

Add Flood Provisions to the 2010 FBC, Building[®]
(Adopted Unanimously by the Workgroup May 29, 2009)

Proposal to modify section added/modified in FBC

102.7 Relocation of manufactured buildings.

1. Relocation of an existing manufactured building does not constitute an alteration.
2. A relocated building shall comply with wind speed requirements of the new location, using the appropriate wind speed map. If the existing building was manufactured in compliance with the Standard Building Code (prior to March 1, 2002), the wind speed map of the Standard Building Code shall be applicable. If the existing building was manufactured in compliance with the Florida Building Code (after March 1, 2002), the wind speed map of the Florida Building Code shall be applicable.
3. A relocated building shall comply with the flood hazard area requirements of the new location.

Proposal to retain section previously deleted FBC

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

106.2.5.1 Design flood elevations. Where design flood elevations are not specified, they shall be established in accordance with Section ~~1627.3.11612.3.1~~.

Proposal to modify section added/modified in FBC

106.3.5 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; and all exterior elevations:

Commercial Buildings:

Building

1. Site requirements:

- Parking
- Fire access
- Vehicle loading
- Driving/turning radius
- Fire hydrant/water supply/post indicator valve (PIV)
- Set back/separation (assumed property lines)
- Location of specific tanks, water lines and sewer lines
- Flood hazard areas, flood zones, and design flood elevations

8. Structural requirements shall include:

- Soil conditions/analysis
- Termite protection
- Design loads
- Wind requirements
- Building envelope
- Structural calculations (if required)
- Foundation
- Flood requirements in accordance with Section 1627, including lowest floor elevations, enclosures, flood damage-resistant materials
- Wall systems
- Floor systems
- Roof systems
- Threshold inspection plan
- Stair systems

Electrical

1. Electrical:

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

Plumbing

- 1. Minimum plumbing facilities
- 2. Fixture requirements
- 3. Water supply piping

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

Mechanical

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

Gas

1. Gas piping
2. Venting
3. Combustion air
4. Chimneys and vents
5. Appliances
6. Type of gas
7. Fireplaces
8. LP tank location
9. Riser diagram/shutoffs
10. Design flood elevation

Residential (one- and two-family)

1. Site requirements
Set back/separation (assumed property lines)

Location of septic tanks

2. Fire-resistant construction (if required)

3. Fire

4. Smoke detector locations

5. Egress

Egress window size and location stairs construction requirements

6. Structural requirements shall include:

Wall section from foundation through roof, including assembly and materials connector tables
wind requirements structural calculations (if required)

Flood hazard areas, flood zones, design flood elevations, lowest floor elevations, enclosures,
equipment, and flood damage-resistant materials

7. Accessibility requirements: show/identify accessible bath

Proposal to modify section added/modified in FBC

109.3 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.

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.

Proposal to modify section added/modified in FBC

110.2 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.
- ~~6~~ 7. The name of the building official.
- ~~7~~ 8. The edition of the code under which the permit was issued.
- ~~8~~ 9. The use and occupancy, in accordance with the provisions of Chapter 3.
- ~~9~~ 10. The type of construction as defined in Chapter 6.
- ~~10~~ 11. The design occupant load.
- ~~11~~ 12. If an automatic sprinkler system is provided, whether the sprinkler system is required.

Proposal to add to the IBC

Section 202 Definitions

FLOODPLAIN MANAGEMENT ORDINANCE. An ordinance or regulation adopted pursuant to the authority granted to local governments by Title 44 Code of Federal Regulations, Sections 59 and 60 for participation in the National Flood Insurance Program.

Proposal to modify section added/modified in FBC

Coordinated with Skip Gregory, Office of Plans and Construction, Agency for Health Care Administration

419.2 Disaster preparedness construction standards.

419.2.2 Site standards.

419.4.2.2.1 All new facilities and additions to existing facilities shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevation, whichever requires the highest elevation; or

419.4.2.2.2 The floor elevation of all new occupied patient area(s) and all patient support area(s) and patient support utilities, including mechanical, electrical (except fuel storage as noted in Section 419.4.2.9.3 of this code) and food services shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevations, whichever requires the highest elevation.

419.4.2.2.3 New additions or floors added to existing facilities, as determined by their site locations, shall meet either the requirements of Section 419.4.2.2.1 or 419.4.2.2.2 of this Code, or be so designed and constructed as to be in compliance with Section 1627 ~~the current standards of the National Flood Insurance Program of the Federal Emergency management Agency, incorporated by reference and available from Federal Emergency management Agency, Federal Insurance Administration, Attn. Publications, P.O. Box 70274, Washington, D.C. 20024.~~

419.4.2.2.4 Where an off-site public access route is available to the new facility at or above the base flood elevation ~~100-year flood plain~~, a minimum of one on-site emergency access route shall be provided that is located at the same elevation as the public access route.

Proposal to modify section added/modified in FBC

Coordinated with Skip Gregory, Office of Plans and Construction, Agency for Health Care Administration

420.4.2 Disaster preparedness construction standards.

420.4.2.2 Site standards.

420.4.2.2.1 All new facilities and additions to existing facilities shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevation, whichever requires the highest elevation, or

420.4.2.2.2 The floor elevation of all new occupied resident area(s) and all resident support area(s) and resident support utilities, including mechanical, electrical (except fuel storage as noted in Section 420.4.2.9.3 of this code) and food services shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevations, whichever requires the highest elevation.

420.4.2.2.3 New additions or floors added to existing facilities, as determined by their site locations, shall meet either the requirements of Section 420.4.2.2.1 or 420.4.2.2.2 of this code, or be so designed and constructed as to be in compliance with Section 1627 ~~the current standards of the National Flood Insurance Program of the Federal Emergency management Agency, incorporated by reference and available from Federal Emergency management Agency, Federal Insurance Administration, Attn. Publications, P.O. Box 70274, Washington, D.C. 20024.~~

420.4.2.2.4 Where an off-site public access route is available to the new facility at or above the base flood elevation ~~100-year flood plain~~, a minimum of one on-site emergency access route shall be provided that is located at the same elevation as the public access route.

Proposal to modify section added/modified in FBC

Coordinated with Jon Hamrick, Plan Review and Training, Office of Educational Facilities

423.4.2 Flood Resistant Construction. ~~[Referenced Documents] FEMA. Federal Emergency Management Agency. Rules and Regulations 44 CFR, Parts 59 and 60, Revised as of October 1, 1995. In Flood Zones A1 through A30, AE, AH, and AO (100-year flood plain) the finished floor at the lowest entry level shall be a minimum 1 foot (305 mm) above the base flood elevation. Educational facilities in flood hazard areas shall comply with ASCE 24.~~

Proposal to modify section added/modified in FBC

Section 424 Swimming Pools and Bathing Places (Public and Private)

424.1 Public swimming pools and bathing places. Public swimming pools and bathing places shall comply with the design and construction standards of this section.

424.1.1 Flood hazard areas. ~~Public swimming pools installed in flood hazard areas established in Section 1627.3 4612.3 shall comply with Section 1627 4612.~~

424.2.4.2 Items not covered. For any items not specifically covered in these requirements, the administrative authority is hereby authorized to require that all equipment, materials, methods of construction and design features shall be proven to function adequately, effectively and without excessive maintenance and operational difficulties.

R424.2.4.2.1 Flood hazard areas. ~~Private swimming pools installed in flood hazard areas established in Section 1627.3 4612.3 shall comply with Section 1627 4612.~~

Proposal to modify the I-Code

801.1.3 Applicability. For buildings in flood hazard areas as established in Section 1627.3 4612.3, interior finishes, trim and decorative materials shall comply with Section 1627.4 4612.4. ~~that extend below the design flood elevation shall be flood damage resistant materials.~~

Proposal to modify the I-Code (as part of substituting entire Chapter 11)

~~1107.7.5 Design flood elevation.~~ The required number of Type A units and Type B units shall not apply to a site where the required elevation of the lowest floor or the lowest horizontal structural building members of nonelevator buildings are at or above the design flood elevation resulting in:

- ~~1. A difference in elevation between the minimum required floor elevation at the primary entrances and vehicular and pedestrian arrival points within 50 feet (15,240 mm) exceeding 30 inches (762 mm), and~~
- ~~2. A slope exceeding 10 percent between the minimum required floor elevation at the primary entrances and vehicular and pedestrian arrival points within 50 feet (15,240 mm).~~

~~Where no such arrival points are within 50 feet (15,240 mm) of the primary entrances, the closest arrival point shall be used.~~

Proposal to retain from I-Code

1203.3 Under-floor ventilation.

1203.3.2 Exceptions.

5. For buildings in flood hazard areas as established in Section ~~1627.3~~ ~~1612.3~~, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24 provided that the ventilation openings are designed and installed in accordance with ASCE 24.

Proposal to modify the I-Code

1403.5 Flood resistance. For buildings in flood hazard areas as established in Section ~~1627.3~~ ~~1612.3~~, exterior walls extending below the design flood elevation shall comply with Section 1627.4. ~~be resistant to water damage.~~ Wood shall be pressure-preservative treated in accordance with AWP A U1 for the species, product and end use using a preservative listed in Section 4 in APWA Standard U1 or decay-resistant heartwood of redwood, black locust or cedar.

Proposal to retain from I-Code

1403.6 Flood resistance for high-velocity wave action areas. For buildings in flood hazard areas subject to high-velocity wave action as established in Section ~~1627.3~~ ~~1612.3~~, electrical, mechanical and plumbing system components shall not be mounted on or penetrate through exterior walls that are designed to break away under flood loads.

Proposal to modify text added by FBC

1601.1 Scope. The provisions of this chapter shall govern the structural design of buildings, structures and portions thereof regulated by this code.

Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1612 through 1626, and as applicable in flood hazard areas, Section 1627.

Proposal to retain from I-Code

NOTATIONS.

Fa = Flood load in accordance with Chapter 5 of ASCE 7.

Proposal to modify from IBC

1603.1 General. Construction documents shall show the size, section and relative locations of structural members with floor levels, column centers and offsets fully dimensioned. The design loads and other information pertinent to the structural design required by Section 1603.1.1 through Section 1603.1.8 shall be indicated on the construction documents.

Exception: Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:

1. Floor and roof live loads.
2. Basic wind speed (3-second gust), miles per hour (km/hr) and wind exposure.
3. Flood design data, if located in flood hazard areas established in Section 1627.3 ~~1612.3~~.

Proposal to retain from IBC

1603.1.6 Flood design data. For buildings located in whole or in part in flood hazard areas as established in Section 1627.3 ~~1612.3~~, the documentation pertaining to design, if required in Section 1627.5 ~~1612.5~~, shall be included and the following information, referenced to the datum on the community's Flood Insurance Rate Map (FIRM), shall be shown, regardless of whether flood loads govern the design of the building:

1. In flood hazard areas not subject to high-velocity wave action, the elevation of proposed lowest floor, including basement.
2. In flood hazard areas not subject to high-velocity wave action, the elevation to which any non-residential building will be dry floodproofed.
3. In flood hazard areas subject to high-velocity wave action, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including basement.

1605.2.2 [Load combinations using strength design or load and resistance factor design]

Flood loads. Where flood loads, Fa, are to be considered in the design, the load combinations of Section 2.3.3 of ASCE 7 shall be used.

1605.3.1.2 [Load combinations using allowable stress design] Flood loads. Where flood loads, F_s, are to be considered in design, the load combinations of Section 2.4.2 of ASCE 7 shall be used.

SECTION 1627 (IBC 1612) FLOOD LOADS

1627.1 (IBC 1612.1) General. Within flood hazard areas as established in Section 1627.3 ~~1612.3~~, all new construction of buildings, structures and portions of buildings and structures, including substantial improvement and restoration of substantial damage to buildings and structures, shall be

designed and constructed to resist the effects of flood hazards and flood loads. For buildings that are located in more than one flood hazard area, the provisions associated with the most restrictive flood hazard area shall apply.

Proposal to add to IBC [to be filled in when proposal is finalized]

1627.1.1 Cross references. See Table 1627.1.

Table 1627.1 CROSS REFERENCES DEFINING FLOOD RESISTANT PROVISIONS OF THE <i>FLORIDA BUILDING CODE</i>			
Florida Building Code – Building			
Section		Section	
Chapter 1	Administration	Chapter 14	Exterior Walls
102	Applicability	1403	Performance Requirements
106	Construction Documents		
109	Inspections	Chapter 16	Structural Design
110	Certificates of Occupancy and Completion	1601	General
		1603	Construction Documents
Chapter 2	Definitions	1605	Load Combinations
202	Definitions	1627	Flood Loads
Chapter 4	Special Detailed Requirements Based on Use and Occupancy	Chapter 18	Soils and Foundations
419	Hospitals	1801	General
420	Nursing Homes	1803	Excavation, Grading and Fill
424	Swimming Pools and Bathing Places (Public And Private)	1807	Dampproofing and Waterproofing
Chapter 8	Interior Finishes	Chapter 30	Elevators and Conveying Systems
801	General	3001	General
Chapter 12	Interior Environment		
1203	Ventilation		
Florida Building Code – Residential			
Section		Section	
Chapter 2	Definitions	Chapter 22	Special Piping and Storage Systems
202	Definitions	M2201	Oil Tanks
Chapter 3	Building Planning	Chapter 24	Fuel Gas
R301	Design Criteria	G2404 (301)	General
R309	Garages and Carports		
R322	Flood Resistant Construction	Chapter 26	General Plumbing Requirements
		P2601	General
Chapter 4	Foundations		
R401	General	Chapter 27	Plumbing Fixtures
R408	Under-Floor Space	P2705	Installation
Chapter 13	General Mechanical System Requirements	Chapter 30	Sanitary Drainage
M1301	General	P3001	General

Chapter 14	Heating and Cooling Equipment	Chapter 31	Vents
M1401	General	P3101	Vent Systems
Chapter 16	Duct Systems	Chapter 41	Swimming Pools
M1601	Duct Construction	R4101	Private Swimming Pools
Chapter 17	Combustion Air	Chapter 44	High-Velocity Hurricane Zones
M1701	General	R4403	High-Velocity Hurricane Zones – General
Chapter 20	Boilers and Water Heaters		
M2001	Boilers		
Florida Building Code – Existing			
Section		Section	
Chapter 1	Administration	Chapter 10	Additions
101	General	1003	Structural
Chapter 3	Prescriptive Compliance Method	Chapter 11	Historic Buildings
302	Additions, Alterations or Repairs	1101	General
Chapter 5	Repairs	Chapter 12	Relocated or Moved Buildings
501	General	1202	Requirements
506	Structural		
Chapter 6	Alterations – Level I	Chapter 13	Performance Compliance Methods
601	General	1301	General
Florida Building Code – Mechanical			
Section		Section	
Chapter 3	General Regulations	Chapter 6	Duct Systems
M301	General	M602	Plenums
		M603	Duct Construction and Installation
Chapter 4	Ventilation		
M401	General	Chapter 12	Hydronic Piping
		M1206	Piping Installation
Chapter 5	Exhaust Systems		
M501	General	Chapter 13	Fuel Piping and Storage
		M1305	Fuel Oil System Installation
Florida Building Code – Plumbing			
Section		Section	
Chapter 3	General Regulations		
P309	Flood Hazard Resistance		
Florida Building Code – Fuel Gas			
Section		Section	
Chapter 3	General Regulations		
FG301	General		

Proposal to retain from I-Code

1627.2 (IBC 1612.2) Definitions. For the purposes of this section, the terms, phrases and words listed herein and their derivations shall have the indicated meanings.

BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides. The definition of “Basement” is limited in application to the provisions of Section ~~1627~~ ~~4642~~ (see “Basement” in Section 502.1).

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

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

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

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

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

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

EXISTING CONSTRUCTION. Any buildings and structures for which the “start of construction” commenced before the effective date of the community’s first floodplain management code, ordinance, or standard. “Existing construction” is also referred to as “existing structures.”

EXISTING STRUCTURES. See “Existing construction.”

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

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

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

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

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

FLOOD HAZARD AREA SUBJECT TO HIGH VELOCITY WAVE ACTION. Area within the flood hazard area which is subject to high velocity wave action, and shown on a Flood Insurance Rate Map (FIRM) or other flood hazard map as Zone V, VO, VE or V1-30.

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

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

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

LOWEST FLOOR. The floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of this section.

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE, or V1-30.

START OF CONSTRUCTION. The date of permit issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), or the installation of streets or walkways, excavation for a basement, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as dwelling units or not part of the main building. For a substantial improvement, the actual “start of construction” means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Proposal to modify the I-Code

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the

market value of the structure before the damage occurred, or as defined in a local floodplain management ordinance.

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started, or as defined in a local floodplain management ordinance. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions.
2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

Proposal to modify the I-Code

1627.3 (IBC 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.

Proposal to retain from I-Code

1627.3.1 (IBC 1612.3.1) Design flood elevations. Where design flood elevations are not included in the flood hazard areas established in Section ~~1627.3~~ ~~1612.3~~, or if floodways are not designated, the building official is authorized to require the applicant to:

1. Obtain and reasonably utilize any design flood elevation and floodway data available from a federal, state, or other source, or
2. Determine the design flood elevation and/or floodway in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered design professional who shall document that the technical methods used reflect currently accepted engineering practice.

1627.3.2 (IBC 1612.3.2) Determination of impacts. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed work will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction of the applicable governing authority.

1627.4 (IBC 1612.4) Design and construction. The design and construction of buildings and structures located in flood hazard areas, including flood hazard areas subject to high velocity wave action, shall be in accordance with Chapter 5 of ASCE 7 and with ASCE 24.

Proposal to modify I-Code

1627.5 (IBC 1612.5) Flood hazard documentation. The following documentation shall be prepared and sealed by a registered design professional and shall be submitted to the building official:

1. For construction in flood hazard areas not subject to high-velocity wave action:
 - 1.1. The elevation of the lowest floor, including basement, as required by the foundation inspection and the final inspection in Section 109.3.~~lowest floor elevation inspection in Section 109.3.3.~~
 - 1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.6.2.1, ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.6.2.2 of ASCE 24.
 - 1.3. For dry floodproofed nonresidential buildings, construction documents shall include a statement that the dry floodproofing is designed in accordance with ASCE 24.
2. For construction in flood hazard areas subject to high-velocity wave action:
 - 2.1. The elevation of the bottom of the lowest horizontal structural member as required by the foundation inspection and the final inspection in Section 109.3. ~~lowest floor elevation inspection in Section 109.3.3.~~
 - 2.2. Construction documents shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.
 - 2.3. For breakaway walls designed to resist a nominal load of less than 10 psf (0.48 kN/m²) or more than 20 psf (0.96 kN/m²), construction documents shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

Proposal to modify text added by FBC

1801.1 Scope. The provisions of this chapter shall apply to building and foundation systems.

Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1816 through 1834, and as applicable in flood hazard areas, Section 1627 ~~1612.~~

Proposal to retain from I-Code

1803.4 Grading and fill in flood hazard areas. In flood hazard areas established in Section 1627.3 ~~1612.3~~, grading and/or fill shall not be approved:

1. Unless fill is placed, compacted and sloped to minimize shifting, slumping and erosion during the rise and fall of flood water and, as applicable, wave action; and
2. In floodways, unless it has been demonstrated through hydrologic and hydraulic analyses performed by a registered design professional in accordance with standard engineering

practice that the proposed grading or fill, or both, will not result in any increase in flood levels during the occurrence of the design flood.

3. In flood hazard areas subject to high-velocity wave action, unless such fill is conducted and/or placed to avoid diversion of water and waves toward any building or structure.

4. Where design flood elevations are specified but floodways have not been designated, unless it has been demonstrated that the cumulative effect of the proposed flood hazard area encroachment, when combined with all other existing and anticipated flood hazard area encroachment, will not increase the design flood elevation more than one foot (305mm) at any point.

1807.1.2.1 Flood hazard areas. For buildings and structures in flood hazard areas as established in Section ~~1627.3~~ 4612.3, the finished ground level of an under-floor space such as a crawl space shall be equal to or higher than the outside finished ground level on at least one side.

Exception: Under-floor spaces of Group R-3 buildings that meet the requirements of FEMA/FIA TB 11.

Proposal to retain from IBC (note 2009 IBC is shown; previous FBC changes to standards (not related to flood) not shown)

3001.2 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, alteration, repair and maintenance of elevators and conveying systems and their components shall conform to ASME A17.1/CSA B44, ASME A90.1, ASME B20.1, ALI ALCTV, and ASCE 24 for construction in flood hazard areas established in Section ~~1627.3~~ 4612.3.

Proposal to modify IBC (as part of FBC deletion of Chapter 34 and reference to IEBC)

Chapter 34 **Existing Structures**

~~**3403.1 Existing buildings or structures.** Additions or alterations to any building or structure shall comply with the requirements of the code for new construction. Additions or alterations shall not be made to an existing building or structure which will cause the existing building or structure to be in violation of any provisions of this code. An existing building plus additions shall comply with the height and area provisions of Chapter 5. Portions of the structure not altered and not affected by the alteration are not required to comply with the code requirements for a new structure.~~

~~**3403.2 [Additions] Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612.3, any addition that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3, any additions that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.~~

~~**3404.2 [Alterations] Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612.3, any alteration that constitutes substantial improvement of the existing~~

~~structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3, any alterations that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.~~

~~**3405.5 [Repairs] Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1612.3, any repair that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.~~

~~For buildings and structures in flood hazard areas established in Section 1612.3, any repairs that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.~~

3409

~~**Historic Buildings**~~

~~**3409.1 Historic Buildings.** The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.~~

~~**3409.2 Flood hazard areas.** Within flood hazard areas established in accordance with Section 1612.3, where the work proposed constitutes substantial improvement as defined in Section 1612.2, the building shall be brought into conformance with Section 1612.~~

~~**Exception:** Historic buildings that are:~~

- ~~1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

3412

~~**Compliance Alternatives**~~

~~**3412.2.4 Alterations and repairs.** An existing building or portion thereof, which does not comply with the requirements of this code for new construction shall not be altered or repaired in such a~~

manner that results in the building being less safe or sanitary than such building is currently. If, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapter 2 through Chapter 12 and Chapter 14 through Chapter 33.

~~**3412.2.4.1 Flood hazard areas:** For existing buildings located in flood hazard areas established in Section 1612.3, if the alterations and repairs constitute substantial improvement of the existing building, the existing building shall be brought into compliance with the requirements for new construction for flood design.~~

Proposal to retain from IBC

Chapter 35 Referenced Standards

FEMA Federal Emergency Management Agency
Federal Center Plaza
500 C Street S.W.
Washington, DC 20472

Standard Reference Number	Title	Referenced in Code Section Number
FEMA/FIA TB-11	Crawlspace Construction for Buildings Located in Special Flood Hazard Areas	1807.1.2.1