

# Florida Building Code 2010: Highlights and Changes Final Exam

- 1.) **The 2010 Florida Building Code is based on**
  - a. 2009 International Building Code
  - b. 2010 International Building Code
  - c. 2009 NFPA Life Safety 101
  - d. None of the above
- 2.) **The 2010 Florida Building Code replaced the 2007 Code as of**
  - a. January 1, 2010
  - b. November 30, 2009
  - c. March 30, 2011
  - d. March 15, 2012
- 3.) **Photocopies of \_\_\_\_\_ are allowed to be submitted to the Building Department for building permit review.**
  - a. Site built building plans
  - b. Manufactured building plans
  - c. Site plans
  - d. None of the above
- 4.) **Inspections are required to determine**
  - a. Elevation certificate at placement of lowest floor in flood hazard areas
  - b. Final certification of elevation as part of final in flood hazard areas
  - c. Impact resistant coverings and impact resistant systems are installed in accordance with the manufacturer's installation instructions
  - d. All of the above
- 5.) **Transient "congregate living facilities' with 10 or fewer occupants can be constructed as a**
  - a. R-1 occupancy
  - b. R-2 occupancy
  - c. R-3 occupancy
  - d. R-4 occupancy
- 6.) **Live work units are classified as a**
  - a. R-1 occupancy
  - b. R-2 occupancy
  - c. R-3 occupancy
  - d. R-4 occupancy
- 7.) **Which statement concerning live/work units is false?**
  - a. the live/work unit is permitted to be a maximum of 3000 sf.
  - b. the nonresidential area is permitted to be a maximum 50 percent of the area of each live/work unit.
  - c. the nonresidential area function shall be limited to the first or second floor only of the live/work unit.
  - d. a maximum of five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.
- 8.) **Fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions shall be identified with a mark indicating that openings need to be protected in an accessible concealed floor, floor ceiling or attic space. The identification shall be repeated at intervals not exceeding \_\_\_\_\_ measured horizontally.**
  - a. 20 feet
  - b. 25 feet
  - c. 30 feet
  - d. 50 feet
- 9.) **Fire resistance for exterior walls is required to be fire rated for exposure from both sides when**
  - a. less than 5 feet
  - b. more than 5 feet
  - c. less than 10 feet
  - d. more than 10 feet
- 10.) **The fire rating of a fire wall is now based on occupancy groups. According to Table 706.4, a fire wall in an Assembly occupancy is required have a fire resistance rating of**
  - a. 4 hours
  - b. 3 hours
  - c. 2 hours
  - d. Is not permitted
- 11.) **Covered areas of buildings not enclosed by walls**
  - a. are not required to be included in the fire area
  - b. shall be included in the fire area
  - c. shall be specified by the design professional of record if it is part of the fire area
  - d. shall be determined by the Building Official if it is part of the fire area
- 12.) **Dead end corridors in Business Occupancies that are fire sprinklered are permitted to be**
  - a. 20 feet
  - b. 25 feet
  - c. 30 feet
  - d. 50 feet
- 13.) **Compliance with incidental use areas is**
  - a. Optional
  - b. Required
  - c. Optional depending on the fire area
  - d. Based on local enforcement
- 14.) **Fire resistant rated tenant separation walls**
  - a. Are required between every tenant
  - b. Are not required in fire sprinklered buildings
  - c. Are required between dwelling units only
  - d. Are not required when it is not a dwelling unit and the building is fire sprinklered

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- 15.) **Special inspections and commissioning is required for**
- All commercial buildings
  - Smoke control systems only
  - Structural components only
  - Not required in Florida
- 16.) **The Florida Accessibility Code is based on**
- DOJ 1991 ADAAG
  - ANSI 2003
  - Federal 2010 ADA Standards for Accessible Design
  - Florida's own homegrown code
- 17.) **The Florida Energy Code is based on**
- International Energy Conservation Code
  - Florida's own homegrown code
  - ANSI/ASRAE 90.1
  - Federal 10 CFR 433 Energy Efficiency Standards
- 18.) **Florida adopted what edition of the ASCE-7**
- 2005
  - 2007
  - 2010
  - None of the above
- 19.) **According to Chapter 16 of the FBC what risk category is "Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300"**
- Risk category I
  - Risk category II
  - Risk category III
  - Risk category IV
- 20.) **Wind maps are based on**
- Risk category
  - Wind exposure
  - Components and cladding design pressures
  - None of the above
- 21.) **Wood panels for protection of openings for wind borne debris regions are permitted for**
- Buildings less than 3 stories
  - Single story buildings
  - All R occupancies
  - R-3 and R-4 occupancies
- 22.) **The wind velocity (3-second gust) to be used in structural calculations for Risk category 1 for Broward County is:**
- 156 mph
  - 160 mph
  - 90 mph
  - 175 mph
- 23.) **An R-4 occupancy can be constructed in accordance with the Florida Residential Code**
- when fire sprinklered
  - when less than 16 occupants
  - when approved by the Building Official
  - never, it is not permitted to be permitted under the Florida Residential Code
- 24.) **Which of the following is not true for ambulatory health care?**
- Is an I occupancy
  - Is required to be fire sprinklered
  - Must have smoke barriers dividing each facility
  - A fire alarm system is required
- 25.) **A two story B, F, M or S building is permitted to be unlimited in area when the building is**
- fire sprinklered and 40 feet of open space surrounding the building is provided.
  - fire sprinklered and 60 feet of open space surrounding the building is provided
  - fire sprinklered and exterior walls are fire rated for 3 hours and 40 feet of open space surrounding the building is provided.
  - not permitted

# **CONTINUING EDUCATION** **For Professional ARCHITECTS**

**Florida Building Code 2010:  
Highlights and Changes**

This 2 CE hour Florida Advanced Building Code Course discusses some of the many highlights and changes from the previous code and focuses only on Chapters 1 to 16 of the 2010 Building Code. It is presented in accordance with the requirements of the Florida Department of Business and Professional Regulation (DBPR) for the required Advanced Florida Building Code Module.

The 2010 Florida Building Code (FBC) replaced the 2007 Florida Building Code as of March 15, 2012. Based on the 2009 edition of the International Building code, the 2010 FBC includes over 450 changes to the previous Code, including both Florida specific amendments as well as the removal of many previous Florida specific amendments to the IBC base code. Important changes include:

❖ **Wind Design.** The 2010 Florida Building Code imposes significant changes related to Wind Design in accordance with standards created by the American Society of Civil Engineers (ASCE). The 2010 wind changes include the design wind speeds of ASCE pamphlet 7, which have been generally increased over previous code wind speeds.

According to Jeffery Gross, AIA, CCS, NCARB, "The 2010 wind changes include the design wind speeds of ASCE 7-10, which are, for the most part, higher than previous code speeds. However, with some of the other coefficients that are used in calculating the wind pressure for design, the pressures stay about the same. Risk categories I, II, III, and IV replace occupancy categories, with most residential and light commercial buildings falling into risk category II. Broward and Miami-Dade County wind speeds change from a former 140 and 146 miles per hour, respectively, to six new wind speeds that range from 156 to 186 miles per hour. Florida Building Code has also added surface roughness factor D back in the code, which could affect some beachfront sites."

❖ **The 2012 Florida Accessibility Code**, which was adopted as part of the Florida Building Code as a separate book (formerly Chapter 12). Accessibility changes have been made to match the updated Federal 2010 ADA Standards for Accessible Design published September 10, 2010 for the Department of Justice. This ensures that building owners complying with Florida code are also in compliance with the national Americans with Disabilities Act.

❖ **Energy Conservation.** Energy Provisions, formerly Chapter 13, have been moved into a new volume of the Code - the Florida Building Code, Energy Conservation. The commission adopted the 2009 International Energy Conservation Code as the foundation for the 2010 Florida Building Code.

❖ **Fire Sprinklers.** The 2010 Florida Building Code removes the Fire Sprinkler Requirements for one and two-family dwellings.

❖ **Construction in Flood-Prone Areas.** At the request of FEMA, the Florida Building Commission has included in the 2010 Florida Building Code further regulation of construction in flood-prone areas. These changes come directly from both the IBC and IRC and are consistent with the requirements of the National Flood Insurance Program. The 2010 Florida Building Code allows the Community Rating System to continue without having to meet the strict requirements for local technical amendments to the Code.

This course presents only a few of the many important changes from the previous Florida Building Code series and from the 2009 International Building Code (the base code). While we have tried to include many of the significant changes, each building professional will have their own specialties and areas of expertise, making it incumbent on every Florida architect to carefully study the code sections that most affect their professional practice.

# CHAPTER 1 – Administration: Significant Changes

Chapter 1 is now split into two parts: Part 1 is Scope and Application, Part 2 is Administration and Enforcement.

102.7 Relocation of Manufactured Buildings:  
New item (3) added:

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

## 107.3 Examination of Documents

Exception 1 language was revised, and photocopies of manufactured buildings plans are now allowed to be submitted for plan review for a building permit.

From 2010 FBC Building:

**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 Section 553.77(5), Florida Statutes, and 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 9B-1.009, F.A.C., shall be sufficient for local permit application documents of record for the modular building portion of the permitted project.

## 107.3.5 Minimum plan review criteria for buildings:

New plan review criteria were added and must be included on the plans.

From 2010 FBC Building:

### 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:

1. **Building**  
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

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

Electrical

8. Design flood elevation

Plumbing

14. Design flood elevation

Mechanical

16. Design flood elevation

Gas

10. Design flood elevation

Residential (one-and two-family)

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

## 110.3 Required inspections

New inspections are now required to verify the placement of an Elevation certificate at the lowest floor in flood hazard areas. Final certification of elevation is part of the final in flood hazard areas.

From 2010 FBC Building:

**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.*

## 111.2 Certificate Issued

For buildings in flood-hazard areas, the Certificate of Occupancy must now include a statement that documentation of the as-built lowest floor elevation has been provided and is retained in the records of the department of building safety.

From 2010 FBC Building:

**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 department of building safety.*
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.*

## CHAPTER 2 – Definitions: Significant Changes

Some definitions were added or modified:

### **AMBULATORY HEALTH CARE FACILITY.**

*Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation.*

### **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.*

### **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.*

## CHAPTER 3 – Use and Occupancy Classification: Significant Changes

Section 303, Assembly Group A, has added/modified exceptions 4 and 5.

From 2010 FBC Building:

### **303.1 Exceptions:**

- 4. Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of the Florida Building Code, Accessibility.*
- 5. Accessory religious educational rooms and religious auditoriums with occupancy loads of less than 100 are not considered separate occupancies.*

Under Section 310, several Group R residential uses have been modified through the addition of specific allowances for small transient use, live/work units, and small residential care facilities.

R-1 now includes Congregate Living Facilities (transient) with 10 or fewer occupants; R-2 includes live/work units; and R-4 can be constructed to the FBC Residential Code when protected by an automatic sprinkler system, in accordance with FBC Section 903.3.1.4.

Transient “congregate living facilities’ with 10 or fewer occupants are allowed to be constructed as R-3 occupancy rather than R-1 occupancy.

From 2010 FBC Building:

**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 in accordance with Section 101.2. Residential occupancies shall include the following:*

*R-1. Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:*

*Boarding houses (transient)  
Hotels (transient)  
Motels (transient)*

*Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.*

*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 (non-transient)  
Convents  
Dormitories  
Fraternities and sororities  
Hotels (non-transient)  
Live/work units  
Monasteries  
Motels (non-transient)  
Vacation timeshare properties*

*R-4 occupancy may be constructed in accordance with the Florida Residential Code with proper fire protection.*

From 2010 FBC Building:

**R-4 Residential occupancies** *shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.*

*Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code or shall comply with the Florida Building Code, Residential provided the building is protected by an automatic sprinkler system installed in accordance with Section 903.2.8*

## CHAPTER 4 – Special Detailed Requirements Based on Use and Occupancy: Significant Changes

Under section 402, Covered Mall and Open Mall Buildings, a new definition was added to clarify that an “Open Mall,” (open air, no roof over the pedestrian walkway), is subject to the same code considerations as a covered mall.

From 2010 FBC Building:

**402.2 Definitions.** *The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.*

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

**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. For the purpose of this chapter, 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. For the purpose of Chapter 4 of the Florida Building Code, Building, anchor buildings are not considered as a part of the open mall building.*

For a high-rise building of more than 420 feet in height an additional stairway shall be required so that egress capacity will be maintained during the time of full evacuation. There is an exception when the building is equipped with occupant self-evacuation elevators.

From 2010 FBC Building:

**403.5.2 Additional exit stairway.** *For buildings other than Group R-2 that are more than 420 feet (128 m) 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 not be 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.*

Self-luminous and photo luminescent material is now required to indicate the exit path in high-rise buildings of group A, B, E, I, M and R-1 occupancies.

From 2010 FBC Building:

**403.5.5 Luminous egress path markings.** *Luminous egress path markings shall be provided in accordance with Section 1024.*

Elevators in high-rise buildings are now allowed for use as occupant self-evacuation when constructed in compliance with 3008. However, this does not reduce the general requirements of chapter 10, Means of Egress.

From 2010 FBC Building:

**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, a minimum of one fire service access elevator shall be provided in accordance with Section 3007.*

**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 438, Live/Work Units, allows for a mixed-use residential/non-residential unit with a maximum size of 3000 sf. The nonresidential area is permitted to be a maximum 50 percent of the area of each live/work unit. The nonresidential area function shall be limited to the first or main floor only of the live/work unit and a maximum of five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time. Hazardous and storage uses are not allowed (minor storage is permitted).

From 2010 FBC Building:

### **LIVE/WORK UNITS**

**438.1 General.** *A live/work unit is a dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant and shall comply with Sections 419.1 through 419.8.*

*Exception: Dwelling or sleeping units that include an office that is less than 10 percent of the area of the dwelling unit shall not be classified as a live/work unit.*



438.1.1 Limitations. The following shall apply to all live/work areas:

1. The live/work unit is permitted to be a maximum of 3,000 square feet (279 m<sup>2</sup>);
2. The nonresidential area is permitted to be a maximum 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. A maximum of five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.

438.2 Occupancies. Live/work units shall be classified as a Group R-2 occupancy. Separation requirements found in Sections 439 and 508 shall not apply within the live/work unit when the live/work unit is in compliance with Section 438. High-hazard and storage occupancies shall not be permitted in a live/work unit. 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.

438.3 Means of egress. Except as modified by this section, the provisions for Group R-2 occupancies in Chapter 10 shall apply to the entire live/work unit.

438.3.1 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 1004.1.1.

438.3.2 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 not exceed 50 pounds (220 N) with a perpendicular force against the door of 50 pounds (220 N).

438.3.3 Spiral stairways. Spiral stairways that conform to the requirements of Section 1009.9 shall be permitted.

438.3.4 Locks. Egress doors shall be permitted to be locked in accordance with Item 4 of Section 1008.1.9.3.

438.4 Vertical openings. Floor openings between floor levels of a live/work unit are permitted without enclosure.

438.5 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.

438.6 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.

438.7 Accessibility. Accessibility shall be designed in accordance with the Florida Accessibility Code.

438.8 Ventilation. The applicable requirements of the Florida Building Code, Mechanical shall apply to each area within the live/work unit for the function within that space

A change in sections 439.2 clarifies the separation requirement between dwelling or sleeping units and other occupancies in the same building. The wall is to be constructed in accordance with Section 709. This change is from section 420 of the 2009 IBC and was renumbered to the FBC format.

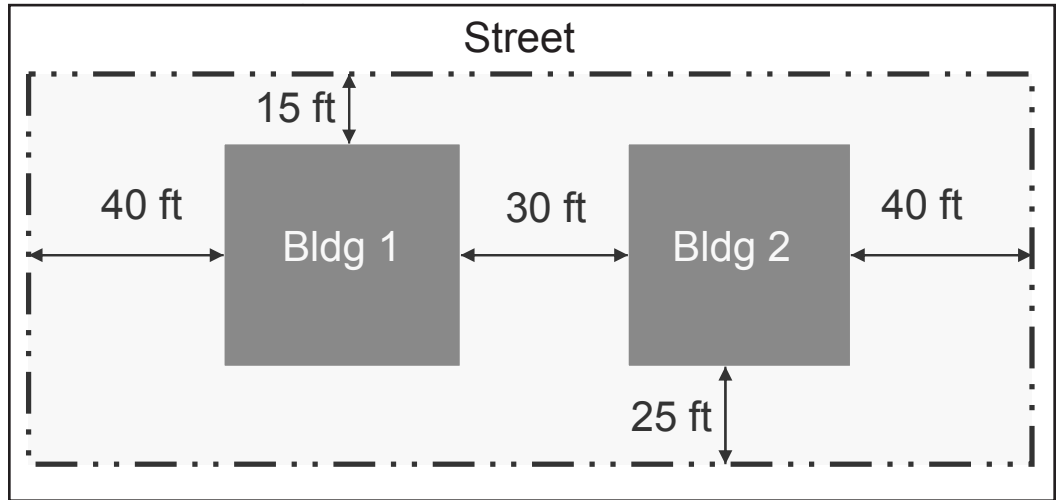
From 2010 FBC Building:

**439.1 General.** Occupancies in Groups I-1, R-1, R-2 and R-3 shall comply with the provisions of this section and other applicable provisions of this code.

**439.2 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 709.

# CHAPTER 5 – General Building Heights and Areas: Significant Changes

When determining the allowable area frontage increase for buildings on the same lot, the full open space between opposing exterior walls may be considered in the frontage calculation for both buildings. In this way, the open space between buildings can be counted for each building.



From 2010 FBC Building:

### 506.2.1 Width limits.

*The value of W shall be at least 20 feet. 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 of each portion of exterior wall and open space where the value of W is greater than or equal to 20 feet. Where the value of W exceeds 30 feet, a value of 30 feet shall be used in calculating the weighted average, regardless of the actual width of the open space. Where two or more buildings are on the same lot, W shall be measured from the exterior face of a building to the exterior face of an opposing building, as applicable.*

*Exception: The value of W divided by 30 shall be permitted to be a maximum of 2 when the building meets all requirements of Section 507 except for compliance with the 60-foot public way or yard requirement, as applicable.*

**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.*

A one or two story building in groups B, F, M or S is may be unlimited in area when the building is

sprinklered and 60 feet of open space surrounding the building is provided. The rationale is as follows: “Section 507.3 of the 2010 FBC allows unlimited area for a fully sprinklered, 1 story building of Group M. Sections 402.6 & 507.12 of the 2010 FBC allow fully sprinklered, 3 story Anchor Buildings in Covered Malls to have unlimited area. Section 507.4 of the 2009 IBC allows unlimited area for a fully sprinklered, 2 story bldg. We feel that a fully sprinklered, 2 story Mercantile Building of unlimited area is a lesser hazard than a fully sprinklered, 3 story Anchor Building of unlimited area.”

From 2010 FBC 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 when 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 in width.*

Table 508.2 was revised to show that parking garages and storage rooms are no longer regulated as incidental accessory occupancies, and fire pump rooms were added.

From 2010 FBC Building:

**508.2.5 Separation of incidental accessory occupancies.** *The incidental accessory occupancies listed in Table 508.2.5 shall be separated from the remainder of the building or equipped with an automatic fire-extinguishing system, or both, in accordance with Table 508.2.5.*

*Exception: Incidental accessory occupancies within and serving a dwelling unit are not required to comply with this section.*

Partial Table 508.2 INCIDENTAL USE-AREAS ACCESSORY OCCUPANCIES	
ROOM OR AREA	SEPARATION AND/OR PROTECTION
Parking garages (Sec. 406.2)	2 hours; or 1 hour and provide automatic sprinkler system throughout the building
Storage Rooms over 100 sq. ft.	1 hour or provide automatic sprinkler system throughout the building
Rooms containing fire pumps in non high-rise buildings	2 hours; or 1 hour and provide automatic sprinkler system throughout the building
Rooms containing fire pumps in high-rise buildings	2 hours

## CHAPTER 6 – Types of Construction: Significant Changes

In Section 602.1, a reference to Section 703.2 was added to clarify fire resistance construction requirements.

From 2010 FBC Building:

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. The building elements shall have a fire-resistance rating not less than that specified in

*Table 601 and exterior walls shall have a fire-resistance rating not less than that specified in Table 602. Where required to have a fire-resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.*

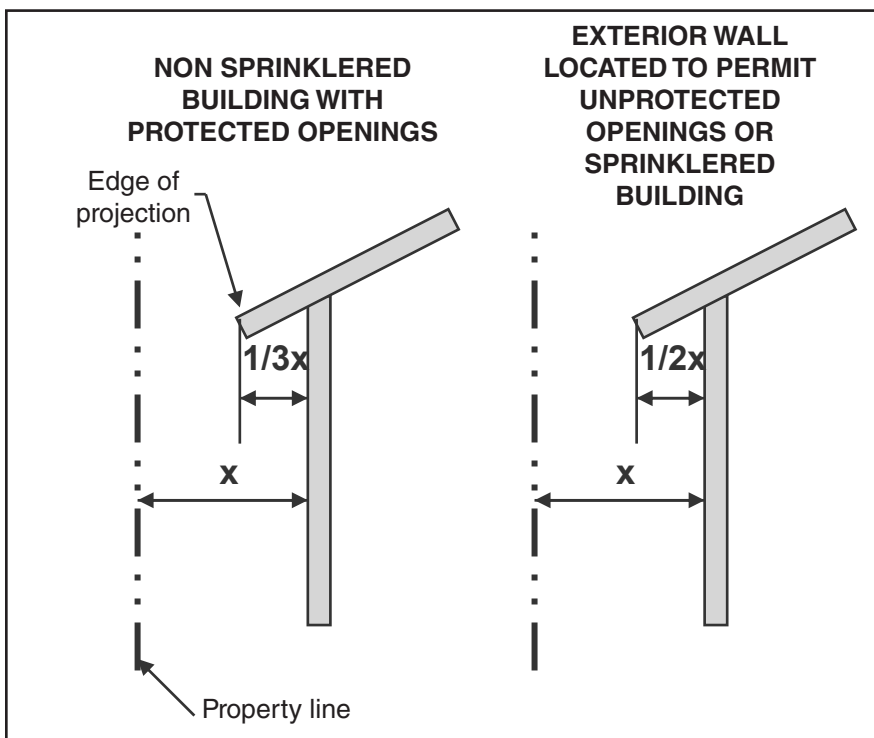
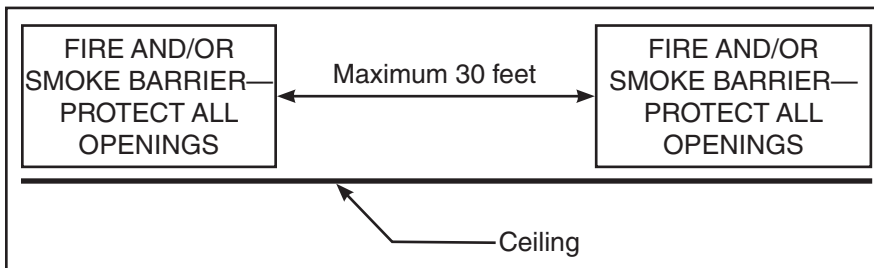
## CHAPTER 7 – Fire and Smoke Protection Features: Significant Changes

Wherever fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions are present, they must be within accessible concealed floor, floor-ceiling or attic spaces. The identification shall be repeated at intervals not exceeding 30 feet measured horizontally along the wall or partition, with lettering that is not less than ½ inch in height and incorporating the suggested wording “FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS” or other wording.

From 2010 FBC Building:

**703.6 Marking and identification.** Fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling. Such identification shall:

1. Be located in accessible concealed floor, floor-ceiling or attic spaces;
2. Be repeated at intervals not exceeding 30 feet (914 mm) measured horizontally along the wall or partition; and
3. Include lettering not less than 0.5 inch (12.7 mm) in height, incorporating the suggested wording: “FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS,” or other wording.



*Exception: Walls in Group R-2 occupancies that do not have a removable decorative ceiling allowing access to the concealed space.*

The distance that a projection may extend beyond an exterior wall is now figured differently. In a non-sprinklered building with protected openings, the projection may extend one third into the distance to the property line. For a building with unprotected openings, or a sprinklered building, the projection may extend no more than one half the distance to the property line.

From 2010 FBC Building:

**705.2 Projections.** Cornices, eave overhangs, exterior balconies and similar projections extending beyond the exterior wall shall conform to the requirements of this section and Section 1406. Exterior egress balconies and

exterior exit stairways shall also comply with Sections 1019 and 1026, respectively. Projections shall not extend beyond the distance determined by the following three methods, whichever results in the lesser projection:

1. A point one-third the distance from the exterior face of the wall to the lot line where protected openings or a combination of protected and unprotected openings are required in the exterior wall.
2. A point one-half the distance from the exterior face of the wall to the lot line where all openings in the exterior wall are permitted to be unprotected or the building is equipped throughout with an automatic sprinkler system installed under the provisions of Section 705.8.2.
3. More than 12 inches into areas where openings are prohibited. Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with this section.

Where an interior wall must be fire-rated, the rating must now address fire exposure from either side. The code formerly required the fire rating of the exterior wall to be tested from the interior if the fire separation distance was greater than 5 feet. The new requirement applies only to exterior walls greater than 10 feet. Where the wall is 10 feet or less, the rating must address both the interior and the exterior.

From 2010 FBC Building:

**705.5 Fire-resistance ratings.** Exterior walls shall be fire-resistance rated in accordance with Tables 601 and 602 and this section. The required fire-resistance rating of exterior walls with a fire separation distance of greater than 10 feet shall be rated for exposure to fire from the inside. The required fire-resistance rating of exterior walls with a fire separation distance of less than or equal to 10 feet shall be rated for exposure to fire from both sides.

Section 706.1 has been re-worded to eliminate a Florida specific amendment, based on a technically sound method of providing fire-resistance rating.

From 2010 FBC Building:

**706.1 General.** Each portion of a building separated by one or more fire walls that comply with the provisions of this section shall be considered a separate building. ~~For the purposes of determining height and area in accordance with Table 503, fire walls dividing buildings into separate buildings shall provide a 4-hour fire-resistance rating. The extent and location of such fire walls shall provide a complete separation. Where a fire wall also separates groups that are required to be separated by a fire barrier wall, the most restrictive requirements of each separation shall apply. Fire walls located on lot lines shall also comply with Section 503.2. Such fire walls (party walls) shall provide a 4-hour fire-resistance rating and shall be constructed without openings.~~

Fire wall requirements have changed. A minimum four hour wall is no longer required. The required fire rating is dependent on the occupancy group.

The 2009 IBC does not require tenant separation walls to be rated. The FBC requirement to construct tenant

**Table 706.4  
Fire Wall Fire Resistance Ratings**

Group	Fire Rating (hours)
A, B, D, E, H-4, I, R-1, R-2, U	3a
F-1, H-3b, H-5, M, S-1	3
H-1, H-2	4b
F-2, S-2, R-3, R-4	2

- a. In Type II or V construction, walls shall be permitted to have a 2-hour fire resistance rating.
- b. For Group H-1, H-2 or H-3 buildings, also see Sections 415.4 and 415.5

separation walls as fire barrier walls originated in the Standard Building Code. The FBC now allows an exception that moves the Florida Building Code closer to the present IBC. The exception to not require a fire resistant tenant separation wall is when the wall is not separating a dwelling unit or sleeping unit and the building is protected by a fire sprinkler system.

From 2010 FBC Building:

**709.1 General.** *The following wall assemblies shall comply with this section.*

1. Walls separating dwelling units in the same building as required by Section 438.2.
2. Walls separating sleeping units in the same building as required by Section 438.2.
3. Walls separating tenant spaces in covered mall buildings as required by Section 402.7.2.
4. Corridor walls as required by Section 1018.1.
5. Elevator lobby separation as required by Section 708.14.1
6. Wall separating individual tenant spaces.

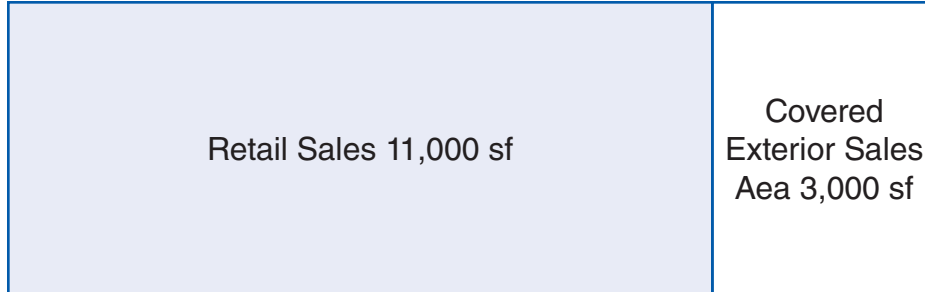
Exceptions:

1. *In Group B and S occupancies, walls used to separate tenants shall not be required to **have a fire-resistance rating, provided no area between fire partitions having a 1-hour fire-resistance rating exceeds 3,000 square feet (279 m<sup>2</sup>).***
2. *In aircraft hangar occupancies, walls used to separate tenants shall not be required to have a fire-resistance rating, provided the aircraft hanger is constructed in accordance with the requirements of Section 412.2.*
3. *In mini-warehouses/self-storage buildings, walls used to separate tenants shall not be required to have fire-resistance rating, provided a sprinkler system meeting the requirements of Ordinary Hazard Group II as defined by NFPA 13, is installed employing quick response heads.*
4. *Other than dwelling units or sleeping units, walls used to separate individual tenant spaces shall not be required to have a fire-resistance rating when the building is protected by a complete automatic sprinkler system installed in accordance with section 903.3.1.1.*

# CHAPTER 9 – Fire Protection Systems: Significant Changes

Covered areas of buildings not enclosed by walls have to be included in the fire area.

Fire sprinklers are required when fire areas are 14,000 sq. ft. or greater for a Group M occupancy. In this diagram below, the fire area is 14,000 sq. ft., therefore sprinklers are required unless the wall between the covered area and the enclosed mercantile space is a 2 hour fire barrier therefore creating two fire areas with each less than 14,000 sf (FBC 707.3.9)



From 2010 FBC Building:

**902.1 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.*

The threshold for requiring fire sprinklers in Group E occupancies has been reduced from 20,000 sq. ft. to 12,000 sq. ft. Fire barrier requirements are as per Table 707.3.9.

From 2010 FBC Building:

**903.2.3 Group E.** *An automatic sprinkler system shall be provided for Group E occupancies as follows:*

1. *Throughout all Group E fire areas greater than 12,000 square feet (1115 m<sup>2</sup>) in area.*

Fire sprinklers have to be extended to protect exterior balconies of combustible construction (Type V) in Group R occupancies where there is a roof or deck above the balcony or exterior deck. NFPA 13R does not require these areas to be protected with sprinklers, however, FBC was changed due to the increased frequency of cooking fires in R-2 buildings.

From 2010 FBC Building:

**903.3.1.2.1 Balconies and decks.** *Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units where the building is of Type V construction, provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch to 6 inches below the structural members and a maximum distance of 14 inches below the deck of the exterior balconies and decks that are constructed of open wood joist construction.*

The provision to allow the use of NFPA 13D sprinkler

systems has been extended to include townhouses.

From 2010 FBC Building:

**903.3.1.3 NFPA 13D sprinkler systems.** *Where allowed, automatic sprinkler systems installed in one and two-family dwellings and townhouses shall be installed throughout in accordance with NFPA 13D.*

Section 909.3 was modified to re-apply the core requirements of IBC section 909.3 back into FBC.

This change is due to the complexity and uniqueness of each design.

From 2010 FBC Building:

**909.3 Special inspection and test requirements.** *In addition to the ordinary inspection and test requirements which buildings, structures and parts thereof are required to undergo, smoke*

*control systems subject to the provisions of Section 909 shall undergo special inspections and tests sufficient to verify the proper commissioning of the smoke control design in its final installed condition. The design submission accompanying the construction documents shall clearly detail procedures and methods to be used and the items subject to such inspections and tests. Such commissioning shall be in accordance with generally accepted engineering practice and, where possible, based on published standards for the particular testing involved.*

Carbon monoxide protection language has been clarified to remove ambiguity.

From 2010 FBC Building:

**916.1 Carbon monoxide protection.** *Every separate building or an addition to an existing building for which a permit for new construction is issued and having a fossil-fuel-burning heater or appliance, a fireplace, or an attached garage, or other feature, fixture, or element that emits carbon monoxide as a byproduct of combustion shall have an operational carbon monoxide alarm installed within 10 feet of each room used for sleeping purposes in the new building or addition, or at such other locations as required by this Code.*

**916.1.1 Carbon monoxide alarm.** *The requirements of Section 916.1 shall be satisfied by providing for one of the following alarm installation:*

- (1) *A hard-wired carbon monoxide alarm.*
- (2) *A battery-powered carbon monoxide alarm.*
- (3) *A hard-wired combination carbon monoxide and smoke alarm.*
- (4) *A battery-powered combination carbon monoxide and smoke alarm.*

## CHAPTER 10 – Means of Egress: Significant Changes

New Definitions in Chapter 10 include Exit Access Doorway, Flight, and Suite. Note that although the definition of “Suite” is new, provisions relating to suites in I-2 occupancies have been in previous editions of the code.

From 2010 FBC Building:  
**1002 Definitions.**

**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, unenclosed exit access stair or unenclosed exit access ramp.

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

**SUITE.** A group of patient treatment rooms or patient sleeping rooms within Group I-2 occupancies where staff are in attendance within the suite, for supervision of all patients within the suite and the suite is in compliance with the requirements of Sections 1014.2.2 through 1014.2.7.

The minimum required egress width was changed.

From 2010 FBC Building:

**1005.1 Minimum required egress width.** The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.3 inch (7.62 mm) per occupant for stairways and by 0.2 inch (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

Exception: Means of egress complying with Section 1028.

Sections 1005.2 and 1005.3 were revised to handle encroachment of doors and/or handrails into the width of the means of egress. A fully opened door cannot reduce the width by more than 7 inches. The door *in any position* cannot reduce the width by more than one-half of the required egress width. Two exemptions: 1) when the hardware is installed on the side of the door facing the corridor *when fully opened*, and 2) when the hardware is mounted between 34” and 48” above the floor.

From 2010 FBC Building:

**1005.2 Door encroachment.** Doors, when fully opened, and handrails opening into the path of egress travel shall not reduce the required means of egress width by more than 7 inches. Doors in any position shall not reduce the required width by more than one-half during the course of the swing. When fully open, the door shall not project more than 7 inches into the required width. Other nonstructural projections such as trim and similar decorative features

shall be permitted to project into the required width a maximum of 1½ inches on each side.

Exception: The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 and dwelling units of Group R-3.

**1005.3 Door hardware encroachment.** Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch (178 mm) maximum projection requirement of Section 1005.2 when:

1. The hardware is mounted to the side of the door facing the corridor width when the door is in the open position; and
2. The hardware is mounted not less than 34 inches (865mm) or more than 48 inches (1220 mm) above the finished floor.

Section 1009.4.2, Exception 5 was reworded to remove a Florida specific amendment. Existing IBC code language provides the equivalent requirement.

From 2010 FBC Building:

**1009.4.2 Riser height and tread depth.** Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread’s leading edge. Winder treads shall have a minimum tread depth of 11 inches (279 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. Alternating tread devices in accordance with Section 1009.10.
2. Ship ladders in accordance with Section 1009.11.
3. Spiral stairways in accordance with Section 1009.9.
4. Aisle stairs in assembly seating areas where the stair pitch or slope is set, for sightline reasons, by the slope of the adjacent seating area in accordance with Section 1028.11.2.
5. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 7 3/4 inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than 3/4 inch (19.1 mm) but not more than 1 1/4 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).

For roof access, alternating treads are permitted in lieu of a stairway to the roof when the roof is not occupied. This code change restores the code to the base code language and removes a Florida specific requirement.

From 2010 FBC Building:

**1009.13 Access to roof.** *Buildings four stories or more in height, except those with a roof slope greater than 4:12, shall be provided with a stairway to the roof. Such stairway shall be marked at street and floor levels with a sign indicating that it continues to the roof. Where roofs are used for roof gardens or for other purposes, stairways shall be provided as required for such use or occupancy.*  
**Stairway to roof.** *In buildings four or more stories above grade plane, one stairway shall extend to the roof surface, unless the roof has a slope steeper than four units vertical in 12 units horizontal (33-percent slope). In buildings without an occupied roof, access to the roof from the top story shall be permitted to be by an alternating tread device.*

Section 1011.1 was reworded to remove a Florida specific amendment. Existing IBC code language provides the equivalent requirement.

From 2010 FBC Building:

**1011. Exit Signs.**

**1011.1** *Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. The path of egress travel to exits and within exits shall be marked by readily visible exit signs to clearly indicate the direction of egress travel in cases where the exit or the path of egress travel is not immediately visible to the occupants. Intervening means of egress doors within exits shall be marked by exit signs. Exit sign placement shall be such that no point in an exit access corridor or exit passageway is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.*

*Exceptions:*

- 1. Exit signs are not required in rooms or areas that require only one exit or exit access.*
- 2. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the building official.*
- 3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.*
- 4. Exit signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.*
- 5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.*

For fixed seating adjacent to a guard, the seating surface is now considered a walking surface and the minimum height is measured from the seat surface rather than the floor.

From 2010 FBC Building:

**1013.2 Height.** *Required guards shall form a protective barrier be not less than 42 inches high, measured vertically above the leading edge of the tread adjacent walking surfaces, adjacent fixed seating or the line connecting the leading edges of the treads or adjacent seatboard.*

*Exceptions:*

- 1. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.*
- 2. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.*
- 3. The height in assembly seating areas shall be in accordance with Section 1028.14.*
- 4. Along alternating tread devices and ship ladders, guards whose top rail also serves as a handrail, shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread nosing.*

The maximum lengths of dead end corridors are allowed to be 50 feet in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U when equipped with fire sprinklers.

From 2010 FBC Building:

**1018.4 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 in length.*

*Exceptions:*

- 1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet.*
- 2. In occupancies in Groups B, and E, F, I-1, M, R-1, R-2, R-4, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet.*
- 3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.*

## CHAPTER 11 – Accessibility: Significant Changes

The Florida Accessibility Code was updated to the Federal 2010 ADA Standards for Accessible Design and is now published in a separate volume. Selected Florida specific requirements remain in the separate volume,

such as the 12 foot wide accessible parking space, the Florida accessible toilet stall with the lavatory in the stall and vertical accessibility.

## CHAPTER 13 – Energy Efficiency: Significant Changes

The Florida Energy Code is now published in a separate volume, and is based on the International Energy Efficiency Code instead of Florida-written code as in previous editions.

## CHAPTER 14 – Exterior Walls: Significant Changes

Section 1403.2, was reworded to remove a Florida specific amendment. Existing IBC code language provides the equivalent requirement.

From 2010 FBC Building:

**1403.2 Weather protection.** Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing, as described in Section 1405.4. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer, as described in Section 1404.2, and a means for draining water that enters the assembly to the exterior. Protection against condensation in the exterior wall assembly shall be provided in accordance with Section 1405.3

Exceptions:

1. A weather-resistant exterior wall envelope shall not be required over concrete or masonry walls designed in accordance with Chapters 19 and 21, respectively.

Anchored masonry veneer was revised in accordance with ASCE 7 – 2010 edition, including the ultimate design wind speed maps. Where wind speed exceeds 130 mph, prescriptive anchoring of masonry veneer is not allowed.

From 2010 FBC Building:

**1405.6.2 Wind requirements.** Sections 6.2.2.1 and 6.2.2.11 of TMS 402/ACI 530/ASCE 5 shall be modified as followed

6.2.2.1 Except as provided in Section 6.2.2.11, prescriptive requirements for anchored masonry veneer shall not be used in areas where the basic wind speed exceeds 130 mph (177 km/hr) as given in ASCE 7.

6.2.2.11 Requirements in areas of high winds — The following requirements apply in areas where the basic wind speed, as given in ASCE 7, exceeds 130 mph but does not exceed 150 mph and the building's mean roof height is less than or equal to 60 ft:

- (a) Reduce the maximum wall area supported by each anchor to 70 percent of that required in Sections 6.2.2.5.6.1 and 6.2.2.5.6.2.

(b) Space anchors at a maximum 18 in. horizontally and vertically.

(c) Provide additional anchors around openings larger than 16 in. in either direction. Space anchors around perimeter of opening at a maximum of 24 in. on center. Place anchors within 12 in. of openings.

A new Section 1408, EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) was added.

From 2010 FBC Building:

**SECTION 1408 EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)**

1408.1 General. The provisions of this section shall govern the materials, construction and quality of exterior insulation and finish systems (EIFS) for use as exterior wall coverings in addition to other applicable requirements of Chapters 7, 14, 16, 17 and 26.

1408.2 Performance characteristics. EIFS shall be constructed such that it meets the performance characteristics required in ASTM E 2568.

1408.3 Structural design. The underlying structural framing and substrate shall be designed and constructed to resist loads as required by Chapter 16.

1408.4 Weather resistance. EIFS shall comply with Section 1403 and shall be designed and constructed to resist wind and rain in accordance with this section and the manufacturer's application instructions.

1408.4.1 EIFS with drainage. EIFS with drainage shall have an average minimum drainage efficiency of 90 percent when tested in accordance the requirements of ASTM E 2273 and is required on framed walls of Type V construction, Group R1, R2, R3 and R4 occupancies.

1408.4.1.1 Water-resistive barrier. For EIFS with drainage, the water-resistive barrier shall comply with Section 1404.2 or ASTM E 2570.

1408.5 Installation. Installation of the EIFS and EIFS with drainage shall be in accordance with the EIFS manufacturer's instructions.



## CHAPTER 15 — Roof Assemblies and Rooftop Structures: Significant Changes

A new definition and sections were added due to the increased use of photovoltaic roofing materials, which are an important part of achieving energy efficiency goals in Florida.

From 2010 FBC Building:  
**Section 1502 DEFINITIONS**

**BUILDING INTEGRATED PHOTOVOLTAIC ROOFING.** *A roofing product consisting of electricity generating photovoltaic component integrated into a roof covering.*

*1507.17 Building integrated photovoltaic roofing modules/shingles. The installation of building integrated photovoltaic roofing modules/shingles shall comply with the provisions of this section.*

*1507.17.1 Material standards. Building integrated photovoltaic roofing modules/shingles shall be listed and labeled in accordance with UL 1703.*

*1507.17.2 Attachment. Building integrated photovoltaic*

*roofing modules/shingles shall be attached in accordance with the manufacturer's installation instructions.*

*1507.17.3 Wind resistance. Building integrated photovoltaic roofing modules/shingles shall be tested in accordance with procedures and acceptance criteria in ASTM D3161 or TAS 107. Building integrated photovoltaic roofing modules/shingles shall comply with the classification requirements of Table 1507.2.7.1 for the appropriate maximum basic wind speed. Building integrated photovoltaic roofing module/shingle packaging shall bear a label to indicate compliance with the procedures in ASTM D3161 or TAS 107 and the required classification from Table 1507.2.7.1.*

*1505.8 Photovoltaic systems. Rooftop installed photovoltaic systems that are adhered or attached to the roof covering or photovoltaic modules/shingles installed as roof coverings shall be labeled to identify their fire classification in accordance with the testing required in Section 1505.1.*

## CHAPTER 16 — Structural Design: Significant Changes

The base code (IBC 2009) was updated to include ASCE 7-2010. Many FBC sections were changed to integrate them to the updated ASCE 7 2010 Edition. New wind speeds and wind maps are provided.

The following are required to be on the construction documents for Wind Design:

- ❖ Ultimate design wind speed  $V_{ult}$  (3 second gust) miles/hour and Nominal design wind speed  $V_{asd}$  as determined in Section 1609.3.1
- ❖ Risk category from T1604.5 or T1.5-1 of ASCE-7
- ❖ Wind Exposure
- ❖ Enclosure Applications
- ❖ Components and cladding design wind pressure

From 2010 FBC Building:

**1603.1.4 Wind design data.** *The following information related to wind loads shall be shown, regardless of whether wind loads govern the design of the lateral-force-resisting system of the building:*

1. *Basic Ultimate design wind speed  $V_{ult}$ , (3-second gust), miles per hour (km/hr) and nominal design wind speed,  $V_{asd}$ , as determined in accordance with Section 1609.3.1.*
2. *Risk Category from Table 1604.5 or Table 1.5-1 of ASCE 7*
3. *Wind Exposure. Where more than one wind exposure is utilized, the wind exposure and applicable wind direction shall be indicated.*

4. *The applicable enclosure applications, and if designing with ASCE 7, the internal pressure coefficient.*
5. *Components and cladding. The design wind pressures in terms of psf (kN/m<sup>2</sup>) to be used for the selection of exterior component and cladding materials not specifically designed by the registered design professional.*

A new requirement for Geotechnical information for the design loadbearing values of soils is to be shown on the construction documents.

From 2010 FBC Building:

**1603.1.6 Geotechnical information.** *The design loadbearing values of soils shall be shown on the construction documents.*

Each building shall be assigned a Risk Category, based on the nature of the Occupancy (these were previously called occupancy categories.)

From 2010 FBC Building:

**Section 1602 DEFINITIONS AND NOTATIONS RISK-OCCUPANCY CATEGORY.** *A categorization category of buildings and other structures for determination used to determine structural requirements based on occupancy of flood and wind loads based on the risk associated with unacceptable performance.*

*1604.5 Each building and structure shall be assigned a risk occupancy category in accordance with Table 1604.5.*

**TABLE 1604.5  
RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES**

RISK CATEGORY	NATURE OF OCCUPANCY
I	<p><i>Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to:</i></p> <ul style="list-style-type: none"> <li>• <i>Agricultural facilities.</i></li> <li>• <i>Certain temporary facilities.</i></li> <li>• <i>Minor storage facilities.</i></li> <li>• <i>Screen Enclosures.</i></li> </ul>
II	<p><i>Buildings and other structures except those listed in Risk Categories I, III and IV</i></p>
III	<p><i>Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:</i></p> <ul style="list-style-type: none"> <li>• <u><i>Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300.</i></u></li> <li>• <u><i>Buildings and other structures containing elementary school, secondary school or day care facilities with an occupant load greater than 250.</i></u></li> <li>• <u><i>Buildings and other structures containing adult education facilities, such as colleges and universities, with an occupant load greater than 500.</i></u></li> <li>• <u><i>Group I-2 occupancies with an occupant load of 50 or more resident patients but not having surgery or emergency treatment facilities.</i></u></li> <li>• <u><i>Group I-3 occupancies.</i></u></li> <li>• <u><i>Any other occupancy with an occupant load greater than 5,000a.</i></u></li> <li>• <u><i>Power-generating stations, water treatment facilities for potable water, waste water treatment facilities and other public utility facilities not included in Risk Category IV.</i></u></li> <li>• <u><i>Buildings and other structures not included in Risk Category IV containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released.</i></u></li> </ul>
IV	<p><i>Buildings and other structures designated as essential facilities, including but not limited to:</i></p> <ul style="list-style-type: none"> <li>• <u><i>Group I-2 occupancies having surgery or emergency treatment facilities.</i></u></li> <li>• <u><i>Fire, rescue, ambulance and police stations and emergency vehicle garages.</i></u></li> <li>• <i>Designated earthquake, hurricane or other emergency shelters.</i></li> <li>• <i>Designated emergency preparedness, communications and operations centers and other facilities required for emergency response.</i></li> <li>• <i>Power-generating stations and other public utility facilities required as emergency backup facilities for Risk Category IV structures.</i></li> <li>• <i>Structures containing highly toxic materials as defined by Section 307 where the quantity of the material exceeds the maximum allowable quantities of Table 307.1(2).</i></li> <li>• <i>Aviation control towers, air traffic control centers and emergency aircraft hangars.</i></li> <li>• <i>Buildings and other structures having critical national defense functions.</i></li> <li>• <i>Water storage facilities and pump structures required to maintain water pressure for fire suppression.</i></li> </ul>

Wind loads on every building or structure shall be determined in accordance with Chapter 26 through 30 of ASCE 7 or provisions of the alternate all-heights method in Section 1609.6. The revision to Exception 1 of Section 1609.1.1 was to replace the *IBHS Guideline for Hurricane Resistant Residential Construction* (legacy standard SBCCI SSTD 10) with the new ICC 600 *Standard for Residential Construction in High-Wind Regions*.

From 2010 FBC Building:  
**1609.1.1 Determination of Wind Loads.** Wind loads on every building or structure shall be determined in

*accordance with Chapter 26 through 30 of ASCE 7 or provisions of the alternate all-heights method in Section 1609.6. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.*

Exceptions:

1. *Subject to the limitations of Section 1609.1.1.1, the provisions of ICC 600 shall be permitted for applicable Group R-2 and R-3 buildings.*
2. *Subject to the limitations of Section 1609.1.1.1,*

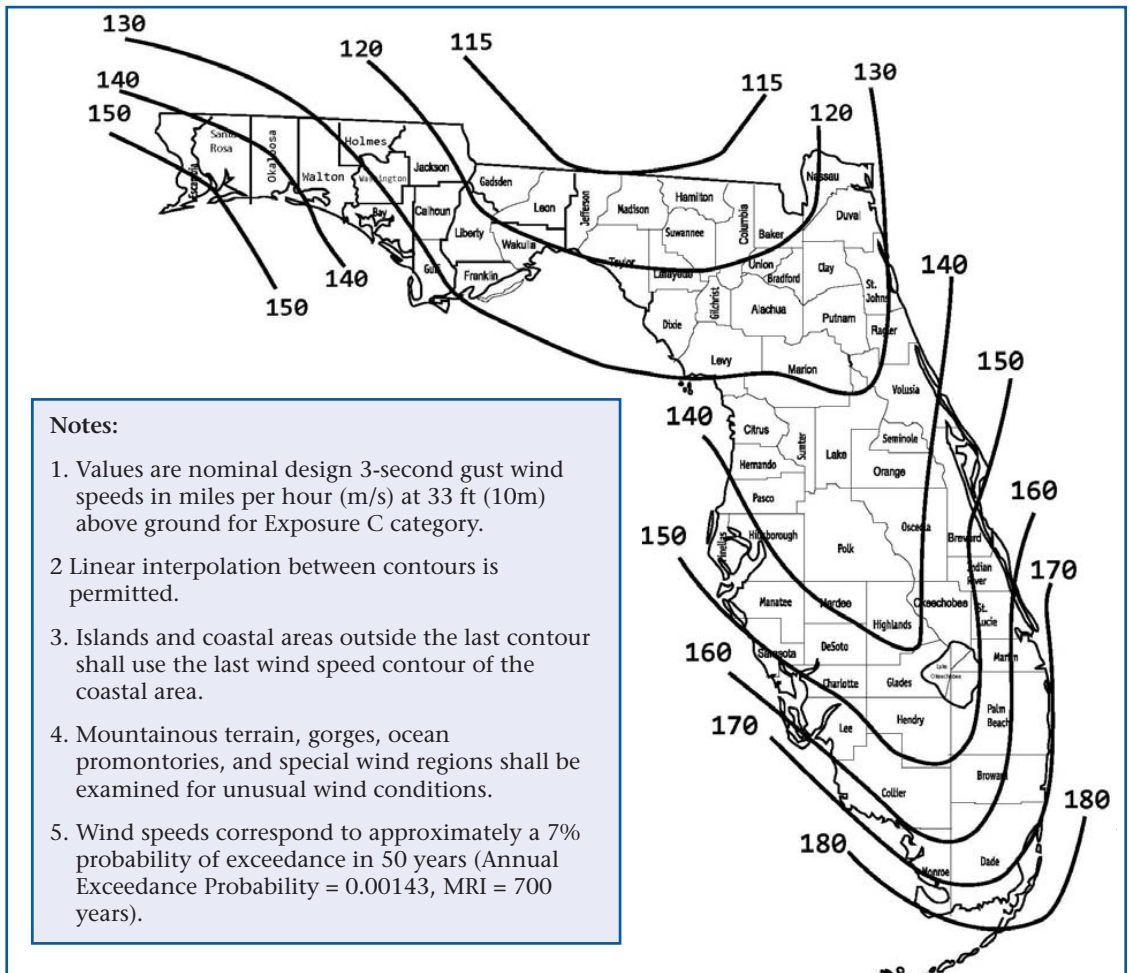
1609.1.4 and 1609.3 provisions of the ANSI/AF&PA WFCM, Wood Frame Construction Manual for One and Two Family Dwellings shall be permitted for applicable wood frame buildings of Group R3 occupancy where Vasd determined in accordance with section 1609.3.1 is 150 mph or less.

- 7. Designs using AASHTO LTS-4 Structural specifications for Highway signs, luminaries and traffic signals.
- 8. Wind loads for screen enclosures shall be determined in accordance with Section 2002.4.

The wind speeds in Figure 1609A, 1609B and 1609C shall be converted to nominal wind speeds, Vasd, in accordance with Section 1609.3.1 when the provisions of the standards referenced in Exceptions 1 through 5 and 7 are used unless the wind provisions in the standards are based on Ultimate Wind Speeds as specified in accordance with Figures 1609A, 1609B, or 1609C or Chapter 26 of ASCE 7.

Figure 1609 was changed for ultimate design and to meet ASCE 07, 2010. There are now three maps (Figures 1609A, B, and C) which determine the Ultimate Design Wind Speed.

- 3. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of AISI S230.
- 4. Designs using NAAMM FP 1001 for Design loads of Metal Flag Poles.
- 5. Designs using TIA-222 for antenna-supporting structures and antennas shall be permitted for communication tower and steel antenna support structures.
- 6. Wind tunnel tests in accordance with Chapter 31 of ASCE 7.



**Figure 1609A  
Ultimate Design  
Wind Speeds,  
Vult, for Risk  
Category II  
Buildings and  
other Structures.**

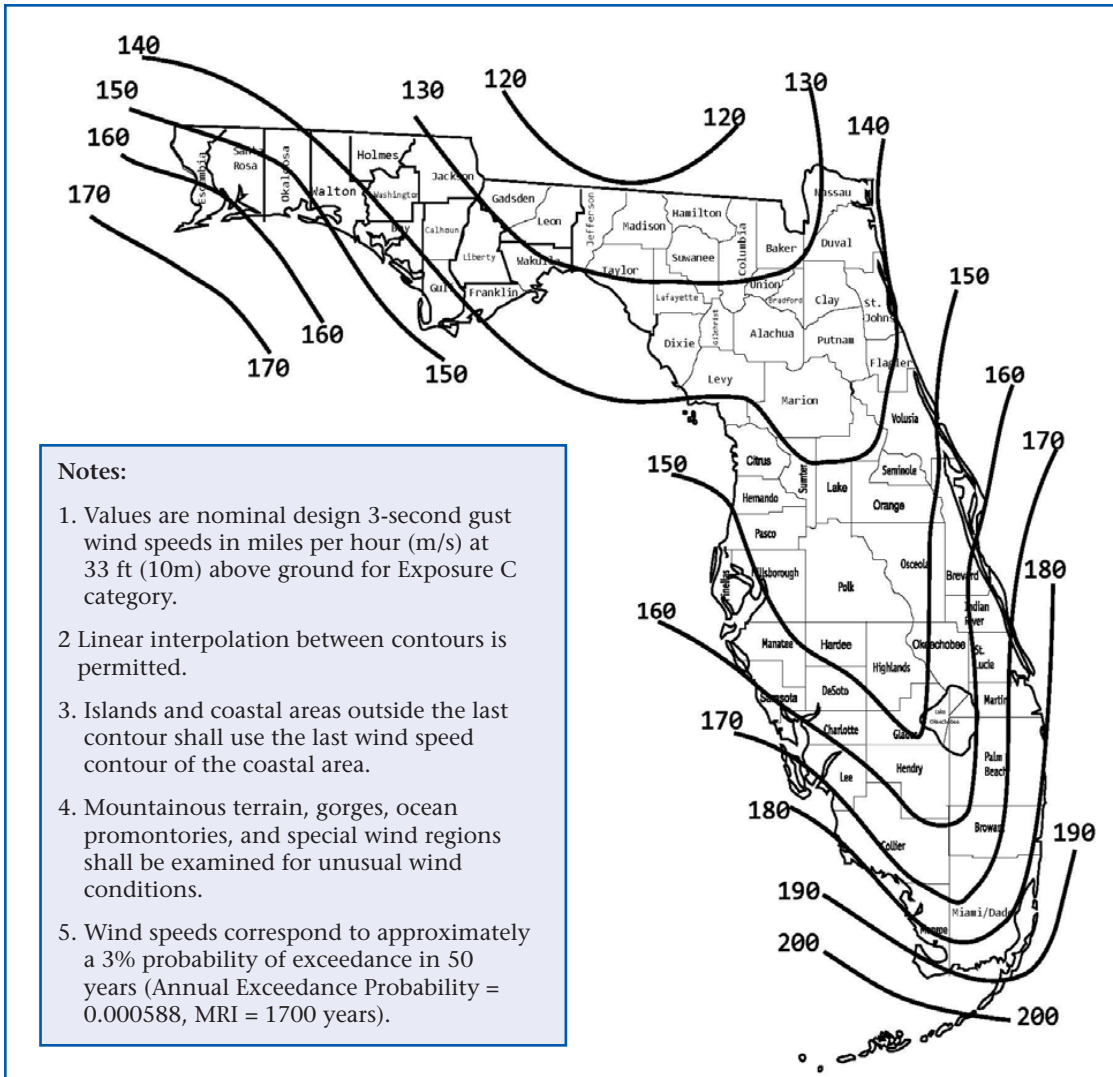


Figure 1609B  
Ultimate Design  
Wind Speeds,  
Vult,  
for Risk  
Category III and  
IV Buildings  
and other  
Structures.

The definitions for **Hurricane Prone Regions** and **Wind Borne Debris Region** were revised.

From 2010 FBC Building:  
*Wind Loads*

**Definitions 1609.2**

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

1. The U. S. Atlantic Ocean and Gulf of Mexico coasts where the basic wind speed for Risk Category II buildings is greater than 115 mph (40 m/s) and
2. Hawaii, Puerto Rico, Guam, Virgin Islands and American Samoa.

**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 Vult is 130 (48 m/s) or greater; or
2. In areas where the ultimate design wind speed Vult is 140 mph (53 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.

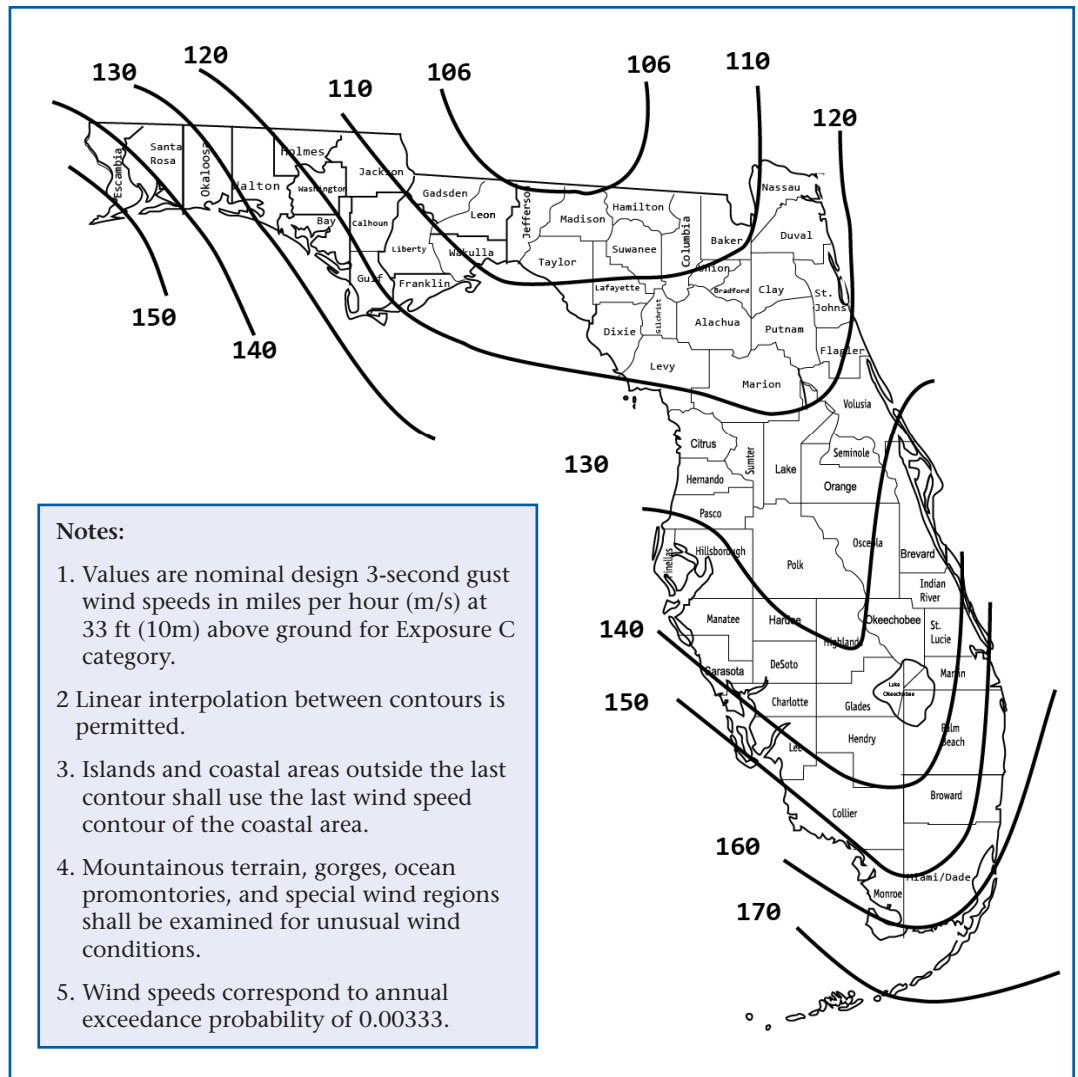
The use of wood structural panels for protection of openings for wind borne debris regions is now restricted to R-3 and R-4 occupancies.

From 2010 FBC Building:

**1609.1.2 Protection of openings.** Glazed openings in buildings located in wind-borne debris regions shall be protected from wind-borne debris. Glazed opening protection for wind-borne debris shall meet the requirements of SSTD 12, ASTM E 1886 and ASTM E 1996, ANSI/DASMA 115 (for garage doors and rolling doors) or TAS 201, 202 and 203 or AAMA 506 referenced therein.

1. Glazed openings located within 30 feet (9.1 m) of grade shall meet the requirements of the large missile test of ASTM E 1996.
2. Glazed openings located more than 30 feet (9.1 m) above grade shall meet the provisions of the small missile test of ASTM E 1996.

2010 FBC  
State of Florida  
Category I  
Building and  
Structures  
In Miles Per Hour  
Figure C



3. Storage sheds that are not designed for human habitation and that have a floor area of 720 square feet (67 m<sup>2</sup>) or less are not required to comply with the mandatory windborne debris impact standards of this code.
4. Openings in sunrooms, balconies or enclosed porches constructed under existing roofs or decks are not required to be protected provided the spaces are separated from the building interior by a wall and all openings in the separating wall are protected in accordance with Section 1609.1.2 above. Such spaces shall be permitted to be designed as either partially enclosed or enclosed structures.

**Exceptions:**

1. Wood structural panels with a minimum thickness of 7/16 inch (11.1 mm) and maximum panel span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings classified as Group R-3 or R-4 occupancy. Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be predrilled as required for the anchorage method and shall be secured with the attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance

with the provisions of ASCE 7, with corrosion-resistant attachment hardware provided and anchors permanently installed on the building. Attachment in accordance with Table 1609.1.2 with corrosion-resistant attachment hardware provided and anchors permanently installed on the building is permitted for buildings with a mean roof height of 45 feet (13 716 mm) or less where  $V_{asd}$ , determined in accordance with Section 1609.3.1 does not exceed 140 mph (63 m/s).

2. Glazing in Risk Category I buildings as defined in Section 1604.5, including greenhouses that are occupied for growing plants on a production or research basis, without public access shall be permitted to be unprotected.
3. Glazing in Risk Category II, III or IV buildings located over 60 feet (18 288 mm) above the ground and over 30 feet (9144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building shall be permitted to be unprotected.
4. Exterior balconies or porches under existing roofs or decks enclosed with screen or removable vinyl and acrylic panels complying with Section 2002.3.3 shall not be required to be protected and openings in the wall separating the unit from the balcony or porch shall

not be required to be protected unless required by other provisions of this code.

Surface Roughness C definition was re-worded.

From 2010 FBC Building:

**1609.4.2 Surface Roughness Categories**

Surface Roughness C. Open terrain with scattered obstructions having heights generally less than 30 feet (9144 mm). This category includes flat open country, and grasslands, and all water surfaces in hurricane-prone regions. This surface roughness shall also apply to any building located within surface roughness B-type terrain where the building is within 100 feet horizontally in any direction of open areas of surface roughness C or D-type terrain that extends more than 600 feet (182.9 m) and width greater than 150 ft. in the upwind direction. Short-term (less than two year) changes in the pre-existing terrain exposure, for the purposes of development, shall not be considered surface roughness C. Where development buildout will occur within three years and the resultant condition will meet the definition of surface roughness B, surface roughness B shall be regulating for the purpose of permitting. This category includes flat open country, and grasslands and ocean or gulf shorelines and shall extend downwind for a distance of 1500 feet.

Exposure category B, C and D were modified.

From 2010 FBC Building:

**1609.4.3 Exposure categories.** An exposure category shall be determined in accordance with the following:

Exposure B. For buildings with a mean roof height of less than or equal to 30 ft, Exposure B shall apply where the ground surface roughness condition, as defined by Surface Roughness B, prevails in the upwind direction for a distance of at least 1,500 ft (457 m). For buildings with a mean roof height greater than 30 ft, Exposure B shall apply where Surface Roughness B prevails in the upwind direction for a distance of at least 2,600 feet (792 m) or 20 times the height of the building, whichever is greater.

Exposure C. Exposure C shall apply for all cases where Exposures B or D do not apply.

Exposure D. Exposure D shall apply when the ground surface roughness, as defined as surface roughness D, prevails in the upwind direction for a distance of at least 5,000 feet (1524m) or 20 times the height of the building, whichever is greater. Exposure D shall extend inland from the shoreline for a distance of 600 feet (183 m) or 20 times the height of the building, whichever is greater from an Exposure D condition as defined in the previous sentence.

To establish flood hazard areas, the applicable

governing authority shall, by a Local Floodplain Management Ordinance, adopt a flood hazard map and supporting data.

From 2010 FBC Building:

**1612.3 Establishment of flood hazard areas.** To establish flood hazard areas, the applicable governing authority shall, by local floodplain management ordinance, adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for [INSERT NAME OF JURISDICTION]," dated [INSERT DATE OF ISSUANCE], as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this Section.

Wind velocities to be used in structural calculations have been changed as follows:

From 2010 FBC Building:

**1620.1 Buildings and structures, and every portion thereof, shall be designed and constructed to meet the requirements of Chapters 26 through 31 of ASCE 7.**

**1620.2 Wind velocity (3-second gust) used in structural calculations shall be as follows: 140 miles per hour (63 m/s) in Broward County and 146 miles per hour (65 m/s) in Miami-Dade County.**

Miami-Dade County

Risk Category I Buildings and Structures: 175 165 mph

Risk Category II Buildings and Structures: 185 175 mph

Risk Category III and IV Buildings and Structures: 95 186 mph

Broward County

Risk Category I Buildings and Structures: 160 156 mph

Risk Category II Buildings and Structures: 170 mph

Risk Category III and IV Buildings and Structures: 180 mph

**1620.3 All buildings and structures shall be considered to be in Exposure Category C, unless Exposure Category D applies, as defined in Section 26.7 of ASCE 7.**

**1620.4 For wind force calculations, roof live loads shall not be considered to act simultaneously with the wind load.**

**1620.5 Utility sheds shall be designed for a wind load of not less than 15 psf (718 Pa)**

This course presents only a few of the many important changes from the previous Florida Building Code series and from the 2009 International Building Code (the base code). While we have tried to include many of the significant changes, each building professional will have their own specialties and areas of expertise, making it incumbent on every Florida architect to carefully study the code sections that most affect their professional practice.

Congratulations, you have completed this 2 CE hour Florida Advanced Building Code class.