injection point for ozone generating equipment shall be located in the pool return line after the filtration and heating equipment, prior to the halogen injection point, and as far as possible from the nearest pool return inlet with a minimum distance of 4 feet (1219 mm). Injection methods shall include a mixer, contact chamber, or other means of efficiently mixing the ozone with the recirculated water. The injection and mixing equipment shall not prevent the attainment of the required turnover rate of the recirculation system. Ozone generating equipment shall be equipped with a check valve between the generator and the injection point. Ozone generating equipment shall be equipped with an air flow meter and a means to control the flow. The generator shall be electrically interlocked with the recirculation pump to prevent the feeding of ozone when the recirculation pump is not operating. A flow sensor controller can also be used to turn off the feeder when flow is sensed.

454.1.6.5.16.4.5 Ventilation requirements. Ozone generating equipment shall be installed in equipment rooms with either forced draft or cross draft ventilation. Below-grade equipment rooms with ozone generators shall have forced draft ventilation and all equipment rooms with forced draft ventilation shall have the fan control switch located outside the equipment room door. The exhaust fan intake for forced draft ventilation and at least one vent grille for cross draft ventilation shall be located at floor level.

454.1.6.5.16.4.6 A self-contained breathing apparatus designed and rated by its manufacturer for use in ozone contaminated air shall be provided when ozone generator installations are capable of exceeding the maximum pool water ozone contact concentration of 0.1 milligram per liter. The self-contained breathing apparatus shall be available at all times and shall be used at times when the maintenance or service personnel have determined that the equipment room ozone concentration exceeds 10 mg/L. Ozone generator installations which require the self-contained breathing apparatus shall also be provided with Draeger-type detector tube equipment which is capable of detecting ozone levels of 10 mg/L and greater.

Exception: In lieu of the self-contained breathing apparatus, an ozone detector capable of detecting 1 mg/L may be used. Said detector shall be capable of stopping the production of ozone, venting the room and sounding an alarm once ozone is detected.

454.1.6.5.16.5 Ionization units may be used as supplemental water treatment on public pools subject to the condition of this section.

454.1.6.5.16.5.1 Ionization equipment and electrical components and wiring shall comply with the requirements of Chapter 27 of this code and the manufacturer shall provide a certification of conformance.

454.1.6.5.16.5.2 Ionization equipment shall meet NSF/ANSI Standard 50, *Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs*, or equivalent, shall meet UL standards and shall be electrically interlocked with recirculation pump.

454.1.6.5.16.6 Ultraviolet (UV) light disinfectant equipment may be used as supplemental water treatment on public pools [and additional treatment on interactive water features (IWFs)] subject to the conditions of this paragraph and manufacturer's specifications. UV is encouraged to be used to eliminate or reduce chlorine-resistant pathogens, especially the protozoan cryptosporidium.

1. UV equipment and electrical components and wiring shall comply with the requirements of the *National Electrical Code* and the manufacturer shall provide a certification of conformance to the jurisdictional building department.
2. UV equipment shall meet UL standards and shall be electrically interlocked with recirculation pump(s) on all pools and with feature pumps(s) on an IWF such that when the UV equipment fails to produce the required dosage as measured by an automated sensor, the feature pump(s) are disabled so the water features do not operate.
3. UV equipment shall be validated by a capable party that it delivers the required and predicted UV dose at the validated flow, lamp power and water UV transmittance conditions, and has complied with all professional practices summarized in the *USEPA Ultraviolet Disinfectant Guidance Manual dated November 2006*, which is publication number EPA 815-R-06-007 available from the department at http://www.floridashealth.org/Environment/water/swim/index.html or at http://www.epa.gov/safewater/disinfection/lt2/pdfs/guide_lt2_uvguidance.pdf.
4. UV equipment shall constantly produce a validated dosage of at least 40 mJ/cm^2 (millijoules per square centimeter) at the end of lamp life.
5. The UV equipment shall not be located in a side stream flow and shall be located to treat all water returning to the pool or water features.

454.1.6.5.17 Water features such as waterfalls or fountains in pools may use up to 20 percent of the return water from the filter system, however all waters used in the feature shall not be counted toward attaining the designed turnover rate. Return piping system shall be designed and capable of handling the additional feature flow when the feature is turned off. Features that require more than 20 percent of the flow rate shall be supplied by an additional pump that drafts from a suitable collector tank. All water features that utilize water from the pool shall be designed to return the water to the pool. Spray features mounted in the pool deck shall be flush with the pool deck and shall be designed with the safety of the pool patron in mind.

454.1.6.5.18 Chemical quality. Only NSF-60 approved chemicals shall be provided.

454.1.7 Wading pools.

454.1.7.1 General. Wading pools shall meet the requirements of Sections 454.1.1 through 454.1.6.5, unless otherwise indicated. Wading pools and associated piping shall not be physically connected to any other swimming pools and have no minimum width dimensions requirements.

454.1.7.2 Depths. Wading pools shall have a maximum depth of 2 feet (610 mm). The depth at the perimeter of the pool shall be uniform and shall not exceed 12 inches (305 mm). However, where jurisdictional building department-approved zero depth entry designs are used, this uniform depth requirement must be met only on the remainder of the pool outside the zero depth entry portion. The pool floor shall not be more than 12 inches (305 mm) below the deck unless steps and handrails are provided. Depth and "NO DIVING" markers are not required on wading pools.

454.1.7.3 Recirculation. Wading pools shall have a minimum of one turnover every hour. Lines from main drains shall discharge into a collector tank.

454.1.7.3.1 Skimmer equalizer lines when required shall be plumbed into the main drain installed in the pool floor with a grate covering.

454.1.7.3.2 The grate cover shall be sized so as not to allow the flow to exceed 1 $^1/_2$ feet per second (457 mm/s) when the equalizer line is operating.

454.1.7.4 Inlets. Wading pools with 20 feet (6096 mm) or less of perimeter shall have a minimum of two equally spaced adjustable inlets.

454.1.7.5 Emergency drainage. All wading pools shall have drainage to waste without a cross connection through a quick opening valve to facilitate emptying the wading pool should accidental bowel or other discharge occur.

454.1.7.6 Vacuuming. Wading pools with 200 square feet (19 m^2) or more of pool water surface area shall have provisions for vacuuming through the skimmer, a portable vacuum system or an alternative approved method that does not involve a direct suction port in the pool.

454.1.7.7 Wading pool decks. When adjacent to swimming pools, wading pools shall be separated from the swimming pool by barrier or a fence of a minimum of 48 inches (1219 mm) in height with self-latching and self-closing gates. When adjacent to areas less than one foot (305 mm) deep of zero depth entry pools, the fence or effective barrier is required if the water edges are less than 40 feet (12 192 mm) apart. Wading pools shall have a minimum 10-foot (3048 mm) wide deck around at least 50 percent of their perimeter with the remainder of the perimeter deck being at least 4 feet (1219 mm) wide. There shall be at least 10 feet (3048 mm) between adjacent swimming pools and wading pools.

454.1.7.8 Lighting. Wading pools are exempt from underwater lighting requirements, but shall have lighting installed for night use of 10 footcandles (1000 lux) if indoors or 6 footcandles (60 lux) for outdoor night use. Such illumination shall be provided over the pool water surface and the pool deck surface

454.1.7.9 Automated oxidation reduction potential (ORP) and pH controllers with sensing probes shall be provided to assist in maintaining proper disinfection and pH levels.

454.1.8 Spa pools.

454.1.8.1 General. Spa pools shall meet the requirements of Sections 454.1.1 through 454.1.6.5, unless specifically indicated otherwise.

454.1.8.2 Color, pattern, finish. The color, pattern or finish of the pool interior shall not obscure the existence or presence of objects or surfaces within the pool.

454.1.8.3 Water depths. Spa-type pools shall have a minimum water depth of 2 $^1/_2$ feet (762 mm) and a maximum water depth of 4 feet (1219 mm), except that swim spa pools may have a maximum water depth of 5 feet (1524 mm). Depth markers and "NO DIVING" markers are not required on spa-type pools with 200 square feet (19 m^2) or less of water surface area.

454.1.8.4 Steps and handrails. Steps or ladders shall be provided and shall be located to provide adequate entrance to and exit from the pool. The number of sets of steps or ladders required shall be on the basis of one for each 75 feet (22 860 mm), or major fraction thereof, of pool perimeter. Step sets for spa-type pools with more than 200 square feet (19 m^2) of pool water surface area shall comply with Section 454.1.2.5. Step sets for spa-type pools with 200 square feet (19 m^2) or less of pool water surface area shall comply with the following: Step treads shall have a minimum width of 10 inches (254 mm) for a minimum continuous tread length of 12 inches (305 mm). Step riser heights shall not exceed 12 inches (305 mm). Intermediate treads and risers between the top and bottom treads and risers shall be uniform in width and height, respectively. Contrasting markings on the leading edges of the submerged benches and the intersections of the treads and risers are required to be installed in accordance with Section 454.1.2.5.

454.1.8.4.1 Handrails shall be provided for all sets of steps and shall be anchored in the bottom step and in the deck. Handrails shall be located to provide maximum access to the steps and handrails shall extend 28 inches (711 mm) above the pool deck.

454.1.8.4.2 Where **"**figure 4" handrails are used, they shall be anchored in the deck and shall extend laterally to any point vertically above the bottom step. Handrails shall be located to provide maximum access to the steps and handrails shall extend 28 inches (711 mm) above the pool deck.

454.1.8.5 Decks. Decks shall have a minimum 4-foot-wide (1219 mm) unobstructed width around the entire pool perimeter, except that pools of less than 120 square feet (11 m^2) of pool water surface area shall have a minimum 4-foot-wide (1219 mm) unobstructed continuous deck around a minimum of 50 percent of

the pool perimeter. Decks less than 4 feet (1219 mm) wide shall have barriers to prevent their use. Decks shall not be more than 10 inches (254 mm) below the top of the pool. For pools of 120 square feet (11 m^2) or greater, 10 percent of the deck along the pool perimeter may be obstructed.

454.1.8.6 Therapy or jet systems.

454.1.8.6.1 The return lines of spa-type therapy or jet systems shall be independent of the recirculation-filtration and heating systems.

454.1.8.6.2 Therapy or jet pumps shall take suction from the collector tank. Collector tank sizing shall take this additional gallonage into consideration.

454.1.8.7 Filtration system inlets. Spa-type pools with less than 20 feet (6096 mm) of perimeter shall have a minimum of two equally spaced adjustable inlets.

454.1.8.8 Filtration recirculation. Spa-type pools shall have a minimum of one turnover every 30 minutes. The piping, fittings, and hydraulic requirements shall be in accordance with Section 454.1.6.5. All recirculation lines to and from the pool shall be individually valved with proportional flow-type valves in order to control the recirculation flow.

454.1.8.9 Vacuuming. Spa-type pools of over 200 square feet (19 m^2) of pool water surface area shall have provisions for vacuuming.

454.1.8.10 Combination spas/pools. When spa pools are part of a conventional swimming pool, the spa pool area shall be offset from the main pool area with the same water depth as the main pool area. The spa pool shall meet all the spa pool requirements of this chapter, and the deck area at the spa shall be protected by connected 30-inch-high (762 mm) stanchions. The deck perimeter at the offset spa area shall not exceed 15 percent of the entire swimming pool perimeter. All benches shall have contrasting markings on the leading edges of the intersection of the bench seats. If tile is used, it shall be slip resistant.

454.1.8.11 Portable and wooden spa pools. Portable and wooden-type spa pools are prohibited.

454.1.8.12 Automated controllers. Automated oxidation reduction potential (ORP) and pH controllers with sensing probes shall be installed on spa pools to assist in maintaining proper disinfection and pH levels.

454.1.8.13 In addition to the requirements of Section 424.1.2.3.5, spa pool signs installed shall include the following:

1. Maximum water temperature 104º F (40º C).
2. Children under twelve must have adult supervision.
3. Pregnant women, small children, people with health problems and people using alcohol, narcotics or other drugs that cause drowsiness should not use spa pools without first consulting a doctor.
4. Maximum use 15 minutes.

454.1.8.14 A clock shall be visible from the spa pool to assist the patron in meeting requirement 4 of Section 454.1.8.13 above.

454.1.8.15 If a spa is equipped with an emergency cut-off or kill switch, it shall include provisions for a minimum 80 decibel audible alarm near the spa to sound continuously until deactivated when such device is triggered. The following additional rule sign shall be installed to be visible by the spa which reads "ALARM INDICATES SPA PUMPS OFF. DO NOT USE SPA WHEN ALARM SOUNDS UNTIL ADVISED OTHERWISE."

454.1.9 Water recreation attractions and specialized pools.

454.1.9.1 General. Water recreation attraction projects shall be designed and constructed within the limits of sound engineering practice. In addition to the requirements of this section, compliance is required with Sections 454.1.1 through 454.1.6.5 of this chapter, depending upon the pool design and function. Additionally, all pools listed in this section shall have a 2-hour turnover rate unless otherwise noted.

454.1.9.2 Water slides.

454.1.9.2.1 Water slide plunge pool. Plunge pools shall be constructed of concrete or other structurally rigid impervious materials with a nontoxic, smooth and slip-resistant finish. The plunge pool design shall meet the criteria of Sections 454.1.9.2.1.1 through 454.1.9.2.1.6.

454.1.9.2.1.1 Plunge pool water depth. The minimum plunge pool operating water depth at the slide flume terminus shall be 3 feet (914 mm). This depth shall be maintained for a minimum distance of 10 feet (3048 mm) in front of the slide terminus from which point the plunge pool floor may have a constant upward slope to allow a minimum water depth of 2 feet (51 mm) at the base of the steps. The floor slope shall not exceed 1 in 10. The plunge pool water depth shall be commensurate with safety and the ease of exit from the plunge pool.

454.1.9.2.1.2 Plunge pool dimension. The plunge pool dimension between any slide flume exit or terminus and the opposite side of the plunge pool shall be a minimum of 20 feet (6096 mm) excluding steps.

454.1.9.2.1.3 Slide flume terminus.

454.1.9.2.1.3.1 The slide flume terminus shall be designed by the design engineer who can demonstrate to the jurisdictional building department's satisfaction that riders will be adequately slowed prior to discharge so as to prevent injury or harm to the rider upon impact with the plunge pool water. The slide terminus shall be flush with the pool wall and located at or below the pool water level.

454.1.9.2.1.3.2 The minimum distance between any plunge pool side wall and the outer edge of any slide terminus shall be 5 feet (1524 mm). The minimum distance between adjacent slide flumes shall be 6 feet (18 288 mm).

454.1.9.2.1.3.3 A minimum length of slide flume of 10 feet (3048 mm) shall be perpendicular to the plunge pool wall at the exit end of the flumes.

454.1.9.2.1.4 Plunge pool main drains. The plunge pool shall have a minimum of one main drain with separate piping and valve to the filtration system collector tank. The velocity through the openings of the main drain grate shall not exceed $1^1/_2$ feet per second (457 mm/s) at the design flow rate of the recirculation pump. The main drain piping shall be sized to handle 100 percent of the design flow rate of the filtration system with a maximum flow velocity of 3 feet (914 mm) per second.

454.1.9.2.1.5 Plunge pool floor slope. The plunge pool floor shall slope to the main drains and the slope shall not exceed 1 in 10.

454.1.9.2.1.6 Plunge pool decks.

454.1.9.2.1.6.1 Width. The minimum width of plunge pool decks along the exit side shall be 10 feet (3048 mm).

454.1.9.2.1.6.2 Slopes. All plunge pool decks shall slope to the plunge pool or pump reservoir or to deck drains which discharge to waste, or other acceptable means. All slopes shall be between 2- and 4-percent grade.

454.1.9.2.2 Run out lanes.

454.1.9.2.2.1 Run out lanes may be utilized in lieu of a plunge pool system, provided they are constructed to the slide manufacturers specifications and are approved by the design engineer of record.

454.1.9.2.2.2 Five-foot-wide (1524 mm) walkways shall be provided adjacent to run out lanes.

454.1.9.2.2.3 Minimum water level indicator markings shall be provided on both sides of the run out trough to ensure adequate water for the safe slowing of pool patrons.

454.1.9.2.2.4 Water park personnel shall be provided at the top of the slides and at the run out.

454.1.9.2.3 Pump reservoirs. Pump reservoirs shall be made of concrete or other impervious material with a smooth slip-resistant finish. Pump reservoirs shall be for the slide pump intakes, but where properly sized may also be used as a collector tank for the filter system. Pump reservoir designs shall meet the criteria of Sections 454.1.9.2.3.1 through 454.1.9.2.3.5.

454.1.9.2.3.1 Pump reservoir volume. The minimum reservoir volume shall be equal to 3 minutes of the combined flow rate in gallons per minute of all filter and slide pumps.

454.1.9.2.3.2 Pump reservoir security. Pump reservoirs shall be accessible only to authorized individuals.

454.1.9.2.3.3 Pump reservoir maintenance accessibility. Access decks shall be provided for the reservoir such that all areas are accessible for vacuuming, skimming, and maintenance. The decks shall have a minimum width of 3 feet (914 mm) and shall have a minimum slope of 3:10 away from the reservoir.

454.1.9.2.3.4 Pump reservoir slide pump intakes. The slide pump intakes shall be located in the pump reservoir and shall be designed to allow cleaning without danger of operator entrapment.

454.1.9.2.3.5 Pump reservoir main drains. The pump reservoir shall have a minimum of one main drain with separate piping and valve to the filtration system collector tank and the velocity through the openings of the main drain grates shall not exceed $1^1/_2$ feet per second (457 mm/s) at the design flow rate of the filtration system pump. The main drain piping shall be sized to handle 100 percent of design flow rate of the filtration system pump with a maximum flow velocity of 3 feet per second (914 mm/s).

454.1.9.2.3.6 The pump reservoir shall be fed by main drains within the plunge pool itself (either in the floor or side wall). They shall have the maximum flow velocity of $1^1/_2$ feet per second (457 mm/s) through the main drain grating and 3 feet per second (3962 mm/s) through the reservoir piping.

454.1.9.2.4 Slide pump check valves. Slide pumps shall have check valves on all discharge lines.

454.1.9.2.5 Perimeter overflow gutters or skimmers. Plunge pools and pump reservoirs shall have a perimeter overflow gutter system or skimmer which shall be an integral part of the filtration system.

454.1.9.2.5.1 Perimeter overflow gutter systems. Perimeter overflow gutter systems shall meet the requirements of Section 454.1.6.5.3.1 except that gutters are not required directly under slide flumes or along the weirs which separate plunge pools and pump reservoirs.

454.1.9.2.5.2 Surface skimmers. Surface skimmers may be used in lieu of perimeter overflow gutters and shall be appropriately spaced and located according to the structural design. Unless an overflow gutter system is used, surface skimmers shall be provided in the plunge pool and in the pump reservoir and the skimmer system shall be designed to carry 60 percent of the filtration

system design flow rate with each skimmer carrying a minimum 30 gpm (2 L/s). All surface skimmers shall meet the requirements for NSF commercial approval as set forth in NSF/ANSI Standard 50, *Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs*, which is incorporated by reference in these rules, including an equalizer valve in the skimmer and an equalizer line to the pool wall on systems with direct connection to pump suction.

454.1.9.2.6 Water slide recirculation–filtration equipment.

454.1.9.2.6.1 Recirculation rate. The recirculation-filtration system of water slides shall recirculate and filter a water volume equal to the total water volume of the facility in a period of 2 hours or less.

454.1.9.2.6.2 Filter areas. Minimum filter area requirements shall be twice the filter areas specified for the recirculation rates stipulated in Section 454.1.6.5.5.1. The filtration system shall be capable of returning the pool water turbidity to 5/10 NTU within 8 hours or less after peak bather load.

454.1.9.2.6.3 Hair and lint strainer. Any filtration system pump which takes suction directly from the plunge pool and reservoir shall have a minimum 8-inch (208 mm) diameter hair and lint strainer on the suction side of the pump.

454.1.9.2.7 Disinfection. The disinfection equipment shall be capable of feeding 12 mg/L of halogen to the continuous recirculation flow of the filtration system.

454.1.9.2.8 Slide design and construction is the responsibility of a professional engineer licensed in Florida and the applicant.

454.1.9.2.9 A lockable gate shall be provided at the stair or ladder entrance to the slide.

454.1.9.2.10 Upon construction completion, a professional engineer licensed in Florida shall certify that the slide was constructed in accordance with the manufacturer's specifications and is structurally sound.

454.1.9.3 Water activity pools.

454.1.9.3.1 Water activity pools shall be designed and constructed within the limits of sound engineering practice.

454.1.9.3.2 Water activity pools shall be constructed of concrete or other structurally rigid impervious materials with a nontoxic, smooth and slip-resistant finish. These pools shall be of such shape and design as to be operated and maintained in a safe and sanitary manner.

454.1.9.3.3 The recirculation-filtration system of water activity pools shall achieve a minimum of one turnover every 2 hours for water activity pools over 2 feet (610 mm) deep, and in 1 hour for these pools that are 2 feet (610 mm) deep or less.

454.1.9.3.4 Those portions of the activity pool where the water depth will not allow for the proper installation of underwater lighting, shall be provided with 6 footcandles (60 lux) of lighting on the deck and water surface.

454.1.9.3.5 Fence requirements shall be in accordance with Section 454.1.7.7.

454.1.9.3.6 Play features with an overhead clearance of less than 4 feet (1219 mm) shall be blocked or barricaded to preclude children becoming entrapped.

454.1.9.3.7 In addition to the requirements of Section 454.1.2.3.5, all water activity pool signs installed shall have the following added in one inch letters:

"Do not swallow the pool water, it is recirculated."

"Do not use pool if you are ill with diarrhea."

454.1.9.4 Wave pools.

454.1.9.4.1 Wave pools shall be designed and constructed within the limits of sound engineering practice.

454.1.9.4.2 Wave pools shall be constructed of concrete or other impervious materials with a smooth slip-resistant finish. These pools shall be of such shape and design as to be operated and maintained in a safe and sanitary manner.

454.1.9.4.3 The recirculation-filtration system of wave pools shall be capable of a minimum of one turnover every 3 hours.

454.1.9.4.4 Floors shall be sloped in accordance with the manufacturer's or design engineer's specifications; however, they shall not exceed the slope limits of Section 454.1.2.2.3.

454.1.9.5 River rides.

454.1.9.5.1 River rides shall be constructed within the limits of sound engineering practice.

454.1.9.5.2 River rides shall be constructed on concrete or other impervious materials with a nontoxic, smooth and slip-resistant finish. These rides shall be of such shape and design as to be operated in a safe and sanitary manner.

454.1.9.5.3 The recirculation-filtration system of the river ride shall be capable of a minimum of one turnover every 3 hours.

454.1.9.5.4 The maximum water depth of the river ride shall not exceed 3 feet (914 mm) unless justified to the jurisdictional building department's satisfaction by the design engineer.

454.1.9.5.5 Decking shall be provided at the entrance and exit points as necessary to provide safe patron access but shall not be smaller than 10 feet (3048 mm) in width and length. Additional decking along the ride course is not required except that decking shall be required at lifeguard locations and emergency exit points.

454.1.9.5.6 Access and exit shall be provided at the start and end of the ride and additional exit locations shall be located along the ride course as necessary to provide for the safety of the patrons.

Propulsion jets shall be installed in the walls of the river ride. In the alternative, propulsion jets may be installed in the floor if they are covered by a grate that will inhibit entrapment or injury of the pool patrons' feet or limbs.

454.1.9.6 Zero depth entry pools.

454.1.9.6.1 Zero depth entry pools shall have a continuous floor slope from the water edge to the deep end.

454.1.9.6.2 The deck level perimeter overflow system with grate shall be provided at the water's edge across the entire zero depth portion of the pool.

454.1.9.6.3 The pool deck may slope toward the pool for no more than 7 inches (2133 mm), as measured from the overflow system grate outward. Beyond this area the deck shall slope away from the pool in accordance with Section 454.1.2.2.3.

454.1.9.6.4 "No-Entry, Shallow Water" signs shall be provided along the pool wall edge where the water depth is less than 3 feet (914 mm) deep. No-entry signs shall be slip-resistant, shall have 4-inch-high (102 mm) letters, shall be located within 2 feet (610 mm) of the pool edge and shall be spaced no more than 15 feet (4572 mm) apart.

454.1.9.6.5 Additional inlets shall be provided in areas of less than 18 inches (457 mm) deep. The numbers and location shall be such as to double the flow rate into this area.

454.1.9.6.6 The recirculation-filtration system shall be of a minimum of one turnover every 2 hours in the area of the pool that is 3 feet (914 mm) deep or less. In the remainder of the pool where the depth is greater than 3 feet (914 mm), the system shall have a maximum 6 hour turnover rate. The design plans submitted by the applicant shall provide the volume of water in the pool area of 3 feet (914 mm) depth and less, the volume of water in the pool area greater than 3 feet (914 mm) in depth and the total volume in the pool for determination of minimum circulation flow. The volume calculations shall provide verification that the correct volume of water is used to determine the minimum flow at the 2-hour and the 6-hour flow requirements.

454.1.9.6.7 Those portions of the zero depth entry pool, where the water depth will not allow for the proper installation of underwater lighting, shall be provided with 6 footcandles (60 lux) of lighting on the deck and the water.

454.1.9.6.8 Play structures in a zero depth entry area [in depth 0 to 3 feet (0 to 914 mm)] may be within 15 feet (4572 mm) of the pool walls, but shall comply with sound engineering requirements for the safety of pool patrons.

454.1.9.7 Special purpose pools.

454.1.9.7.1 General. Special purpose pool projects may deviate from the requirements of other sections of these rules provided the design and construction are within the limits of sound engineering practice. Only those deviations necessary to accommodate the special usage shall be allowed and all other aspects of the pool shall comply with the requirements of this section and with Section 454.1.2.

454.1.9.7.2 A special purpose pool may incorporate ledges which do not overhang into the pool.

454.1.9.8 Interactive water features (IWFs).

454.1.9.8.1 Waters discharged from all fountain or spray features shall not pond on the feature floor but shall flow by gravity through a main drain fitting to a below or collection system which discharges to a collector tank. The minimum size of the collector tank shall be equal to the volume of 3 minutes of the combined flow of all feature pumps and the filter pump. Smaller tanks may be utilized if hydraulically justified by the design engineer. Adequate access shall be provided to the sump or collector tank. Stairs or a ladder shall be provided as needed to ensure safe entry into the tank.

454.1.9.8.2 Reserved.

454.1.9.8.3 Chemical feeders shall be in accordance with Section 454.1.6.5; except that the disinfection feeder shall be capable of feeding 12 ppm of free chlorine to the pressure side of the recirculation system or the collector tank (based upon a hypothetical 30-minute turnover of the contained volume within the system). Automated oxidation reduction potential (ORP) and pH controllers with sensing probes shall be installed to assist in maintaining proper disinfection and pH levels.

454.1.9.8.4 If night operation is proposed, 6 footcandles (60 lux) of light shall be provided on the pool deck and the water feature area. Lighting that may be exposed to the feature pool water shall not exceed 15 volts, shall be installed in accordance with manufacturer's specifications and be approved for such use by UL or NSF.

454.1.9.8.5 All electrical work shall comply with Chapter 27 of this code.

454.1.9.8.6 Hydraulics.

454.1.9.8.6.1 The filter system shall filter and chemically treat all water that is returned to the spray features. The filter system shall draft from the collector tank and return filtered water

directly to the spray features. Excess water not required by the spray features shall be returned to the collector tank.

454.1.9.8.6.2 The water feature pump shall draft from the collector tank.

454.1.9.8.6.3 Alternatively, the contained volume of the system may be filtered and chemically treated based upon a 30-minute turnover of the contained volume with 100 percent returned to the collector tank by manifold piping. If this alternative is chosen, all water returned to the spray feature(s) must also be treated with UV light disinfection equipment to accomplish protozoan destruction in accordance with sound engineering and the requirements of Section 454.1.6.5.16.6. This alternative must have the ability to feed 6 mg/L free chlorine to the feature water as it is returned to the spray feature. The UV disinfection equipment shall be electrically interconnected such that whenever it fails to produce the required UV dosage, the water spray features pump(s) and flow will be immediately stopped.

454.1.9.8.6.4 The flow rate through the feature nozzles of the water features shall be such as not to harm the patrons and shall not exceed 20 feet per second (6096 mm/s) unless justified by the design engineer and by the fountain system manufacturer.

454.1.9.8.6.5 An automatic water level controller shall be provided.

454.1.9.8.6.6 An overfill waste line with air gap shall be provided.

454.1.9.8.6.7 A means of vacuuming and completely draining the tank(s) shall be provided.

454.1.9.8.6.8 Where the filter system described in Section 454.1.9.8.6.1 is utilized, a second filter system and disinfection system shall be provided to treat the water in the collector tank when the feature/filter pump is not in operation. Said system shall be capable of filtering the total volume of water in the collector tank in 30 minutes and the disinfection system shall be capable of providing 12 mg/L of disinfectant to this flow rate.

454.1.9.8.6.9 IWFs shall be fenced in the same fashion as wading pools, as noted in Section 454.1.7.7. Where the IWF is at least 50 feet (15 240 mm) from all other pools and is not designed to have any standing water, fencing requirements should be carefully considered by the applicant to control usage, but are not required by rule.

454.1.9.8.6.10 A minimum 4-foot-wide (1219 mm) wet deck area shall be provided around all IWFs. The wet deck shall meet the requirements of Section 454.1.2.2.3; however, up to 50 percent of the perimeter may be obstructed.

454.1.9.8.6.11 IWFs shall be constructed of concrete or other impervious and structurally rigid material.

454.1.9.8.6.12 Floor slopes of an IWF shall be a maximum 1 foot (305 mm) vertical in 10 feet (3048 mm) horizontal and a minimum of 1 foot (305 mm) vertical in 50 feet (15 240 mm) horizontal.

454.1.9.8.6.13 In addition to the requirements of Section 454.1.2.3.5, all IWF pool rule signs installed shall have the following added in one inch letters:

"Do not swallow the fountain water, it is recirculated. "

"Do not use fountain if you are ill with diarrhea. "

454.1.9.8.7 Water theme parks shall meet all other aspects of these rules for the features provided.

454.1.9.8.7.1 Rules and regulations for water theme parks shall be posted in minimum 1-inch (305 mm) letters at each entrance to the park and shall contain the following:

1. No food, drink, glass or animals in or on the pool decks.
2. Park operating hours __A.M. to __P.M.
3. Shower before entering.
4. Do not swallow the pool water.

454.1.9.8.7.2 Showers shall be provided at or near the entrance (queue line) to a water recreation attraction.

454.1.9.8.7.3 Water theme parks are exempt from the fencing requirements of Section 454.1.3.1.9, except that pools designed for small children shall be fenced when located within 50 feet (15 240 mm) of a pool with water depths of 3 feet (914 mm) or more.

454.1.9.8.7.4 Sanitary facilities within a water theme park shall be as near to the water recreation attractions as prudent to ensure patron use, but not over 200 feet (60 960 mm) walking distance from any exit of a water attraction.

454.1.10 Modifications.

454.1.10.1 Modifications. Modifications include nonequivalent changes or additions to the recirculation system, treatment equipment, physical structure or appurtenances. Replacement of the pool or spa shell is considered to be construction of a new facility and shall be processed as such. The installation of new decking is not considered a modification if it is installed in conformance with Section 454.1.3.1, and deck markings are upgraded in accordance with Section 454.1.2.3. Resurfacing the pool interior to original nontoxic, slip-resistant and smooth specifications or equivalent replacement of equipment are not considered modifications.

454.1.10.2 The painting of pools shall not be considered a modification provided the following conditions are met:

1. Only paints designated by the manufacturer as pool paints are used.
2. All step stripes, slope break markers and safety line, and depth and NO DIVING markings shall be provided to comply with the applicable provision(s) this section.

454.1.10.3 The installation of copper or copper/silver ionization units and ozone generators capable of producing less than a pool water ozone contact concentration of 0.1 milligrams per liter (mg/L) shall not be considered a pool modification provided compliance when the following is met:

1. The ionization or ozone generator unit complies with paragraph 64E-9.007(16)(e), *Florida Administrative Code.*
2. The manufacturer provides one set of signed and sealed engineering drawings indicating the following:
   a. The unit does not interfere with the design flow rate.
   b. The unit and the typical installation meet the requirements of the *National Electrical Code.*
   c. A copper test kit and information regarding the maximum allowed copper and silver level and the minimum required chlorine level shall be available to the pool owner.
   d. The unit shall meet the requirements of NSF/ANSI Standard 50.
3. At least 7 days before the time of installation, the installer will provide a photocopy of the above drawings and a letter of intent identifying the pool on which the unit is to be installed.
4. Upon completion of the installation, a professional engineer or electrician licensed in the state of Florida shall provide a letter to the county health department, indicating the unit was properly installed in accordance with the typical drawings, the *National Electrical Code* and local codes.

454.2 Private swimming pools.

454.2.1 Definitions—general.

454.2.1.1 Tense, gender and number. For the purpose of this code, certain abbreviations, terms, phrases, words, and their derivatives shall be construed as set forth in this section. Words used in the present tense include the future. Words in the masculine gender include the feminine and neuter. Words in the feminine and neuter gender include the masculine. The singular number includes the plural and the plural number includes the singular.

454.2.1.2 Words not defined. Words not defined herein shall have the meanings stated in the *Florida Building Code, Building; Florida Building Code, Mechanical; Florida Building Code, Plumbing; Florida Building Code, Fuel Gas;* or *Florida Fire Prevention Code*. Words not defined in the *Florida Building Code* shall have the meanings stated in the Webster's *Ninth New Collegiate Dictionary*, as revised.

454.2.2 Definitions.

ABOVE-GROUND/ON-GROUND POOL. See "Swimming pool."

ADMINISTRATIVE AUTHORITY. The individual official, board, department or agency established and authorized by a state, county, city or other political subdivision created by law to administer and enforce the provisions of the swimming pool code as adopted or amended.

APPROVED. Accepted or acceptable under an applicable specification stated or cited in this code, or accepted as suitable for the proposed use under procedures and power of the administrative authority.

APPROVED SAFETY COVER. A manually or power-applied safety pool cover that meets all of the performance standards of ASTM International in compliance with ASTM F 1346.

APPROVED TESTING AGENCY. An organization primarily established for the purpose of testing to approved standards and approved by the administrative authority.

BACKWASH PIPING. See "Filter waste discharge piping."

BARRIER. A fence, dwelling wall or nondwelling wall or any combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool, especially access from the residence or from the yard outside the barrier.

BODY FEED. Filter aid fed into a diatomite-type filter throughout the filtering cycle.

CARTRIDGE FILTER. A filter using cartridge-type filter elements.

CHEMICAL PIPING. Piping which conveys concentrated chemical solutions from a feeding apparatus to the circulation piping.

CIRCULATION PIPING SYSTEM. Piping between the pool structure and the mechanical equipment. Usually includes suction piping, face piping and return piping.

COMBINATION VALVE. A multipart valve intended to perform more than one function.

DESIGN HEAD. Total head requirement of the circulation system at the design rate of flow.

DIATOMITE (DIATOAMCEOUS EARTH). A type of filter aid.

DIATOMITE-TYPE FILTER. A filter designed to be used with filter aid.

DIRECT ACCESS FROM THE HOME. Any opening which discharges into the "perimeter" of the pool or any opening in an exterior dwelling wall, or interior wall (for indoor pools) which faces the pool.

EXIT ALARM. A device that makes audible, continuous alarm sounds when any door or window which permits access from the residence to any pool that is without an intervening enclosure is opened or left ajar.

FACE PIPING. Piping, with all valves and fittings, which is used to connect the filter system together as a unit.

FILTER. Any apparatus by which water is clarified.

FILTER AID. A nonpermanent type of filter medium or aid such as diatomite, alum, etc.

FILTER CARTRIDGE. A disposable or renewable filter element which generally employs no filter aid.

FILTER ELEMENT. That part of a filter which retains the filter medium.

FILTER MEDIUM. Fine material which entraps the suspended particles and removes them from the water.

FILTER RATE. Average rate of flow per square foot of filter area.

FILTER ROCK. Specially graded rock and gravel used to support filter sand.

FILTER SAND. A specially graded type of permanent filter medium.

FILTER SEPTUM. That part of the filter element in a diatomite-type filter upon which a cake of diatomite or other nonpermanent filter aid may be deposited.

FILTER WASTE DISCHARGE PIPING. Piping that conducts waste water from a filter to a drainage system. Connection to drainage system is made through an air gap or other approved methods.

FRESH WATER. Those waters having a specific conductivity less than a solution containing 6,000 ppm of sodium chloride.

HIGH RATE SAND FILTER. A sand filter designed for flows in excess of 5 gpm (0.3 L/s) per square foot.

HOT TUB. See "Swimming pool."

INGROUND POOL. See "Swimming pool."

INLET FITTING. Fitting or fixture through which circulated water enters the pool.

MAIN SUCTION OUTLET. Outlet at the deep portion of the pool through which the main flow of water leaves the pool when being drained or circulated.

MESH SAFETY BARRIER. A combination of materials, including fabric, posts, and other hardware to form a barrier around a swimming pool.

MEDICALLY FRAIL ELDERLY PERSON. Means any person who is at least 65 years of age and has a medical problem that affects balance, vision, or judgment, including but not limited to a heart condition, diabetes, or Alzheimer's disease or any related disorder.

POOL. See "Swimming pool."

POOL DEPTHS. The distance between the floor of the pool and the maximum operating water level.

POOL PERIMETER. A pool perimeter is defined by the limits of the pool deck, its surrounding area including yard area on same property, and any dwelling or nondwelling wall or any combination thereof which completely surrounds the pool.

POOL PLUMBING. All chemical, circulation, filter waste discharge piping, deck drainage and water filling system.

PORTABLE POOL. A prefabricated pool which may be erected at the point of intended use and which may be subsequently disassembled and reerected at a new location. Generally installed on the surface of the ground and without excavation.

PRECOAT. In a diatomite-type filter, the initial coating or filter aid placed on the filter septum at the start of the filter cycle.

RAPID SAND FILTER. A filter designed to be used with sand as the filter medium and for flows not to exceed 5 gpm (0.3 L/s) per square foot.

RECEPTOR. An approved plumbing fixture or device of such material, shape and capacity as to adequately receive the discharge from indirect waste piping, so constructed and located as to be readily cleaned.

RESIDENTIAL. Situated on the premises of a detached one- or two-family dwelling or a one-family townhouse not more than three stories high.

RETURN PIPING. That portion of the circulation piping which extends from the outlet side of the filters to the pool.

SALINE WATER. Those waters having a specific conductivity in excess of a solution containing 6,000 ppm of sodium chloride.

SEPARATION TANK. A device used to clarify filter rinse or waste water; sometimes called a "reclamation tank."

SKIM FILTER. A surface skimmer combined with a vacuum diatomite filter.

SPA, NONPORTABLE. See "Swimming pool."

SPA, PORTABLE. Nonpermanent structure intended for recreational bathing, in which all controls and water heating and water circulating equipment are an integral part of the product and which is cord-connected and not permanently electrically wired.

SUCTION PIPING. That portion of the circulation piping located between the pool structure and the inlet side of the pump and usually includes main outlet piping, skimmer piping, vacuum piping and surge tank piping.

SURFACE SKIMMER. A device generally located in the pool wall which skims the pool surface by drawing pool water over a self-adjusting weir.

SWIMMING POOL, PRIVATE. Any structure, located in a residential area, that is intended for swimming or recreational bathing and contains water over 24 inches (610 mm) deep including but not limited to inground, above-

ground, and onground swimming pools, hot tubs, and nonportable spas.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained within a structure and surrounded on all four sides by walls of said structure.

SWIMMING POOL, OUTDOOR. Any swimming pool which is not an indoor pool.

SWIMMING POOL, PUBLIC. A watertight structure of concrete, masonry, fiberglass, stainless steel or plastic which is located either indoors or outdoors, used for bathing or swimming by humans, and filled with a filtered and disinfected water supply, together with buildings, appurtenances and equipment used in connection therewith. A public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose pool or water recreation attraction, to which admission may be gained with or without payment of a fee and includes, pools operated by or serving camps, churches, cities, counties, day care centers, group home facilities for eight or more clients, health spas, institutions, parks, state agencies, schools, subdivisions; or the cooperative living-type projects of five or more living units, such as apartments, boarding houses, hotels, mobile home parks, motels, recreational vehicle parks and townhouses.

SWIMMING POOL, RESIDENTIAL. See "Swimming pool, private."

TURNOVER TIME. The time in hours required for the circulation system to filter and recirculate a volume of water equal to the pool volume.

VACUUM FITTING. A fitting in the pool which is used as a convenient outlet for connecting the underwater suction cleaning equipment.

VACUUM PIPING. The piping from the suction side of a pump connected to a vacuum fitting located at the pool and below the water level.

WASTE PIPING. See "Filter waste discharge piping."

WIDTH AND/OR LENGTH. Actual water dimension taken from wall to wall at the maximum operating water level.

YOUNG CHILD. Any person under the age of 6 years.

454.2.3 Mechanical requirements. Unless otherwise specified in this code, all piping, equipment and materials used in the process piping system of swimming pools that are built in place shall conform to the *Florida Building Code, Plumbing.*

454.2.4 Approvals.

454.2.4.1 Compliance. All materials, piping, valves, equipment or appliances entering into the construction of swimming pools or portions thereof shall be of a type complying with this code or of a type recommended and approved by a nationally recognized testing agency or conforming to other recognized standards acceptable to the administrative authority.

454.2.4.2 Items not covered. For any items not specifically covered in these requirements, the administrative authority is hereby authorized to require that all equipment, materials, methods of construction and design features shall be proven to function adequately, effectively and without excessive maintenance and operational difficulties.

454.2.4.2.1 Flood hazard areas. Private swimming pools installed in flood hazard areas established in Section 1612.3 shall comply with Section 1612.

454.2.4.3 Applicant responsibility. It shall be the responsibility of the applicant to provide such data, tests or other adequate proof that the device, material or product will satisfactorily perform the function for which it is intended, before such item shall be approved or accepted for tests.

454.2.5 Alternate materials and methods of construction.

454.2.5.1 Approval and authorization. The provisions of this code are not intended to prevent the use of any alternate material, method of construction, appliance or equipment, provided any such alternate has been first approved and its use authorized by the administrative authority.

454.2.5.2 Required tests. When there is insufficient evidence to substantiate claims for alternates, the administrative authority may require tests, as proof of compliance, to be made by an approved agency at the expense of the applicant.

454.2.6 Private swimming pools.

454.2.6.1 Conformance standard. Design, construction and workmanship shall be in conformity with the requirements of ANSI/NSPI 3, ANSI/APSP/ICC 4, ANSI/APSP/ICC 5, ANSI/APSP/ICC 6, and ANSI/APSP 7.

454.2.6.2 Required equipment. Every swimming pool shall be equipped complete with approved mechanical equipment consisting of filter, pump, piping valves and component parts.

Exception: Pools with a supply of fresh water equivalent to the volume of the pool in the specified turnover time will be allowed.

454.2.6.3 Water velocity. Pool piping shall be designed so the water velocity will not exceed 10 feet per second (mm/s) for pressure piping and 8 feet per second (mm/s) for suction piping, except that the water velocity shall not exceed 8 feet per second (3048 mm/s) in copper tubing. Main suction outlet velocity must comply with ANSI/APSP 7.

Exception: Jet inlet fittings shall not be deemed subject to this requirement.

454.2.6.4 Piping to heater. Water flow through the heater, any bypass plumbing installed, any backsiphoning protection, and the use of heat sinks shall be

done in accordance with the manufacturer's recommendations.

454.2.6.5 Piping installation. All piping materials shall be installed in strict accordance with the manufacturer's installation standards.

Exception: Primer and glue on exposed above-ground piping not required to be colored.

454.2.6.6 Entrapment protection for suction outlets shall be installed in accordance with the requirements of ANSI/APSP 7.

454.2.7 Pumps.

454.2.7.1 Strainer. Pool circulating pumps shall be equipped on the inlet side with an approved-type hair and lint strainer when used with a pressure filter.

454.2.7.2 Installation. Pumps shall be installed in accordance with manufacturer recommendations.

454.2.7.3 Capacity. Pumps shall have design capacity at the following heads.

1. Pressure diatomaceous earth–At least 60 feet (18 288 mm).
2. Vacuum D.E.–20-inch (508 mm) vacuum on the suction side and 40-feet (1219 mm) total head.
3. Rapid sand–At least 45 feet (13 716 mm).
4. High rate sand–At least 60 feet (18 288 mm).

454.2.7.4 Materials. Pump impellers, shafts, wear rings and other working parts shall be of corrosion-resistant materials.

454.2.8 Valves.

454.2.8.1 General. Valves shall be made of materials that are approved in the *Florida Building Code, Plumbing*. Valves located under concrete slabs shall be set in a pit having a least dimension of five pipe diameters with a minimum of at least 10 inches (254 mm) and fitted with a suitable cover. All valves shall be located where they will be readily accessible for maintenance and removal.

454.2.8.2 Full-way (gate) valves. Full-way valves shall be installed to insure proper functioning of the filtration and piping system. When the pump is located below the overflow rim of the pool, a valve shall be installed on the discharge outlet and the suction line.

454.2.8.3 Check valves. Where check valves are installed they shall be of the swing, spring or vertical check patterns.

454.2.8.4 Combination valves. Combination valves shall be installed in accordance with the manufacturer's installation instructions.

454.2.9 Water supply. Unless an approved type of filling system is installed, any water supply which in the judgment of the administrative authority may be used to fill the pool, shall be equipped with backflow protection. No over the rim fill spout shall be accepted unless located under a diving board, or properly guarded.

454.2.10 Waste water disposal.

454.2.10.1 Connection limitations. Direct or indirect connections shall not be made between any storm drain, sewer, drainage system, seepage pit underground leaching pit, or subsoil drainage line, and any line connected to a swimming pool unless approved by the administrative authority.

454.2.10.2 Disposal through public sewer. When the waste water from a swimming pool is to be disposed of through a public sewer, a 3-inch (76 mm) P-trap shall be installed on the lower terminus of the building drain and the tall piece from the trap shall extend a minimum of 3 inches (76 mm) above finished grade and below finished floor grade. This trap need not be vented. The connection between the filter waste discharge piping and the P-trap shall be made by means of an indirect connection.

454.2.10.3 Deviations. Plans and specifications for any deviation from the above manner of installation shall first be approved by the administrative authority before any portion of any such system is installed. When waste water disposal is to seepage pit installation, it shall be installed in accordance with the approval granted by the administrative authority.

454.2.11 Separation tank. A separation tank of an approved type may be used in lieu of the aforementioned means of waste water disposal when connected as a reclamation system.

454.2.12 Tests.

454.2.12.1 Pressure test. All pool piping shall be tested and proved tight to the satisfaction of the administrative authority, under a static water or air pressure test of not less than 35 psi (241 kPa) for 15 minutes.

Exception: Circulating pumps need not be tested as required in this section.

454.2.12.2 Drain and waste piping. All drain and waste piping shall be tested by filling with water to the point of overflow and all joints shall be tight.

454.2.13 Drain piping.

454.2.13.1 Slope to discharge. Drain piping serving gravity overflow gutter drains and deck drains shall be installed to provide continuous grade to point of discharge.

454.2.13.2 Joints and connections. Joints and connections shall be made as required by the *Florida Building Code, Plumbing.*

454.2.14 Water heating equipment.

454.2.14.1 Labels. Swimming pool water heating equipment shall conform to the design, construction and installation requirements in accordance with accepted engineering practices and shall bear the label of a recognized testing agency, and shall include a consideration of combustion air, venting and gas supply requirements for water heaters.

454.2.14.2 Water retention. If a heater is not equipped or designed for an approved permanent bypass or antisiphon device, an approved permanent bypass or antisi-

phon device shall be installed to provide a positive means of retaining water in the heater when the pump is not in operation.

454.2.14.3 Pit drainage. When the heater is installed in a pit, the pit shall be provided with approved drainage facilities.

454.2.14.4 Connections. All water heating equipment shall be installed with flanges or union connection adjacent to the heater.

454.2.14.5 Relief valve. When water heating equipment which is installed in a closed system has a valve between the appliance and the pool, a pressure relief valve shall be installed on the discharge side of the water heating equipment. For units up to and including 200,000 Btu/hour input, the relief valve shall be rated by the American Gas Association.

454.2.15 Gas piping. Gas piping shall comply with the *Florida Building Code, Fuel Gas*.

454.2.16 Electrical. Electrical wiring and equipment shall comply with Chapter 27 of this code

454.2.17 Residential swimming barrier requirement. Residential swimming pools shall comply with Sections 454.2.17.1 through 454.2.17.3.

Exception: A swimming pool with an approved safety pool cover complying with ASTM F 1346.

454.2.17.1 Outdoor swimming pools. Outdoor swimming pools shall be provided with a barrier complying with Sections 454.2.17.1.1 through 454.2.17.1.14.

454.2.17.1.1 The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade the barrier may be at ground level or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

454.2.17.1.2 The barrier may not have any gaps, openings, indentations, protrusions, or structural components that could allow a young child to crawl under, squeeze through, or climb over the barrier as herein described below. One end of a removable child barrier shall not be removable without the aid of tools. Openings in any barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

454.2.17.1.3 Solid barriers which do not have openings shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

454.2.17.1.4 Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed $1^3/_4$ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed $1^3/_4$ inches (44 mm) in width.

454.2.17.1.5 Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed $1^3/_4$ inches (44 mm) in width.

454.2.17.1.6 Maximum mesh size for chain link fences shall be a $2^1/_4$-inch (57 mm) square unless the fence is provided with slats fastened at the top or bottom which reduce the openings to no more than $1^3/_4$ inches (44 mm).

454.2.17.1.7 Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than $1^3/_4$ inches (44 mm).

454.2.17.1.8 Access gates, when provided, shall be self-closing and shall comply with the requirements of Sections 454.2.17.1.1 through 454.2.17.1.7 and shall be equipped with a self-latching locking device located on the pool side of the gate. Where the device release is located no less than 54 inches (1372 mm) from the bottom of the gate, the device release mechanism may be located on either side of the gate and so placed that it cannot be reached by a young child over the top or through any opening or gap from the outside. Gates that provide access to the swimming pool must open outward away from the pool. The gates and barrier shall have no opening greater than $^1/_2$ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

454.2.17.1.9 Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. All doors and windows providing direct access from the home to the pool shall be equipped with an exit alarm complying with UL 2017 that has a minimum sound pressure rating of 85 dBA at 10 feet (3048 mm). Any deactivation switch shall be located at least 54 inches (1372 mm) above the threshold of the access. Separate alarms are not required for each door or window if sensors wired to a central alarm sound when contact is broken at any opening.

   Exceptions:

   a. Screened or protected windows having a bottom sill height of 48 inches (1219 mm) or more measured from the

interior finished floor at the pool access level.

b. Windows facing the pool on floor above the first story.

c. Screened or protected pass-through kitchen windows 42 inches (1067 mm) or higher with a counter beneath.

2. All doors providing direct access from the home to the pool must be equipped with a self-closing, self-latching device with positive mechanical latching/locking installed a minimum of 54 inches (1372 mm) above the threshold, which is approved by the authority having jurisdiction**.**

454.2.17.1.10 Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier which meets the requirements of Sections 454.2.17.1.1 through 454.2.17.1.9 and Sections 454.2.17.1.12 through 454.2.17.1.14. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

454.2.17.1.11 Standard screen enclosures which meet the requirements of Section 454.2.17 may be utilized as part of or all of the "barrier" and shall be considered a "nondwelling" wall. Removable child barriers shall have one end of the barrier nonremovable without the aid of tools.

454.2.17.1.12 The barrier must be placed around the perimeter of the pool and must be separate from any fence, wall, or other enclosure surrounding the yard unless the fence, wall, or other enclosure or portion thereof is situated on the perimeter of the pool, is being used as part of the barrier, and meets the barrier requirements of this section.

454.2.17.1.13 Removable child barriers must be placed sufficiently away from the water's edge to prevent a young child or medically frail elderly person who may manage to penetrate the barrier from immediately falling into the water. Sufficiently away from the water's edge shall mean no less than 20 inches (508 mm) from the barrier to the water's edge. Dwelling or nondwelling walls including screen enclosures, when used as part or all of the barrier and meeting the other barrier requirements, may be as close to the water's edge as permitted by this code.

424.2.17.1.14 A wall of a dwelling may serve as part of the barrier if it does not contain any door or window that opens to provide direct access from the home to the swimming pool.

454.2.17.1.15 A mesh safety barrier meeting the requirements of Section 454.2.17 and the following minimum requirements shall be considered a barrier as defined in this section:

1. Individual component vertical support posts shall be capable of resisting a minimum of 52 pounds (24 kg) of horizontal force prior to breakage when measured at a 36-inch (914 mm) height above grade. Vertical posts of the child safety barrier shall extend a minimum of 3 inches (76 mm) below deck level and shall be spaced no greater than 36 inches (914 mm) apart.

2. The mesh utilized in the barrier shall have a minimum tensile strength according to ASTM D 5034 of 100 pounds per foot (kg/m^2), and a minimum ball burst strength according to ASTM D 3787 of 150 pounds per foot (kg/m^2). The mesh shall not be capable of deformation such that a $^1/_4$-inch (6.4 mm) round object could not pass through the mesh. The mesh shall receive a descriptive performance rating of no less than "trace discoloration" or "slight discoloration" when tested according to ASTM G 53, Weatherability, 1,200 hours.

3. When using a molding strip to attach the mesh to the vertical posts, this strip shall contain, at a minimum, #8 by $^1/_2$-inch (12.7 mm) screws with a minimum of two screws at the top and two at the bottom with the remaining screws spaced a maximum of 6 inches (152 mm) apart on center.

4. Patio deck sleeves (vertical post receptacles) placed inside the patio surface shall be of a nonconductive material.

5. A latching device shall attach each barrier section at a height devices that include, but are not limited to, devices that provide the security equal to or greater than that of a hook-and-eye-type latch incorporating a spring actuated retaining lever (commonly referred to as a safety gate hook).

6. The bottom of the mesh safety barrier shall not be more than 1 inch (25 mm) above the deck or installed surface (grade).

454.2.17.1.16 Adjacent waterways. Permanent natural or permanent man-made features such as bulkheads, canals, lakes, navigable waterways, etc., adjacent to a public or private swimming pool or spa may be permitted as a barrier when approved by the authority having jurisdiction. When evaluating such barrier features, the authority may perform on-site inspections and review evidence such as surveys, aerial photographs, water management agency standards and specifications, and any other similar documentation to verify, at a minimum, the following:

1. The barrier feature is not subject to natural changes, deviations, or alterations and is capable of providing an equivalent level of protection as that provided by the code.
2. The barrier feature clearly impedes, prohibits or restricts access to the swimming pool or spa.

454.2.17.2 Indoor swimming pools. All walls surrounding indoor swimming pools shall comply with Section 454.2.17.1.9.

454.2.17.3 Prohibited locations. A barrier may not be located in a way that allows any permanent structure, equipment, or window that opens to provide access from the home to the swimming pool.

454.2.18 Ladders and steps. All pools, whether public or private, shall be provided with a ladder or steps in the shallow end where water depth exceeds 24 inches (610 mm). In private pools where water depth exceeds 5 feet (1524 mm) there shall be ladders, stairs or underwater benches/swim-outs in the deep end. Where manufactured diving equipment is to be used, benches or swim-outs shall be recessed or located in a corner.

Exception: In private pools having more than one shallow end, only one set of steps are required. A bench, swimout or ladder may be used at all additional shallow ends in lieu of an additional set of steps.

454.2.19 Final inspection. Final electrical, and barrier code, inspection shall be completed prior to filling the pool with water.

Exception: Vinyl liner and fiberglass pools are required to be filled with water upon installation.

454.2.20 Filters. Components shall have sufficient capacity to provide a complete turnover of pool water in 12 hours or less.

454.2.20.1 Sand filters.

454.2.20.1.1 Approved types. Rapid sand filters [flow up to 5 gpm per square foot (0.3L/s)] shall be constructed in accordance with approved standards. Where high rate sand filters [flow in excess of 5 gpm per square foot (0.3 L/s)] are used, they shall be of an approved type. The circulation system and backwash piping shall be adequate for proper backwashing of said filter and shall provide backwash flow rates of at least 12 gpm per square foot (0.8 L/s) or rapid sand filters or 15 gpm per square foot (0.9 L/s) for high rate sand filters.

454.2.20.1.2 Instructions. Every filter system shall be provided with written operating instructions.

454.2.20.1.3 Filter system equipment. On pressure-type filters, a means shall be provided to permit the release of internal pressure. A filter incorporating an automatic internal air release as its principal means of air release shall have lids which provide a slow and safe release of pressure as part of its design. A separation tank used in conjunction with a filter tank shall have as part of its design a manual means of air release or a lid which provides a slow and safe release of pressure as it is opened.

454.2.20.2 Diatomite-type filters.

454.2.20.2.1 Design. Diatomite-type filters shall be designed for operation under either pressure or vacuum. The design capacity for both pressure and vacuum filters shall not exceed 2 gpm per square foot (0.13 L/s) of effective filter area.

454.2.20.2.2 Filter aid. Provision shall be made to introduce filter aid into the filter in such a way as to evenly precoat the filter septum.

454.2.21 Pool fittings.

454.2.21.1 Approved type. Pool fittings shall be of an approved type and design as to be appropriate for the specific application.

454.2.21.2 Skimmers. Approved surface skimmers are required and shall be installed in strict accordance with the manufacturer's installation instructions. Skimmers shall be installed on the basis of one per 800 square feet (74 m^2) of surface area or fraction thereof, and shall be designed for a flow rate of at least 25 gpm (94 L/m) per skimmer.

454.2.21.3 Main outlet. An approved main outlet, when provided, shall be located on a wall or floor at or near the deepest point in the pool for emptying or circulation, or both, of the water in the pool.

454.2.21.4 Hydrostatic relief device. In areas of anticipated water table an approved hydrostatic relief device shall be installed.

Exception: Plastic liner pools (where there is no structural bottom to the pool).

454.2.21.5 Inlet fittings. Approved manufactured inlet fittings for the return of recirculated pool water shall be provided on the basis of at least one per 300 square feet (28 m^2) of surface area. Such inlet fittings shall be designed and constructed to insure an adequate seal to the pool structure and shall incorporate a convenient means of sealing for pressure testing of the pool circulation piping. Where more than one inlet is required, the shortest distance between any two required inlets shall be at least 10 feet (3048 mm).

454.2.22 Equipment foundations and enclosures. All pool motors and equipment shall be installed in compliance with the manufacturer's recommendations. All heating and electrical equipment, unless approved for outdoor installation, shall be adequately protected against the weather or installed within a building.

454.2.23 Accessibility and clearances. Equipment shall be so installed as to provide ready accessibility for cleaning, operating, maintenance and servicing.

SECTION 455
PUBLIC LODGING ESTABLISHMENTS

455.1 Scope. Public lodging establishments shall comply with the following design and construction standards.

Note: Other administrative and programmatic provisions may apply. See Department of Business and Professional Regulations (DBPR) Rules 61C-1 and 61C-3, *Florida Administrative Code* and Chapter 509, *Florida Statutes*.

455.2 Definitions.

PUBLIC LODGING ESTABLISHMENT. See Section 509.013, *Florida Statutes.*

455.3 General sanitation and safety requirements. The following general requirements and standards shall be met by all public lodging establishments:

455.3.1 Water, plumbing and waste. Except as specifically provided in this code, standards for water, plumbing and waste shall be governed by Chapter 5 of 1999 Food Code and Chapter 509 Part I, *Florida Statutes*. For the purposes of this section, the term "food establishment" as referenced in the Food Code shall apply to all public lodging establishments as defined in Chapter 509, *Florida Statutes.*

455.3.2 Public bathrooms.

455.3.2.1 Each public lodging establishment shall be provided with adequate and conveniently located bathroom facilities for its employees and guests in accordance with provisions of this section and the *Florida Building Code, Plumbing.* Public access to toilet facilities shall not be permitted through food preparation, storage, or ware washing areas. Bathroom fixtures shall be of readily cleanable sanitary design.

455.3.2.2 Public bathrooms shall be completely enclosed and shall have tight-fitting, self-closing doors or have entrances and exits constructed in such a manner as to ensure privacy of occupants. Such doors shall not be left open except during cleaning or maintenance.

455.3.2.3 Resort condominiums, nontransient establishments and resort dwellings are exempt from the provisions of this section.

455.3.3 Vermin control. Effective control measures shall be taken to protect against the entrance into the establishment, and the breeding or presence on the premises of rodents, flies, roaches and other vermin. All buildings shall be effectively rodentproofed. All windows used for ventilation must be screened, except when effective means of vermin control are used. Screening material shall not be less than 16 mesh to the inch or equivalent, tightfitting and free of breaks.

455.3.4 Fire safety. All fire safety, protection and prevention equipment must be installed, approved, maintained and used in accordance with Chapter 509, *Florida Statutes*, Chapter 69A-3 Fire Prevention—General Prevention Code, *Florida Administrative Codes.*

455.3.4.1 Specialized smoke detectors. Specialized smoke detectors for the deaf and hearing-impaired shall be made available upon request by guests in transient public lodging establishments without charge. Failure of the operator to inform any employee charged with registering guests of the location of such detector constitutes failure to make such detectors available.

455.3.5 Electrical wiring. To prevent fire or injury, defective electrical wiring shall be replaced and wiring shall be kept in good repair. Only a wall switch or approved pull cord shall be permitted in bathrooms. Electrical wiring shall be in accordance with the provisions of Chapter 27 of this code.

455.3.6 Heating and ventilation. The heating and ventilation system shall be kept in good repair or be installed to maintain a minimum of 68°F (20°C) throughout the building.

455.3.7 Gas appliances. All appliances, including water heaters using gas, shall be properly vented as required by the *Florida Building Code, Fuel Gas.*

455.4 Sanitation and safety requirements.

455.4.1 Guest bathrooms.

455.4.1.1 Connecting bathrooms shall provide toilets with open-front seats. Guest and private bathrooms shall provide toilets. Guest, private, and connecting bathrooms shall provide lavatories and shower enclosures with hot and cold running water under pressure.

455.4.1.2 Each transient public lodging establishment shall maintain one public bathroom with a minimum of a toilet, lavatory, and shower enclosure for each sex on every floor for every 15 guests rooming on that floor not having access to private or connecting bathrooms.

455.4.2 Ice storage bins. Ice storage bins shall be drained through an air gap in accordance with the provisions of the *Florida Building Code, Plumbing*.

455.4.3 Locks. A locking device shall be provided in accordance with the *Florida Fire Prevention Code*. Public lodging establishments as defined in rule 61C-1.002(4)(a), *Florida Statutes*, shall have at least one approved locking device which does not include a sliding chain or hook-and-eye-type device, on all outside and connecting doors which cannot be opened by a nonmaster guest room key.

SECTION 456
PUBLIC FOOD SERVICE ESTABLISHMENTS

456.1 Scope. Public food service establishments or food establishments shall comply with design and construction standards as described in the Food Code, Chapter 509 Part I or Chapter 500, *Florida Statutes*, as applicable.

Note: Other administrative and programmatic provisions may apply. See Department of Business and Professional Regulation (DBPR) Rule 61C-4, *Florida Administrative Code,* Chapter 500 and Chapter 509, *Florida Statutes.*

456.2 Definitions.

FOOD ESTABLISHMENTS. See Section 500.03, *Florida Statutes*.

PUBLIC FOOD SERVICE ESTABLISHMENTS. See Section 509.013, *Florida Statutes*.

456.3 General sanitation and safety requirements. The following general requirements and standards shall be met by all food service establishments.

456.3.1 Water, plumbing, and waste. Except as specifically provided in this section, standards for water, plumbing and waste shall be governed by Chapter 5, Food Code, herein adopted by reference.

456.3.1.1 Grease interceptors shall be designed and installed in accordance with the *Florida Building Code, Plumbing.*

456.3.2 Public bathrooms.

456.3.2.1 Food service establishment shall be provided with adequate and conveniently located bathroom facilities for its employees and guests in accordance with provisions of the *Florida Building Code, Plumbing*. Public access to toilet facilities shall not be permitted through food preparation, storage, or ware-washing areas. Bathroom fixtures shall be of readily cleanable sanitary design.

456.3.2.2 Public bathrooms shall be completely enclosed and shall have tight-fitting, self closing doors or, in public lodging establishments or bathrooms located outside a public food service, have entrances and exits constructed in such a manner as to ensure privacy of occupants.

456.3.3 Vermin control. Effective control measures shall be taken to protect against the entrance into the establishment, and the breeding or presence on the premises of rodents, flies, roaches and other vermin. All buildings shall be effectively rodentproofed. All windows used for ventilation must be screened, except when effective means of vermin control are used. Screening material shall not be less than 16 mesh to the inch or equivalent, tightfitting and free of breaks.

456.3.4 Fire safety. All fire safety, protection and prevention equipment must be installed, approved, maintained and used in accordance with Chapter 509, *Florida Statutes*, Chapter 69A-55, Uniform Fire Safety Standards for Public Food Service Establishments, FAC, and the *Florida Fire Prevention Code* as adopted by the State Fire Marshal.

456.3.5 Electrical wiring. To prevent fire or injury, defective electrical wiring shall be replaced and wiring shall be kept in good repair. Only a wall switch or approved pull cord shall be permitted in bathrooms. Electrical wiring shall be in accordance with the provisions of Chapter 27 of this code.

456.3.6 Gas appliances.

456.3.6.1 All appliances, including water heaters using gas, shall be properly vented in accordance with the *Florida Building Code, Fuel Gas*. All appliances shall have a nationally recognized testing laboratory seal such as an AGA or UL seal.

456.3.6.2 Heating appliances shall be properly sized in Btu input for room air space. Proper sizing of heating appliances shall be determined in accordance with the provisions of the *Florida Building Code, Fuel Gas*.

456.4 Sanitation and safety requirements.

456.4.1 Bathroom facilities. All bathrooms shall be of easy and convenient access to both patrons and employees and shall be located on the same floor of the premises served. For the purpose of this section, the same floor includes any intermediate levels between the floor and ceiling of any room or space not to exceed a vertical height of 8 feet (2438 mm). Public food service establishments whose occupancy is incidental to another occupancy may utilize public restrooms provided on the same floor. The travel distance may vary where adequate directional signs are provided and the number of fixtures is deemed satisfactory by the applicable plumbing authority. Each public food service establishment shall maintain a minimum of one public bathroom for each sex, properly designated, except as provided herein.

456.4.1.1 Places serving food or drink on a take-out, carry-out or delivery basis only which provide no seating shall be required to provide a minimum of one bathroom accessible to the public.

456.4.1.2 Arcades, malls, or flea markets containing public food service establishments which offer no seating within the public food service establishment may have centrally located bathroom facilities accessible to patrons of the establishments in the arcade, mall, or flea market provided such bathroom facilities are within 300 feet (91 440 mm) of each establishment.

456.4.1.3 Public food service establishments located within theme parks and entertainment complexes may utilize centrally located bathroom facilities accessible to patrons of the establishments in the theme park or entertainment complex provided such bathroom facilities are reasonably accessible. For purposes of this section, reasonably accessible means within 300 feet (91 440 mm) of each establishment.

456.4.1.4 Public food service establishments which seat 10 persons or less shall be required to provide a minimum of one bathroom accessible to the public.

456.4.1.5 Public food service establishments located within a public lodging establishment shall be permitted to utilize public bathrooms located within the public lodging establishment, provided such bathrooms are available for use by the patrons of the public food service establishment during all hours of operation, are within 300 feet (91 440 mm) of the public food service establishment, and are located on the same floor as the public food service establishment. For purposes of this section, the same floor includes any intermediate levels between the floor and ceiling of any room or space without restriction as to vertical height.

SECTION 457
MENTAL HEALTH PROGRAMS

457.1 Public mental health crisis stabilization units and short-term residential treatment programs.

457.1.1 Scope. Crisis stabilization units and short-term residential treatment units shall comply with the design and construction standards in this section.

Note: Other administrative and programmatic provisions may apply. See Department of Children and Family Services (DCFS) Rule 65E-12, *Florida Administrative Code*, and Chapter 394, *Florida Statutes*.

457.1.2 Definitions.

CRISIS STABILIZATION UNIT (CSU). A state-supported mental health service or program and is a short-term alternative to inpatient psychiatric hospitalization and an integrated part of a designated public receiving facility under the authority of Chapter 394, *Florida Statutes*. A CSU provides brief intensive services for individuals who are presented as acutely mentally ill on a 24-hour-a-day, seven-day-a-week basis, under the licensing authority of the department of Children and Families and the Agency for Health Care Administration. The purpose of a CSU is emergency psychiatric reception, psychiatric examination, to stabilize and redirect people to the most appropriate and least restrictive treatment settings consistent with their needs.

SHORT-TERM RESIDENTIAL TREATMENT PROGRAM (SRT). A state-supported acute care 24-hour-a-day, seven-day-a-week residential alternative service, generally of 90 days or less, and which is an integrated part of a designated public receiving facility and receives state mental health funds under the authority of chapter 394, *Florida Statutes*. The purpose of an SRT is to provide less acute intensive short-term treatment to individuals who have previously been admitted to either a hospital or CSU and have been transferred to the SRT as being temporarily in need of a 24-hour-a-day structured therapeutic setting in a less restrictive, but longer-stay alternative to hospitalization.

457.1.3 Facility standards for facilities licensed prior to or on July 14, 1993.

457.1.3.1 Building construction requirements.

457.1.3.1.1 Construction, additions, refurbishing, renovations, and alterations to existing facilities shall comply with the following codes and standards:

1. The building codes described in the *Florida Building Code*;
2. The fire codes contained in Chapter 69A-44, "Minimum Fire Safety Standards for Residential Alcohol and Drug Abuse Treatment and Prevention Programs, Mental Health Residential Treatment Facilities and Crisis Stabilization Units," *Florida Administrative Code*, as described in the NFPA 101, Chapters 18 and 19, Special Definitions, as adopted by the *Florida Fire Prevention Code*, as applicable to limited health care facilities, which is included by reference in Chapter 59A-3, *Florida Administrative Code*.

457.1.3.2 Minimum physical plant requirements. Each CSU and SRT shall conform to the requirements of Sections 457.1.3.2.1 through 457.1.3.2.12.

457.1.3.2.1 In multiple occupancy bedrooms or sleeping areas there shall be a minimum of 60 square feet (6 m^2) per bed and no less than a 30-inch (762 mm) separation between beds. Bedrooms shall be limited to a maximum of four occupants.

457.1.3.2.2 The minimum size of a single occupant bedroom shall be 55 square feet (5 m^2).

457.1.3.2.3 Each CSU shall have at least one seclusion room and another room which may be used as a seclusion room. Each SRT shall have a seclusion room. Seclusion rooms shall be a minimum of 55 square feet (5 m^2). If a restraint bed is utilized, it shall have access around it and be bolted to the floor. Seclusion rooms shall minimally include a mattress. Ceilings shall be solid, and all lighting fixtures shall be tamperproof, and power receptacles are not permitted in the room.

457.1.3.2.4 The facility shall have at least one water fountain readily accessible for the use of persons receiving services.

457.1.3.2.5 The facility shall have a minimum ratio of one shower for each eight individuals and one toilet and lavatory for each six individuals. Individual shower stalls and dressing areas shall be provided. The use of gang showers is prohibited. Access to a bathroom shall not be through another person's room.

457.1.3.2.6 The facility shall have a locked area for personal possessions being held for safekeeping. Individual shelves or other similar dividers shall be provided in the locked area for the storage of personal possessions. The facility shall have written policies and procedures to ensure reasonable access to personal possessions.

457.1.3.2.7 Each facility shall have a fenced outside recreation area with a minimum fence height of no less than 6 feet (1829 mm) suitable for impeding elopements.

457.1.3.2.8 External windows shall have security screens or equivalent protection.

457.1.3.2.9 The facility shall provide an appropriate separate nontreatment area to serve as a general reception area with accommodations for such activities as receiving visitors. This reception area shall be separated from the treatment area by a locked doorway.

457.1.3.2.10 When a CSU is collocated with another program, as provided for in Section 65E-12.106(23), *Florida Administrative Code*, the following minimum facility requirements shall be met.

Collocation means the operation of CSU and SRT, or CSU and substance abuse detoxification services from a common nurses' station without treatment system integration. It may result in the administration of those services by the same organization and the sharing of common services, such as

housekeeping, maintenance and professional services.

1. A CSU shall be separated and secured by locked doors, used by persons receiving services, from the SRT and detoxification units.
2. Whenever a CSU is collocated with an SRT or substance abuse detoxification unit there shall be no compromise in CSU standards. In all instances, whenever there is a conflict between CSU rules and SRT, alcohol or drug abuse rules, the more restrictive rules shall apply.

457.1.3.2.11 All CSUs shall be locked facilities and, to the maximum extent practical, provide a locked perimeter around a living unit and fenced exercise area within which individuals can reside 24 hours-a-day in an environment designed to minimize potential for injury. Where this is not possible, operational compensation shall be made as follows:

1. Each person receiving services shall be provided a minimum of 175 square feet (16 m^2) of usable client space within the CSU. Useable client space is the sum, in gross square feet, of all rooms, interior wall to interior wall, that are part of a CSU and SRT facility. mechanical and electrical rooms, administrative and staff offices, screening areas, nurses' stations, visitor and reception areas, crawl space and attic space are excluded. Bedrooms shall be spacious and attractive, and activity rooms or space shall be provided.
2. CSU facilities shall be locked to provide reasonable control over access to and egress from the unit, recreational area, and emergency reception areas. When individuals are moved to other areas, the pathways shall also be locked or have adequate control provisions to prevent elopement. Such controlled passageways shall include access to the emergency reception area, unit proper, off unit doorways, and recreational areas.
3. All unit door locks shall employ a common key for rapid access in emergency situations with quick releasing or single-turn mechanisms.

457.1.3.2.12 Food preparation areas for thirteen or more persons shall comply with the provisions of Chapter 64E-11, *Florida Administrative Code*, "Food Hygiene."

457.1.3.3 Health and sanitation.

457.1.3.3.1 Appropriate health and sanitation inspections shall be obtained before occupying any new physical facility or addition. A report of the most recent inspections must be on file and accessible to authorized individuals.

457.1.3.3.2 Hot and cold running water under pressure shall be readily available in all washing, bathing and food preparation areas. Hot water in areas used by persons being served shall be at least 100°F (38°C) but not exceed 120°F (49°C).

457.1.3.4 Seclusion room. Each CSU shall have at least one seclusion room located in the CSU facility. Additional space shall be available that can be used either as a seclusion room or bedroom, as need dictates. Policies and procedures shall be developed on handling emergency situations that require seclusion. Each SRT shall have a seclusion room.

457.1.4 Minimum construction standards for CSU and SRT facilities initially licensed after July 14, 1993.

457.1.4.1 Construction requirements.

457.1.4.1.1 New facility construction. New facility construction and additions, refurbishing, renovations and alterations to existing facilities shall comply with the following codes and standards:

1. The building codes described in the *Florida Building Code*.
2. The fire codes contained in Chapter 69A-44, "Minimum Fire Safety Standards for Residential Alcohol and Drug Abuse Treatment and Prevention Programs, Mental Health Residential Treatment Facilities and Crisis Stabilization Units," *Florida Administrative Code*, as described in the NFPA 101, Chapters 12 and 13, "Special Definitions," as adopted by the *Florida Fire Prevention Code*, as applicable to limited health care facilities, which is included by reference in Chapter 59A-3, *Florida Administrative Code*.
3. The accessibility requirements of the *Florida Building Code, Accessibility.*

457.1.4.1.2 Plumbing. All plumbing shall comply with the requirements of the *Florida Building Code, Plumbing.*

457.1.4.1.3 Inspections and certificate of occupancy. Appropriate health and sanitation inspections and a certificate of occupancy shall be obtained before occupying any new facility or addition. A report of the most recent inspections must be on file and accessible to authorized individuals.

457.1.4.1.4 Sprinklers. No unsprinklered building classification as defined in this code, is allowed. All facilities shall be protected throughout by an approved automatic sprinkler and smoke detection system to include a smoke detector in every bedroom. Provision shall be made for automatic emergency forces notification.

457.1.4.1.5 Surge protection. Surge protection in compliance with the *National Electric Code*, Article 280, as incorporated by reference in Chapter 27 of this code shall be installed to protect each service entrance equipment and have integral visual indication of surge protector failure. Additional surge protection shall be provided for all low-voltage and

power connections to all electronic equipment and conductors entering or exiting the building and other life safety systems equipment such as fire alarm, telephone, and nurse call. Protection shall be in accordance with appropriate IEEE standards for the type of equipment being protected.

457.1.4.2 Overall functional design.

457.1.4.2.1 The CSU or SRT shall be designed to provide a locked perimeter around a living unit and fenced exercise area within which individuals can reside 24 hours a day in an environment designed to minimize potential for injury. The CSU or SRT structure shall be single-story ground level facility. These facilities shall have separate off-unit reception and administration areas which may also be locked. Service corridors and pathways to other non-unit activities shall not be through the locked CSU or SRT unit.

457.1.4.2.2 The walls throughout all client areas of the CSU or SRT shall either be concrete block or a double layer of gypsum wallboard or $^{3}/_{4}$-inch (19 mm) thick plaster on metal lath to minimize maintenance of the facility. The general architecture of the unit shall provide for optimal line-of-sight observation from the nurses' station throughout the unit, minimizing hidden spots and blind corners.

457.1.4.2.3 The CSU or SRT shall be designed to create a pleasant functional therapeutic environment throughout, by the use of sunlight, colors, designs, textures, and furnishings. The design shall achieve a secure unit which looks more residential than institutional in its construction and furnishings, while incorporating substantial safety considerations throughout.

457.1.4.2.4 The CSU or SRT shall be designed in order that the general unit be divided into a close observation area and a general observation area based upon the need for frequent physical proximity, singular observation of individuals, and lowered stimulation levels. These areas do not need physical separation; for example, they may be the left and right sides of the unit.

457.1.4.2.4.1 Close observation area. This area shall include persons brought onto the CSU or SRT needing initial observation or restraints, individualized observation, and lowered stimulation levels, all of which require the frequent physical proximity of nurses. This area shall be directly adjacent to the primary unit doorway and nurses' station. The immediately adjacent rooms shall be used for single occupancy and restraint or seclusion. These rooms shall be remote from routine high activity areas and corridors.

457.1.4.2.4.2 General observation area. This shall include areas where persons routinely congregate or walk through such as multioccupant bedrooms, activity rooms, smoking areas, dining room and routine traffic corridors, or pathways. The dining and activity areas shall be directly observable, or under constant staff supervision, but may be a greater distance from the nurses' station.

457.1.4.2.5 All areas of CSUs and SRTs shall be ventilated by central, ducted supply and return forced air systems. Toilets, bathrooms and soiled function rooms shall be mechanically exhausted to the outside. Ventilation units shall distribute tempered heated or cooled air to all spaces and shall supply outside air in the quantity of either the sum of all exhausts or 20 cfm (.009 m^3/s) per person whichever is greater. The quality of all exhausts must match the intake volume of all outside air. Supply, exhaust, and return fans shall run continuously while the building is occupied. Areas in which smoking is permitted shall be well vented by at least 35 cfm (.02 m^3/s) per person to the outside in order to minimize smoke diffusion throughout the unit.

457.1.4.2.6 All doors opening directly onto the unit from nonclient rooms or office areas shall be equipped with locksets which are key released to leave the client area and permit unobstructed return to the client area. Door closures are required to deny persons receiving services accidental unsupervised access to the contents of staff offices, janitorial closets, and mechanical areas.

457.1.4.2.7 Corridors shall ensure maximum clear distances by recessing water fountains and fire extinguishers, or placing them in alcoves. Corridors in client areas must be at least a 6 foot (1829 mm) clear width; nonclient areas must be at least 44 inches (1118 mm) minimum clear width. Corridor ceilings shall be a minimum height of 7 feet 6 inches (2284 mm).

457.1.4.2.8 Hot and cold running water under pressure shall be readily available in all washing, bathing, food preparation, and food handling areas. Hot water in client areas shall be at least 100°F (38°C), but not exceed 120°F (49°C).

457.1.4.2.9 The minimum size for doors shall be no less than 3 feet (914 mm) wide and 6 feet 8 inches high (2032 mm). Areas accessible to persons with physical disabilities shall comply with applicable codes and standards.

457.1.4.2.10 Since glass fragments are a safety hazard throughout the unit, the use of glass shall be minimal.

457.1.4.2.11 All television sets must be securely fastened.

457.1.4.2.12 Door closures shall not be utilized in unobserved client areas.

457.1.4.2.13 All CSUs and SRTs equipped with electronic locks on internal doors or egress doors shall ensure that such locks have manual common key mechanical override that will operate in the event of a power failure or fire. Egress pathways and

doors shall be locked as provided for in the *Life Safety Code*, NFPA 101, Chapter 12, as incorporated by reference in Chapter 59A-3, *Florida Administrative Code* as adopted by the *Florida Fire Prevention Code*.

457.1.4.2.14 CSUs and SRTs with electronic or magnetic door locks or other fundamental operational components which are electric shall have either: a battery back-up system rated for facility emergency power draw and capable of sustaining door locks and emergency operations for a minimum period of 6 hours; or an emergency generator with transfer switch with a battery pack back-up system capable of operating for 2 hours at facility emergency power draw level.

457.1.4.2.15 The use of door vision panels and windows shall minimize the opportunity for isolation of staff or persons served in unobserved areas. This does not include privacy provisions such as bathrooms and bedrooms.

457.1.4.3 Uniform specifications.

457.1.4.3.1 The design shall ensure that each person receiving services in a CSU or SRT is provided a minimum of 175 square feet (16 m^2) of usable client space.

457.1.4.3.2 Tamper-resistant screws shall be used to protect electrical switches and outlets throughout the facility in all areas accessible to persons receiving services. Lighting fixtures shall be tamperproof type throughout the facility in all areas accessible to persons receiving services.

457.1.4.3.3 All electrical switches and outlets in wet areas shall be ground-fault protected with a remote breaker switch. Tamperproof, safety-type duplex outlets shall be used in all areas accessible to persons receiving services.

457.1.4.3.4 Air ducts shall be covered with a perforated-type metal grille not residential louvered grilles, throughout the unit in all areas accessible to persons receiving services.

457.1.4.3.5 All hose bibbs shall be equipped with a vacuum breaker device.

457.1.4.3.6 The unit shall have a minimum of one drinking fountain.

457.1.4.3.7 Ceiling height in bedrooms, activity areas, and bathrooms shall be at least 9 feet (2743 mm).

457.1.4.3.8 The operation of all perimeter locks shall ensure reasonable control over both access and egress.

457.1.4.4 Administration and public areas.

457.1.4.4.1 Waiting rooms shall have an adjacent restroom which is designed to accommodate persons with physical disabilities in accordance with the *Florida Building Code, Accessibility*.

457.1.4.4.2 The entrance shall be grade level, sheltered from inclement weather and accessible to persons with physical disabilities in accordance with the *Florida Building Code, Accessibility*.

457.1.4.4.3 The lobby shall include a drinking fountain and space for clerical personnel. Private interview space for emergency screening of voluntary persons shall be adjacent to the lobby.

457.1.4.5 Emergency screening area for CSUs.

457.1.4.5.1 This shall be a locked area in which law enforcement admissions may be received. This area shall not be wholly isolated visually from the CSU to provide safety for emergency screening personnel who may become isolated in this area. This area shall provide for medical clearance, emergency screening, bathroom facilities, and other activities which may be necessary.

457.1.4.5.2 A separate entrance shall be provided directly to emergency screening areas and examination rooms for law enforcement personnel. It shall have a driveway where a law enforcement vehicle can pull immediately adjacent to the building before transferring a person through the separate entrance to the emergency screening area. The law enforcement entrance shall also have a lock box where the law enforcement officer can lock his weapons during such time as he or she is in the facility.

457.1.4.5.3 A separate bathroom with supervised shower area shall be located so that all persons being admitted may be showered before being admitted to the residential section of the unit.

457.1.4.6 Seclusion rooms.

457.1.4.6.1 Each CSU shall have a minimum of two seclusion rooms that shall share a common vestibule with a bathroom off the vestibule area. Each SRT shall have at least one seclusion room. Seclusion rooms shall be free of sharp edges or corners and be strongly constructed to withstand repeated physical assaults. Walls shall be either concrete block or double layered to provide resistance and be smooth. The ceilings shall be 9 feet (2743 mm) in clear height, hard-coated, and lighting fixtures recessed and tamperproof. Lighting fixtures shall be nonbreakable, preferably Lexan, and shall be installed with tamperproof screws, as shall any other items in the seclusion rooms. The seclusion room door shall be heavy wood or metal at least 36 inches (914 mm) in width and shall open outward. The door frame shall be heavy steel and shall be thoroughly bolted into the wall and cemented in.

457.1.4.6.2 At least one seclusion room in the CSU shall have a sturdily constructed bed, without sharp edges and bolted to the floor. A bed in the SRT seclusion room is optional; however, if present, the bed shall meet the same requirements as specified for the CSU. Its placement in the room shall provide adequate space for staff to apply restraints and not

assist individuals in tampering with the lights, smoke detectors, cameras, or other items that may be in the ceiling of the room. There shall be a rheostat control mechanism outside the room to adjust the illumination of the light in the seclusion room.

457.1.4.6.3 The floor and walls, up to a height of 3 feet (914 mm), shall be coated with an impermeable finish to resist penetration of body fluids. One seclusion room shall have a floor drain. A hose bibb shall be in a readily adjacent area such as a bathroom.

457.1.4.6.4 There shall be a vision panel in the door of the seclusion room, no larger than 8 inches by 8 inches (203 mm by 203 mm), which provides a view of the entire room. This vision panel shall be Lexan or other suitably strong material and it shall be securely mounted in the door. Provisions shall be made to ensure privacy from the public and other persons receiving services while providing easy access for staff observation.

457.1.4.6.5 Seclusion rooms shall be a minimum of 70 square feet (7 m^2) and a minimum room dimension of 9 feet (2743 mm).

457.1.4.6.6 Fire sprinkler heads shall be ceiling mounted and either recessed or flush-mounted type without a looped spray dispersal head.

457.1.4.6.7 A voice-activated and switchable emergency calling system for monitoring persons receiving services shall be provided in each seclusion room.

457.1.4.6.8 Each seclusion room shall have an electronic visual monitoring system capable of viewing the entire room and be monitored from the nurses' station.

457.1.4.7 Janitor's closet.

457.1.4.7.1 A janitor's closet shall be on the unit. It shall contain a floor receptor for mop water and provide space for mop bucket, brooms, and other minimal items. Caustic and other dangerous chemicals shall not be stored in this closet.

457.1.4.7.2 This closet shall have an automatic door closer and have an automatic relocking-type lock.

457.1.4.8 Bathrooms.

457.1.4.8.1 Access to a bathroom shall not be through another person's bedroom. Bathrooms shall provide space, in addition to bathing, for dry clothes and changing of clothes and for observation staff. The shower head shall be recessed or have a smooth curve from which items cannot be hung. There shall be no overhead rod, privacy stall supports, protrusions, or fixtures capable of carrying more than 40 pounds (18 kg) of weight. The ceiling shall be hard coated. Sprinkler heads shall be either recessed or a flush-mounted-type dispersal head. The toilet shall be a flushometer-type, not residential with water tank and cover. Toilets shall be of heavy duty construction securely fastened to the floor and have seats with locking nuts. Secure cleanout access shall be provided for the toilet to clean out plugs and pipes. Floor drains in bathroom areas shall be of sufficient size that they cannot be plugged by standing on them.

457.1.4.8.2 Mirrors shall not be common glass. A polycarbonate mirror, fully secured, and flat-mounted to the wall is required. Polished metal mirrors shall not be permitted.

457.1.4.8.3 Lighting fixtures shall be recessed and tamperproof with Lexan or other strong translucent material.

457.1.4.8.4 Bathroom fixtures, shower, lavatory, and toilet shall be readily accessible from a common area. If not accessible from a common area, they will be deemed to be available only to the occupants of directly adjoining bedroom or bedrooms.

457.1.4.8.5 Each CSU and SRT shall have a bathroom of sufficient size for use by persons with physical disabilities. It shall include toilet, lavatory, shower, and safety grab bars for shower and toilet.

457.1.4.8.6 The facility shall have a minimum ratio of one shower for each eight persons receiving services and one toilet and lavatory for each six persons receiving services. Individual shower stalls and dressing areas shall be provided. The use of gang showers is prohibited.

457.1.4.9 Nurses' station.

457.1.4.9.1 The nurses' station shall be positioned so that the unit may be under constant direct visual surveillance. Charting and records areas shall be located in the rear of the nurses' station, and not in a separate area, so that staff on duty can readily observe the client areas. A bathroom shall be nearby for staff use. The nurses' station, if separated from client areas, shall utilize either Lexan or safety wire glass for enclosure to above counter top level. If not enclosed, the counter top shall be at least 18 inches (457 mm) in width.

457.1.4.9.2 Thirty is the maximum number of beds which may be served by a common nurses' station in colocated units, as described in Section 65E-12.106(23), *Florida Administrative Code*.

457.1.4.9.3 The nurses' station, which functions as the primary control center, shall have necessary electronic assistance such as camera monitors and intercoms in more remote areas where persons may become isolated. Areas warranting visual and auditory monitoring include remote entrance or egress doors, isolated hallways, an after hours law enforcement entrance, an emergency screening area, and a fenced recreational yard.

457.1.4.10 Medication room. The medication room shall be located near the nurses' station. The medication room shall have a sink, refrigerator, locked storage, and facilities for dispensing medication. Security against unauthorized access shall be assured. The

refrigerator shall store medications and clean materials only.

457.1.4.11 Examination room. A suitable examination room shall be provided for physical examinations, nursing assessments, and other related medical activities. It shall include a sink for hand washing.

457.1.4.12 Bedrooms.

457.1.4.12.1 Ceilings shall be nonaccessible to prohibit persons receiving services from entering attic spaces or having access to overhead pipes and beams. Light switches and electrical outlets shall be secured with nontamper-type screws. When feasible, each bedroom shall have a window, operable by staff, with an exterior view. Window sills shall not exceed a height of 36 inches (914 mm) above floor level and should incorporate protective screens or Lexan-type material to prevent direct access to glass surfaces. There should be no overhead protrusions available for hanging in excess of 40 pounds (18 kg) weight.

457.1.4.12.2 Beds and other heavy furniture suitable for barricading the door shall be secured to the floor or walls.

457.1.4.12.3 Multiple occupant bedrooms shall be limited to a maximum of four occupants and shall be a minimum size of 60 square feet (6 m^2) per bed with no less than a 30-inch (762 mm) separation between beds. Single occupant bedrooms shall be a minimum of 80 square feet (7 m^2).

457.1.4.12.4 Bedroom doors shall be a minimum of 36 inches (914 mm) wide.

457.1.4.13 Kitchen and nourishment preparation area.

457.1.4.13.1 Preparation or food handling areas shall have water and plumbing fixtures suitable for cleaning dining utensils. The requirements for nourishment preparation areas are less than that of kitchens due to the minimal scale of operations for these areas. If these areas are accessible to persons receiving services, they should include appropriate safety considerations for sharp and other dangerous instruments and the elimination of hot surfaces. Space shall be provided for disposal of wet garbage. Refrigeration and freezer space shall be provided in these areas for the carryover of a minimum amount of perishable food.

457.1.4.13.2 Kitchens shall comply with Chapter 64E-11, *Florida Administrative Code*, Food Preparation and Sanitation Requirements, as well as the 1985 NFPA 101, Chapters 12 and 13, Fire Safety Requirements as incorporated by reference in Chapter 59A3, *Florida Administrative Code* as adopted by the *Florida Fire Prevention Code*. Kitchens shall be designed with flow-through-type operation where food arriving is immediately placed into dry storage or freezer units without walking through food preparation areas. The flow-through-type system would provide for the preparation of food, serving and dishes returned with garbage and waste going out to an adjacent dumpster and can wash with water collection curbing and drain. A concrete pad shall be provided for the trash dumpster and garbage truck entrance.

457.1.4.13.3 Kitchens shall be equipped with fire suppression hoods and through-wall grease laden air evacuation and ventilation systems. All electrical outlets shall be ground-fault circuit interrupter protected. If meals are to be served via an open area, directly from the kitchen, this area shall have a fire-rated steel retractable overhead door-type mechanism to continue the fire wall protection around the kitchen area. Kitchens shall have heat detectors rather than smoke sensors.

457.1.4.13.4 External to the kitchen, and outside the waste exit door, there shall be a curbed slop sink for mops and dirty kitchen water with an immediately accessible hose bibb and drain. This area shall be external to the kitchen area, but immediately adjacent to it, to provide ready disposal of waste water as well as for the removal of cleaning items from the kitchen when they are not in use.

457.1.4.13.5 There shall be a large food storage pantry in or adjacent to the kitchen.

457.1.4.13.6 Facilities using off-site kitchens for food preparation shall have an on-site food reception, warming and holding area of sufficient size and with sufficient equipment to warm and hold food for each meal served. Required space shall include provision for proper disposal or holding of used implements and disposal of wet garbage in accordance with Chapter 64E-11, *Florida Administrative Code.*

457.1.4.14 Dining area. Each CSU or SRT shall have an attractive dining area on the unit. Seating capacity shall reflect the licensed capacity of the entire CSU or SRT, although residents may eat or be served in shifts during daily operations. Individual, rather than bench seating, shall be used for easy floor cleaning.

457.1.4.15 Unit laundry facilities.

457.1.4.15.1 Provision shall be made for the storage of soiled laundry in an adjacent, isolated, fire-resistant area.

457.1.4.15.2 Each CSU or SRT shall have a personal laundry room which shall incorporate a flow-through design in which dirty laundry enters, is sorted, placed in the washer, dried, folded, and moved out without crossing clean laundry with dirty laundry. CSUs and SRTs shall have a small washer and dryer for immediate unit needs and to wash clothes. These washing and drying units shall be equipped to sanitize clothes as a preventive measure of infection control.

457.1.4.15.3 The soiled laundry room shall have a locked door equipped with automatic door closer to restrict access to cleaning chemicals. The soiled

laundry room air shall be exhausted outside the facility.

457.1.4.16 Clean laundry room.

457.1.4.16.1 A separate space shall be provided for clean laundry capable of storing an adequate supply of laundry for the size of the CSU or SRT. The laundry closet shall have a locked door to prevent access to these items by persons receiving services.

457.1.4.16.2 Items stored on the top shelf shall provide an 18-inch (457 mm) clear space from sprinkler heads so as to not block dispersal of water.

457.1.4.17 Fenced recreational area.

457.1.4.17.1 CSUs and SRTs shall have a no less than 6-foot-high (1829 mm) fenced, out-of-doors area where persons receiving services may have access to fresh air and exercise. It must provide privacy for persons receiving services otherwise exposed to public view. This area shall be constructed to retain persons inside the area and minimize elopements from the area, although it is not a secure area.

457.1.4.17.2 The fenced area shall provide some shaded area where persons receiving services may be out of doors without being in direct sunlight or may receive sunlight as they desire. The enclosing fences shall have an exit gate which is located away from the building as a secondary egress from the fenced area, for use in fire situations, or access by lawn maintenance equipment. The gate shall be provided with a lock which is readily accessible from both sides. The area of this fenced enclosure shall be at least 1,100 square feet (102 m^2) including an activity area having dimensions of not less than 20 feet by 40 feet (6096 mm by 1219 mm).

457.1.4.17.3 Objects shall not be placed near the fence to provide a ready step ladder over the fence and, if fabric fencing is used, the horizontal bracing used for corners shall be outside the fabric to preclude its use as an escape ladder step. The fenced area shall be designed, without blind corners, to be readily visible by one staff member standing in a central location. If desired, the fence may be topped with a 45-degree inward slanting restraining-type wire. The use of barbed wire and other sharp injurious materials, however, is prohibited.

457.1.4.17.4 This area, as all other primary fire exit routes, shall have egress lighting which is connected to the power side of the facility electrical panel so that in the event of a fire and electrical panel disconnect, the exit and congregation areas would still have lighting.

457.1.4.18 Multipurpose room. In addition to open, on unit floor space, each CSU and SRT shall have an accessible multipurpose room for group activities of at least 180 square feet (17 m^2). This area may be the dining area.

457.1.4.19 Off unit storage areas.

457.1.4.19.1 Each CSU and SRT shall have appropriate storage, in nonclient areas, for operating supplies and materials.

457.1.4.19.2 Adjacent nonclient area storage for personal belongings shall be a minimum of 8 cubic feet (0.23 m^3) for each person receiving services.

457.2 Community mental health regulation. Adult residential treatment facilities (RTFs) shall be limited to adults and comply with the regulations in Sections 457.2.1 through 457.2.4.

Note: Other administrative and programmatic provisions may apply. See Department of Children and Family Services (DCFS) Rule 65E-4.016, *Florida Administrative Code*, and Chapter 394, *Florida Statutes*.

457.2.1 Facility standards.

457.2.1.1 Building construction requirements. The construction and renovation of a facility shall comply with the provisions of the *Florida Building Code.*

457.2.2 Health and safety. Facilities and additions shall be constructed to allow full compliance with the provisions of this section.

457.2.2.1 Fire safety.

457.2.2.1.1 Residential treatment facilities shall comply with all applicable federal, state and local fire safety standards as follows:

1. Level IA licensed facilities shall comply with the fire codes contained in Chapter 69A-3, Fire Prevention—General Provisions, *Florida Administrative Code*, as described in the NFPA 101, Chapters 18 and 19, Special Definitions as adopted by the *Florida Fire Prevention Code*, as applicable to limited health care facilities.
2. For facility Level IB, which may have no more than three residents incapable of self-preservation, and for facility Levels II, III, IV and V, which may have no residents incapable of self-preservation, each resident record shall have a signed statement by a physician or licensed psychologist regarding the resident's capability of self-preservation.
3. Facility Levels IB, II, III, IV and V shall have a prompt evacuation capability.

457.2.2.1.2 Level IV and V facilities shall have a written policy on the safe use of extension cords and adapters. The use of extension cords and adaptors is prohibited in Level I, II and III facilities.

457.2.2.1.3 Electrical cords and appliances shall be maintained in a safe condition.

457.2.2.1.4 Portable heating devices shall be used only in emergency situations as defined in agency procedures approved by the governing board.

457.2.2.1.5 Flammable liquids or gas cylinders shall not be positioned near flame or heat sources, nor stored with combustible materials.

457.2.2.1.6 Emergency power. The facility shall provide egress lighting that will operate in the event of a power failure.

457.2.2.1.7 Smoking. The program shall have a written policy governing smoking in the facilities. Smoking shall be prohibited in any area of the facility where combustible supplies, materials, liquids or gases will be used or stored.

457.2.2.1.8 Fire safety inspections. A fire safety inspection shall be obtained before occupying any new physical facility or addition.

457.2.2.2 Personal safety.

457.2.2.2.1 The building shall be free of hazards such as cracks in the floors, walls or ceiling; warped or loose boards, tile, linoleum, handrails or railings; and broken window panes or missing window screens.

457.2.2.2.2 Protection shall be provided from sharp or jagged projections, "invisible" glass, moving parts, heated surfaces, heavy objects that could fall, or any other potentially hazardous condition.

457.2.2.2.3 Grab bars shall be nonremovable.

457.2.2.2.4 The temperature of the hot water supply shall be regulated and shall be between 105°F (41°C) and 115°F (46°C) at the outlet.

457.2.2.2.5 Any electrical fans, except ceiling paddle fans, shall be screened. All electrical fans, including paddle fans, shall be placed in a safe location.

457.2.2.2.6 Indoor and outdoor recreational areas shall be provided with safeguards designed for the needs of the residents.

457.2.2.2.7 Outdoor recreational areas shall be well drained.

457.2.2.3 Health and sanitation.

457.2.2.3.1 Appropriate health and sanitation inspection certificates shall be obtained before occupying any new physical facility or addition, and at least yearly or as required by statute, thereafter. A report of the most recent inspection must be on file and accessible to authorized individuals.

457.2.2.3.2 Hot and cold running water under pressure shall be readily available in all washing, bathing and food preparation areas.

457.2.2.3.3 The kitchen and food preparation area shall be well-lighted, ventilated and located apart from areas which could cause food contamination. All doors and windows in the kitchen and food preparation areas that open to the outside shall be screened.

457.2.3 Food service.

457.2.3.1 For food service areas with a capacity of 13 or more residents, all matters pertaining to food service shall comply with the provisions of Chapter 64E-11, *Florida Administrative Code*.

457.2.3.2 Food preparation, sanitation and storage.

457.2.3.2.1 Each refrigerator or freezer used for storage of perishable foods shall be provided with an accurate indicating thermometer located in the warmest part toward the front side of the refrigerator or freezer so that the temperature can be easily and readily observed.

457.2.3.2.2 Freezers should be kept at or below 0°F (-18°C).

457.2.3.3 Dining.

457.2.3.3.1 Dining tables shall seat small groups of residents unless other arrangements are justified on the basis of resident needs.

457.2.3.3.2 The dining area shall be suitably lighted, ventilated and furnished.

457.2.4 Environment.

457.2.4.1 Residential facilities shall not be identified by an exterior sign or vehicle sign that labels the residents or special functions of the facility. Vehicle traffic and parking relating to the facility shall be similar to that of surrounding structures or residences.

457.2.4.2 The grounds of the facility shall have adequate space for resident activities.

457.2.4.3 The facility shall be accessible to persons with disabilities or the facility shall have written policies and procedures that describe how disabled individuals can gain access to the facility for necessary services.

457.2.4.4 Areas that accommodate the following shall be available:

1. A full range of social activities;
2. Private conversations;
3. Group activities; and
4. Resident privacy, when appropriate.

457.2.4.5 All areas of the facility occupied by residents shall be climatically controlled in a manner conducive to the comfort and privacy of the residents and shall include the following.

457.2.4.5.1 A design temperature of at least 72°F (22°C) and not to exceed 85°F (29°C) shall be used for waking hours in all areas used by residents. During sleeping hours, a temperature of at least 68°F (20°C) shall be used. These temperature requirements apply unless otherwise mandated by federal or state authorities.

457.2.4.5.2 When cooling devices are used, they shall be placed or adjusted in a manner which minimizes drafts.

457.2.4.6 Drinking water shall be readily available and easily accessible to residents.

457.2.4.7 Mirrors reasonably free of distortion shall be placed in appropriate places to aid in grooming and to enhance self-awareness.

457.2.4.8 Clocks shall be provided to promote awareness of time and day.

457.2.4.9 The use of door locks or closed sections of the building shall comply with all applicable safety standards.

457.2.4.10 Clean, well-lighted and ventilated laundering facilities for resident use shall be available on the premises or in the immediate neighborhood.

457.2.4.11 A telephone which allows private conversations shall be available and easily accessible within the facility.

457.2.4.12 Facility lighting shall promote clear perceptions of people and functions. When and where appropriate, lighting shall be controlled by residents.

457.2.4.13 Whenever feasible, the environment shall provide views of the outdoors.

457.2.4.14 Bedrooms. Bedrooms shall be designed to meet the following criteria.

457.2.4.14.1 All resident bedrooms shall be ventilated, well-lighted and located convenient to a bathroom.

457.2.4.14.2 Resident bedrooms designated for single occupancy shall provide a minimum inside measurement of 80 square feet (7 m^2) of usable floor space.

457.2.4.14.3 Resident bedrooms designated for multiple occupancy shall provide a minimum inside measurement of 60 square feet (6 m^2) of usable floor space per bed and be limited to four occupants.

457.2.4.14.4 All resident bedrooms shall open directly into a corridor, a common use area or the outside, except in those facilities comprised of apartments.

457.2.4.14.5 Each resident bedroom where furnishings are supplied by the facility shall be furnished with personal storage space and adequate space for hanging clothes.

457.2.4.14.6 Bedroom doors shall not have vision panels.

457.2.4.15 Bathrooms. Bathrooms shall be designed to meet the following criteria.

457.2.4.15.1 A toilet and lavatory facility shall be provided for every six residents, and toilets shall be equipped with seats.

457.2.4.15.2 A minimum of one tub or shower facility, equipped with nonslip devices, shall be provided for every eight residents.

457.2.4.15.3 Bathrooms shall be ventilated, adequately lighted and have clearly labeled hot and cold running water.

457.2.4.15.4 Each bathroom shall have a door in working order to assure privacy.

457.2.4.15.5 When there is more than one toilet or bathing facility in a bathroom, provisions are required for privacy.

457.2.4.15.6 Bathrooms used by residents with disabilities shall be equipped to ensure safety and independent mobility.

457.2.4.15.7 Sole access to toilet or bathing facilities shall not be through another resident's sleeping room, except in facilities comprised of apartments.

457.2.4.16 Common living areas. Common living areas shall be designed to meet the following criteria.

457.2.4.16.1 A room, separate from sleeping areas, shall be provided where residents may read or engage in socialization or other leisure time activities.

457.2.4.16.2 A minimum of 35 square feet (3 m^2) of living and dining space per resident shall be provided by all facilities except those comprised of apartments. This space shall include living, recreational and other space designated accessible to residents, but shall not include bathrooms, corridors, storage space, or screened porches which cannot be adapted for year round use. Facilities with bedrooms which include living space may count the square footage that is in excess of the bedroom square footage requirements as part of the 35 square footage (3 m^2) living and dining space requirements.

SECTION 458
MANUFACTURED BUILDINGS

458.1 General. The following administrative requirements for inspection and plan review apply to manufactured buildings including factory-built schools. Additional technical requirements for factory-built schools can be found in Section 453.

Note: See Department of Business and Professional Regulation Rule 61-41, *Florida Administrative Code* and Chapter 553, *Florida Statutes*.

458.2 Definitions.

458.2.1 "Agency" means an individual or entity authorized to perform inspections of or review plans for manufactured buildings as provided by Rule 61-41, *Florida Administrative Code*.

458.2.2 "Factory-built school" means any building designed or intended for use as a school building which is manufactured in whole or in part at an off-site facility, including prefabricated educational facilities, factory-built educational facilities and modular built educational facilities that are designed to be portable, relocatable, demountable or reconstructible, are used primarily as classrooms or the components of an entire school and do not fall under the provisions of Sections 320.822-320.862, *Florida Statutes*.

458.2.3 Department. Refers to Department of Business and Professional Regulation.

458.3 Inspections. Inspection of installation of manufactured buildings and construction activities conducted at the site of the installation shall by conducted pursuant to Chapter 1 hereof. Inspections during the manufacturing process shall be conducted by those agencies as follows.

458.3.1 Inspections shall be conducted at the manufacturing facility by an appropriately licensed representative of an agency selected by the manufacturer. The inspections shall ensure that the buildings are being manufactured in compliance with the applicable codes and the approved plans. Once an agency has inspected a manufactured building, the manufacturer shall not seek to have the building inspected by another agency, nor shall any agency inspect a building that has already been inspected by another agency unless the subsequent inspection is at the direction of the department or unless the building or modification thereto is being inspected for recertification by the department.

458.3.2 At a minimum, a certified agency shall meet the criteria in Sections 458.3.2.1 through 458.3.2.4.

458.3.2.1 With regard to manufactured buildings, observe the first building built, or with regard to components, observe the first unit assembled, after certification of the manufacturer, from start to finish, inspecting all subsystems: electrical, plumbing, structural, mechanical, or thermal. Continue observation of the manufacturing process until the approved inspection agency determines that the manufacturer's quality control program, in conjunction with the application of the plans approved by the approved inspection agency, will result in a building and components that meet or exceed the applicable *Florida Building Code* requirements. Thereafter, inspect each module produced during at least one point of the manufacturing process and inspect at least 75 percent of the subsystems of each module: electrical, plumbing, structural, mechanical, or thermal.

458.3.2.2 With respect to components, inspect at least 75 percent of the manufactured building components and at least 20 percent of the storage sheds that are not designed for human habitation and that have a floor area of 720 square feet or less.

458.3.2.3 During each inspection, the agency shall verify the manufacturer's inplant quality control program is working as set forth in the approved quality control manual.

458.3.2.4 Should work stop on a particular module or component for a period of two months, reinspection shall be required.

458.3.3 When an agency discovers a deviation from the code or the approved plans which creates or threatens to create an imminent life safety hazard, all buildings or components which have progressed through that stage of production since the agency's previous inspection shall be inspected to ensure the absence of that deviation, and the agency shall immediately notify the manufacturer and the department in writing. Any building or component exhibiting the deviation shall be brought into conformance with the applicable code and the approved plans by the manufacturer within thirty days of notification of the deviation by the agency. The corrective action must be left available for reinspection by the agency.

458.3.4 The agency shall note all inspections, deviations and corrective actions in a written inspection report and shall complete the inspection report portion of the building code information system available via the Internet.

458.3.5 The agency shall give a copy of the inspection report(s) to the manufacturer for record and shall retain another copy. The agency or the manufacturer shall provide a copy of an inspection report to the department when requested.

458.4 Design plan and systems approval. Plan review pertaining to installation of manufactured buildings and construction activities conducted at the site of the installation shall be conducted pursuant to Chapter 1 hereof. Plan review pertaining to construction activities occurring within the manufacturing process shall be conducted by Department approved agencies. If the residential manufactured building is transportable in one or more sections and is 8 body feet (2458 m) or more in width or 40 body feet (12 192 mm) or more in length, or, when erected on site, is 320 square feet (29 m^2) or more, and which is built on a permanent chassis, the manufacturer shall certify the manufactured building has been excluded from regulation by the United States Department of Housing and Urban Development**.**

458.4.1 Plan approval expiration. Plan approvals for manufactured buildings shall expire upon the effective date of the new code. Upon revision of the *Florida Building Code,* plan approvals shall expire upon the effective date of that revision unless the manufacturer files, with the department, a sworn statement by an agency that the plans have been reviewed and are in compliance with the revisions to the *Florida Building Code*. The Agency shall transmit plans electronically through the building code information system to the Department**.**

Exception: In accordance with Section 105.3.7, manufacturers should be permitted to complete all buildings designed and approved prior to the effective date of a new code edition, provided a clear signed contract is in place. The contract shall provide specific data mirroring that required by an application for permit, specifically, without limitation, date of execution, building owner or dealer, and anticipated date of completion. However, the construction activity must commence within 6 months of the contract's execution. The contract is subject to verification by the Department of Business and Professional Regulation.

458.4.2 Evidence of agency approval. Approved plans and specifications shall be evidenced by a letter of certification from the agency. No manufacturing activity shall commence until plan approval has been obtained from the agency.

Approved copies of the design plans and specifications shall be returned to the manufacturer with an agency approval letter indicating the limitations, if any, of such approval. An approved copy of the plans shall be available

at each place of manufacture, which shall be made available for inspection and monitoring. Upon approval of the plans, the agency shall electronically submit the plans bearing the approval stamp, with a list of any limitations of that plan approval, to the department via the building code information system at www.floridabuilding.org.

458.5 Factory-built schools, plan review (also see Section 453, State Requirements for Education Facilities). Plan review of plans for constructed factory-built schools shall be performed by the agency selected by the department. An applicant for plan approval shall submit complete plans to the agency in the manner and format agreed to by the agency and the applicant. Upon determination by the agency that the submitted plans comply with all applicable standards, the agency shall certify such determination by affixing an approval stamp on each page of the plans, and shall return one copy to the applicant, maintain an original set, and submit one copy electronically to the department. The agency shall be compensated for the actual cost of the plan review by the applicant. No manufacturing activity shall commence until plan approval has been obtained from the agency. Plan review at a minimum shall include those items identified in Chapter 1 hereof.

458.6 Factory-built schools, plan review, inspections and work progress reports (also see Section 453, State Requirements for Education Facilities).

458.6.1 Inspectors. The school board or Florida college (educational entity) which is to utilize the factory-built school shall be responsible for compliance with inspection requirements. Inspections may be performed by an agency.

458.6.2 New construction. All buildings shall be subject to inspection during the manufacturing process. The educational entity shall ensure that factory inspections are performed periodically and are sufficient to ensure the building and its systems comply with the applicable standards. Inspections may be performed by an agency. The inspector shall require the correction of all deficiencies found during the manufacturing process. Upon an inspector's determination that the building complies with the applicable standards, the inspector shall provide the department the information as required on the data plate for the building and identify the building as satisfactory for use as an educational facility on the building code information system.

SECTION 459
BOOT CAMPS FOR CHILDREN

459.1 Boot camps for children shall comply with the design and construction standards as described herein. Enforcement and interpretation of these provisions shall be by the entities authorized by Chapter 553.80, *Florida Statutes*.

Note: Other administrative and programmatic provisions may apply. See Department of Juvenile Justice Rule 63-E 2, *Florida Administrative Code*, and Chapter 39, *Florida Statutes*.

459.2 Facility structural and operational standards.

459.2.1 The facility shall conform to the *Florida Fire Prevention Code*. All new construction and building renovations shall comply with the *Florida Building Code*.

459.2.2 All juvenile justice residential treatment program facilities shall conform to the *Florida Building Code.*

459.2.3 All juvenile justice residential treatment program facilities shall comply with the sanitation, health and fire codes set forth in the *Florida Building Code* and in the *Florida Fire Prevention Code*.

SECTION 460
MAUSOLEUMS AND COLUMBARIUMS

460.1 General. The provisions of Section 460 shall apply to buildings or structures as defined in Section 202 as chapel mausoleums, garden mausoleums, nonvisitation crypt mausoleums, and columbariums. All crypts and niches built after this code becomes effective shall conform to this code.

460.2 Occupancy classification. Mausoleums and columbariums shall be classified as a Group S2 low hazard storage occupancy.

460.3 Construction type. Mausoleums, columbariums and accessory occupancies shall be of Type I unsprinklered, Type II unsprinklered, or Type IIB unsprinklered construction.

460.4 Accessory occupancies. Accessory occupancies shall comply with Section 508.2.

460.5 Structural loads. Mausoleums and columbariums shall be designed to comply with the structural design requirements of Chapter 16. Crypts shall be designed for a minimum total live load of 35 psf (2 kN/m^2).

460.6 Mausoleum and columbarium construction. The design and construction of mausoleums and columbariums shall comply with the *Florida Building Code, Building* and Section 460.6.

460.6.1 Plumbing systems. Mausoleums and columbariums shall not be required to comply with the *Florida Building Code, Plumbing*.

Exception: Accessory areas and an occupancy in a mixed occupancy building shall comply with *Florida Building Code, Plumbing*. The number and location of plumbing facilities shall be based on the accessory areas and the mixed occupancy areas.

460.6.2 Mechanical systems. Mausoleums and columbariums shall not be required to comply with the *Florida Building Code, Mechanical*.

Exceptions:

1. Accessory areas and an occupancy in a mixed occupancy building shall comply with *Florida Building Code, Mechanical*. Mechanical systems shall be based on the accessory areas and the mixed occupancy areas.
2. Crypt pressure relief system shall comply with Section 460.7.2, except for family mausoleum

units where all crypts are bordering an exterior wall, pressure relief ventilation shall be provided from the crypt to the outside of the mausoleum through the exterior wall or roof.

3. Niches shall not require pressure relief systems.

460.6.3 Fire protection systems. Mausoleums and columbariums shall not be required to comply with Chapter 9, Fire Protection Systems.

Exception: Accessory areas and an occupancy in a mixed occupancy building shall comply with Chapter 9. The fire protection systems shall be based on the accessory areas and the mixed occupancy areas.

460.6.4 Interior finish. The interior finish for mausoleums and columbariums shall be Class A for exits and exit access and Class B for other spaces. The floor tile, marble, and granite used in a chapel mausoleum shall comply with the Marble Institute of America (1998).

460.6.5 Exterior finish. The exterior finish for mausoleums and columbariums shall be one or more of the following finishes:

Granite
Marble
Rubbed concrete
Painted concrete
Stucco
Synthetic stucco
Waterproofing products
Tile

460.7 Crypts.

460.7.1 Crypts construction. Crypts and companion crypts shall be constructed of reinforced concrete complying with this section and Chapter 19.

460.7.1.1 Cast in place crypt. Cast in place crypts shall have a minimum thickness of 3 inches (76 mm) for floor slabs, walls, and other structural framework.

460.7.1.2 Precast crypt. Concrete shall have a minimum specified compressive strength f'_c of 5,000 psi (34.5 mPa). Crypt floor slabs and roof slabs shall have a minimum thickness of $2^1/_2$ inches (63.5 mm) Crypt walls shall be a minimum thickness of $3^1/_2$ inches (88.9 mm) at the top of the wall to a minimum of 2 inches (50.8 mm) at the bottom of the wall.

460.7.1.3 Crypt front. Crypt fronts are to be independent of the crypt panel. The front shall be Grade A exterior type granite or marble according to the Marble Institute of America (1998), or travertine, or bronze, or tile mosaic. The front shall be installed with a hanger system. The hangers, clips, and other exterior or interior fastenings shall be of copper-based alloy, copper, or stainless steel designed for strength and durability. Aluminum fastenings may be used if they will not react with any material or metal that they may come in contact with and when not embedded in concrete. The front, trim, and wall stone shall be a minimum $^3/_4$ inch (19.1 mm) thick, other materials used for crypt fronts shall be the thickness as dictated at the time by modern mausoleum construction.

460.7.2 Crypt relief vent. For family mausoleum units where all crypts are bordering an exterior wall, pressure relief ventilation shall be provided from the crypt to the outside of the mausoleum through the exterior wall or roof. For all other mausoleum units, each crypt shall have a pressure relief vent from the crypt to the roof of the mausoleum complying with Section M515, Mausoleum relief system, of the *Florida Building Code, Mechanical*. Niches shall not require pressure relief systems.

460.8 Casket placement. Casket placement shall have minimum interior dimensions of 2 feet 6 inches (762 mm) wide mm) by 2 feet 1 inch (635 mm) high by 7 feet $3^1/_2$ inches (2223 mm) deep.

460.9 Niches. Niches shall be designed and constructed in accordance with Section 460.9.

460.9.1 Minimum size. Niches shall have a minimum volume of 200 cubic inches (7 m^3) with a minimum width of $4^1/_2$ inches (114.3 mm), a minimum height of 9 inches (228.6 mm), and a minimum depth of 5 inches (127 mm).

460.9.2 Niche front. The niche front shall be Grade A exterior-type granite or marble according to the Marble Institute of America (1998), or travertine, bronze, tile mosaic, glass, lexan, or plexiglass.

460.9.3 Pressure relief systems. Niches shall not require pressure relief systems.

460.9.4 Wall thickness. Niche wall thickness shall be the thickness as dictated at the time of construction by modern mausoleum and columbarium construction.

460.10 Family mausoleum. Family mausoleums consisting of six or fewer casket placements shall comply with either Sections 460.1 or 460.10.

460.10.1 Materials. Family mausoleums shall be constructed of the materials in Sections 460.10.1.1 through 460.10.1.6.

460.10.1.1 Reinforced concrete floor. Reinforced concrete floor shall have a minimum specified compressive strength f'_c of 5,000 psi (34.5 mPa).

460.10.1.2 Hardware. Hardware and fasteners shall be of stainless steel or bronze.

460.10.1.3 Doors. When installed, doors and door hardware shall be bronze.

460.10.1.4 Crypt front. Crypt fronts shall be granite or marble.

460.10.1.5 Walls and roof. Walls and roof shall be of granite, marble or reinforced concrete.

460.10.1.6 Floor. The floor shall be granite, marble, or reinforced concrete.

460.10.2 Crypt relief vent. For family mausoleum units where all crypts are bordering an exterior wall, pressure relief ventilation shall be provided from the crypt to the

outside of the mausoleum through the exterior wall or roof.

For family mausoleum units where all crypts are not bordering an exterior wall, each crypt shall have a pressure relief vent from the crypt to the roof of the mausoleum complying with Section M515, Mausoleum relief system, of the *Florida Building Code, Mechanical*.

460.10.3 Minimum thickness. The minimum thickness for the components of a family mausoleum shall comply with Section 460.10.3.

460.10.3.1 Family mausoleum. Exterior walls shall be a minimum of 4 inches (101.6 mm). The roof shall be minimum of 6 inches (152 mm). The floor shall be a minimum of 6 inches (152 mm) granite, marble, or reinforced concrete. Shelves shall be a minimum of 2 inches (51 mm). Crypt fronts shall be a minimum of $^3/_4$ inch (19.1 mm).

460.10.3.2 Burial chamber mausoleum. Exterior walls shall be a minimum of 6 inches (152 mm). The roof shall be a minimum of 6 inches (152 mm). The floor shall be a minimum of 8 inches (203 mm) granite. Shelves shall be a minimum of 2 inches (51 mm). Crypt fronts shall be a minimum of $^3/_4$ inch (19.1 mm).

SECTION 461
TRANSIENT PUBLIC LODGING ESTABLISHMENTS

461.1 Any transient public lodging establishment, as defined in Chapter 509, *Florida Statutes*, and used primarily for transient occupancy as defined in Section 83.43(10), *Florida Statutes*, or any timeshare unit of a timeshare plan as defined in Chapters 718 and 721, *Florida Statutes*, which is of three stories or more and for which the construction contract has been let after the effective date of this code, with interior corridors which do not have direct access from the guest area to exterior means of egress and on buildings over 75 feet (22 860 mm) in height that have direct access from the guest area to exterior means of egress and for which the construction contract has been let after the effective date of this code, shall be equipped with an automatic sprinkler system installed in compliance with the provisions prescribed in the NFPA 13, *Standards for the Installation of Sprinkler Systems*. Each guestroom and each timeshare unit shall be equipped with an approved listed single-station smoke detector meeting the minimum requirements of NFPA 74, *Standards for the Installation, Maintenance and Use of Household Fire Warning Equipment*, powered from the building electrical service, notwithstanding the number of stories in the structure, if the contract for construction is let after the effective date of this code. Single-station smoke detectors shall not be required when guest-rooms or timeshare units contain smoke detectors connected to a central alarm system which also alarms locally.

SECTION 462
USE OF ASBESTOS IN NEW PUBLIC BUILDINGS OR BUILDINGS NEWLY CONSTRUCTED FOR LEASE TO GOVERNMENT ENTITIES—PROHIBITION

462.1 The use of asbestos or asbestos-based fiber materials is prohibited in any building, construction of which is commenced after September 30, 1983, which is financed with public funds or is constructed for the express purpose of being leased to any governmental entity.

SECTION 463
ADULT DAY CARE

463.1 General. Adult day care facilities shall comply with the following design and construction standards.

Note: See Agency for Health Care Administration (AHCA) Rule 58A-6, *Florida Administrative Code*, and Chapter 400, Part V, *Florida Statutes*.

463.2 Definitions.

"Adult day care center" or **"center"** means any building, buildings, or part of a building, whether operated for profit or not, in which is provided through its ownership or management, for a part of a day, basic services to three or more persons who are 18 years of age or older, who are not related to the owner or operator by blood or marriage, and who require such services. The following are exempt from this part:

1. Any facility, institution, or other place that is operated by the federal government or any agency thereof.
2. Any freestanding inpatient hospice facility that is licensed by the state and which provides day care services to hospice patients only.
3. A licensed assisted living facility, a licensed hospital, or a licensed nursing home facility that provides services during the day which include, but are not limited to, social, health, therapeutic, recreational, nutritional and respite services, to adults who are not residents, so long as the facility does not hold itself out as an adult day care center.

"Capacity" shall mean the number of participants for which a center has been licensed to provide care at any given time and shall be based upon required net floor space.

"Net floor space" shall mean the actual climatically controlled occupied area, not including accessory unoccupied areas such as hallways, stairs, closets, storage areas, bathrooms, kitchen or thickness of walls, set aside for the use of the day care center participants.

"Participant space" shall mean the required net floor space per participant. Maximum participant capacity shall refer to the licensed capacity.

463.3 The following minimum conditions shall be met:

463.3.1 The floor surface in kitchens, all rooms and areas in which food is stored or prepared and in which utensils are washed or stored shall be of smooth nonabsorbent material and constructed so it can be easily cleaned and shall be washable up to the highest level reached by splash or spray.

463.3.2 The walls and ceilings of all food preparation, utensil washing and hand-washing rooms or areas shall have smooth, easily cleanable surfaces. Walls shall be washable up to the highest level reached by splash or spray.

463.3.3 Hot and cold running water under pressure shall be easily accessible to all rooms where food is prepared or utensils are washed.

463.3.4 Hand-washing facilities, provided with hot and cold running water, shall be located within the food preparation area in new adult day care facilities and adult day care facilities which are extensively altered.

463.3.5 Multiuse equipment and utensils shall be constructed and repaired with materials that are nontoxic, corrosion resistant and nonabsorbent; and shall be smooth, easily cleanable and durable under conditions of normal use; and shall not impart odors, color or taste nor contribute to the contamination of food.

463.3.6 A three-compartment sink or a two-compartment sink and a dishwater with an effective, automatic sanitizing cycle, shall be provided.

463.3.7 Refrigeration units and hot food storage units used for the storage of potentially hazardous foods shall be provided with a numerically scaled indicating thermometer accurate to plus or minus 3°F (-16°C). The thermometer shall be located in the warmest or coldest part of the units and of such type and so situated that the temperature can be easily and readily observed.

463.4 Participant and program data, emergency procedures. Fire safety protection shall be governed in accordance with the *Florida Fire Prevention Code*.

463.5 Physical plant, sanitary conditions, housekeeping standards and maintenance.

463.5.1 The participant capacity shall be determined by the total amount of net floor space available for all of the participants. Centers shall provide not less than 45 square feet (4 m^2) of net floor area per participant. Centers shall be required to provide additional floor space for special target populations to accommodate activities required by participant care plans.

463.5.2 Facilities exempt pursuant to Section 400.553, *Florida Statutes*, shall utilize separate space over and above the minimum requirement needed to meet their own licensure certification approval requirements. Only congregate space shall be included in determining minimum space. For purposes of this section, congregate space shall mean climatically controlled living room, dining room, specialized activity rooms, or other rooms to be commonly used by all participants.

463.5.3 Center facilities shall consist of, but not be limited to, the following:

1. Bathrooms.
2. Dining areas.
3. Kitchen areas.
4. Rest areas.
5. Recreation and leisure time areas.

463.5.4 A private area shall be available for the provision of first aid, special care and counseling services when provided, or as necessary for other services required by participants. This area shall be appropriately furnished and equipped.

463.5.5 Bathrooms shall be ventilated and have hot and cold running water, supplying hot water at a minimum of 105°F (41°C) and a maximum of 115°F (46°C).

463.5.6 Recreation and leisure time areas shall be provided where a participant may read, engage in socialization or other leisure time activities. The recreation areas also may be utilized for dining areas.

463.5.7 All areas used by participants shall be suitably lighted and ventilated and maintained at a minimal inside temperature of 72°F (22°C) when outside temperatures are 65°F (18°C) or below, and all areas used by participants must not exceed 90°F (32°C). Mechanical cooling devices must be provided when indoor temperatures exceed 84°F (29°C). The facility shall have a thermometer which accurately identifies the temperature.

SECTION 464
ASSISTED LIVING FACILITIES

464.1 Scope. Assisted living facilities shall comply with the following design and construction standards as described herein.

Note: Other administrative and programmatic provisions may apply. See Agency of Health Care Administration (AHCA) Rule 58A-5, *Florida Administrative Code* and Chapter 400 Part III, *Florida Statutes*.

464.2 Definitions.

AGENCY. The Agency for Health Care Administration.

AHCA CENTERAL OFFICE. The Assisted Living Unit, Agency for Health Care Administration.

ASSISTED LIVING FACILITY. Any building or buildings, section or distinct part of a building, private home, boarding home, home for the aged or other residential facility, whether operated for profit or not, which undertakes through its ownership or management to provide housing, meals and one or more personal services for a period exceeding 24 hours to one or more adults who are not relatives of the owner or administrator. The following are exempted from this definition.

1. Any facility, institution, or other place operated by the federal government or any agency of the federal government.

2. Any facility or part of a facility licensed under Chapter 393, *Florida Statutes*, or Chapter 394, *Florida Statutes*.

3. Any facility licensed as an adult family care home under Part VII Chapter 400, *Florida Statutes*.

4. Any person who provides housing, meals and one or more personal services on a 24-hour basis in the person's own home to not more than two adults who do not receive optional state supplementation. The person who provides the housing, meals, and personal services must own or rent the home and reside therein.

5. Any home or facility approved by the United States Department of Veterans Affairs as a residential care home wherein care is provided exclusively to three or fewer veterans.

6. Any facility that has been incorporated in this state for 50 years or more on or before July 1, 1983, and the board of directors of which is nominated or elected by the residents, until the facility is sold or its ownership is transferred; or any facility, with improvements or additions thereto, which has existed and operated continuously in this state for 60 years or more on or before July 1, 1989, is directly or indirectly owned and operated by a nationally recognized fraternal organization, is not open to the public, and accepts only its own members and their spouses as residents.

7. Any facility certified under Chapter 651, *Florida Statutes*, or a retirement community, may provide services authorized under this section or Part IV of Chapter 400, *Florida Statutes* to its residents who live in single-family homes, duplexes, quadruplexes, or apartments located on the campus without obtaining a license to operate an assisted living facility if residential units within such buildings are used by residents who do not require staff supervision for that portion of the day when personal services are not being delivered and the owner obtains a home health license to provide such services. However, any building or distinct part of a building on the campus that is designated for persons who receive personal services and require supervision beyond that which is available while such services are being rendered must be licensed in accordance with this section. If a facility provides personal services to residents who do not otherwise require supervision and the owner is not licensed as a home health agency, the buildings or distinct parts of buildings where such services are rendered must be licensed under this section. A resident of a facility that obtains a home health license may contract with a home health agency of his or her choice, provided that the home health agency provides liability insurance and workers' compensation coverage for its employees. Facilities covered by this exemption may establish policies that give residents the option of contracting for services and care beyond that which is provided by the facility to enable them to age in place. For purposes of this section, a retirement community consists of a facility licensed under this section or under Part II of Chapter 400, *Florida Statutes*, and apartments designed for independent living located on the same campus.

8. Any residential unit for independent living which is located within a facility certified under Chapter 651, *Florida Statutes*, or any residential unit which is colocated with a nursing home licensed under Part II of Chapter 400, *Florida Statutes*, or colocated with a facility licensed under this section in which services are provided through an outpatient clinic or a nursing home on an outpatient basis.

CAPACITY. The number of residents for which a facility has been licensed to provide residential care.

DEPARTMENT. The Department of Elderly Affairs.

DISTINCT PART. Designated bedrooms or apartments, bathrooms and a living area; or a separately identified wing, floor or building which includes bedrooms or apartments, bathrooms and a living area. The distinct part may include a separate dining area, or meals may be served in another part of the facility.

DOEA ASSISTED LIVING PROGRAM. The Assisted Living Program, Department of Elder Affairs.

EXTENDED CONGREGATE CARE. Acts beyond those authorized in subsection (5) that may be performed pursuant to Part I of Chapter 464, *Florida Statutes* by persons licensed thereunder while carrying out their professional duties. The purpose of such services is to enable residents to age in place in a residential environment despite mental or physical limitations that might otherwise disqualify them from residency in a facility licensed under this part.

FOOD SERVICE. The storage, preparation, serving and cleaning up of food intended for consumption in a facility or a formal agreement that meals will be regularly catered by a third party.

PERSONAL SERVICES. Direct physical assistance with or supervision of the activities of daily living and the self-administration of medication and other similar services which the department may define by rule. Personal services shall not be construed to mean the provision of medical, nursing, dental or mental health services.

RELATIVE. An individual who is the father, mother, stepfather, stepmother, son, daughter, brother, sister, grandmother, grandfather, great-grandmother, great-grandfather, grandson, granddaughter, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, brother-in-law, sister-in-law, stepson, stepdaughter, stepbrother, stepsister, half brother or half sister of an owner or administrator.

RENOVATION. Additions, repairs, restorations or other improvements to the physical plant of the facility within a five-year period that costs in excess of 50 percent of the value of the building as reported on the tax rolls, excluding land, before the renovation.

RESIDENT. A person 18 years of age or older, residing in and receiving care from a facility.

RESIDENT'S REPRESENTATIVE OR DESIGNEE. A person other than the owner, or an agent or employee of the

facility, designated in writing by the resident, if legally competent, to receive notice of changes in the contract executed pursuant to Section 400.424, *Florida Statutes*; to receive notice of and to participate in meetings between the resident and the facility owner, administrator or staff concerning the rights of the resident; to assist the resident in contacting the ombudsman council if the resident has a complaint against the facility; or to bring legal action on behalf of the resident pursuant to Section 400.429, *Florida Statutes*.

464.3 Codes and standards for the design and construction of assisted living facilities. Except as modified and required by this section of the code, Chapter 58A-5, *Florida Administrative Code* or Chapter 429 Part III, *Florida Statutes*, all new assisted living facilities and all additions, alterations, or renovations to existing assisted living facilities with more than 16 licensed beds shall also be in compliance with *The Guidelines for the Design and Construction of Health Care Facilities (The Guidelines*) Part I General, and Section 4.1.4 Requirements for Assisted Living of Part 4, Residential Health Care Facilities, incorporated by reference.

464.4 Additional physical plant requirements for assisted living facilities. In addition to the codes and standards referenced in Section 464.3 of the code, the following minimum essential facilities shall apply to all new assisted living facilities.

464.4.1 Indoor radon testing as mandated by Section 404.056(5), *Florida Statutes*, shall be completed by all facilities.

464.4.2 Heating and cooling.

464.4.2.1 When outside temperatures are 65°F (18°C) or below, an indoor temperature of at least 72°F (22°C) shall be maintained in all areas used by residents during hours when residents are normally awake. During night hours when residents are asleep, an indoor temperature of at least 68°F (20°C) shall be maintained.

464.4.2.2 During hours when residents are normally awake, mechanical cooling devices, such as electric fans, must be used in those as are of buildings used by residents when inside temperatures exceed 85°F (29°C) provided outside temperatures remain below 90°F (32°C). No residents shall be in any inside area that exceeds 90°F (32°C). However, during daytime hours when outside temperatures exceed 90°F (32°C), and at night, an indoor temperature of no more than 81°F (27°C) must be maintained in all areas used by residents.

464.4.2.3 Residents who have individually controlled thermostats in their bedrooms or apartments shall be permitted to control temperatures in those areas.

464.4.3 Common areas.

464.4.3.1 A minimum of 35 square feet (3 m^2) of living and dining space per resident, live-in staff and live-in family member shall be provided except in facilities comprised of apartments. This space shall include living, dining, recreational or other space designated accessible to all residents, and shall not include bathrooms, corridors, storage space or screened porches which cannot be adapted for year round use. Facilities with apartments may count the apartment's living space square footage as part of the 35-square-footage (3 m^2) living and dining space requirement.

Those facilities also serving as adult day care centers must provide an additional 35 square feet (3 m^2) of living and dining space per adult day care client. Excess floor space in residents' bedrooms or apartments cannot be counted toward meeting the requirement of 35 square feet (3 m^2) of living and dining space requirements for adult day care participants. Day care participants may not use residents' bedrooms for resting unless the room is currently vacant.

464.4.3.2 A room, separate from resident bedrooms, shall be provided where residents may read, engage in socialization or other leisure time activities. Comfortable chairs or sofas shall be provided in this communal area.

464.4.3.3 The dining area shall be furnished to accommodate communal dining.

464.4.4 Bedrooms.

464.4.4.1 Resident sleeping rooms designated for single occupancy shall provide a minimum inside measurement of 80 square feet (7 m^2) of usable floor space. Usable floor space does not include closet space or bathrooms.

464.4.4.2 Resident bedrooms designated for multiple occupancy shall provide a minimum inside measurement of 60 square feet (6 m^2) of usable floor space per room occupant.

464.4.4.3 Resident bedrooms designated for multiple occupancy in facilities newly licensed or renovated six months after October 17, 1999, shall have a maximum occupancy of two persons.

464.4.4.4 All resident bedrooms shall open directly into a corridor, common use area or to the outside. A resident must be able to exit his bedroom without having to pass through another bedroom unless the two rooms have been licensed as one bedroom.

464.4.4.5 All resident bedrooms shall be for the exclusive use of residents. Live-in staff and their family members shall be provided with sleeping space separate from the sleeping and congregate space required for residents.

464.4.5 Bathrooms.

464.4.5.1 There shall be at least one bathroom with one toilet and sink per six persons, and one bathtub or shower per eight persons. All residents, all live-in staff and family members, and respite care participants must be included when calculating the required number of toilets, sinks, bathtubs and showers. All adult day care participants shall be included when calculating the required number of toilets and sinks.

464.4.5.2 Each bathroom shall have a door in working order to assure privacy. The entry door to bathrooms with a single toilet shall have a lock which is operable

from the inside by the resident with no key needed. A nonlocking door shall be permitted if the resident's safety would otherwise be jeopardized.

464.4.5.3 There shall be nonslip safety devices such as bath mats or peel off stickers in the showers and bathtubs of all facilities. Showers and bathtubs with a nonskid surface require a separate nonskid device only if the surface is worn. Grab bars shall be required in showers and bathtubs. Grab bars, whether portable or permanent, must be securely affixed to the floor or adjoining walls. Facilities newly licensed or renovated six months after October 17, 1999 must have grab bars next to the commode.

464.4.5.4 Sole access to a toilet or bathtub or shower shall not be through another resident's bedroom, except in apartments within a facility.

464.4.6 Security. External boundaries of a facility or a distinct part of a facility, including outside areas, may be secured using egress control or perimeter control devices if the following conditions are met.

464.4.6.1 The use of the device complies with all life-safety requirements.

464.4.6.2 Residents residing within a secured area are able to move freely throughout the area, including the resident's bedroom or apartment, bathrooms and all common areas, and have access to outdoor areas on a regular basis and as requested by each resident.

464.4.6.3 Residents capable of entering and exiting without supervision have keys, codes or other mechanisms to exit the secured area without requiring staff assistance.

464.4.6.4 Staff who provide direct care or who have regular contact with residents residing in secured areas complete Level 1 Alzheimer's training as described in Rule 58A-5.0191.

464.4.6.5 Pursuant to Section 400.441, *Florida Statutes*, facilities with 16 or fewer residents shall not be required to maintain an accessible telephone in each building where residents reside, maintain written staff job descriptions, have awake night staff or maintain standardized recipes as provided in Rules 58A-5.0182(6)(g), 58A-5.019(2)(e), 58A-5.019(4)(a) and 58A-5.020(2)(b), respectively.

464.5 Extended congregate care.

464.5.1 Physical site requirements. Each extended congregate care facility shall provide a homelike physical environment which promotes resident privacy and independence, including:

464.5.1.1 A private room or apartment, or a semiprivate room or apartment shared with a roommate of the resident's choice. The entry door to the room or apartment shall have a lock which is operable from the inside by the resident with no key needed. The resident shall be provided with a key to the entry door on request. The resident's service plan may allow for a nonlocking entry door if the resident's safety would otherwise be jeopardized.

464.5.1.2 A bathroom, with a toilet, sink and bathtub or shower, which is shared by a maximum of four residents. A centrally located hydromassage bathtub may substitute for the bathtub or shower in two of the bathrooms. The entry door to the bathroom shall have a lock which is operable from the inside by the resident with no key needed. The resident's service plan may allow for a nonlocking bathroom door if the resident's safety would otherwise be jeopardized.

SECTION 465
CONTROL OF RADIATION HAZARDS

465.1 Scope. Control of radiation hazards shall comply with the following design and construction standards as described herein.

Note: Other administrative and programmatic provisions may apply. See Department of Health (DOH) Rule 64E-5, *Florida Administrative Code*, and Chapter 404, *Florida Statutes*.

465.2 Control of access to high radiation areas.

465.2.1 Definitions.

HIGH RADIATION AREA. An area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of 1 mSv (0.1 rem) in 1 hour at 30 cm from any source of radiation or from any surface that the radiation penetrates. For purposes of this section, rooms or areas in which diagnostic X-ray systems are used for healing arts purposes are not considered high radiation areas.

VERY HIGH RADIATION AREA. An area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess to 500 rad (5 gray) in 1 hour at 1 m from a source of radiation or from any surface that the radiation penetrates. At very high doses received at high dose rates, units of absorbed dose, gray and rad, are appropriate, rather than units of dose equivalent, sievert and rem.

465.2.2 The licensee or registrant shall ensure that each entrance or access point to a high radiation area has one or more of the following features.

465.2.2.1 A control device that upon entry into the area causes the level of radiation to be reduced below that level at which an individual might receive a deep dose equivalent of 0.1 rem (1 millisievert) in 1 hour at 30 cm from the source of radiation from any surface that the radiation penetrates;

465.2.2.2 A control device that energizes a conspicuous visible or audible signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or

465.2.2.3 Entryways that are locked except during periods when access to the areas is required with positive control over each individual entry.

465.3 Caution signs.

465.3.1 Standard radiation symbol. Unless otherwise authorized by the department, the symbol prescribed in this section shall use the colors magenta or purple or black on yellow background. The symbol prescribed is the three-bladed design, as follows:

465.3.1.1 Radiation symbol.

465.3.1.1.1 Cross-hatched area is to be magenta or purple or black.

465.3.1.1.2 The background is to be yellow.

465.3.2 Exception to color requirements for standard radiation symbol. In spite of the requirements of Section 465.3.1, licensees or registrants are authorized to label sources, source holders or device components containing sources of radiation that are subjected to high temperatures, with conspicuously etched or stamped radiation caution symbols and without a color requirement.

465.3.3 Additional information on signs and labels. In addition to contents of signs and labels prescribed in this part, the licensee or registrant shall provide on or near the required signs and labels additional information to make individuals aware of potential radiation exposures and to minimize the exposures.

465.4 Posting requirements.

465.4.1 Posting of radiation areas. The licensee or registrant shall post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIATION AREA."

465.4.2 Posting of high radiation areas. The licensee or registrant shall post each high radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, HIGH RADIATION AREA" or "DANGER, HIGH RADIATION AREA."

465.4.3 Posting of very high radiation areas. The licensee or registrant shall post each very high radiation area with a conspicuous sign or signs bearing the radiation symbol and words "GRAVE DANGER, VERY HIGH RADIATION AREA."

465.4.4 Posting of air-borne radioactivity areas. The licensee shall post each air-borne radioactivity area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, AIR-BORNE RADIOACTIVITY AREA" or "DANGER, AIR-BORNE RADIOACTIVITY AREA."

465.4.5 Posting of areas or rooms in which licensed material is used or stored. The licensee shall post each area or room in which there is used or stored an amount of licensed material exceeding 10 times the quantity of such material specified in State of Florida Office of Radiation Control Radioactive Material Requiring Labeling, May 2000, which is herein incorporated by reference and which is available from the department, with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)."

465.4.6 A licensee or registrant is not required to post caution signs in areas or rooms containing sources of radiation for periods of less than 8 hours if each of the following conditions is met.

465.4.6.1 The sources of radiation are constantly attended during these periods by an individual who takes the precautions necessary to prevent the exposure of individuals to sources of radiation in excess of the limits established in this section, and

465.4.6.2 The area or room is subject to the licensee's or registrant's control.

465.4.7 Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs as specified in 64E-5.323 if the patient could be released from confinement as specified in 64E-5.622.

465.4.8 A room or area is not required to be posted with a caution sign because of the presence of a sealed source provided the radiation level at 30 cm from the surface of the sealed source container or housing does not exceed 0.005 rem (0.05 millisievert) per hour.

465.4.9 A room or area is not required to be posted with a caution sign because of the presence of radiation machines used solely for diagnosis in the healing arts.

465.5 General requirements.

465.5.1 Shielding. Each X-ray facility shall have primary and secondary protective barriers as needed to assure that an individual will not receive a radiation dose in excess of the limits specified in Part III of Chapter 64E-5, *Florida Administrative Code.*

465.5.1.1 Structural shielding in walls and other vertical barriers required for personnel protection shall extend without breach from the floor to a height of at least 7 feet (2.1 m).

465.5.1.2 Doors, door frames, windows and window frames shall have the same lead equivalent shielding as that required in the wall or other barrier in which they are installed.

465.5.1.3 Prior to construction, the floor plans and equipment arrangement of all new installations, or modifications of existing installations, utilizing X-ray energies of 200 keV and above for diagnostic or therapeutic purposes shall be submitted to the Department of Health for review and approval. In computation of protective barrier requirements, the maximum anticipated workload, use factors, occupancy factors and the potential for radiation exposure from other sources shall be taken into consideration.

465.5.1.3.1 The plans shall show, as a minimum, the following.

465.5.1.3.1.1 The normal location of the X-ray system's radiation port; the port's travel and traverse limits; general direction of the useful beam; locations of any windows and doors; the location

of the operator's booth; and the location of the X-ray control panel.

465.5.1.3.1.2 The structural composition and thickness or lead equivalent of all walls, doors, partitions, floor and ceiling of the room concerned.

465.5.1.3.1.3 The dimensions of the room concerned.

465.5.1.3.1.4 The type of occupancy of all adjacent areas inclusive of space above and below the room concerned. If there is an exterior wall, the distance to the closest area where it is likely that individuals may be present.

465.5.1.3.1.5 The make and model of the X-ray equipment and the maximum technique factors.

465.5.1.3.1.6 The type of examinations or treatments which will be performed with the equipment.

465.5.1.3.2 Information shall be submitted on the anticipated maximum workload of the X-ray system.

465.5.1.3.3 If the services of a qualified person have been utilized to determine the shielding requirements, a copy of the report, including all basic assumptions used, shall be submitted with the plans.

465.5.2 X-ray film processing facilities.

465.5.2.1 Processing facilities. Each installation using a radiographic X-ray system shall provide suitable equipment for handling and processing radiographic film in accordance with the following provisions.

465.5.2.1.1 The area in which undeveloped films are handled for processing shall be devoid of light with the exception of light in the wave lengths having no significant effect on the radiographic film.

465.5.2.1.2 Film pass boxes, if provided, shall be so constructed as to exclude light when film is placed in or removed from the boxes, and shall incorporate adequate shielding to prevent exposure of undeveloped film to stray radiation.

465.5.2.1.3 Darkrooms used by more than one individual shall be provided a positive method to prevent accidental entry while undeveloped films are being handled or processed.

465.5.2.1.4 Where film is developed manually, the following conditions shall be met:

465.5.2.1.4.1 At least one trisectional tank made of mechanically rigid, corrosion-resistant material shall be utilized; and

465.5.2.1.4.2 The temperature of each solution shall be maintained within the range of 600°F to 800°F (160°C to 270°C). Film shall be developed in accordance with the time-temperature relationships specified by the film manufacturer, or, in the absence of such recommendations by the film manufacturer, with the following time-temperature chart:

465.5.2.1.4.3 Devices shall be utilized which will:

1. Indicate the actual temperature of the developer; and
2. Signal the passage of a preset time as short as 2 minutes.

465.6 Doors, interlocks, and warning systems.

465.6.1 A licensee shall control access to the teletherapy room by a door at each entrance.

465.6.2 A licensee shall equip each entrance to the teletherapy room with an electrical interlock system that shall:

1. Prevent the operator from turning on the primary beam of radiation unless each treatment room entrance door is closed;
2. Turn off the beam of radiation immediately when an entrance door is opened; and
3. Prevent the primary beam of radiation from being turned on following an interlock interruption until all treatment room entrance doors are closed and the beam on-off control is reset at the console.

465.6.3 A licensee shall equip each entrance to the teletherapy room with a conspicuously visible beam condition indicator light.

465.7 Radiation monitoring devices.

465.7.1 A licensee shall have a permanent radiation monitor in each teletherapy room capable of continuously monitoring beam status.

465.7.2 Each radiation monitor shall be capable of providing visible notice of a teletherapy unit malfunction that results in an exposed or partially exposed source. The visible indicator of high radiation levels shall be observable by an individual entering the teletherapy room.

TIME-TEMPERATURE CHART

Thermometer Reading (Degrees)		Minimum Developing Time (minutes)
C	F	
26.7	80	2
26.1	79	2
25.6	78	$2^1/_2$
25.0	77	$2^1/_2$
24.4	76	3
23.9	75	3
23.3	74	$3^1/_2$
22.8	73	$3^1/_2$
22.2	72	4
21.7	71	4
21.1	70	$4^1/_2$
20.6	69	$4^1/_2$
20.0	68	5
19.4	67	$5^1/_2$
18.9	66	$5^1/_2$
18.3	65	6
17.8	64	$6^1/_2$
17.2	63	7
16.7	62	8
16.1	61	$8^1/_2$
15.6	60	$9^1/_2$

465.7.3 Each radiation monitor shall be equipped with a backup power supply separate from the power supply to the teletherapy unit. This backup power supply may be a battery system.

465.8 Viewing systems. A licensee shall construct or equip each teletherapy room to permit continuous observation of the patient from the teletherapy unit console during irradiation.

465.9 Warning devices.

465.9.1 All locations designated as high radiation areas, and all entrances to such locations shall be equipped with easily observable warning lights that operate when and only when radiation is being produced.

465.9.2 Except in facilities designed for human exposure, each high radiation area shall have an audible warning device which shall be activated for 15 seconds prior to the possible creation of such high radiation area. Such warning device shall be clearly discernible in all high radiation areas and in any adjacent radiation areas.

465.9.3 Barriers, temporary or otherwise, and pathways leading to high radiation areas shall be identified in accordance with the Department of Health.

465.10 Design requirements for radiation rooms. Panoramic irradiators shall not be operated unless the following are met.

465.10.1 Each entrance to a radiation room must have a door or other physical barrier to prevent inadvertent entry of personnel while the sources are exposed. Product conveyor systems can serve as barriers as long as they reliably and consistently function as a barrier. It must not be possible to move the sources out of their shielded position if any door or barrier to the radiation room is open. Opening the door or barrier while the sources are exposed must cause the sources to return promptly to their shielded position. The primary entry door must have a lock which is operated by the same key used to control source movement. The doors and barriers must not prevent any individual in the radiation room from leaving.

465.10.2 Each entrance to a radiation room must have an independent backup access control to detect personnel entry while the sources are exposed if the primary access control fails. Entry while the sources are exposed must cause the sources to return to their fully shielded position and also must activate a visible and audible alarm to make the individual entering the room aware of the hazard. The alarm also must alert at least one other individual of the entry who is on site and who is trained to render or summon assistance promptly.

465.10.3 A radiation monitor must be provided to detect the presence of high radiation levels in the radiation room before personnel entry. The monitor must be integrated with personnel access door locks to prevent room access when the monitor detects high radiation levels. The monitor must generate audible and visible alarms if high radiation levels are detected when personnel entry is attempted. The monitor can be located in the entrance or maze but not in the direct radiation beam.

465.10.4 Before sources move from their shielded position, the source control automatically must activate conspicuous visible and audible alarms to alert people in the radiation room that the sources will be moved from their shielded position. The alarms must give individuals enough time to leave the room before the sources leave the shielded position.

465.10.5 Each radiation room must have a clearly visible and readily accessible control which will allow an individual in the room to return the sources to their fully shielded position.

465.10.6 Each radiation room must contain a control which allows the sources to move from the shielded position only if the control has been activated and the door or barrier to the radiation room subsequently has been closed within a preset time.

465.10.7 Each entrance to the radiation room and each entrance to the area within the personnel access barrier of an underwater irradiator must be posted as required by this section. Panoramic irradiators also must be posted as required by this section. The sign can be removed, covered or otherwise made inoperative when the sources are shielded fully.

465.10.8 If the radiation room has roof plugs or other movable shielding, it must not be possible to operate the irradiator unless the shielding is in its proper location. This requirement can be met by interlocks which prevent operation if shielding is not placed properly or by an operating procedure requiring inspection of shielding before operating.

465.10.9 Underwater irradiators must have a personnel access barrier around the pool which must be locked to prevent access when the irradiator is not attended. Only operators and facility management shall have access to keys to the personnel access barrier. There must be an intrusion alarm to detect unauthorized entry when the personnel access barrier is locked. Activation of the intrusion alarm must alert an individual, not necessarily on site, who is prepared to respond or summon assistance.

465.11 Fire protection.

465.11.1 The radiation room at a panoramic irradiator must have heat and smoke detectors. The detectors must activate an audible alarm. The alarm must be capable of alerting a person who is prepared to summon assistance promptly. The sources must become fully shielded automatically and the air handling systems within the radiation room must be disabled automatically if a fire is detected.

465.11.2 The radiation room at a panoramic irradiator must be equipped with a fire suppression or extinguishing system capable of extinguishing a fire without the entry of personnel into the room. The system for the radiation room must have a shutoff valve to control flooding into unrestricted areas.

465.12 Irradiator pools.

465.12.1 Irradiator pools must possess a watertight stainless steel liner or a liner metallurgically compatible with other components in the pool or be constructed so that there is a low likelihood of substantial leakage and have a surface designed to facilitate decontamination and must include a means of safely storing sources during repairs of the pool.

465.12.2 Irradiator pools must have no penetration more than 20 inches (0.5 m) below the normal low water level which could allow water to drain out of the pool. Pipes which have intakes more than 20 inches (0.5 m) below the normal low water level must have siphon breakers to prevent the siphoning of the pool.

465.12.3 A means must be provided to replenish water losses from the pool.

465.12.4 An audible and visible indicator must be provided to indicate if the pool water level is below the normal low water level or above the normal high water level.

465.12.5 Irradiator pools must be equipped with a purification system designed to maintain the water during normal operation at a level of conductance not exceeding 20 microsiemens per centimeter and with a clarity so the sources can be seen clearly.

465.12.6 A physical barrier such as a railing or cover must be used around irradiator pools during normal operation to prevent personnel from accidentally falling into the pool. The barrier can be removed during maintenance, inspection and service operations.

465.12.7 If long-handled tools or poles are used in irradiator pools, the radiation dose rate on the handling areas of the tools must not exceed 2 millirem (0.02 millisievert) per hour.

465.13 Design requirements.

465.13.1 Panoramic irradiators shall meet the following design requirements.

465.13.1.1 Shielding. The shielding walls shall be designed to meet generally accepted building code requirements for reinforced concrete and shall design the walls, wall penetrations, and entrance ways to meet the radiation shielding requirements of Rule 64E-5.1407 *Florida Administrative Code*. If the irradiator will use more than 2×10^{17} becquerels (5 million curies) of activity, the licensee shall evaluate the effects of heating of the shielding walls by the irradiator sources.

465.13.1.2 Foundations. The foundation shall be designed with consideration given to soil characteristics to ensure it is adequate to support the weight of the facility.

465.13.1.3 Fire protection. The number, design, locations and spacing of the smoke and heat detectors and extinguishing system shall be appropriate to detect fires and that the detectors are protected from mechanical and radiation damage. The fire extinguishing system shall be designed to provide the necessary discharge patterns, densities, and flow characteristics for complete coverage of the radiation room and that the system is protected from mechanical and radiation damage.

465.13.1.4 Wiring. The electrical wiring and electrical equipment in the radiation room shall be selected to minimize failures due to prolonged exposure to radiation.

465.13.2 Pool irradiators shall meet the following design requirements.

465.13.2.1 Pool integrity. The pool shall be designed to assure that it is leak resistant, that it is strong enough to bear the weight of the pool water and shipping casks, that a dropped cask would not fall on sealed sources, that all penetrations meet the requirements of Section 465.12.2, and that metal components are metallurgically compatible with other components in the pool.

465.13.2.2 Water-handling system. The water purification system shall be designed to meet the requirements of Section 465.12.5. The system must be designed so that water leaking from the system does not drain to unrestricted areas without being monitored. The licensee shall design the water chiller system so that it shall compensate adequately for the amount of heat generated by the sealed sources. The water-handling system must have remote controls capable of safely operating a contaminated system.

465.13.3 Floor penetrations. No floor penetrations, including expansion joints, floor joints and drains, shall allow the uncontrolled release of water from the radiation room that has not been analyzed for its radioactive content.

465.14 Construction control. The requirements of this section must be met before loading sources. Panoramic irradiators shall meet the following construction requirements.

465.14.1 Shielding. The construction of the shielding shall be monitored to verify that it meets design specifications and generally accepted building code requirements for reinforced concrete.

465.14.2 Foundations. The construction of the foundations shall be monitored to verify that they meet design specifications.

465.14.3 Fire protection. The ability of the heat and smoke detectors shall be verified to detect a fire, to activate alarms and to cause the source rack to become fully shielded automatically. The operability of the fire suppression or extinguishing system shall also be verified.

465.14.4 Wiring. The electrical wiring and electrical equipment that were installed shall be verified to meet the design specifications.

465.15 Pool irradiators shall meet the following construction requirements.

465.15.1 Pool integrity. The integrity of the pool shall be tested to verify that the pool meets the design specifications. The penetrations and water intakes shall be verified to meet the requirements of Section 465.12.2.

SECTION 466
DAYCARE OCCUPANCIES

466.1 General.

466.1.1 Places of religious worship shall not be required to meet the provisions of this section in order to operate a nursery while services are being held in the building.

466.1.2 Where day care occupancies with clients 24 months or less in age or incapable of self-preservation are located one or more stories above the level of exit discharge or where day care occupancies are located two or more stories above the level of exit discharge, smoke barriers shall be provided to divide such stories into a minimum of two smoke compartments. The smoke barriers shall be constructed in accordance with Section 709 but shall not be required to have a fire-resistance rating.

466.2 Closet doors. Every closet door latch shall be such that clients can open the door from inside the closet.

466.3 Bathroom doors. Every bathroom door lock shall be designed to permit opening of the locked door from the outside in an emergency. The opening device shall be readily accessible to the staff.

466.4 Door closure. Any exit door designed to be normally closed shall be kept closed and shall comply with Section 716.5.

466.5 Location and construction types. Day care occupancies shall be limited to the locations and construction types specified in Table 466.5. Day care homes and adult day care shall be permitted to be of any type construction permitted by this code.

466.6 Protection from hazards. Rooms or spaces for the storage, processing or use of materials specified below shall be protected in accordance with the following.

466.6.1 The following rooms or spaces shall be separated from the remainder of the building by fire barriers having a fire-resistance rating of not less than 1 hour or shall be protected by an approved automatic extinguishing system.

1. Boiler and furnace rooms.

   Exception: Rooms enclosing only air-handling equipment.
2. Rooms or spaces used for the storage of combustible supplies in quantities deemed hazardous by the building official.
3. Rooms or spaces used for the storage of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards.
4. Janitor closets.

   Exception: Doors to janitor closets shall be permitted to have ventilating louvers where the space is protected by automatic sprinklers.

466.6.2 The following rooms or spaces shall be separated from the remainder of the building by fire barriers having

TABLE 466.5
DAYCARE LOCATION AND TYPE OF CONSTRUCTION

LOCATION OF DAY CARE	TYPE OF CONSTRUCTION	
	Sprinklered Building	Construction Type
1 story below LED[1]	Yes	I, II, IIIA, IV, V-A
Level of Exit Discharge	No	Any type permitted by this code
1 story above LED[1]	Yes No	Any type
2 or 3 stories above LED[1]	Yes	I, II, III-A, V-A
> 3 stories above LED[1] but not high rise	Yes	I
High rise	Yes	I

Notes:
[1]LED means Level of Exit Discharge.

a fire-resistance rating of not less than 1 hour and shall be protected by an approved automatic fire-extinguishing system.

1. Laundries.
2. Maintenance shops, including woodworking and painting areas.
3. Rooms or spaces used for processing or use of combustible supplies deemed hazardous by the building official.
4. Rooms or spaces used for processing or use of hazardous materials or flammable or combustible liquids in quantities deemed hazardous by recognized standards.

Exception: Food preparation facilities protected in accordance with NFPA 96 shall not be required to have openings protected between food preparation areas and dining areas. Where domestic cooking equipment is used for food warming or limited cooking, protection or segregation of food preparation facilities shall not be required if approved by the building official.

466.6.3 Where automatic extinguishing is used to meet the requirements of this section, sprinkler piping serving not more than six sprinklers for any isolated hazardous area shall be permitted to be connected directly to a domestic water supply system having a capacity sufficient to provide 0.15 gpm/per square foot (6.1 L/min/m^2) of floor area throughout the entire enclosed area. An indicating shutoff valve shall be installed in an accessible location between the sprinklers and the connection to the domestic water supply.

466.7 Detection and alarm systems. Day care occupancies shall be provided with a fire alarm system in accordance with Section 907 and this section.

Exception: Day care occupancies housed in one room.

466.7.1 Initiation of the required fire alarm system shall be by manual means and by operation of any required smoke detectors and required sprinkler systems.

466.7.1.1 Occupant notification signals shall be audible and visual signals in accordance with NFPA 72 and *Florida Building Code, Accessibility*. The general evacuation alarm signal shall operate throughout the entire building.

Exceptions:

1. Where total evacuation of occupants is impractical because of building configuration, only the occupants in the affected zones shall be initially notified. Provisions shall be made to selectively notify occupants in other zones to afford orderly evacuation of the entire building.
2. Where occupants are incapable of evacuating themselves because of age, physical or mental disability or physical restraint, the private operating mode as described in NFPA 72 shall be permitted to be used. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. This notification shall include means to readily identify the zone, area, floor or building in need of evacuation.

466.7.1.2 Fire department notification. The fire alarm system shall be arranged to transmit the alarm automatically to the fire department in accordance with NFPA 72 by means of one of the following methods as approved by the building official:

1. An auxiliary alarm system, or
2. A central station connection, or
3. A proprietary system, or
4. A remote station connection.

Exception: Where none of the above means of notification is available, a plan for notification of the fire department, acceptable to the building official, shall be provided.

466.7.2 Detection. A smoke detection system shall be installed in accordance with NFPA 72, with placement of detectors in each story in front of doors to the stairways and in the corridors of all floors occupied by the day care occupancy. Detectors also shall be installed in lounges, recreation areas and sleeping rooms in the day care occupancy.

Exception: Day care occupancies housed in one room.

466.8 Corridors. Every interior corridor shall be constructed of walls having not less than a 1-hour fire-resistance rating.

Exceptions:

1. In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Sections 901.6 and 903.3.1.1, corridor walls shall not be required to be rated, provided that such walls form smoke partitions in accordance with Section 710.
2. Where the corridor ceiling is an assembly having 1-hour fire-resistance rating where tested as a wall, the corridor walls shall be permitted to terminate at the corridor ceiling.
3. Lavatories in unsprinklered buildings shall not be required to be separated from corridors, provided that they are separated from all other spaces by walls having not less than a 1-hour fire-resistance rating in accordance with Section 709.
4. Lavatories shall not be required to be separated from corridors, provided the building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Sections 901.6 and 903.3.1.1.

466.9 Flexible plan and open plan buildings. Flexible plan and open plan buildings shall comply with the requirements of this chapter as modified as follows.

466.9.1 Each room occupied by more than 300 persons shall have two or more means of egress entering into sepa-

rate atmospheres. Where three or more means of egress are required, not more than two of them shall enter into a common atmosphere.

466.9.2 Flexible plan buildings shall be evaluated while all folding walls are extended and in use as well as when they are in the retracted position.

466.10 Day care homes.

466.10.1 This section establishes life safety requirements for day care homes in which more than three but not more than 12 clients receive care, maintenance and supervision by other than their relative(s) or legal guardian(s) for less than 24 hours per day.

Exception: Facilities that supervise clients on a temporary basis with a parent or guardian in close proximity.

466.10.2 Definitions. For definitions, see Chapter 2.

466.10.3 Places of religious worship shall not be required to meet the provisions of this section in order to operate a nursery while services are being held in the building.

466.10.4 Occupancies that include part-day preschools, kindergartens and other schools whose purpose is primarily educational, even though the children are of preschool age, shall comply with the provisions for Group E occupancy.

466.10.5 Smoke detection systems.

466.10.5.1 Single-station smoke alarms installed in accordance with the household fire warning equipment requirements of Chapter 2 of NFPA 72 shall be installed within day care homes.

Exception: System smoke detectors installed in accordance with NFPA 72 and arranged to function in the same manner shall be permitted.

466.10.5.2 Where the day care home is located within a building of another occupancy, any corridors serving the day care home shall be provided with a complete smoke detection system installed in accordance with NFPA 72.

466.10.5.3 Single-station smoke alarms shall be powered by the building electrical system.

466.10.5.4 Single-station smoke alarms shall be provided in all rooms used for sleeping.

466.10.5.5 Where two or more smoke alarms are required within a living unit, suite of rooms, or similar area, they shall be arranged so that operation of any smoke alarm shall cause all smoke alarms within the living unit, suite of rooms or similar area to sound.

466.10.5.5.1 The alarms shall sound only within an individual living unit, suite of rooms or similar area and shall not actuate the building fire alarm system. Remote annunciation shall be permitted.

SECTION 467
HOSPICE INPATIENT FACILITIES AND UNITS AND HOSPICE RESIDENCES

467.1 Scope. All hospice inpatient facilities and units and residences shall comply with the following design and construction standards. Enforcement and interpretation of these provisions shall be by the state agency authorized by Section 553.73, *Florida Statutes*.

Note: Other administrative and programmatic provisions may apply. See Department of Elder Affairs (DOEA) Rule 58A-2, *Florida Administrative Code*, Agency for Health Care Administration (AHCA) Rule 59C-1, *Florida Administrative Code*, and Chapter 400 Part VI, *Florida Statutes.*

467.2 Physical plant requirements (inpatient facility and unit).

467.2.1 As used in this rule, "inpatient facility and unit" means the location where inpatient services are provided to hospice patients that are in need of hospice inpatient care.

467.2.2 Codes and standards.

467.2.2.1 All new inpatient units and facilities, and additions or renovations to existing units and facilities shall be in compliance with the requirements for:

1. Institutional Occupancy—Group I-2, as described in Section 308.3 of this code; and
2. The National Fire Protection Association Life Safety Code 101, Chapter 18, New Health Care Occupancy, as described in Rule 69A-3.012, *Florida Administrative Code*, Standards of the National Fire Protection Association and incorporated by reference in Rule 69A-3.012, *Florida Administrative Code.*

467.2.2.2 Inpatient sleeping rooms shall be made accessible in accordance with the requirements of the *Florida Building Code, Accessibility.*

467.2.2.3 In renovations and additions to existing facilities, only that portion of the total facility affected by the project must comply with applicable sections of the codes for new facilities and units.

467.2.2.4 Existing portions of the facility that are not included in the renovation or addition but are essential to the functioning of the complete facility, as well as existing areas which receive less than substantial amounts of new work, shall comply with the applicable sections of the codes for existing inpatient facilities and units.

467.2.2.5 All existing inpatient facilities and units licensed by the Agency for Health Care Administration shall be in compliance with *National Fire Protection Association Life Safety Code 101*, Chapter 19, Existing Health Care Occupancy, and incorporated by reference in Rule 69A-3.012, *Florida Administrative Code*.

467.2.3 Construction requirements. The following shall be provided in each inpatient facility and unit.

467.2.3.1 Each patient sleeping room shall have a minimum room area exclusive of toilet room, or permanently attached or built in closets, lockers or wardrobes, of 100 square feet (9.29 m^2) per bed for private rooms and 80 square feet (7.70 m^2) per bed for double occupancy rooms.

467.2.3.2 Each patient sleeping room shall have a window or door with a clear glass light in compliance with Section 1205.2 of this code. The window or door shall open directly to an atrium or to the outside of the building with a minimum of 20 feet (6.10 m) in clear and unobstructed vista measured perpendicularly from the window or door.

467.2.3.3 Each patient sleeping room shall have a wardrobe, locker or closet suitable for hanging clothing of the patient.

467.2.3.4 Other than a patient sleeping room located in a hospital or nursing home, each patient sleeping room shall have access to a toilet room without having to enter the general corridor area. One toilet room shall serve no more than four beds and no more than two resident rooms. The door shall be side hinged, swing out from the toilet room, and unless otherwise required by this code, be at least 32 inches (813 mm) wide. The toilet room shall contain a water closet with grab bars on both sides and an emergency nurse call station. The water closet shall be equipped with a bedpan-rinsing device.

467.2.3.5 A handwashing facility shall be provided within each patient toilet room or within each patient bedroom.

467.2.3.6 A nurses' station, clean workroom and soiled workroom shall be provided. Access to these rooms shall be from a corridor or ante room.

467.2.3.7 A charting space for clinical staff shall be provided at each nurses' station.

467.2.3.8 A handwashing facility shall be located in or near each nurses' station.

467.2.3.9 The clean workroom shall be provided with a work counter, hand wash facility, storage facilities and covered waste receptacle.

467.2.3.10 The soiled workroom shall be provided with a service sink equipped with rinsing device, work counter, a handwashing facility, storage facilities, covered waste receptacle and covered linen receptacle.

467.2.3.11 A drug distribution system shall be provided with provisions for the locked storage of medications. Nothing in this section shall prohibit the use of the clean workroom for drug distribution.

467.2.3.12 A clean linen storage room or closet shall be provided.

467.2.3.13 A nourishment station with equipment for preparing or serving nourishments between scheduled meals shall be provided and shall be available for patient, family, volunteers, guests and staff use. Provisions shall be made for the use and storage of small appliances such as coffee makers or toasters. A minimum of two duplex receptacles connected to a small appliance circuit shall be provided.

467.2.3.14 A nurse calling system accessible by the patient shall be provided.

467.2.3.15 Storage for administrative supplies shall be provided.

467.2.3.16 Parking for stretchers and wheelchairs in an area out of the path of normal traffic and of adequate size for the unit shall be provided.

467.2.3.17 A janitor's closet with a floor drain and storage space for housekeeping equipment and supplies shall be provided.

467.2.3.18 A multipurpose lounge suitable and furnished for reception, recreation, dining, visitation, group social activities and worship shall be provided.

467.2.3.19 A conference or consultation room for patient and family use shall be provided.

467.2.3.20 A washer and dryer for patients' personal use shall be provided.

467.2.4 Details.

467.2.4.1 Fixtures, such as drinking fountains, public telephone, vending machines and portable equipment, shall not be located or stored so as to restrict corridor traffic or reduce the minimum required corridor width.

467.2.4.2 Doors to patient tub rooms, showers and water closets that swing into the room shall be equipped with reversible hardware that will allow the door to swing out in an emergency.

467.2.4.3 Doors, except those to closets or spaces not subject to occupancy, shall not swing into the exit access corridors.

467.2.4.4 Windows and outer doors, if used for ventilation, shall be equipped with insect screens.

467.2.4.5 Interior thresholds and expansion joint covers shall be made flush with the floor surface.

467.2.4.6 Grab bars shall be provided at all patient toilets, showers, and tubs. The bars shall have a clearance of $1^1/_2$ inches (38 mm) to the walls and shall be sufficiently anchored to sustain a concentrated applied load of not less than 250 pounds (113 kg).

467.2.4.7 Single paper towel dispensers, soap dispensers and covered waste receptacles shall be provided at all hand washing facilities.

467.2.4.8 Staff handwashing facilities shall be fitted with wrist blades and a gooseneck type spout.

467.2.4.9 All handwashing facilities shall be securely anchored to withstand an applied vertical load of not less than 250 pounds (113 kg) on the front of the fixture.

467.2.5 Elevators. In new multistory units and facilities, an elevator shall be provided in compliance with the

requirements of Chapter 30 of this code. In addition, a hospital-type elevator large enough to accommodate a bed and attending staff shall service all patient sleeping rooms and patient treatment areas located above the ground floor. The car shall be at least 5 feet 8 inches (1.73 m) wide by 9 feet (2.74 m) deep and the car doors shall have a clear opening of not less than 4 feet (1.22 m) wide and 7 feet (2.13 m) high.

467.2.6 Mechanical system requirements.

467.2.6.1 Air conditioning, heating and ventilating systems.

1. All patient occupied areas shall be heated or cooled by individual or central units. Heating units shall be designed to provide a minimum of 72°F (22.22°C) ambient indoor temperature and air conditioning units shall be designed to provide a minimum of 78°F (25.55°C) ambient indoor temperature.
2. All air-supply and air-exhaust systems shall be mechanically operated. Fans serving exhaust systems shall be located at the discharge end of the system.

467.2.6.1.1 Carbon monoxide detector. See Section 916.1.

467.2.6.2 Plumbing and other piping systems. Water distribution systems shall be arranged to provide hot water at each hot water outlet at all times. Hot water at shower, bathing, and handwashing facilities for patients' personal use shall not exceed 110°F (43.3°C).

467.2.7 Electrical system requirements.

467.2.7.1 Lighting.

1. All spaces occupied by people, machinery, and equipment within the building, approaches to building, and parking areas shall have electric lighting.
2. All patients' rooms shall have general lighting and night lighting. General room luminaries shall be switched at the entrance to the patient room.

467.2.7.2 Receptacles. All patient rooms shall have hospital grade duplex grounding-type receptacles.

467.2.8 Emergency electrical system.

467.2.8.1 A Type III essential electrical system shall be provided in all hospice facilities as described in *National Fire Protection Association Life Safety Code* 99, "Health Care Facilities", and incorporated by reference in Rule 69A-3.012, *Florida Administrative Code.* The emergency power for this system shall meet the requirements of a Level-II, type 10, Class 48 generator as described in *National Fire Protection Association Life Safety Code* 110, "Emergency Standby Power Systems", and incorporated by reference in Rule 69A-3.012, *Florida Administrative Code*.

467.2.8.2 In new construction, the normal main service equipment shall be separated from the emergency distribution equipment by locating it in a separate room. Transfer switches shall be considered emergency distribution equipment for this purpose.

467.2.8.3 Switches for critical branch lighting shall be completely separate from normal switching. The devices or cover plates shall be of a distinctive color. Critical branch switches are permitted to be adjacent to normal switches. Switches for life safety lighting are not permitted except as required for dusk-to-dawn automatic control of exterior lighting fixtures.

467.2.8.4 There shall be selected life safety lighting provided at a minimum of 1 footcandle (10 lux) and designed for automatic dusk-to-dawn operation along the travel paths from the exits to the public way or to safe areas located a minimum of 30 feet (9.14 m) from the building.

467.2.8.5 A minimum of one elevator per bank serving any patient use floor shall be connected to the equipment branch of the essential electric system and arranged for manual or automatic operation during loss of normal power. Elevator cab lighting, controls, and communication and signal systems shall be connected to the life safety branch.

467.2.8.6 There shall be a dedicated low-fuel alarm for the day tank supplying the emergency generator driver. A manual pump shall also be provided for the day tank. The alarm shall be located at the generator derangement panel.

467.2.8.7 Transfer switch contacts shall be of the open type and shall be accessible for inspection and replacement.

467.2.8.8 If required by the facility's emergency food plan, there shall be power connected to the equipment branch of the essential electrical system for kitchen refrigerators, freezers and range hood exhaust fans. Selected lighting within the kitchen and dry storage areas shall be connected to the critical branch of the essential electrical system.

467.3 Residential units.

467.3.1 Residential units shall comply with the *Florida Building Code* and the *National Fire Protection Association Life Safety Code* 101 as adopted by the *Florida Fire Prevention Code.*

467.3.2 Residential units shall comply with the following codes and standards.

467.3.2.1 All new facilities and additions and renovations to existing facilities shall be in compliance with:

1. Section 310.1 of this code for Group R-4 occupancy;
2. The *National Fire Protection Association Life Safety Code* 101, Chapter 32, Residential Board and Care Occupancy and incorporated by reference in Rule 69A-3.012, *Florida Administrative Code*, and
3. The *Florida Building Code, Accessibility*.

467.3.2.2 All existing facilities shall comply with *National Fire Protection Association Life Safety Code* 101, Chapter 33, Residential Board and Care Occupancy and incorporated by reference in Rule 69A-3.012, *Florida Administrative Code*.

SECTION 468
SCHOOLS, COLLEGES AND UNIVERSITIES

468.1 Scope. Florida's public and private schools, colleges, and universities shall comply with all applicable requirements of the code and the following standards. These are minimum standards; boards or owners may impose more restrictive requirements. Additional requirements for public educational facilities in Florida, including public schools and Florida's colleges, are found in Section 453, State Requirements for Educational Facilities.

468.2 Sites.

468.2.1 Drainage. Soil, grass, and planting beds shall provide positive drainage away from sidewalks, but shall not fall away at more than a 3-percent gradient slope for a minimum distance of 5 feet (1524 mm) from the edge.

468.2.2 Playgrounds and equipment. Playgrounds and equipment shall be safe, structurally sound, verminproof, and shall not have jagged or sharp projections. Playground equipment shall be anchored to suitable foundations to prevent toppling or dislodgement. Cushioning materials such as mats, wood chips, or sand shall be used under climbing equipment, slides, and swings.

468.2.3 Outdoor waste containers. A smooth nonabsorbent surface shall be provided for outdoor waste containers.

468.3 Building construction.

468.3.1 Rodent proofing. Buildings for Group E occupancies shall be rodentproofed in accordance with Appendix F, Rodent-proofing.

468.3.2 Glare from natural light. Sources of natural light in instructional spaces shall be glazed with glare reducing materials or shall be shielded to prevent glare that can interfere with seeing task within the instructional space.

468.3.3 Automated external defibrillator. Automated external defibrillators shall be provided in public educational facilities that are a member of the Florida High School Athletic Association.

468.3.4 Diaper changing stations. A diaper changing station shall be located in or adjacent to any classroom where children wearing diapers are in attendance. A hand washing lavatory shall be provided within the changing station area. Access shall be provided to the lavatory without opening doors or touching a handle.

468.3.5 Plumbing.

468.3.5.1 Standards. Educational and ancillary facilities shall be provided with toilets, handwashing facilities, and drinking fountains for all occupants, in ratios and accessible as required by the *Florida Building Code*, Florida law, and federal requirements.

Exception: A single unisex toilet room is allowed where provided in child care, prekindergarten through grade 3 and ESE classrooms.

468.3.5.2 Teacher toilets. Faculty and staff toilets shall be separate from student toilets.

Exception: Separation of faculty/staff and student toilet facilities is not required for colleges and universities.

468.3.5.3 Toilet room access.

468.3.5.3.1 Toilet facilities for pre-k through grade 12 shall be accessible under continuous roof cover from all student occupied spaces.

Exception: Relocatable classrooms installed for temporary use.

468.3.5.3.2 Access to group toilet rooms. Access to student group toilet rooms shall not be through an occupied space, storage space, or equipment space.

468.3.5.4 Shielding device. The entry to each group toilet room shall be provided with a door, partition, or other shielding device to block from view the occupants in the toilet room. If a door is provided, it shall have a closer and shall swing out in the direction of egress.

468.3.5.5 Walls. Walls in toilet rooms shall be impervious to a height of at least 4 feet (1219 mm) above the floor. Walls in kitchens, sculleries, can wash areas, and shower rooms shall be impervious to a height of at least 6 feet (1829 mm) above the floor. Toilet and shower partitions shall be impervious.

468.3.5.6 Floor drains and hose bibbs. All group toilet rooms shall be provided with at least one floor drain and one easily accessible hose bibb. The floor shall be sloped down to the drain.

468.3.5.7 Handwashing facilities.

468.3.5.7.1 Handwashing facilities shall be located within or adjoining each toilet room.

468.3.5.7.2 Soap dispensers for liquid, foam, or powdered soap shall be provided at all handwashing basins.

468.3.5.7.3 Individual towel dispensers or hot-air hand drying devices shall be provided near handwashing basins.

468.3.5.8 Showers.

468.3.5.8.1 Shower heads shall be based on the peak load to be accommodated at one time and provided at the ratio of one shower head for each five students, located a minimum of 30 inches (762 mm) apart.

468.3.5.8.2 Floors shall be drained in such a manner that waste water from any shower head will not pass over areas occupied by other bathers.

468.3.5.8.3 Water shall be heated and the temperature at the shower head shall not exceed 110°F (43°C) nor be less than 95°F (35°C).

468.3.6 Mechanical.

468.3.6.1 Natural ventilation. Natural ventilation shall not be provided in toilet rooms, shower rooms, lockers rooms, and storage rooms for athletic equipment or soiled clothes.

468.3.6.2 Fans and blowers. Fans and blowers shall be sized and designed to provide the required air movement without excessive or disturbing noise that would interfere with the educational program provided in the space being ventilated.

468.3.6.3 Kilns. Kiln rooms and areas shall be provided with adequate exhaust to dispel emitted heat to the exterior, and they shall not be connected to any other exhaust system.

468.3.6.4 Chemistry laboratories and science classrooms. HVAC systems in chemistry labs and science classrooms shall be designed and installed to ensure that chemicals originating from the space are not recirculated.

Exception: A high capacity emergency exhaust system providing twenty (20) air changes per hour may be used in chemistry laboratories and science classrooms with fume hoods. Positive ventilation may be provided via doors or windows opening to the exterior. Signs providing operational instructions shall be permanently installed at the emergency exhaust system fan switch and adjacent to the door(s) or window(s) to be opened.

468.3.6.5 Chemical storage. Rooms used for the storage, handling, and disposal of chemicals used in school, college, and university laboratories shall be vented to the exterior. The ventilation system shall not be connected to the air-conditioning return air system, and the rooms shall be kept at moderate temperatures. Chemical storage cabinets, when vented to the exterior, shall be mechanically vented in accordance with NFPA 30 and NFPA 91.

468.3.7 Lighting.

468.3.7.1 Illumination level in classrooms/instructional spaces. Illumination at the normal task level for the type of classroom/instruction space shall be a minimum of 40 footcandles (400 Lux).

468.3.7.2 Illumination uniformity in classrooms/ instruction spaces. Luminaries shall have a ceiling arrangement or positioned around the walls such that a uniformed illumination level, within 10 footcandles (100 Lux), is maintained at the students required normal task level for the type of classroom/instruction space.

468.3.7.3 Brightness ratio in classrooms/instructional spaces. The brightness ratio between the student task level and the instruction area or areas or visual display location shall be one (1) to five (5) or less.

468.3.7.4 Illumination failure of general and means of egress luminaries. Illumination systems shall be designed and maintained so that the failure of any single lighting unit, such as an electric luminary, does not leave any occupied space or means of egress in the dark. (See Section1006 for additional means of egress requirements.)

468.3.7.5 Glare elimination. Illumination of permanently installed markerboards, chalkboards and other instruction aids shall be designed to eliminate glare and shadows.

SECTION 469
OFFICE SURGERY SUITE

469.1 Scope. An office surgery suite is that portion of a physician's office where surgery is performed according to Rule 64B-8-9009 Standard of Care for Office Surgery. These minimum standards of design and construction apply to a physician's office required to register under Rule 64B8-9.009.(1)(a).

469.1.1 The minimum standards of design, construction and specified minimum essential utilities and facilities of this section shall be applicable to the all office surgery suites that are required to be registered but have not yet been registered with the Florida Department of Health in accordance with *Florida Administrative Code* 64B8-9.0091 Requirement for Physician Office Registration; Inspection or Accreditation, and to all newly constructed office surgery suites, and all additions, alterations or renovations to all existing office surgery suites on the effective date of this code.

469.2 Codes and standards.

469.2.1 In addition to the minimum requirements of this section, an office surgery suite shall also be in compliance with the following:

469.2.1.1 The fire codes as described in Chapter 69A-3.012, "Standards of the National Fire Protection Association Adopted," *Florida Administrative Code.*

469.2.1.2 Part I of The *Guidelines for Design and Construction of Health Care Facilities* (*The Guidelines*), as referenced in Chapter 35 of this code.

469.3 Office surgery suite occupancy classification.

469.3.1 Office surgery suites that provide services or treatment, on an outpatient basis, to four or more patients at the same time that either renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance from others or that provide surgical treatment requiring general anesthesia to four or more patients at the same time, shall meet the requirements of Ambulatory Health Care Occupancies as described in NFPA 101, *Life Safety Code* and this code.

469.3.2 All other office surgery suites shall comply with the requirements of Business occupancy as described in NFPA 101, Life Safety Code, and this code.

469.4 Physical plant standards.

469.4.1 Administration and public areas. There shall be a waiting room or lobby area of sufficient size to accommodate patients and visitors.

469.4.1.1 There shall be a public toilet(s) with handwashing station(s), public access to a telephone for local calls, and an electric water fountain or a water and cup-dispensing unit. When the office surgery suite is located within an office building, these functions may be provided as part of the office building's public areas.

469.4.1.2 As determined by the functional program of the office surgery suite, there shall be an admitting office, secure medical record storage, director of nursing office, in-service training or conference area.

469.4.1.3 There shall be a toilet room(s) with handwashing station located within the office surgery suite for patients.

469.4.2 Pre-operative area(s).

469.4.2.1 As determined by the functional program of the office surgery suite, the following elements shall be provided for clinical services.

469.4.2.2 Patient change areas. An area(s) shall be provided for patients to change from street clothing into surgical gowns and to prepare for surgery. Provisions shall be made for patient privacy and for securing patients' personal effects.

469.4.2.3 A separate and distinct primary recovery area(s) shall be provided that is located adjacent to the operating room(s). It shall contain a minimum of one (1) Pre-operative station per each operating room and shall not be part of the restricted area of the office surgery suite. There shall be 3 feet (0.914 meter) of clear floor area around three sides of each recovery station for work and circulation.

469.4.2.4 The Pre-operative area(s) shall be located in direct view of a nurse station.

469.4.2.5 Cubicle curtains or other provisions for privacy during Pre-operative care shall be provided.

469.4.2.6 There shall be a dedicated handwashing station located in or immediately adjacent to the Pre-operative area(s).

469.4.2.7 If determined by the functional program taking into consideration the types of surgery and procedures performed, the types of anesthesia used, average recovery periods, and staffing levels, this area may be shared with the Post-operative Area.

469.4.3 Operating room(s).

469.4.3.1 There shall be at a minimum one operating room in each office surgery suite. The size and location of the operating room(s) shall be dependent on the level of care provided and equipment utilized based on the functional program.

469.4.3.2 The size of the operating room(s) shall be as defined by the American College of Surgeons Classes as adapted from the American College of Surgeons publication 04GR-0001: *Guidelines for Optimal Ambulatory Surgical Care and Office-Based Surgery*, which was developed by the Board of Governors Committee on Ambulatory Surgical Care and published in May 2000.

469.4.3.2.1 Class A. To be used for Level I Office Surgery as defined by Rule 64B8-9.009, *Florida Administrative Code*.

469.4.3.2.1.1 Class A operating rooms shall have a minimum clear floor area of 150 square feet (14 m^2) with a minimum clear dimension of 12 feet (3.65 meters).

469.4.3.2.1.2 There shall be a minimum clear distance of 3 feet 6 inches (1.07 m) at each side, the head, and the foot of the operating table.

469.4.3.2.2 Class B: To be used for Levels I, II and IIA, Office Surgery, as defined in Rule 64B8-9.009, *Florida Administrative Code*.

469.4.3.2.2.1 Class B operating rooms shall have a minimum clear dimension of 15 feet (4.57 m).

469.4.3.2.2.2 Room arrangement shall permit a minimum clear dimension floor area of 250 square feet (23.23 m^2) with a minimum of 3 feet 6 inches (1.07 m) at each side, the head, and the foot of the operating table.

469.4.3.2.3 Class C. To be used for Levels I, II, IIA and III, Office Surgery, as defined in Rule 64B8-9.009, *Florida Administrative Code*.

469.4.3.2.3.1 Class C operating rooms shall have a minimum clear floor area of 400 square feet (37.16 m^2) and a minimum clear dimension of 18 feet (5.49 m).

469.4.3.2.3.2 Room arrangement shall permit a minimum clear dimension of 4 feet (1.22 m) at each side, the head, and the foot of the operating table.

469.4.3.3 The Class B and C operating room(s) shall be located within the semi-restricted area within the office surgery suite.

469.4.3.4 The operating room(s) shall be equipped with an emergency communication system connected to at least one continuously occupied location within the office surgery suite, such as a control or nurse station.

469.4.4 Post-operative area(s).

469.4.4.1 Area(s) for recovery in office surgery suites shall be provided in accordance with the functional program with the following minimum requirements.

469.4.4.2 A separate and distinct primary recovery area(s) shall be provided that is located within or adjacent to the operating room(s). It shall contain a minimum of one (1) recovery station per each operating room and shall not be part of the restricted area of the office surgery suite. There shall be 3 feet (0.9 m) of clear floor area around three sides of each recovery station for work and circulation.

469.4.4.3 The recovery area shall be located in direct view of the nurse station.

469.4.4.4 Cubicle curtains or other provisions for privacy during post-operative care shall be provided.

469.4.4.5 There shall be a dedicated handwashing station located in or immediately adjacent to the recovery area(s).

469.4.5 Step-down recovery area(s).

469.4.5.1 As required by the functional program, a designated supervised step-down recovery area may be provided for patients who do not require postanesthesia recovery but need additional time for their vital signs to stabilize before safely leaving the office surgery suite. This area shall contain a clinical workspace, space for family members, and provisions for privacy. It shall have convenient patient access to toilets large enough to accommodate a patient and an assistant. Handwashing stations and nourishment facilities shall be included within or immediately adjacent to this area(s).

469.4.6 Surgical service areas. The following areas and spaces shall be provided.

469.4.6.1 Control station. As determined by the office surgery suite, a control station located to permit visual surveillance of all traffic entering the restricted corridor (access to operating rooms and other ancillary clean/sterile areas) shall be provided.

469.4.6.2 Drug distribution station. Provisions shall be made for storage and preparation of medications administered to patients. A refrigerator for pharmaceuticals and a double-locked storage for controlled substances shall be provided.

469.4.6.3 Scrub station(s). Scrub station(s) shall be provided outside of and near the entrance to each operating room and may service two operating rooms if needed. Scrub station(s) shall be arranged to minimize incidental splatter on nearby personnel or supply carts. The scrub stations shall be trimmed with foot, knee, or ultrasonic controls (no single lever wrist blades).

469.4.6.4 Soiled workroom. The soiled workroom shall contain a handwashing station, a sink large enough to accommodate the cleaning of the largest piece of surgical instrument utilized in the operating room, a work counter, and waste receptacle(s). This may be the same workroom as described in Section 469.4.7, "Sterilizing facilities."

469.4.6.5 Fluid waste disposal station(s). This station(s) shall be convenient to the general operating room(s) and postanesthesia recovery area(s). A clinical sink or toilet equipped with a rinsing device may meet this requirement.

469.4.6.6 Anesthesia equipment and supplies. As required by the functional program, provisions shall be made for cleaning, testing, and storing anesthesia equipment and supplies.

469.4.6.7 Medical gas storage. Medical gas storage with space for reserve nitrous oxide and oxygen cylinders, if such gas is used in the office surgery suite, shall be provided and located outside of the restricted surgical area(s). Service and delivery access shall be possible without entering the restricted surgical area(s). All cylinders shall be securely chained or fastened to prevent accidental damage.

469.4.6.8 General storage room(s). General, surgical and equipment storage room(s) or closet enclosures shall be provided for equipment and supplies used or required in the surgical suite.

469.4.6.9 Staff clothing change area(s). A minimum of one (1) change area shall be provided for staff working within the office surgery suite. This area(s) shall contain locker(s), toilet(s), handwashing station(s), and space for donning scrub attire.

469.4.6.10 Patient change areas. An area shall be provided for patients to change from street clothing into surgical gowns and to prepare for surgery. Provisions shall be made for patient privacy and for securing patients' personal effects.

469.4.6.11 Stretcher/wheelchair storage area. This area shall be convenient for use and out of the required exit access.

469.4.6.12 Lounge and toilet facilities. Lounge and toilet facilities with a handwashing station for staff shall be provided as required by the functional program.

469.4.6.13 Nourishment room or area. For office surgery suites that provide accommodations for overnight stays, a nourishment room or area shall be provided. It shall contain a refrigerator, double compartment sink, counter, and storage for food items and utensils.

469.4.6.14 Housekeeping room. A room containing a floor receptor or service sink shall be provided exclusively for the office surgery suite. Storage space for housekeeping supplies and equipment shall be provided in this room or in the general storage room(s). Hazardous supplies such as cleaning chemicals shall be protected in accordance with the requirements of the referenced fire safety codes.

469.4.6.15 Crash/anesthesia cart(s). Space shall be provided for emergency resuscitation equipment and supplies such as crash/anesthesia cart(s) with convenient access to and use from both the surgery and recovery areas.

469.4.7 Sterilizing facilities.

469.4.7.1 A system for providing sterilized equipment and supplies shall be provided. When sterilization is provided offsite, adequate handling (receiving and distribution) and on-site storage of sterile supplies shall be accommodated, and shall meet the minimum requirements for sterilization performed onsite.

469.4.7.2 Adequate space shall be available for the cleaning and sanitizing of clean and soiled carts and vehicles transporting supplies.

469.4.7.3 If on-site processing facilities are provided they shall include the following.

469.4.7.3.1 Soiled workroom. This room shall be physically separated from all other areas of the office surgery suite. Workspace shall be provided to

handle the cleaning and the gross cleaning, debridement, and disinfections of all medical/surgical instruments and equipment. The soiled workroom shall contain work surfaces(s), sink(s), flush-type devices(s), and washer/sterilizer decontaminators or other decontamination equipment as appropriate to the functional program.

469.4.7.3.2 Clean/assembly workroom. This workroom shall have access to an immediately adjacent handwashing station and shall contain appropriate and sufficient workspace and equipment for terminal sterilizing of medical and surgical equipment and supplies. Clean and soiled work areas shall be physically separated. Access to the sterilization room shall be restricted. The clean assembly room shall have adequate space for the designated number of work areas as defined in the functional program as well as space for storage of clean supplies, sterilizer carriages and instrumentation.

469.4.7.3.3 Clean/sterile supplies. Storage for packs, etc., shall include provisions for ventilation, humidity, and temperature control.

469.4.8 Details and finishes.

469.4.8.1 The minimum nominal door width for patient use shall be 3 feet (0.9 m) except doors requiring gurney/stretcher access, shall have a nominal width of 3 feet 8 inches (1.11 m).

469.4.8.2 Toilet room doors for patient use shall open outward or be equipped with hardware that permits access from the outside in emergencies.

469.4.8.3 Handwashing stations shall be located and arranged to permit proper use and operation. Each handwashing station shall be equipped with single service paper towel dispensers and a soap dispenser.

469.4.8.4 Provisions for hand drying shall be included at all handwashing stations except scrub stations. Hand drying shall be accomplished by single towel dispensers or electrical hand driers.

469.4.8.5 Wall bases in operating rooms and areas that are frequently subject to wet cleaning shall be monolithic and coved directly up from the floor, tightly sealed to the wall, and constructed without voids. Seam welds in sheet flooring shall utilize manufacturer's weld product recommendations. Vinyl composition tile (VCT) shall not be used in these areas.

469.4.8.6 Heavy ceiling mounted equipment such as operating room lights, tracks or other equipment shall have suspension systems specially designed for that application.

469.4.8.7 Cubicle curtains and draperies designed for appropriate patient privacy shall be noncombustible or flame retardant.

469.4.8.8 Floors subject to continuous use while wet, such as shower areas, shall have a nonslip surface.

469.4.8.9 Floor finishes in areas such as surgical suite, central sterile supply spaces, radiographic rooms, and minor surgical procedure rooms shall be washable, smooth, and capable of withstanding chemical cleaning.

469.4.8.10 Wall finishes shall be washable and, in the proximity of plumbing fixtures, shall be smooth and moisture resistant.

469.4.8.11 Wall finishes in areas such as operating suite, central sterile supply spaces, radiographic rooms, and minor surgical procedure rooms shall be washable, smooth, and capable of withstanding chemical cleaning.

469.4.8.12 Wall finishes in operating room(s) shall be scrubbable, capable of withstanding harsh chemical cleaning, and monolithic.

469.4.8.13 Ceiling finishes in semirestricted areas such as clean corridors, central sterile supply spaces, radiographic rooms, minor surgical procedure rooms and existing operating rooms shall be smooth, scrubbable, nonabsorptive, nonperforated, capable of withstanding cleaning with chemicals, and without crevices that can harbor mold and bacteria growth.

469.4.8.14 Ceiling finishes in operating rooms shall be monolithic, scrubbable, and capable of withstanding chemicals. Ceiling access panels shall be provided as required.

469.4.9 Elevators.

469.4.9.1 Installation and testing of elevators shall comply with ANSI/ASME A17.1 for new construction and ANSI/ASME A17.3 for existing facilities.

469.4.9.2 At least one elevator car shall have a minimum inside car platform of 51 inches by 80 inches (1295 mm by 2032 mm) with a minimum clear opening width of 42 inches (1067 mm) unless otherwise designed to provide equivalent space to allow the entrance and exit of an ambulance stretcher in the horizontal position. The elevator entrance may be of the side opening entrance type in order to accommodate a stretcher in its horizontal position. If more than one elevator is present, this elevator shall be identified.

469.4.9.3 The elevator car to be used for emergency evacuation of patients shall derive its power from an emergency electrical system.

469.4.9.4 Elevator call buttons and controls shall not be activated by heat or smoke. Light beams, if used for operating door reopening devices without touch, shall be used in combination with door-edge safety devices and shall be interconnected with a system of smoke detectors so that the light control feature will be overridden or disengaged should it encounter smoke at any landing.

469.4.10 Waste processing services.

469.4.10.1 Storage and disposal. Facilities shall provide for sanitary storage and treatment or disposal of waste using techniques acceptable to the appropriate health and environmental authorities. The functional program shall stipulate the categories and volumes of

waste for disposal and shall stipulate the methods of disposal for each.

469.4.10.2 Medical waste. Medical waste shall be disposed of either by incineration or other approved technologies.

469.4.11 Mechanical system standards.

469.4.11.1 Medical gas and vacuum standards.

469.4.11.1.1 If the functional program of the office surgery suite requires a medical gas system, it shall be a minimum of a Level III piped medical gas system in accordance with NFPA 99. In lieu of a Level III piped oxygen system, anesthetizing equipment with a double yoke oxygen system is acceptable. If an anesthesia ventilator is planned to be used during the surgical procedure, then a Level III piped gas system shall be required.

469.4.11.1.2 As required by the functional program of the office surgery suite, either a piped clinical vacuum system in accordance with NFPA 99 or portable electrical vacuum equipment shall be provided. In either case, there shall be a redundant vacuum system or equipment exclusively dedicated to the anesthetizing equipment.

469.4.11.1.3 For piped systems, the number of station outlets shall meet the needs of the functional program. However, the minimum number of station outlets shall be as described in Table 2.

TABLE 2
MINIMUM STATION OUTLETS FOR PIPED GAS SYSTEMS IN OFFICE SURGERY SUITES

LOCATION	OXYGEN	VACUUM
Class A	NA	NA
Class B and C	2	2*
Post Operative Recovery	1	1

* An additional outlet shall be provided for anesthesia evacuation if necessary.

469.4.11.1.4 All piping, except control-line tubing, shall be identified. All valves shall be tagged, and a valve schedule shall be provided to the office surgery suite owner for permanent record and reference.

469.4.11.1.5 All gas cylinders in service and in storage shall be individually secured and located to prevent falling or being knocked over.

469.4.12 Heating, ventilation, and air conditioning (HVAC).

469.4.12.1 All rooms and areas in the office surgery suite used for patient care shall be required to have HVAC systems as described in this section and as described for similar rooms and areas in the 2010 edition of *The Guidelines for the Design and Construction of Health Care Facilities*, Part 6, ANSI/ASHRAE/ASHE Standard 170-2008, *Ventilation of Health Care Facilities.*

469.4.12.2 Fans serving exhaust systems shall be located at the discharge end and shall be readily serviceable. Air supply and exhaust in rooms for which no minimum total air change rate is noted may vary down to zero in response to room load.

469.4.12.3 The outdoor air introduced through the VAV air handling unit(s) shall remain constant throughout the range of operation.

469.4.12.4 Exhaust outlets, piping and ductwork shall be permanently and clearly identified.

469.4.13 Plumbing systems.

469.4.13.1 The material used for plumbing fixtures shall be nonabsorptive and acid resistant.

469.4.13.2 Water spouts for staff use in lavatories and sinks shall have the discharge point a minimum of 5 inches (127 mm) above the rim of the fixture.

469.4.13.3 General handwashing stations used by staff shall be trimmed with valves that can be operated without hands. (Single lever or wrist blade devices may be used.) Blade handles used for this purpose shall be not less than $3^1/_2$ inches (88.90 mm) nor exceed $4^1/_2$ inches (114.3 mm in length. If clinical sinks are utilized, handles on clinical sinks shall be at least 6 inches (152.4 mm) long.

469.4.13.4 The water-heating system shall have sufficient supply capacity to deliver at the temperatures of between 150°F to 120°F (41°C to 49°C. Water temperature is measured at the point of use or inlet to the equipment. Water shall be permitted to be stored at higher temperatures.

469.4.13.5 Drain lines from sinks used for acid waste disposal shall be made of acid-resistant material.

469.4.13.6 Drainage piping shall not be installed within the ceiling or exposed in operating rooms or other sensitive areas. If there is existing drainage piping from a floor directly above, special precautions such as safety drain pans shall be provided.

469.4.13.7 Floor drains or sinks shall not be permitted in operating rooms.

469.4.13.8 If a floor drain is installed in a cystoscopy room, it shall contain a nonsplash, horizontal-flow flushing bowl beneath the drain plate.

469.4.13.9 Where plaster traps are used, provisions shall be made for appropriate access and cleaning.

469.4.13.10 All piping, except control-line tubing, shall be identified. All valves shall be tagged, and a valve schedule shall be provided to the office surgery suite owner for permanent record and reference.

469.4.14 Electrical standards.

469.4.14.1 All electrical material and equipment, including conductors, controls, and signaling devices, shall be installed in compliance with applicable sections of NFPA 70 and NFPA 99 and shall be listed as complying with available standards of listing agencies, or other similar established standards where such standards are required.

469.4.14.2 The electrical installations, including alarm and communication systems, shall be tested to demonstrate that equipment installation and operation is appropriate and functional.

469.4.14.3 Services and switchboards.

469.4.14.3.1 Main switchboards shall be located in an area separate from plumbing and mechanical equipment and shall be accessible to authorized persons only.

469.4.14.3.2 Switchboards shall be convenient for use, readily accessible for maintenance, away from traffic lanes, and located in dry, ventilated spaces free of corrosive or explosive fumes, gases, or any flammable material. Overload protective devices shall operate properly in ambient room temperatures.

469.4.14.4 Panelboards.

469.4.14.4.1 Panelboards serving normal lighting, appliance circuits and critical branch emergency circuits shall be located on the same floor as the circuits they serve. Panelboards serving life safety emergency circuits may be located on another floor and serve floors above and/or below.

469.4.14.5 Lighting.

469.4.14.5.1 All occupied spaces shall have fixtures for lighting that can be illuminated as necessary.

469.4.14.5.2 Each operating room shall have general lighting for the room in addition to local lighting provided by special lighting unit(s) at the surgical table.

469.4.14.6 Receptacles (convenience outlets).

469.4.14.6.1 Duplex grounded-type receptacles shall be installed in all areas in sufficient quantities for tasks to be performed as needed.

469.4.14.6.2 Each operating room, primary recovery station shall have a minimum of three hospital grade duplex receptacles that shall be sufficient to connect all equipment and devices and that shall include one spare duplex receptacle.

469.4.14.6.3 At least one of these receptacles shall be connected to the emergency system and one connected to the normal system. The emergency system receptacles shall be distinctively marked so as to be readily identified.

469.4.14.6.4 There shall be no more than two duplex receptacles per circuit in these areas.

469.4.14.6.5 Multiple outlet extenders shall not be permitted, except electrical strips with full surge protectors may be utilized.

469.4.14.7 Equipment.

469.4.14.7.1 At inhalation anesthetizing locations, all electrical equipment and devices, receptacles, and wiring shall comply with the applicable sections of NFPA 99 and NFPA 70.

469.4.14.8 Nurse call system.

469.4.14.8.1 In facilities that contain more than one operating room and where recovery beds are not in direct view from the nurses' station, the following nurses' calling system shall be provided.

469.4.14.8.2 Each recovery bed shall be provided with a call button. Two call buttons serving adjacent beds may be served by one calling station.

469.4.14.8.3 Calls shall activate a visual and audible signal at the nurses' or control station and in the clean workroom and soiled workroom. If voice circuits are provided, indicating lights shall be used and shall remain lighted as long as the voice circuit is operating.

469.4.14.8.4 A nurses' call emergency system shall be provided at each patient toilet and dressing room. Activation shall be by a pull cord that extends to near the floor. This system will activate audiovisual signals in the recovery room nurses' station and in the surgical suite nurses' station. The emergency call system shall be designed so that signal light activation will remain lighted until turned off at patient's calling station.

469.4.14.9 Emergency electrical service.

469.4.14.9.1 There shall be an emergency electrical service to provide power and light to the office surgery suite for a minimum period of two (2) hours as prescribed in Rule 64B8-9.009. The system shall operate emergency exit lighting, fire alarm systems, nurses' calling systems, surgical room lighting, recovery room lighting and shall power monitoring equipment, selected receptacles in the operating and recovery areas and medical refrigerator if provided.

469.4.14.9.2 Power may be supplied by batteries or an emergency generator in accordance with NFPA 111 and NFPA 110 respectively.

469.4.14.9.3 All office surgery suites shall at a minimum be equipped with a Type III nonportable, permanently installed emergency electrical system designed and installed in accordance with NFPA 99. New office surgery suites providing Level III surgical procedures as defined by the Board of Medicine should provide a Type I emergency electrical system in accordance with the requirements of NFPA 99.

469.4.14.10 Fire alarm system.

469.4.14.10.1 The fire alarm system shall be as required by NFPA 101, *Life Safety Code*, and installed in accordance with NFPA 72.

CHAPTER 5
GENERAL BUILDING HEIGHTS AND AREAS

SECTION 501
GENERAL

501.1 Scope. The provisions of this chapter control the height and area of structures hereafter erected and *additions* to existing structures.

[F] 501.2 Address identification. New and existing buildings shall be provided with *approved* address numbers or letters. Each character shall be not less than 4 inches (102 mm) in height and not less than 0.5 inch (12.7 mm) in width. They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. When required by the fire code official, address numbers shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the *public way*, a monument, pole or other *approved* sign or means shall be used to identify the structure. Address numbers shall be maintained.

SECTION 502
DEFINITIONS

502.1 Definitions. The following terms are defined in Chapter 2:

AREA, BUILDING.

BASEMENT.

EQUIPMENT PLATFORM.

GRADE PLANE.

HEIGHT, BUILDING.

MEZZANINE.

SECTION 503
GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1 General. The *building height and area* shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual *building heights* to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the *building height and area* limitations of Table 503.

503.1.2 Buildings on same lot. Two or more buildings on the same *lot* shall be regulated as separate buildings or shall be considered as portions of one building if the *building height* of each building and the aggregate *building area* of the buildings are within the limitations of Table 503 as modified by Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular *building heights and areas* are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited *building height* in Sections 503.1.1 and 504.3 or increased *building heights and areas* for other types of construction.

SECTION 504
BUILDING HEIGHT

504.1 General. The *building height* permitted by Table 503 shall be increased in accordance with Sections 504.2 and 504.3.

Exception: The *building height* of one-*story* aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited if the building is provided with an *automatic sprinkler system* or *automatic fire-extinguishing system* in accordance with Chapter 9 and is entirely surrounded by *public ways* or *yards* not less in width than one and one-half times the *building height*.

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

Exception: The use of an *automatic sprinkler system* to increase *building heights* shall not be permitted for the following conditions:

1. Buildings, or portions of buildings, classified as a Group I-2 occupancy of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.

3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

504.3 Roof structures. Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1509.2.5. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height if of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable *building height* if of combustible materials (see Chapter 15 for additional requirements).

TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS[a, b]
Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of "Area, building," per story

GROUP		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	HEIGHT (feet)	UL	160	65	55	65	55	65	50	40
		STORIES(S) AREA (A)								
A-1	S	UL	5	3	2	3	2	3	2	1
	A	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
A-2	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-3	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-4	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL	UL
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	S	UL	11	5	3	5	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
E	S	UL	5	3	2	3	2	3	1	1
	A	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
F-1	S	UL	11	4	2	3	2	4	2	1
	A	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
F-2	S	UL	11	5	3	4	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
H-1	S	1	1	1	1	1	1	1	1	NP
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
H-2	S	UL	3	2	1	2	1	2	1	1
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
H-3	S	UL	6	4	2	4	2	4	2	1
	A	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
H-4	S	UL	7	5	3	5	3	5	3	2
	A	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
H-5	S	4	4	3	3	3	3	3	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
I-1	S	UL	9	4	3	4	3	4	3	2
	A	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500
I-2	S	UL	4	2	1	1	NP	1	1	NP
	A	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
I-3	S	UL	4	2	1	2	1	2	2	1
	A	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000
I-4	S	UL	5	3	2	3	2	3	1	1
	A	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000

(continued)

TABLE 503—continued
ALLOWABLE BUILDING HEIGHTS AND AREAS[a, b]

GROUP		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	HEIGHT (feet)	UL	160	65	55	65	55	65	50	40
		STORIES(S) AREA (A)								
M	S	UL	11	4	2	4	2	4	3	1
	A	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
R-1	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-3	S	UL	11	4	4	4	4	4	3	3
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
R-4	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
S-1	S	UL	11	4	2	3	2	4	3	1
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
S-2	S	UL	11	5	3	4	3	5	4	2
	A	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
U	S	UL	5	4	2	3	2	4	2	1
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.
A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.
a. See the following sections for general exceptions to Table 503:
1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.
2. Section 506.2, Allowable building area increase due to street frontage.
3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.
4. Section 507, Unlimited area buildings.
b. See Chapter 4 for specific exceptions to the allowable height and areas in Chapter 5.

SECTION 505
MEZZANINES AND EQUIPMENT PLATFORMS

505.1 General. *Mezzanines* shall comply with Section 505.2. *Equipment platforms* shall comply with Section 505.3.

505.2 Mezzanines. A *mezzanine* or *mezzanines* in compliance with Section 505.2 shall be considered a portion of the *story* below. Such *mezzanines* shall not contribute to either the *building area* or number of *stories* as regulated by Section 503.1. The area of the *mezzanine* shall be included in determining the *fire area*. The clear height above and below the *mezzanine* floor construction shall be not less than 7 feet (2134 mm).

505.2.1 Area limitation. The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located. In determining the allowable *mezzanine* area, the area of the *mezzanine* shall not be included in the floor area of the room.

Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.

Exceptions:

1. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 and an *approved emergency voice/alarm communication system* in accordance with Section 907.5.2.2.
3. In sprinklered Group S2 occupancies of Type III construction, the enclosed and unenclosed areas under mezzanines shall be allowed to be included when calculating the permissible size of mezzanines.

505.2.2 Means of egress. The *means of egress* for *mezzanines* shall comply with the applicable provisions of Chapter 10.

505.2.3 Openness. A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more *means of egress* is not required to be open to the room in which the *mezzanine* is located if at least one of the *means of egress* provides direct access to an *exit* from the *mezzanine* level.
3. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, a *mezzanine* having two or more *means of egress* shall not be required to be open to the room in which the *mezzanine* is located.

505.3 Equipment platforms. *Equipment platforms* in buildings shall not be considered as a portion of the floor below. Such *equipment platforms* shall not contribute to either the *building area* or the number of *stories* as regulated by Section 503.1. The area of the *equipment platform* shall not be included in determining the *fire area* in accordance with Section 903. *Equipment platforms* shall not be a part of any *mezzanine* and such platforms and the walkways, *stairs*, *alternating tread devices* and ladders providing access to an *equipment platform* shall not serve as a part of the *means of egress* from the building.

505.3.1 Area limitation. The aggregate area of all *equipment platforms* within a room shall be not greater than two-thirds of the area of the room in which they are located. Where an *equipment platform* is located in the same room as a *mezzanine*, the area of the *mezzanine* shall be determined by Section 505.2.1 and the combined aggregate area of the *equipment platforms* and *mezzanines* shall be not greater than two-thirds of the room in which they are located.

505.3.2 Automatic sprinkler system. Where located in a building that is required to be protected by an *automatic sprinkler system*, *equipment platforms* shall be fully protected by sprinklers above and below the platform, where required by the standards referenced in Section 903.3.

505.3.3 Guards. *Equipment platforms* shall have *guards* where required by Section 1013.2.

SECTION 506
BUILDING AREA MODIFICATIONS

506.1 General. The *building areas* limited by Table 503 shall be permitted to be increased due to frontage *(I_f)* and *automatic sprinkler system* protection *(I_s)* in accordance with Equation 5-1:

$$A_a = \{A_t + [A_t \times I_f] + [A_t \times I_s]\} \quad \textbf{(Equation 5-1)}$$

where:

A_a = Allowable *building area* per *story* (square feet).

A_t = Tabular *building area* per *story* in accordance with Table 503 (square feet).

I_f = Area increase factor due to frontage as calculated in accordance with Section 506.2.

I_s = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3.

506.2 Frontage increase. Every building shall adjoin or have access to a *public way* to receive a *building area* increase for frontage. Where a building has more than 25 percent of its perimeter on a *public way* or open space having a width of not less than 20 feet (6096 mm), the frontage increase shall be determined in accordance with Equation 5-2:

$$I_f = [F/P - 0.25]W/30 \quad \textbf{(Equation 5-2)}$$

where:

I_f = Area increase due to frontage.

F = Building perimeter that fronts on a *public way* or open space having 20 feet (6096 mm) open minimum width (feet).

P = Perimeter of entire building (feet).

W = Width of *public way* or open space (feet) in accordance with Section 506.2.1.

506.2.1 Width limits. To apply this section the value of *W* shall be not less than 20 feet (6096 mm). Where the value of *W* varies along the perimeter of the building, the calculation performed in accordance with Equation 5-2 shall be based on the weighted average calculated in accordance with Equation 5-3 for portions of the exterior perimeter walls where the value of *W* is greater than or equal to 20 feet (6096 mm). Where the value of *W* is greater than 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the weighted average, regardless of the actual width of the open space. *W* shall be measured perpendicular from the face of the building to the closest interior *lot line*. Where the building fronts on a *public way*, the entire width of the *public way* shall be used. Where two or more buildings are on the same *lot*, *W* shall be measured from the exterior face of each building to the opposing exterior face of each adjacent building, as applicable.

Weighted average $W = (L_1 \times w_1 + L_2 \times w_2 + L_3 \times w_3 \ldots)/F$. **(Equation 5-3)**

where:

L_n = Length of a portion of the exterior perimeter wall.

w_n = Width of open space associated with that portion of the exterior perimeter wall.

F = Building perimeter that fronts on a *public way* or open space having a width of 20 feet (6096 mm) or more.

Exception: Where the building meets the requirements of Section 507, as applicable, except for compliance with the 60-foot (18 288 mm) *public way* or *yard* requirement, and the value of *W* is greater than 30 feet (9144 mm), the value of *W* divided by 30 shall be limited to a maximum of 2.

506.2.2 Open space limits. Such open space shall be either on the same *lot* or dedicated for public use and shall be accessed from a street or *approved fire lane*.

506.3 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the *building area* limitation in Table 503 is permitted to be increased by an additional 200 percent ($I_s = 2$) for buildings with more than one *story above grade plane* and an additional 300 percent ($I_s = 3$) for buildings with no more than one *story above grade plane*. These increases are permitted in addition to the height and *story* increases in accordance with Section 504.2.

Exception: The use of an *automatic sprinkler system* to increase the building area limitation shall not be permitted for the following conditions:

1. Buildings classified as a Group H-1 occupancy.
2. Buildings, or portions of buildings, classified as either a Group H-2 or H-3 occupancy. For buildings containing such occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.
3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

506.4 Single occupancy buildings with more than one story. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined in accordance with this section. The actual aggregate *building area* at all *stories* in the building shall not exceed the total allowable *building area*.

Exception: A single *basement* need not be included in the total allowable *building area*, provided such *basement* does not exceed the area permitted for a building with no more than one *story above grade plane*.

506.4.1 Area determination. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined by multiplying the allowable *building area* per *story* (A_a), as determined in Section 506.1, by the number of *stories above grade plane* as listed below:

1. For buildings with two *stories above grade plane*, multiply by 2;
2. For buildings with three or more *stories above grade plane*, multiply by 3; and
3. No *story* shall exceed the allowable *building area* per *story* (A_a), as determined in Section 506.1, for the occupancies on that *story*.

Exceptions:

1. Unlimited area buildings in accordance with Section 507.
2. The maximum area of a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2 shall be determined by multiplying the allowable area per *story* (A_a), as determined in Section 506.1, by the number of *stories above grade plane*.

506.5 Mixed occupancy area determination. The total allowable *building area* for buildings containing mixed occupancies shall be determined in accordance with the applicable provisions of this section. A single *basement* need not be included in the total allowable *building area*, provided such *basement* does not exceed the area permitted for a building with no more than one *story above grade plane*.

506.5.1 No more than one story above grade plane. For buildings with no more than one *story above grade plane* and containing mixed occupancies, the total *building area* shall be determined in accordance with the applicable provisions of Section 508.1.

506.5.2 More than one story above grade plane. For buildings with more than one *story above grade plane* and containing mixed occupancies, each *story* shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three *stories above grade plane*, the total *building area* shall be such that the aggregate sum of the ratios of the actual area of each *story* divided by the allowable area of such *stories* based on the applicable provisions of Section 508.1 shall not exceed 3.

SECTION 507
UNLIMITED AREA BUILDINGS

507.1 General. The area of buildings of the occupancies and configurations specified in Sections 507.1 through 507.12 shall not be limited.

Exception: Other occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2.

Where Sections 507.2 through 507.12 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. *Yards* shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the

exterior face of an opposing building located on the same *lot*, as applicable.

2 Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

507.2 Nonsprinklered, one story. The area of a Group F-2 or S-2 building no more than one *story* in height shall not be limited where the building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.3 Sprinklered, one story. The area of a Group B, F, M or S building no more than one *story above grade plane* of any construction type, or the area of a Group A-4 building no more than one story above grade plane of other than Type V construction, shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

Exceptions:

1. Buildings and structures of Types I and II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.3 and 903.3.1.1 and the *Florida Fire Prevention Code*.
2. The *automatic sprinkler system* shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that:
   2.1. *Exit* doors directly to the outside are provided for occupants of the participant sports areas; and
   2.2. The building is equipped with a *fire alarm system* with *manual fire alarm boxes* installed in accordance with Section 907.

507.3.1 Mixed occupancy buildings with Groups A-1 and A-2. Group A-1 and A-2 occupancies of other than Type V construction shall be permitted within mixed occupancy buildings of unlimited area complying with Section 507.3, provided:

1. Group A-1 and A-2 occupancies are separated from other occupancies as required for separated occupancies in Section 508.4.4 with no reduction allowed in the *fire-resistance rating* of the separation based upon the installation of an *automatic sprinkler system*;
2. Each area of the portions of the building used for Group A-1 or A-2 occupancies shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1; and
3. *Exit* doors from Group A-1 and A-2 occupancies shall discharge directly to the exterior of the building.

507.4 Two story. The area of a Group B, F, M or S building no more than two *stories above grade plane* shall not be limited where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.5 Reduced open space. The *public ways* or *yards* of 60 feet (18 288 mm) in width required in Sections 507.2, 507.3, 507.4, 507.6 and 507.11 shall be permitted to be reduced to not less than 40 feet (12 192 mm) in width provided all of the following requirements are met:

1. The reduced width shall not be allowed for more than 75 percent of the perimeter of the building.
2. The *exterior walls* facing the reduced width shall have a *fire-resistance rating* of not less than 3 hours.
3. Openings in the *exterior walls* facing the reduced width shall have opening protectives with a *fire protection rating* of not less than 3 hours.

507.6 Group A-3 buildings of Type II construction. The area of a Group A-3 building no more than one *story above grade plane*, used as a *place of religious worship*, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor *swimming pool* or tennis court of Type II construction, shall not be limited provided all of the following criteria are met:

1. The building shall not have a *stage* other than a *platform*.
2. The building shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The building shall be surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.7 Group A-3 buildings of Types III and IV construction. The area of a Group A-3 building of Type III or IV construction, with no more than one *story above grade plane*, and used as a *place of religious worship*, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor *swimming pool* or tennis court, shall not be limited provided all of the following criteria are met:

1. The building shall not have a *stage* other than a *platform*.
2. The building shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The assembly floor shall be located at or within 21 inches (533 mm) of street or grade level and all *exits* are provided with ramps complying with Section 1010.1 to the street or grade level.
4. The building shall be surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.8 Group H occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F and S occupancies in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4.

507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building nor the area limitations for the Group H occupancies as specified in Table 503 as modified by Section 506.2 based upon the perimeter of each Group H floor area that fronts on a *public way* or open space.

507.8.1.1 Located within the building. The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations for the Group H occupancies as specified in Table 503.

507.8.1.1.1 Liquid use, dispensing and mixing rooms. Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet (46.5 m^2) need not be located on the outer perimeter of the building where they are in accordance with the *Florida Fire Prevention Code* and NFPA 30.

507.8.1.1.2 Liquid storage rooms. Liquid storage rooms having a floor area of not more than 1,000 square feet (93 m^2) need not be located on the outer perimeter where they are in accordance with the *Florida Fire Prevention Code* and NFPA 30.

507.8.1.1.3 Spray paint booths. Spray paint booths that comply with the *Florida Fire Prevention Code* need not be located on the outer perimeter.

507.8.2 Located on building perimeter. Except as provided for in Section 507.8.1.1, Group H occupancies shall be located on the perimeter of the building. In Group H-2 and H-3 occupancies, not less than 25 percent of the perimeter of such occupancies shall be an *exterior wall*.

507.8.3 Occupancy separations. Group H occupancies shall be separated from the remainder of the unlimited area building and from each other in accordance with Table 508.4.

507.8.4 Height limitations. For two-*story* unlimited area buildings, Group H occupancies shall not be located more than one *story above grade plane* unless permitted based on the allowable height in *stories* and feet as set forth in Table 503 for the type of construction of the unlimited area building.

507.9 Aircraft paint hangar. The area of a Group H-2 aircraft paint hangar no more than one *story above grade plane* shall not be limited where such aircraft paint hangar complies with the provisions of Section 412.6 and is surrounded and adjoined by *public ways* or *yards* not less in width than one and one-half times the *building height*.

507.10 Group E buildings. The area of a Group E building no more than one *story above grade plane*, of Type II, IIIA or IV construction, shall not be limited provided all of the following criteria are met:

1. Each classroom shall have not less than two *means of egress*, with one of the *means of egress* being a direct *exit* to the outside of the building complying with Section 1020 or the building is provided with smoke barriers having a minimum 1-hour fire-resistance rating dividing the building into areas not to exceed 30,000 square feet (2787 m^2) in floor area.
2. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.11 Motion picture theaters. In buildings of Type II construction, the area of a motion picture theater located on the first *story above grade plane* shall not be limited provided the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.12 Covered and open mall buildings and anchor buildings. The area of *covered and open mall buildings* and *anchor buildings* not exceeding three *stories* in height that comply with Section 402 shall not be limited.

SECTION 508
MIXED USE AND OCCUPANCY

508.1 General. Each portion of a building shall be individually classified in accordance with Section 302.1. Where a building contains more than one occupancy group, the building or portion thereof shall comply with the applicable provisions of Section 508.2, 508.3 or 508.4, or a combination of these sections.

Exceptions:

1. Occupancies separated in accordance with Section 510.
2. Where required by Table 415.5.2, areas of Group H-1, H-2 and H-3 occupancies shall be located in a *detached building* or structure.
3. Uses within *live/work units*, complying with Section 419, are not considered separate occupancies.

508.2 Accessory occupancies. Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

508.2.1 Area limitations. Aggregate accessory occupancies shall not occupy more than 10 percent of the *building area* of the *story* in which they are located and shall not exceed the tabular values in Table 503, without *building area* increases in accordance with Section 506 for such accessory occupancies.

508.2.2 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.3 Allowable building area and height. The allowable *building area and height* of the building shall be based on the allowable *building area and height* for the main occupancy in accordance with Section 503.1. The height of each accessory occupancy shall not exceed the tabular values in Table 503, without increases in accordance with Section 504 for such accessory occupancies. The *building area* of the accessory occupancies shall be in accordance with Section 508.2.1.

508.2.4 Separation of occupancies. No separation is required between accessory occupancies and the main occupancy.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

508.3 Nonseparated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as nonseparated occupancies.

508.3.1 Occupancy Classification. Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 which apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area. Where nonseparated occupancies occur in a *high-rise building*, the most restrictive requirements of Section 403 which apply to the nonseparated occupancies shall apply throughout the *high-rise building*.

508.3.2 Allowable building area and height. The allowable *building area and height* of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1.

508.3.3 Separation. No separation is required between nonseparated occupancies.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from other occupancies contiguous to them in accordance with the requirements of Section 420.

508.4 Separated occupancies. Buildings or portions of buildings that comply with the provisions of this section shall be considered as separated occupancies.

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building.

508.4.2 Allowable building area. In each *story*, the *building area* shall be such that the sum of the ratios of the actual *building area* of each separated occupancy divided by the allowable *building* area of each separated occupancy shall not exceed 1.

508.4.3 Allowable height. Each separated occupancy shall comply with the *building height* limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions permitted by Section 510 shall permit occupancies at *building heights* other than provided in Section 503.1.

508.4.4 Separation. Individual occupancies shall be separated from adjacent occupancies in accordance with Table 508.4.

508.4.4.1 Construction. Required separations shall be *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies.

SECTION 509
INCIDENTAL USES

509.1 General. Incidental uses located within single occupancy or mixed occupancy buildings shall comply with the provisions of this section. Incidental uses are ancillary functions associated with a given occupancy that generally pose a greater level of risk to that occupancy and are limited to those uses listed in Table 509.

Exception: Incidental uses within and serving a *dwelling unit* are not required to comply with this section.

509.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

509.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

509.4 Separation and protection. The incidental uses listed in Table 509 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

509.4.1 Separation. Where Table 509 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the *building* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. Construction supporting 1-hour *fire barriers* or *horizontal assemblies* used for incidental use separations in buildings of Type IIB, IIIB and VB construction is

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E		I-1[a], I-3, I-4		I-2		R[a]		F-2, S-2[b], U		B, F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1[a], I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R[a]	—	—	—	—	—	—	N	N	1[c]	2[c]	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2[b], U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1[d]	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
N = No separation requirement.
NP = Not permitted.
a See Section 420.
b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.
c. See Section 406.3.4.
d. Separation is not required between occupancies of the same classification.

not required to be fire-resistance rated unless required by other sections of this code.

509.4.2 Protection. Where Table 509 permits an *automatic sprinkler system* without a *fire barrier*, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance with Section 716.5.9.3. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.7.

509.4.2.1 Protection limitation. Except as specified in Table 509 for certain incidental uses, where an *automatic sprinkler system* is provided in accordance with Table 509, only the space occupied by the incidental use need be equipped with such a system.

SECTION 510
SPECIAL PROVISIONS

510.1 General. The provisions in Sections 510.2 through 510.9 shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable *building heights and areas* of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of Sections 510.2 through 510.8 are to be considered independent and separate from each other.

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is not greater than one *story above grade plane*.
3. The building below the *horizontal assembly* is of Type IA construction.
4. *Shaft*, *stairway*, *ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

   Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

   1. The building above the *horizontal assembly* is not required to be of Type I construction;

TABLE 509
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
Laboratories and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
Group I-3 cells equipped with padded surfaces	1 hour
Waste and linen collection rooms located in either Group I-2 occupancies or ambulatory care facilities	1 hour
Waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

For SI: 1 square foot = 0.0929 m^2, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

2. The enclosure connects fewer than four *stories*; and
3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.

5. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
6. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any of the following occupancies:
   6.1. Group S-2 parking garage used for the parking and storage of private motor vehicles;
   6.2. Multiple Group A, each with an *occupant load* of less than 300;
   6.3. Group B;
   6.4. Group M;
   6.5. Group R; and
   6.6. Uses incidental to the operation of the building (including entry lobbies, mechanical rooms, storage areas and similar uses).
7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 503 for the building having the smaller allowable height as measured from the *grade plane*.

510.3 Group S-2 enclosed parking garage with Group S-2 open parking garage above. A Group S-2 enclosed parking garage with not more than one *story* above *grade plane* and located below a Group S-2 *open parking garage* shall be classified as a separate and distinct building for the purpose of determining the type of construction where all of the following conditions are met:

1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed 1.
2. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the *fire-resistance* requirements of the Group S-2 *open parking garage*.
3. The height and the number of tiers of the Group S-2 *open parking garage* shall be limited as specified in Table 406.5.4.
4. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 *open parking garage* shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 *open parking garage*, except *exit* openings, shall not be required to be protected.

5. The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles, but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m^2), and mechanical equipment rooms incidental to the operation of the building.

510.4 Parking beneath Group R. Where a maximum one *story above grade plane* Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV construction, with grade entrance, is provided under a building of Group R, the number of *stories* to be used in determining the minimum type of construction shall be measured from the floor above such a parking area. The number of stories to be used in determining the height in stories in accordance with Section 903.2.11.3 shall include the parking garage as a story. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a *fire-resistance rating* not less than the mixed occupancy separation required in Section 508.4.

510.5 Group R-1 and R-2 buildings of Type IIIA construction. The height limitation for buildings of Type IIIA construction in Groups R-1 and R-2 shall be increased to six *stories* and 75 feet (22 860 mm) where the first floor assembly above the *basement* has a *fire-resistance rating* of not less than 3 hours and the floor area is subdivided by 2-hour fire-resistance-rated *fire walls* into areas of not more than 3,000 square feet (279 m^2).

510.6 Group R-1 and R-2 buildings of Type IIA construction. The height limitation for buildings of Type IIA construction in Groups R-1 and R-2 shall be increased to nine *stories* and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the *lot* and from *lot lines*, the *exits* are segregated in an area enclosed by a 2-hour fire-resistance-rated *fire wall* and the first floor assembly has a *fire-resistance rating* of not less than $1^1/_2$ hours.

510.7 Open parking garage beneath Groups A, I, B, M and R. *Open parking garages* constructed under Groups A, I, B, M and R shall not exceed the height and area limitations permitted under Section 406.5. The height and area of the portion of the building above the *open parking garage* shall not exceed the limitations in Section 503 for the upper occupancy. The height, in both feet and *stories*, of the portion of the building above the *open parking garage* shall be measured from *grade plane* and shall include both the *open parking garage* and the portion of the building above the parking garage.

510.7.1 Fire separation. *Fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711 between the parking occupancy and the upper occupancy shall correspond to the required *fire-resistance rating* prescribed in Table 508.4 for the uses involved. The type of construction shall apply to each occupancy individually, except that structural members, including main bracing within the open parking structure, which is necessary to support the upper occupancy, shall be protected with the more restrictive fire-resistance-rated assemblies of the groups involved as shown in Table 601. *Means of egress* for the upper occupancy shall conform to Chapter 10 and shall be separated from the parking occupancy by *fire barriers* having not less than a 2-hour *fire-resistance rating* as required by Section 707 with *self-closing* doors complying with Section 716 or *horizontal assemblies* having not less than a 2-hour *fire-resistance rating* as required by Section 711, with *self-closing* doors complying with Section 716. *Means of egress* from the *open parking garage* shall comply with Section 406.5.

510.8 Group B or M with Group S-2 open parking garage. Group B or M occupancies located not higher than the first *story above grade plane* shall be considered as a separate and distinct building for the purpose of determining the type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 2 hours.
2. The occupancies in the building below the *horizontal assembly* are limited to Groups B and M.
3. The occupancy above the *horizontal assembly* is limited to a Group S-2 *open parking garage*.
4. The building below the *horizontal assembly* is of Type I or II construction but not less than the type of construction required for the Group S-2 *open parking garage* above.
5. The height and area of the building below the *horizontal assembly* does not exceed the limits set forth in Section 503.
6. The height and area of the Group S-2 *open parking garage* does not exceed the limits set forth in Section 406.5. The height, in both feet and *stories*, of the Group S-2 *open parking garage* shall be measured from *grade plane* and shall include the building below the *horizontal assembly*.
7. *Exits* serving the Group S-2 *open parking garage* discharge directly to a street or *public way* and are separated from the building below the *horizontal assembly* by 2-hour *fire barriers* constructed in accordance with Section 707 or 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

510.9 Multiple buildings above a horizontal assembly. Where two or more buildings are provided above the *horizontal assembly* separating a Group S-2 parking garage or building below from the buildings above in accordance with the special provisions in Sections 510.2, 510.3 or 510.8, the buildings above the *horizontal assembly* shall be regarded as separate and distinct buildings from each other and shall comply with all other provisions of this code as applicable to each separate and distinct building.