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New Codes and Standards 2023
39th FPC Annual Seminar + Expo
October 1-3, 2023

Advanced Course 8th Edition of the Florida Building Code

Course Number: AHCA 2023.11
Credit Designation: 2 LU/HSW
AIA CES Provider Number: E240

October 3, 2023

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1 OBJECTIVE

Explain why and how the Florida Building Code was created and what information is contained in Chapter 4, Special Occupancies that is germane to Florida. Understand the revised requirements of the FBC so these requirements can be incorporated into new projects for the enhanced safety of the occupants.

2 OBJECTIVE

Be able to explain the new revisions in the FBC especially as described in Chapter 4 as they pertain to certain types of health care facilities and learn about the intent behind the requirements.

3 OBJECTIVE

Learn how the different sections in Chapter 4 relate to each other and why there are some overlapping requirements between health care facility types.

4 OBJECTIVE

Be able to quickly find the information needed to produce a code complying project and be able to explain the interconnections and differences between a law, a rule, a code, and a standard so the attendee can be better prepared to quickly find and apply the correct code requirement to the design and construction of a project.

Advanced Course: 8th (2023) Edition Florida Building Code Revisions and Commentary

Advanced Course: #1143.0
Continuing Education Hours: 2

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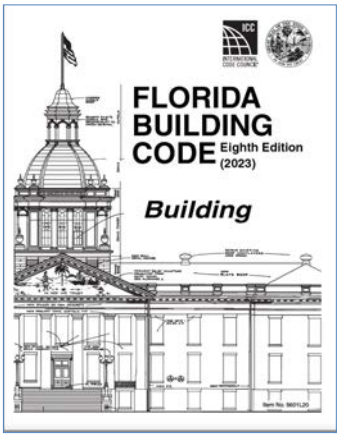
Florida Building Code Eight Edition (2023)



Cover Jacket

Course Overview

This advanced course provides general information regarding the Florida Building Code (FBC) and its origins, including Chapter 4 *Special Occupancies,* and information regarding the revisions of the 8th edition of the FBC germane to health care facilities.

It includes detailed information regarding the revisions found in Chapter 4 *Special Occupancies*, sections 449 *Hospitals*, 450 *Nursing Homes*, 451 *Ambulatory Surgical Centers*, (ASCs) 469 *Office Surgery Suite* and other significant revisions to the 8th edition of the FBC including definitions, egress, construction, and fire protection requirements that are of particular interest to the design and construction of health care facilities.

Origins and Background of the Florida Building Code and Chapter 4 Special Occupancies

Origins of the FBC

Before the ICC there were 3 basic codes in the US: *Standard Building Code* (used in the southeastern states) *Uniform Building Code*, (used in Midwest and western states) and the *BOCA Code* (used in the northeastern states).

- First edition of FBC was based on the last full edition of the *Standard Building Code* (1997) and combined 2 separate state building Codes: *Standard Building Code*, and the *South Florida Building Code,* used by Broward and Miami-Dade Counties.
- Second edition of FBC was based on the second edition of the ICC.
- One Stop For All Design and Construction Requirements

- **Commentary Note:** State Agencies were required to add their design and construction rules to the FBC that were contained in the Florida Administrative Codes of each agency.

Origins of Chapter 4 Special Occupancies

Florida statues then added language to the state agencies withdrawing their authority to write rules for design and construction standards. Here is an example of the enabling legislation:

- **Chapter 395.1055 (9)***The agency may **not** adopt any rule governing the design, construction, erection, alteration, modification, repair, or demolition of any public or private hospital, intermediate residential treatment facility, or ambulatory surgical center. It is the intent of the Legislature to preempt that function to the Florida Building Commission and the State Fire Marshal through adoption and maintenance of the Florida Building Code and the Florida Fire Prevention Code.*

- **Commentary Note:** This section takes away the authority of Agency for Health Care Administration (AHCA) to write any design and construction rule.

Florida Statues and the FBC

The Legislature required AHCA to participate in the FBC revision process.

- Chapter 395.1055 (9) *However, the agency shall provide technical assistance to the commission and the State Fire Marshal in updating the construction standards of the Florida Building Code and the Florida Fire Prevention Code which govern hospitals, intermediate residential treatment facilities, and ambulatory surgical centers.*

- **Commentary Note:** This requires AHCA to participate in the Technical Advisory Committee (TAC) for Special Occupancies along with the other state agencies with design and construction requirements in the FBC. There is similar language in all the Florida statutes that have rules for design and construction in them.

Florida Statues and the FBC (Cont.)

Florida Statute Chapter 553 Part IV created the FBC and Florida Statue Chapter 553.80 (1)(c) gave AHCA review authority.

- Chapter 553.80 (1)(c) Provides the state agency (Agency for Health Care Administration) the authority to review plans and construction of facilities regulated by Chapter 395 and Chapter 400 Parts II and VIII by the agency authorized to do so in addition to the local building and fire authorities.

- **Commentary Note:** This section gives AHCA the authority to review and approve the design and construction of Hospitals and ASCs (chapter 395), Nursing Homes, (chapter 400 Part II), and ICF/DDs (chapter 400 Part VIII.) Although not required to be reviewed, ALFs and Inpatient Hospices may ask AHCA for review and pay the review fees.

Chapter 4 Special Occupancies

Information found in Chapter 4

- Additional requirements for certain occupancies such as high-rise buildings, atriums, covered mall buildings, and some occupancy groups such as I-2 and I-3, etc.
- Specific Requirements for sections 449-469. These sections contain the building requirements that were in the state agencies' rules such as: hospitals, nursing homes, swimming pools, schools, mental health programs, etc.

- **Commentary Note:** Design requirements for State Correctional Institutions are not part of the FBC for security reasons.

Chapter 4 Special Occupancies (Cont.)

Chapter 4 Scope:

- *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:*

- **Commentary Note:** These 20 state specific special occupancy sections (449-469) are part of the Florida Building Code and not found in the International Building Code.

Chapter 4 Special Occupancies (Cont.)

These include the following:

- **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, **Section 469: Office surgery suite.**

Chapter 4 Special Occupancies (Cont.)

Chapter 4 Scope:

- *401.2.2 General. Where in any specific case, Sections 449 through 469 specify different materials, methods of construction, design criteria or other requirements than found in this code, the requirements of Sections 449 through 469 shall be applicable.*

- **Commentary Note:** When the state agencies were required to add their design and construction rules to the FBC, they wanted to be sure they still had control of specific requirements they needed for these special occupancies.

Chapter 4 Special Occupancies (Special Note)

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.*

- **Commentary Note:** This language was added by the state agencies to be sure other requirements not directly related to "sticks and bricks" were not overlooked by the user.

Chapter 4 Special Occupancies
(Special Note)

Florida Building Code, Existing Building

- *101.2 Scope. The provisions of the Florida Building Code, Existing Building shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings.*
- *Exception: For the purpose of public educational facilities and state licensed facilities, see Chapter 4, Special Occupancy, of the Florida Building Code, Building.*

- Co**mmentary Note:** The reason for the exception is the state agencies that included their design requirements into the FBC did not want renovations to be held to the FBC *Existing Building* requirements.

8th Edition FBC Revisions
Chapter 4 Special Occupancies
Health and Residential Care Facilities

Referenced Codes and Standards for Sections 449, 450, 451, and 469

- *FGI Guidelines for the Design and Construction of Hospitals, FGI Guidelines for the Design and Construction of Outpatient Facilities, and FGI Guidelines for the Design and Construction of Residential Health, Care, and Support Facilities,* (referred to as The *Guidelines),* 2022 edition and listed in *Chapter 35 Referenced Standards* of the FBC as ***FGI***.
- The 2021 edition of ANSI/ASHRAE/ASHE Standard 170: Ventilation *of Health Care Facilities*, is incorporated into the 2022 edition of *The Guidelines* as Part 3 for hospitals and outpatient facilities and Part 6 for Residential Facilities. It is used only for those facilities as described in The Guidelines.

- **Commentary Note:** These design codes contain most of the design requirements for new and renovated hospitals, outpatient facilities, and nursing homes in Florida. ASHRAE 170, 2021 edition, is incorporated into and is part of the *The Guidelines* and is not listed as a separate reference in the FBC. Although *ASHRAE 170* is under "continuous maintenance" **the addenda are not permitted** to be used because they were not reviewed or approved by the FBC.

Section 449 Revisions Hospitals

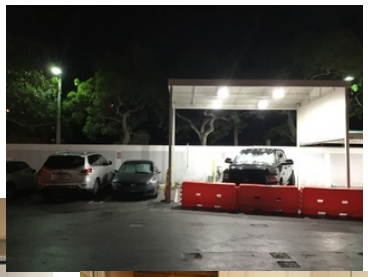
The Guidelines, 2022 edition, exempts a mobile/transportable unit from all requirements in *The Guidelines*, if the mobile/transportable unit is not on-site more than 96 hours. **This was not accepted in Florida.**

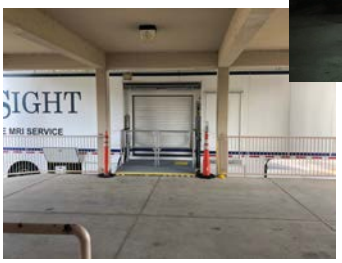
- FBC: *449.3 …Where there are conflicting specific requirements between The Guidelines and this code, the requirements of this code shall take precedence.*
- FBC *449.3.3.3. This section shall apply to all mobile/transportable units regardless of the number of hours they are on-site.*

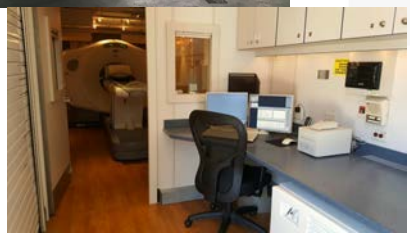
- **Commentary Note:** *The Guidelines* mobile unit chapter was revised to exempt all mobile units from review if they were in service at the facility for less than 96 hours. Florida did not accept this revision as noted in Section 449.3.3.3.

Mobile Units

Mobile Units







The use of a hand sanitizer in lieu of a handwash facility is permitted by The Guidelines for Class I facilities only.

Section 449 Revisions
Hospitals

Hospital Sliding Doors.

- *449.3.4.9 The use of pocket sliding or folding doors to ~~patient use toilet, baths, or shower rooms~~ any occupiable room shall not be permitted.*
- *449.3.4.10 A sliding door used for access to any room located on the exit access corridor may be manual or power operated and shall be smoke resistive and have latching hardware or other mechanism that prevents the door from rebounding to a partially open position if the door is forcefully closed.*
- *449.3.4.10.1 A sliding door used to access an airborne infection isolation room or a protective environment room shall be equipped with an automatic closer that will close and latch when released.*

- **Commentary Note:** No pocket doors are permitted for any occupiable room to prevent jamming**.** They must latch when on an exit access corridor. When they are used on a negative or positive air pressure room, they must be self closing and self latching or the room cannot be maintained with a negative pressure. **This is more stringent than the FGI Guidelines that does not require any door closers on AII rooms.**

Section 449 Revisions
Hospitals

Deletion of Variable Air Systems from FBC.

- 449.3.6.5. *Reserved* ~~Variable air volume systems shall not be permitted for use in surgical departments, obstetrical departments, laboratories, isolation rooms and critical care units and rooms.~~

- **Commentary Note:** This section has been removed in favor of ANSI/ASHRAE/ASHE Standard 170: Ventilation *of Health Care Facilities*, 2021 edition. This standard has been incorporated directly into and is part of *The Guidelines,* 2022 edition. *The Guidelines,* 2022 edition, is referenced in *Chapter 35, Referenced Standards*, FBC. See the *The Guidelines*, 2022 edition, for information concerning variable air volume systems and their requirements.

Section 449 Revisions
Hospitals

Equipotential Grounding Systems.

- *449.3.11.6 There shall be documentation for ~~equipotential~~ grounding system testing of voltage and impedance measurements 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.*

- **Commentary Note:** The term "equipotential grounding" is actually not used in the electrical codes and standards. The revised language is more correct to achieve, " *...impedance, which characterizes the ability of the grounding system to maintain nearly* ***equipotential conditions*** *within the patient care vicinity, (and) is of prime importance in assessing shock hazard.* " *From NFPA 99 Health Care Facilities Code, Annex*

Section 449 Revisions
Hospitals

Fire Alarm in Patient Care Areas.

- *449.3.12.2 In all inpatient and outpatient care rooms, spaces and areas, including sleeping, treatment, diagnostic, and therapeutic, the private operating mode as permitted and described in NFPA 72, National Fire Alarm and Signaling Code, shall be required.*

- **Commentary Note:** The requirement for the use of private operating mode being required in hospitals and nursing homes has been in the FFPC and FBC for several code cycles, but still some fire authorities like to challenge it. This added language is to clarify the private mode will also be used in all outpatient care areas such as outpatient rehabilitative areas.

Section 449 Revisions
Hospitals

Hurricane Provisions.

- *449.4.2 Disaster preparedness construction standards*
- *These minimum standards are intended to increase the ability of the facility to be structural capable of serving as a shelter far patients, staff and the family of patients and staff, equipped to be self-supporting during and immediately following a disaster, and to be protected from damage so the facility can be reoccupied and used for its intended purpose immediately after any required building evacuation*

- **Commentary Note:** This language was added to clarify these provisions are to protect the building from damage whether or not it is occupied. It is also the intention of this section for Nursing Homes although it did not get revised in this edition.

Section 449 Revisions
Hospitals

Hurricane Provisions.

- *449.4.2.5.4 Systems and utilities identified in Section 449.4.2 shall be protected from debris impact by an equipment housing or a screening enclosure complying with the impact protection standards in accordance with Section 1626 when located at or below 30 feet above the finished grade of the building. Where screening enclosures are used, the height of the enclosure shall be not less than the height of the protected equipment and shall provide clearances required for the maintenance and continuous operation of the equipment. Where the housing and louvers are designed to provide the required equipment protection, sufficient standoff shall be provided to prevent damage to internal components from deflection of the cladding as a result of impact.*

- **Commentary Note:** This verbiage was added to assure the equipment will continue in service after direct large missile impact.

Section 449 Revisions
Hospitals

Hurricane Provisions.

- *449.4.2.6 Heating, ventilation and air-conditioning (HVAC) standards.*
- *449.4.2.6.1 All new and replacement air-moving equipment, dx condensing units, through-wall units and other HVAC...*

- **Commentary Note:** This added language is to clarify these requirements are for replacement equipment, not just new equipment. When replacement equipment is contemplated, it must be protected from large missile impact in accordance with this section .

Section 450 Revisions
Nursing Homes

Resident Rooms.

- *450.3.2.1 In new construction and additions, the maximum room capacity of each resident room shall be two persons. In double occupancy resident rooms, sleeping areas shall be separated from each other by a full-height wall or full-height rigid sliding or foldable partition to increase acoustic and visual privacy. Each person lying in bed shall have direct visual access to an exterior window at all times. Either doors or cubicle curtains from the vestibule to these individual resident sleeping areas shall be provided.*

- **Commentary Note:** Clarifies the kind of "partition" that will be acceptable in a split type room. The "partition" cannot simply be a cubicle curtain to separate the room into two sections. Acoustical privacy is important to maintain.

Section 450 Revisions
Nursing Homes

Equipotential Grounding Systems.

- *450.3.14.7 There shall be documentation for grounding system testing of voltage and impedance measurements only in areas defined as Risk Category 1 or 2 in resident care areas.*

- **Commentary Note:** The term "equipotential grounding" was removed for the more correct verbiage. Remember, per section 450.3.14.3, only those resident care areas that are equipped with a piped medical gas or vacuum system are considered Risk Category 1 or 2. If there is no piped medical gas or vacuum, then in nursing homes, all of the resident sleeping and treatment areas are considered Category 3 and impedance measurements are not required by this section.

Section 450 Revisions
Nursing Homes

Carbon Monoxide Detectors.

- *450.3.16.3 Carbon monoxide detector. See Section 915 of this code for requirements.*
- *915.1 Exceptions:*
  2. This section shall ***not apply to existing buildings*** *that are undergoing alterations or repairs unless the alteration is an addition as defined in Section 915.1.3.*

- **Commentary Note:** This new section is a pointer to find the requirements. It is NOT the intent of section 915 to apply to existing facilities even if they are undergoing alterations or equipment changes. Unless the new equipment uses fossil fuel and is replacing equipment that did not use fossil fuel, no carbon monoxide detectors are required.

Section 450 Revisions
Nursing Homes

Resident Area Lighting Requirements.

- *450.3.15.3 All indoor lighting in the resident use areas including corridors, shared spaces, treatment areas, sleeping areas, social/recreational areas and living areas shall be designed and constructed to meet Table A-1 of ANSI/IES RP-28, Recommended Practice: Lighting and the Visual Environment for Older Adults and the Visually Impaired, as referenced in The Guidelines.*

- **Commentary Note:** Lighting is one of the most important areas for maintaining the health and safety of aging populations. Although these are titled as "recommendations" they are referenced as a required standard and therefore are enforced by AHCA just as any other code or standard. Table A-1 is the table that provides the minimum requirements for all new nursing homes.

Section 450 Revisions
Nursing Homes

Emergency Call System.

- *450.3.17.4 Emergency call system. An emergency call station of the pull cord-type shall be provided for resident use at each exam room (if provided), resident toilet, bath or shower room. The cord shall hang to within 2 to 6 inches (5.08–15.24 cm) of the floor for use by a resident lying on the floor. A portable wireless device shall satisfy this requirement.*
  - *1. One emergency call station shall be installed in each separated room or area. Additional emergency call stations shall be located as determined by the facility in its Functional Program.*
  - *2. If the emergency calling station is located inside of the shower it shall be listed for wet locations.*

- **Commentary Note:** Clarifies that a minimum of one call station for each room or separate area is sufficient. Additional call stations are up to the facility's Functional Program…not the AHJ.

Section 451 Revisions
Ambulator Surgical Centers

Operating Room Sizes.

- *451.3.2 Outpatient operating room. All ambulatory surgical centers shall have at least one operating room that has a minimum clear floor area of 270 square feet (25.08 m2) as described in The Guidelines. Every operating room that meets the requirements of an outpatient operating room, as described in The Guidelines, shall be counted as an operating room(s) for purposes of licensure.*

- **Commentary Note:** The size of the ASC operating room has varied in the code requirements through the years from 170 sf to 400 sf with various sizes in between. This size is based on minimum clearance needed when using anesthesia in the OR . At least one operating room in an ASC is now required to have a piped oxygen and vacuum system. This language further states it must be designed as a Category 1 system in accordance with *NFPA 99, Health Care Facilities Code.*

FBC and the Changing Size of ASC Operating Rooms

Florida Building Codes and Effective Dates

Code Edition	2001 FBC		2004 FBC				2007 FBC			2010 FBC		5th Edition (2014)			6th Edition (2017)	Current Version 7th Edition (2020)	8th Edition (2023)
	Original	2003 Supplement	Original	2005 Supplement	2006 Supplement	2007 Supplement	Original	1st 2009 Supplement	2nd 2009 Supplement	Original	2012 Supplement	Original	Supplement 1	Supplement 2			
Effective Date	March 1, 2002 ASC OR 170 SF	June 30, 2003 ASC OR 250 SF	Oct 1, 2005	Dec 16, 2005	Dec 8, 2006 ASC OR 400 SF	July 1, 2007	March 1, 2009	March 1, 2009	Oct 1, 2009	March 15, 2012	April 15, 2012	June 30, 2015	July 1, 2016	October 8, 2016	December 31, 2017 ASC OR 250 SF	December 31, 2020 ASC OR 270 SF	Tentative Date December 31, 2023 ASC OR 270 SF w/ ANA (at least one required) ASC OR 255 SF w/o ANA

Section 451 Revisions
Ambulator Surgical Centers (ASC)

Procedure Rooms.

- *451.3.2.1 If provided, all procedure, examination or treatment rooms shall meet the requirements for these rooms as described in The Guidelines. All procedure rooms shall be counted for purposes of licensure.*

- **Commentary Note:** The term *procedure room* has only been introduced in the codes recently. There has been some issue regarding what constitutes a procedure room vs. an examination/treatment room vs. an operating room. This language is meant to clarify this going forward for new facilities.

Section 451 Revisions
Ambulator Surgical Centers

Post Operative Spaces.

- *451.3.3 Pre- and post-procedure patient care. Reference The Guidelines for other requirements not specifically described in this section.*
- *451.3.3.1 All post-procedure patient care stations as described in The Guidelines, including Phase I Post-Anesthesia Recovery, whether or not combined with pre-procedure positions, and if provided, Phase II Recovery will be counted as recovery positions for purposes of licensure.*
- *451.3.3.2 A Phase II Recover Room or Area is not required*

- **Commentary Note:** Again, everything gets counted for the license so there is no confusion or issues going forward. FBC overrides *The Guidelines* and does NOT require a Phase II Recovery room or area.

Section 451 Revisions
Ambulator Surgical Centers

Medical Gas.

- 451.3.15 Medical gas. *A piped oxygen and vacuum system shall be provided in the operating rooms, if required by The Guidelines, that comply with the requirements of NFPA 99, Health Care Facilities Code, for a Category 1 piped gas and vacuum system.*

- **Commentary Note:** An operating room that is at least 270 SF requires an oxygen and vacuum system per *The Guidelines*. This language further states it must be designed as a Category 1 system in accordance with *NFPA 99, Health Care Facilities Code.*

Section 451 Revisions
Ambulator Surgical Centers

Waste Anesthetic Disposal System.

- *451.3.16 As required by The Guidelines, a waste anesthetic gas disposal (WAGD) system, in accordance with NFPA 99, Health Care Facilities Code, shall be provided in operating rooms where nitrous oxide and/or inhalation anesthesia gas is intended to be administered.*

- **Commentary Note:** This new verbiage requires a WAGD system where anesthesia gas is administered.

Section 451 Revisions
Ambulator Surgical Center

Single Story ASCs.

- *451.3.4.7 Where a fully sprinklered ambulatory surgical center is located in a single-story unsprinklered building, a fire barrier designed and constructed in accordance with Section 707, Fire Barriers, and Section 707.3.10, Fire areas, of this code, may be used to separate the sprinklered ambulatory surgical center fire area from the fire area of the remainder of the unsprinklered single-story building only when all exits from the ambulatory surgical center lead directly to the exterior of the building or to an exit passageway designed and constructed in accordance with Section 1024, Exit Passageways, of this code.*

- **Commentary Note:** This new Section allows a fully sprinklered ASC located in a single story building to be separated from the rest of the building by an appropriate Fire Barrier instead of requiring the entire single story building to be sprinklered. This Section clarifies the intention of Section 903.2.2 Ambulatory care facilities, which was only intended to be applied to multi-story buildings.

Section 469 Revisions
Office Surgery Suite

Reference Revisions:

- 469.2.1.2 *Part 1 and Part 2: Outpatient Facility Types, Chapter 2.1, Common Elements for Outpatient Facilities of The FGI Guidelines for Design and Construction of Outpatient Facilities.*
- *469.2.1.3 The architectural, mechanical and electrical design criteria and processes as specified in the physical plant standards in this section shall take precedence over those in The Guidelines with no additional requirements.*

- **Commentary Note:** This new Section was added to make it clear these types of facilities are not required to meet all of the mechanical and electrical requirements in *The Guidelines* but must meet what is in the FBC

Section 469 Revisions
Office Surgery Suite

Operating Room Sizes.

- *469.4.3.2 The size of the operating room(s) shall be as follows:*
- *469.4.3.2.1 An operating room shall have a minimum clear floor area of 255 square feet (23.69 m2). 469.4.3.2.2 An operating room where anesthetics will be administered using an anesthesia machine and supply cart shall have a minimum clear floor area of 270 square feet (25.08 m2).*
- *469.4.3.2.3 An operating room where surgery that may require additional staff and equipment will be performed shall have a minimum clear floor area of 400 square feet (37.16 m2).*

- **Commentary Note:** Office surgery had become more restrictive than a licensed ASC. This language brings it in line with what *The Guidelines* allows it to be and is less restrictive than the licensed ASC.

8th Edition FBC Revisions
Other Chapters

Definitions… New Additions

- *Automatic flush bolt. Door locking hardware, installed on the inactive leaf of a pair of doors, which has a bolt that is extended automatically into the door frame or floor when the active leaf is closed after the inactive leaf, and which holds the inactive leaf in a closed position. When the active leaf is opened, the automatic flush bolt retracts the bolt or rod allowing the inactive leaf to be opened.*
- *Constant latching bolt. Door locking hardware installed on the inactive leaf of a pair of doors, which has a bolt that automatically latches into the door frame or the floor, and which holds the inactive leaf in a closed position. The latch bolt is retracted manually to allow the inactive leaf to be opened.*
- **Commentary Note:** Similar to NFPA 101 LSC but adds a definition of "Constant latching bolt" for conditions where the active door leaf meets all egress requirements and both the inactive leaf and active leaf must automatically latch when closed…e.g. double doors located on an exit access corridor.

Definitions… New Additions

- *Dead bolt. Door locking hardware with a bolt which is extended and retracted by action of the lock mechanism.*
- *Manual bolt. Door locking hardware operable from one side of the door, or from the edge of a door leaf, with a bolt or rod extended and retracted by manual movement of the bolt or rod, such as a manual flush bolt or manual surface bolt.*
- **Commentary Note:** These definitions make a distinction between a Dead bolt (which is connected to the locking mechanism) and a Manual Bolt (which must be activated separate from the locking mechanism…similar to what was defined as a "dead bolt". See Table 1010.2.4 for a detailed chart for use of the Manual bolts, automatic flush bolts, and constant latching bolts on in inactive leaf of double doors.

Definitions… New Additions

- *Smoke Protective Curtain Assembly for Hoistway. An automatic closing smoke and draft control curtain assembly.*
- *Smoke Compartment. A space within a building enclosed by smoke barriers on all sides, including the top and bottom separated from other interior areas of the building by smoke barriers, including interior walls and horizontal assemblies.*

- **Commentary Note:** New definitions for terms used in the FBC Code. Note that the smoke compartment includes the "top and bottom" of the area of the building to be separated by smoke barriers.

Energy Storage Occupancies

- *306.2 Moderate-hazard factory industrial, Group F-1.*
  Energy storage systems (ESS) in dedicated use buildings

- *716 Opening Protectives*
- *716.5.6.1 Energy storage system separation. Fire-protection-rated glazing shall not be permitted in fire door frames with transom lights and sidelights in fire barriers required by the Florida Fire Prevention Code to enclose energy storage systems.*

- **Commentary Note:** Energy Storage Systems are still addressed in Chapter 5 under Incidental Use as *Stationary storage battery systems*…and require a 2 hour separation for I-2 occupancy if …*energy capacity is greater than the threshold specified in the FFPC.* An ESS in a dedicated use building is classified as an F-1 Building. Non-dedicated use systems are addressed under the FFPC in *NFPA 1, Fire Code, Chapter 52.*

Atrium Smoke Control

- *404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.*
- *Exceptions:*

  1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for atriums that connect only two stories.

  2. A smoke control system is not required for atriums connecting more than two stories when all of the following are met:

  2.1. Only the 2 lowest stories shall be permitted to be open to the atrium.

  2.2. All stories above the lowest 2 stories shall be separated from the atrium in accordance with the provision for a shaft in Section 713.4.

- **Commentary Note:** This new language clarifies that an atrium more than two-stories in height but separated from the floors above the second floor with 2-hour ratings, can still utilize the smoke control exception. Note that this same exception does not exist in the FFPC (NFPA 101 – Chapter 8.6) and the designer must comply with the more restrictive code.

Atrium Smoke Control (Cont.)

- *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:*

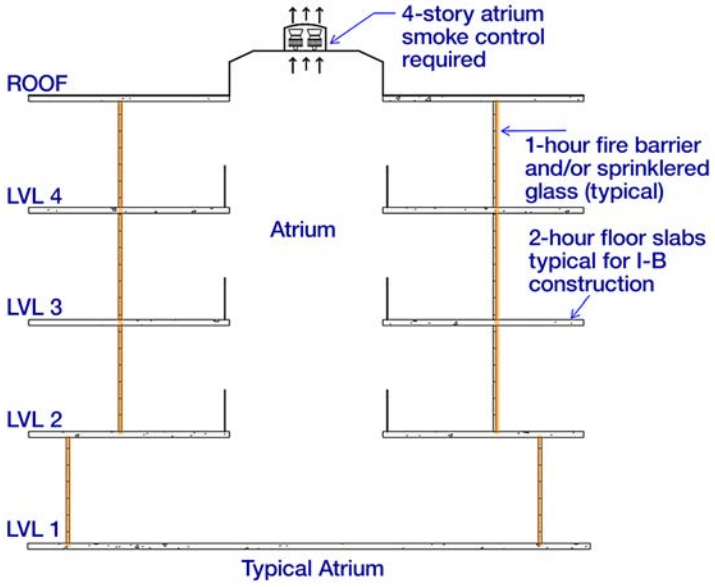
  3. A fire barrier is not required between the atrium and the adjoining spaces of any three floors of the atrium provided such spaces are accounted for in the design of the smoke control system.

  4. A horizontal assembly is not required between the atrium and openings for escalators complying with Section 712.1.3.

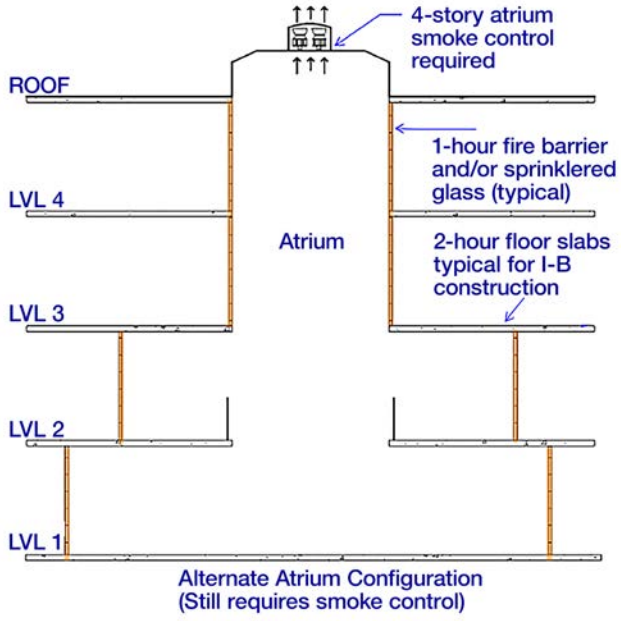
  5. A horizontal assembly is not required between the atrium and openings for exit access stairways and ramps complying with Item 4 of Section 1019.3.

- **Commentary Note:** Two new exceptions were added to the enclosure section 404.6 for horizontal assemblies as is visually shown on the next slides:

Atrium Smoke Control Example

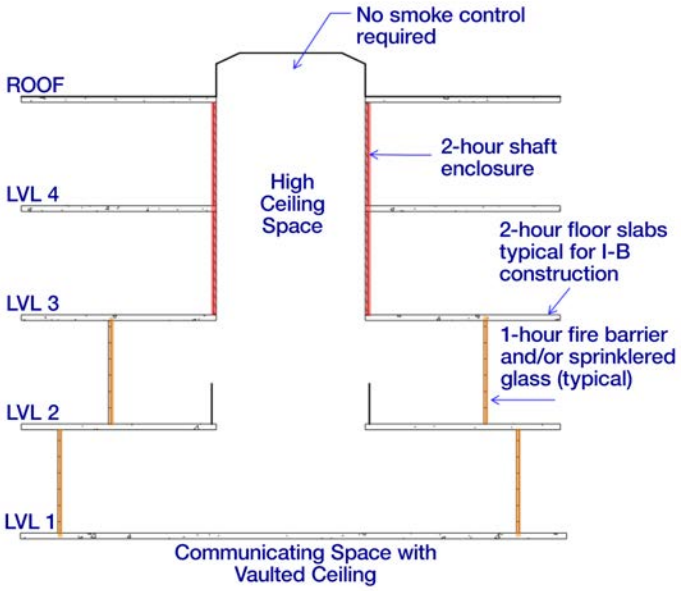


Atrium Smoke Control Example



Atrium Smoke Control Example

Not permitted in *Group I-2, and Group I-1, Condition 2,*



Nursing Home Cooking Facilities Open to the Corridor

- *407.2.6 Nursing home cooking facilities*
  6. The cooking appliances shall comply with Section 407.2.7
- *407.2.7 Domestic cooking appliances*
  (Contains a list of 1-8 items that are not really new revisions)
- **Commentary Note:** Divided the sections into two separate requirements for *Nursing home cooking facilities* and *Domestic cooking appliances*. However, there are no real changes to the requirements for cooking that is open to the corridor.

Exit Access through Care Suites

- *407.4.4.1 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 that all of the other requirements of Sections 407.4 and 1016.2 are satisfied*~~

- **Commentary Note:** In this case, a care suite is similar to a room. Egress cannot pass through a room to an exit. The deleted section is relocated to section 407.4.4.3.

Access to Corridor from Care Suite

- 407.4.4.3 Access to corridor. Every care suite shall have a door leading directly to an exit access corridor or horizontal exit. Movement from habitable rooms within the care suite shall not require more than 100 feet (30 480 mm) of travel within the care suite to a door leading to the exit access corridor or horizontal exit. Where a care suite is required to have more than one exit access door by Section 407.4.4.5.2 or 407.4.4.6.2, the additional door shall lead directly to an exit access corridor, exit or an adjacent suite**.**

- **Commentary Note:** This revision brings the exit access from a suite more into line with *NFPA 101, Life Safety Code*.

Automatic-Closing Door Requirements

- *407.6 Automatic-closing doors. Automatic-closing doors with hold-open devices shall comply with Sections 709.5 and 716.5.*
- *407.6.1 Activation of automatic-closing doors. Automatic-closing doors on hold-open devices in accordance with Section 716.5.9.4 shall also close upon activation of a fire alarm system, an automatic sprinkler system, or both. The automatic release of the hold open device on one door shall release all such doors within the same smoke compartment*
- **Commentary Note:** Although 716.5 requires these fire doors to meet NFPA 80 for their fire ratings, section 709.5 FBC provides exceptions for smoke barrier doors in I-1 Condition 2 and I-2 and ambulatory care facilities. All doors being held open in the smoke compartment must release. Fire rated doors in health care facilities that are NOT cross corridor doors must comply with section 716.5. (Note that a smoke barrier that also has a 2-hour or greater fire rating cannot use the exception in 709.5)

Occupied Roof

- *503.1.4 Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section 506.*
- *Exceptions:*
  1. *The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the occupied roof. Emergency voice/alarm communication system notification per Section 907.5.2.2 shall also be provided in the area of the occupied roof where such system is required elsewhere in the building.*
- **Commentary Note:** Requires an Emergency Voice/Alarm communication on an "Occupied Roof" where the EVCS is already required in the building.

Frontage Increase Factors Revised

- *506.3.2 Minimum frontage distance.*
  The frontage increase shall be based on the smallest public way or open space that is 20 feet (6096 mm) or greater, and the percentage of building perimeter having a minimum 20 feet (6096 mm) public way or open space

- **Commentary Note:** Methodology for determining the allowable area increase for open frontage has been simplified through the use of a tabular format. Allowance for weighting the open space increase has been eliminated.

Table 506.3.3 Frontage Increase Factor

TABLE 506.3.3
FRONTAGE INCREASE FACTOR[a]

	OPEN SPACE			
Percentage (%) of Perimeter	0 to less than 20 feet	20 to less than 25 feet	25 to less than 30 feet	30 feet or greater
0 to less than 25	0	0	0	0
25 to less than 50	0	0.17	0.21	0.25
50 to less than 75	0	0.33	0.42	0.50
75 to 100	0	0.5	0.63	0.75

a. Interpolation is permitted.

Commentary: Table 506.3.3 based on two criteria:

- Smallest public way or open space that $\geq$ 20 ft., and
- Percentage of building perimeter having > 20 ft. of public way and/or open space

Continuity of Fire barriers

- *707 Fire Barriers*
- *707.5 Continuity*
- *Exceptions*

  3. An exit passageway enclosure required by Section 1024.3 that does not extend to the underside of the roof sheathing, slab or deck above shall be enclosed at the top with construction of the same fire-resistance rating as required for the exit passageway

- **Commentary Note:** New text added for an exit passageway to permit use of horizontal shaft wall or other enclosure providing a rating equal to the walls.

Fire Partition Additions

- *708 Fire Partitions*
- *708.1 General. The following wall assemblies shall comply with this section.*

  6. Walls separating ambulatory care facilities from adjacent spaces, corridors or tenants as required by Section 422.2.

  7. Walls separating dwelling and sleeping units in Groups R-1 and R-2 in accordance with Sections 907.2.8.1 and 907.2.9.1.

  8. Vestibules in accordance with Section 1028.2.

- **Commentary Note:** These applications were added to the locations where fire partitions are used. Remember a fire partition must provide supporting construction that "…shall be protected to afford the required fire-resistance rating of the wall supported…" If an ambulatory care facility has tenant separations on a floor in an Type IIB multi-story building, the fire partitions must be supported by a 1 hour fire rating to grade.

Smoke Barrier Continuity

- *709.4.1Smoke-barrier assemblies separating smoke compartments. Smoke-barrier assemblies used to separate smoke compartments shall form an effective membrane enclosure that is continuous from an outside wall or smoke barrier wall to an outside wall or another smoke barrier wall and horizontal assemblies.*

- **Commentary Note:** This revision provides the correction that makes many smoke compartmentation possible in large health care facilities. Clarifies that a smoke barrier can terminate at another smoke barrier or horizontal assembly.

Note on Fire Dampers NOT Required in Any Smoke Barrier

- *709 Smoke Barriers*
- *709.3 Fire-resistance rating. A 1-hour fire-resistance rating is required for smoke barriers.*
- *709.8 Ducts and air transfer openings. Penetrations in a smoke barrier by ducts and air transfer openings shall comply with Section 717.*
- *717.5 Where required. Fire, dampers, smoke dampers, combination fire/smoke dampers, ceiling radiation dampers and corridor dampers shall be provided at the locations prescribed in Sections 717.5.1 through 717.5.7 and 717.6.*
- *717.5.5 Smoke barriers. (*This section does **not require a fire damper** in any occupancy. Smoke dampers are not required in I-2 Condition 2 occupancies **only.)**

- **Commentary Note:** Although not new to the 8th edition of the FBC, there is wide spread misunderstanding of Smoke Barriers and their opening protections.

Pass Through Openings

- *710.5.3 Pass-through openings in Group I-2, Condition 2*

  Where pass-through openings are provided in smoke partitions in Group I-2, Condition 2 occupancies, such openings shall comply with the following:

  1. *The smoke compartment in which the pass-through openings occur does not contain a patient care suite or sleeping room.*
  2. *Pass-through openings are installed in a wall, door or vision panel that is not required to have a fire resistance rating.*
  3. *The top of the pass-through opening is located a maximum of 48 inches (1219 mm) above the floor.*
  4. *The aggregate area of all such pass-through openings within a single room shall not exceed 80 square inches (0.05 m2).*

- **Commentary Note:** Only permitted for I-2, Condition 2 such as hospitals. Brings the FBC more in line with NFPA 101 LSC.

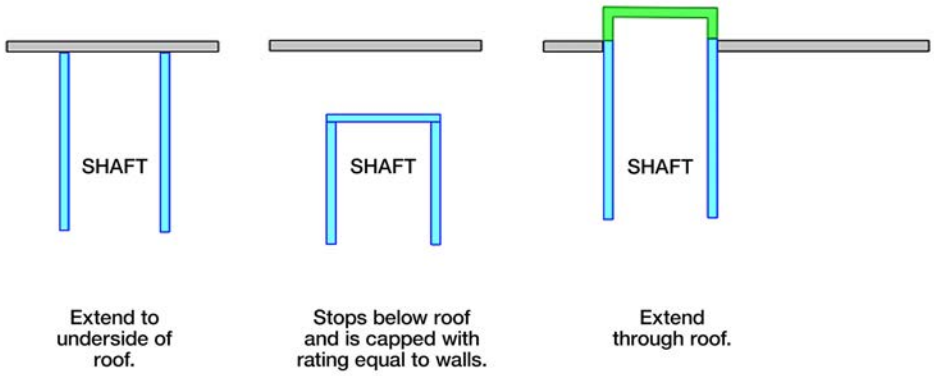
Top of Shaft Enclosures

- *713.12 Enclosure at top. The top of shaft enclosures shall comply with one of the following:*

  1. *Extend to the underside of the roof sheathing, deck or slab and the roof assembly shall comply with the requirements for the type of construction as specified in Table 601.*
  2. *Terminate below the roof assembly and be enclosed at the top with construction of the same fire-resistance rating as the topmost floor penetrated by the shaft, but not less than the fire-resistance rating required for the shaft enclosure.*
  3. *Extend past the roof assembly and comply with the requirements of Section 1510.*

- **Commentary Note:** Clarifies the termination of shaft enclosures. This is often a point of confusion in multi-story buildings such as hospitals.

Top of Shaft Enclosures



Top of Shaft Enclosures (Cont.)

- *713.12.1 Penthouse mechanical rooms. A fire/smoke damper shall not be required at the penetration of the roof- top structure where shaft enclosures extend up through the roof assembly into a rooftop structure conforming to Section 1510. All ductwork in the shaft shall be connected directly to HVAC equipment.*

- **Commentary Note:** Clarifies that a damper is not required at the top of a shaft that enters a "Penthouse" as defined by Chapter 1510 and is connected to HVAC equipment (not an open duct). Multi story hospital designs often utilize a penthouse for mechanical equipment and this is a common area of confusion.

Smoke and Draft Control

- *716.5.3.1 Smoke and draft control. Fire door assemblies shall meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m3/s • m2) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited. Installation of smoke doors shall be in accordance with NFPA 105. Terminated stops shall be prohibited on doors required by Section 405.4.3 to comply with Section 716.5.3 and prohibited on doors required by Sections 3006.3 Item 3, 3007.6.3, or 3008.6.3 to comply with Section 716.5.3.1.*
- *Exception: Elevator hoistway door openings protected in accordance with Section 3006.3*
- **Commentary Note:** Prohibits the use of door frames with stops commonly referred to as "Hospital stops" in "Underground buildings (as defined by 405) and certain Elevator Lobby scenarios.

Static Dampers

- *717.2.3 Static dampers. Fire dampers and ceiling radiation dampers that are listed for use in static systems shall only be installed in heating, ventilation and air-conditioning systems that are automatically shut down in the event of a fire*
- **Commentary Note:** Limits the use of Static fire dampers to HVAC systems that are arranged to shut down on fire. Where a system is designed to continue to run, dampers that are dynamic rated would be required.

New Exceptions for Fire Dampers

- *717.5.2 Fire barriers.*
- *Exception: Fire dampers are not required at penetrations of fire barriers where any of the following apply:*
  3. Such walls are penetrated by fully ducted HVAC systems, have a required fire-resistance rating of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air- handling appliance or equipment to the air outlet and inlet terminals. Flexible air connectors shall be permitted in the following locations:

New Exceptions for Fire Dampers (Cont.)

3.1. Nonmetal flex connections shall be permitted at the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.9 of the Florida Building Code, Mechanical.

3.2. Nonmetal flex connections shall be permitted from an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the Florida Building Code, Mechanical.

- **Commentary Note:** These new exceptions were added to permit the use of flexible air duct connectors as described in this section but still allow the exception to omit fire dampers through 1 hour fire rated barriers that are part of a fully ducted system.

Shafts with Continuous Air Flow

- *717.5.3.1 Continuous upward airflow. Fire dampers and smoke dampers shall not be installed in shafts that are required to maintain a continuous upward airflow path where closure of the damper would result in the loss of the airflow.*

- **Commentary Note:** This exception will permit the use of hazard exhaust systems where a continuous flow (exhaust) is required and a damper that closes would interrupt the exhaust.

Combustible Lockers

- *806.9 Combustible lockers. Where lockers constructed of combustible materials are used, the lockers shall be considered to be interior finish and shall comply with Section 803.*

  Exception: Lockers constructed entirely of wood and non- combustible materials shall be permitted to be used wherever interior finish materials are required to meet a Class C classification in accordance with Section 803.1.1.

- **Commentary Note:** Lockers not constructed of Metal or Solid wood will be required to meet the Interior finish requirements of Section 803. The solid wood or metal lockers would only need to meet the requirements of a Class C material.

Exceptions to Unoccupied Mechanical Rooms & Penthouses

- *1006.2.1 Egress based on occupant load and common path of egress travel distance. Two exits or exit access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1. The cumulative occupant load from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.*
- *Exceptions:*
  3. Unoccupied mechanical rooms and penthouses are not required to comply with the common path of egress travel distance measurement.

- **Commentary Note:** This is a new FBC exception for unoccupied mechanical rooms not to be compelled to comply with common path of travel. Note that the common path of travel under the FFPC would still need to be met if more restrictive.

Required Panic Hardware Refrigeration Machinery Rooms

- *1006.2.2.2 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m2) shall have not less than two exits or exit access doorways. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.*
  Exit or exit access doorways shall swing in the direction of egress travel and shall be equipped with panic hardware, regardless of the occupant load served. Exit or exit access doorways shall be tight fitting and self- closing.

- **Commentary Note:** Adds panic hardware to all refrigeration machinery rooms greater than 1,000 sf.

Electrical Room Egress

- *1006.2.2.4 Electrical rooms. The location and number of exit or exit access doorways shall be provided for electrical rooms in accordance with Section 110.26 of NFPA 70 for electrical equipment rated 1,000 volts or less, and Section 110.33 of NFPA 70 for electrical equipment rated over 1,000 volts. Panic hardware shall be provided where required in accordance with Section 1010.2.9.2.*
- **Commentary Note:** Pulls in the construction requirements for means of egress for certain electrical equipment rooms/vaults that are required under *NFPA 70, National Electrical Code*. Section 1010.2.9.2 is a new section that requires panic hardware on rooms with electrical equipment greater than 800 amperes. See section 1010.2.9.2 for other requirements for such rooms.

New Sections for Locks and Latching

- *1010.2.4* ***Locks and latches****. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:*

  2. In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times.

  4*. Manual bolts, automatic flush bolts, and constant latching bolts on the inactive leaf of a pair of doors in accordance with Table 1010.2.4, provided that the inactive leaf does not have a doorknob, panic hardware, or similar operating hardware***.**

- **Commentary Note:** These are two new added sections for locks and latching. Although Manual bolts are generally not permitted by section 1010.2.1, they are permitted for certain health care occupancies under the provisions of section 1010.2.4. (see Table 1010.2.4 for details on double doors)

  Accessibility requirements prevent the use of a lock or latch that requires *"tight grasping, pinching, or twisting of the wrist…" Section 309.4 Operable Parts, Florida Accessibility Code*

Exceptions for Dead-End Corridor Length

- *1020.5 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.*
- *Exceptions:*
  4. In Group I-2, Condition 2 occupancies, the length of dead-end corridors that do not serve patient rooms or patient treatment spaces shall not exceed 30 feet (9144 mm).

- **Commentary Note:** Extends the dead-end corridor length from 20' to 30' but only for Group I-2, Condition 2 facilities such as hospitals and only areas not serving patient rooms or patient treatment spaces.

Exception for Air Movement

- *1020.6 Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.*
- *Exceptions:*
  4.Transfer air movement required to maintain pressurization difference within health care facilities in accordance with ASHRAE 170.

- **Commentary Note:** New exception codifies air movement in health care facilities for positive and negative air rooms that are located on the exit access corridor.

Exit Passageway New Section

- *1024.9 Exit passageway exterior walls. Exterior walls of the exit passageway shall comply with Section 705. Where non- rated walls or unprotected openings enclose the exterior of the exit passageway and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor of the exit passageway, or to the roof line, whichever is lower.*
- **Commentary Note:** Mimics the requirements for exit stair discharge where the exit is located in an exterior wall that has another intersecting exterior wall that is less than 180º.

But Even When You Follow All of the Codes, Standards, and Rules…

You Still Need to Use Some Common Sense.

(courtesy Belgium Fire Department humor)

Thank you for your attention!

Questions?