# FLOOD RESISTANT STANDARDS WORKGROUP

# REPORT TO THE FLORIDA BUILDING COMMISSION

**May 29, 2009**

*Tallahassee, Florida*

**Facilitation, Meeting and Process Design By**

FCRC CONSENSUS SOLUTIONS

**Report By Jeff A. Blair**
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# FLORIDA BUILDING COMMISSION

# FLOOD RESISTANT STANDARDS WORKGROUP REPORT

## OVERVIEW

At the request of the Florida Division of Emergency Management (DEM) the Florida Building Commission convened a Flood Resistant Standards Workgroup charged with developing recommendations for integrating the International Code Series (I-Codes: IBC, IRC, etc.) flood damage-resistant provisions (for buildings and structures) in the Florida Building Code. FEMA has worked with ICC for the past 10 years on flood standards for buildings that are consistent with the requirements of the National Flood Insurance Program (NFIP), and the current I-Codes reflects these standards. When the 2001 Florida Building Code (First Edition) was developed a policy decision was made, primarily for administrative reasons, to eliminate flood standards from the foundation model code and continue the practice of relying on Floodplain Management Ordinances adopted by communities participating in the National Flood Insurance Program. In addition, the DEM has requested that the policy be reviewed, that identified administrative issues be resolved, and that the I-Code flood standards be retained in the 2010 FBC. The Commission will conduct this facilitated stakeholder process beginning in March of 2009, with adopted recommendations submitted as code amendments for the 2010 Florida Building Code Update process.

Raul L. Rodriguez, AIA, Chair of the Florida Building Commission, has made the following appointments to the Flood Resistant Standards Workgroup. Members are charged with representing their stakeholder group's interests, and working with other interest groups to develop consensus package(s) of recommendations for submittal to the Commission.

| **Member** | **Representation** |
|---|---|
| Tom Allen | Building Officials Association of Florida (BOAF) |
| Miles Anderson | Florida Department of Emergency Management (FDEM) |
| Bob Boyer | Local Government |
| Gene Chalecki | Florida Department of Environmental Protection (FDEP) |
| Eddie Fernandez | Miami-Dade County Code Compliance Office |
| Jack Glenn | Florida Home Builders Association (FHBA) |
| Tom Lanese | Florida Floodplain Managers Association (FFMA) |
| Bud Plisich | Federal Emergency Management Agency (FEMA Region IV) |
| Tim Reinhold | Institute of Building Home Safety (IBHS) |
| Jim Schock | City of Jacksonville |
| Tim Tolbert | Santa Rosa County |
| Philip Wisely | Department of State (Historic Buildings) |

**Meeting Schedule, Starting Time, and Location**

| | | | |
|---|---|---|---|
| March 25, 2009 | 9:00 AM | Tampa, Florida | RACCA Building |
| April 29, 2009 | 9:00 AM | Tallahassee, Florida | Betty Easley Conference Center |
| May 29, 2009 | 9:00 AM | Tallahassee, Florida | Betty Easley Conference Center |

## REPORT OF THE MAY 29, 2009 MEETING

**Opening and Meeting Attendance**
The meeting started at 9:15 AM, and the following Workgroup members were present: Tom Allen, Miles Anderson, Bob Boyer, Gene Chalecki, Jack Glenn, Bud Plisich, Jim Schock, Tim Tolbert, and Philip Wisely

**Members Absent**
Eddie Fernandez, Tom Lanese, and Tim Reinhold.

**DCA Staff Present**
Rick Dixon, Mo Madani, Jim Richmond, and Betty Stevens.

**Project Technical Consultant**
Rebecca Quinn

**Meeting Facilitation**
The meeting was facilitated by Jeff Blair from the FCRC Consensus Center at Florida State University. Information at: http://consensus.fsu.edu/

FCRC CONSENSUS SOLUTIONS

**Project Webpage**
Information on the project, including agenda packets, meeting reports, and related documents may be found in downloadable formats at the project webpage below:
http://consensus.fsu.edu/FBC/Flood-Resistant-Standards.html

**Agenda Review and Approval**
The Workgroup voted unanimously, 9 - 0 in favor, to approve the agenda as presented including the following objectives:

- ✓ To Approve Regular Procedural Topics (Agenda and Summary Report)
- ✓ To Review Outstanding Issues and Options Regarding Integrating and Adopting Flood Resistant Standards in the Florida Building Code
- ✓ To Review Revised Code Provisions for Implementing Workgroup's Recommendations
- ✓ To Discuss and Evaluate Level of Acceptability of Proposed Options
- ✓ To Consider Public Comment
- ✓ To Adopt Package of Consensus Recommendations for Submittal to Florida Building Commission
- ✓ To Review Project Delivery Schedule and Next Steps

**April 29, 2009 Facilitator's Summary Report Review and Approval**
Jeff Blair, Commission Facilitator, asked if any members had corrections or revisions to the April 29, 2009 Report, and none were offered.
The Workgroup voted unanimously, 9 - 0 in favor, to approve the April 29, 2009 Facilitator's Summary Report as presented.

**Threshold Issues Evaluation Results**

Workgroup members were asked to consider and decide on key threshold issues. The results served as the basis for the incorporation of flood resistant standards into the Florida Building Code. The issues and decisions are as follows:

*On balance, should the Commission adopt/incorporate Flood Resistant Standards into the Florida Building Code.*
*Summary of Member's Discussions:*
Members felt that the Commission should incorporate flood resistant standards into the Florida Building Code—within each of the respective codes.

*What should the Base Code for FBC Flood Provisions be—Should the base standards be the provisions found in the IBC including ASCE 24.*
*Summary of Member's Discussions:*
Members felt that the I-Code provisions should be used as the basis for inclusion of flood provisions relevant to buildings and structures into each of the respective codes (FBC). In addition, Members supported adopting ASCE 24 (Flood Resistant Design and Construction Standards) by reference as the flood provisions in each of the codes (FBC). Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.

*Should the Workgroup focus on only buildings and structures for the 2010 Code Cycle.*
*Summary of Member's Discussions:*
Members felt the Code should only contain provisions for building and structures and other flood provisions should be handled at the local level via a local companion ordinance.

*How should Appendix G (IBC—Flood Resistant Construction) be handled.*
*Summary of Member's Discussions:*
Members felt that on balance this is an issue for local jurisdictions and would be handled between the Code flood standards provisions and the companion ordinance approach.

*Should local jurisdictions be allowed to adopt higher standards than the base standards.*
*Summary of Member's Discussions:*
Members supported allowing local jurisdictions to adopt higher standards for flood resistance provision to address local concerns within the Code (based on local flood studies), to ensure local's ability to be eligible for the NFIP's Community Rating System.

*What should the strategy be for handling inconsistencies between the Coastal Construction Control Line (CCCL) and flood provisions.*
*Summary of Member's Discussions:*
Members felt that inconsistencies between the CCCL and V Zone requirements shall continue to be resolved at the local level, and on a case-by-case basis.

*Should variances to flood resistant standards be allowed, and if so how.*
*Summary of Member's Discussions:*
Members agreed that the Code does not allow variances, and local jurisdictions would handle this within the context of the companion ordinance approach.

*Should it be permissible for flood resistant standards to be administered outside of building departments.*
*Summary of Member's Discussions:*
Members felt that on balance this is an issue for local jurisdictions and it would be handled by the combination between flood standards provisions incorporated in the Code and the companion ordinance.

**Key Issues Regarding Code Integration Results**

The Workgroup identified and agreed to a strategy for key issues regarding code language for integrating flood resistant standards in the respective codes (2009 FBC, Building, residential. Existing Building, Mechanical, Plumbing, and Fuel Gas). The issues and respective strategies are as follows:

*Integrate flood resistant standards and ASCE 24 in the High Velocity Hurricane Zone (HVHZ).*
The Workgroup agreed that flood resistant standards should be integrated into the HVHZ consistent with the methodology adopted in the code integration documents.

*Integrate swimming pools built in flood hazard areas and designated floodways with the flood provisions of the code.*
The Workgroup agreed that on balance ICC flood resistant standards language should be used for swimming pools. The Workgroup agreed that flood resistant standards for swimming pools should be integrated into the code consistent with the methodology adopted in the code integration documents.

*Ensure flood resistant standards in the code are integrated within sections 419, 420 and 423 (state agency standards integration).*
The Workgroup agreed that on balance flood resistant standards should be integrated in the state agency regulations as appropriate for sections 419, 420 and 423. The Workgroup agreed that flood resistant standards for state agency standards should be integrated into the code consistent with the methodology adopted in the code integration documents.

*Provide a tie-back between the Code and the flood maps adopted by local jurisdictions in their floodplain management ordinance.*
The Workgroup agreed that on balance there should be a tie-back between the Code and flood maps adopted by local jurisdictions.

*Provide a tie-back between the Code and the floodplain management ordinance adopted by local jurisdictions.*
*Provide a definition of Floodplain Management Ordinance.*
The Workgroup agreed that on balance there should be a tie-back between the Code and floodplain management ordinances adopted by local jurisdictions.

**Review and Discussion of Revised Code Language for Implementing Workgroup's Flood Resistant Standards Integration Recommendations**

Members were provided with proposed revised language for integration of flood resistant standards into the Florida Building Code in advance of the meeting. Drafts were provided as follows: 2010, FBC, Building; 2010 FBC, Residential; 2010 FBC, Existing Building; 2010 FBC, Mechanical; 2010 FBC, Plumbing; and, FBC 2010, Fuel Gas.

*Note: the 2009 International Building Code was used as the foundation code for the recommendations, and flood resistant standards will be proposed for adoption as the 2010 Edition of the Florida Building Code.*

During the meeting members were asked to identify any issues regarding the proposed integration text, and then to acceptability rank any issues with the draft integration language by code in turn, and then to vote for approval of the language as modified by code in turn.

*Workgroup Actions:*

**Motion—**The Workgroup voted unanimously, 9 – 0 in favor, to approve the revised code integration language as revised by Workgroup actions, for integration of flood resistant standards in the 2010 FBC, Building, 2010 FBC, Residential, 2010 FBC, Existing Building, 2010 FBC, Mechanical, 2010 FBC, Plumbing, and 2010 FBC, Fuel Gas, and to authorize staff to edit, correlate, and numerate as required to ensure consistency. *Note: the 2009 International Building Code was used as the foundation code for the recommendations, and flood resistant standards will be proposed for adoption as the 2010 Edition of the Florida Building Code.*

The revised code integration language is included as Attachment 3 of this Report.

*(Attachment 3—Flood Standards Integration Results)*

**General Public Comment**

Members of the public were invited to provide the Workgroup with general comments. In addition, members of the public spoke on each of the substantive discussion issues before the Workgroup throughout the meeting.

*Public Comment:* No public comment was offered.

**Adoption of Workgroup's Consensus Package of Recommendations for Submittal to the Florida Building Commission**

Following adoption of text for integrating flood resistant standards into the Florida Building Code the Workgroup took the following action:

*Workgroup Actions:*

**Motion—**The Workgroup voted unanimously, 9 – 0 in favor, to adopt the package of consensus recommendations for submittal to the Florida Building Commission, and to authorize staff to edit, correlate, paginate and numerate as necessary to ensure consistency with Workgroup actions.

The consensus recommendations include the adopted code language for integration of flood resistant standards into the 2010, FBC, Building; 2010 FBC, Residential; 2010 FBC, Existing Building; 2010 FBC, Mechanical; 2010 FBC, Plumbing; and, FBC 2010, Fuel Gas codes, (the 2009 IBC served as the foundation code for proposed FBC flood resistant standards) and the consensus recommendations as follows:

## Options Achieving Consensus Level of Support

*1. The I-Code provisions should be used as the basis for inclusion of flood provisions relevant to buildings and structures into each of the respective codes (FBC). Members agreed that on balance, ICC provisions should be retained unless there is a specific need for a Florida Specific Requirement.*

*2. Adopt ASCE 24 (Flood Resistant Design and Construction Standards) by reference as the flood provisions in each of the codes (FBC).*

*3. Allow local jurisdictions to adopt higher standards for flood resistance provision to address local concerns within the Code (based on local flood studies), to ensure local's ability to be eligible for the NFIP's Community Rating System.*

*4. Seek a legislative exception so that local CRS (higher flood resistant standards) would not be subject to the local technical amendment requirements of the Code, subject to a consistency review with updated editions of the code.*

*5. Develop a model "companion" ordinance that includes NFIP-consistent administrative provisions and includes NFIP requirements for development other than buildings and structures that are not within the scope of the Code. Also, include a list of more stringent requirements that local jurisdictions could consider for possible adoption.*

*6. Inconsistencies between the CCCL and V Zone requirements shall continue to be resolved at the local level, and on a case-by-case basis.*

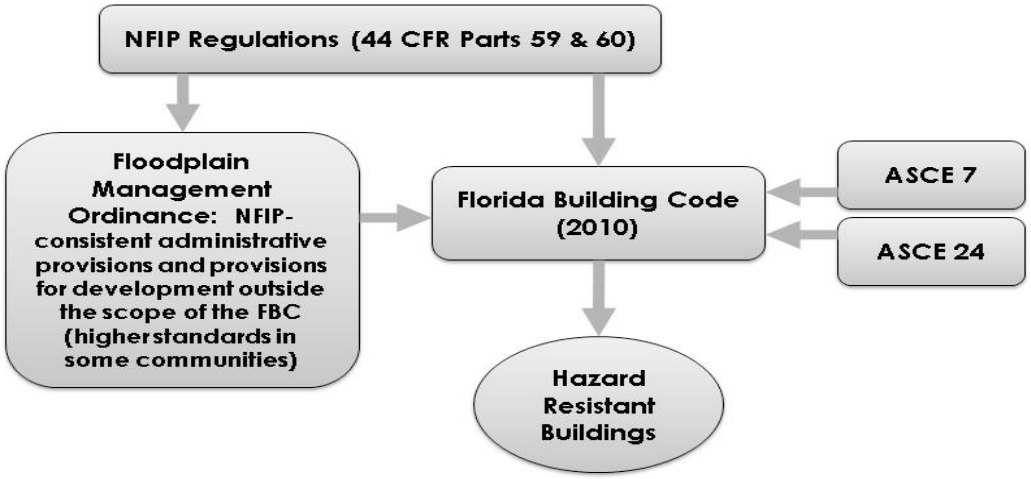
*7. A interagency group should be formed to develop a strategy for determining whether any inconsistencies between the CCCL and V Zone requirements can be resolved by code changes in the next code cycle (i.e., coordination between FBC, DEP, DEM, FEMA).*

*8. Adoption of flood maps and administrative procedures shall be at the local level.*

*9. Retain ICC format, modify as appropriate for Florida and develop cross-reference list, similar to Chapter 27 for the Electrical Code.*

*10. Seek statutory change to section 553.80 F.S. to clarify that this provision not be used to deviate from flood resistant requirements.*

**FLOOD RESISTANT STANDARDS INCORPORATED INTO THE FLORIDA BUILDING CODE—RECOMMENDED PROCESS**




**Next Steps**

The Flood Resistant Standards Workgroup's recommendations will be submitted to the Commission's Structural TAC for review and comment, and subsequently forwarded to the Commission for consideration at the August 2009 Commission meeting. The Commission will be asked to consider the ten policy recommendations at the August meeting, and the technical provisions will be evaluated as proposed code modifications during the 2010 Code Update process with a full technical review by the Structural TAC.

Miles Anderson, DEM, announced that the Flood Resistant Standards Workgroup will convened to provide comments on the model companion ordinance under development by DEM. The model "companion" ordinance will includes NFIP-consistent administrative provisions and NFIP requirements for development other than buildings and structures that are not within the scope of the Code. The "model" will also include a list of more stringent requirements that local jurisdictions could consider for possible adoption. The "model ordinance" will serve as a template for the companion ordinance (to go with the building and structural flood resistant provisions in the Florida Building Code) that local jurisdictions will adopt to ensure compliance with the NFIP's Community Rating System.

As next steps in the process of integrating flood resistant standards in the Code, DEM will:
a.) develop a model floodplain ordinance that will be reviewed by the Flood Resistant Standards Workgroup, and coordinated with the Florida Building Code.
b.) develop a training module regarding the flood provisions and coordinating the Florida Building Code with local ordinances.

c.) review existing floodplain management guidance materials to identify revisions necessary to coordinate with the flood provisions in the FBC; coordinate review and input by FFMA and BOAF; revise the materials (described in Scope of Work, Detailed Description)

**FBC Workplan—Flood Resistant Standards Workgroup Task**

| **38.** | **Evaluate Adoption of Flood Standards in the Florida Building Code** |
|---|---|

*Schedule:*

| | |
|---|---|
| Workgroup appointed | 12/08 |
| DEM contract with FSU/CRC | 1/09 |
| Workgroup meetings | 3/25 |
| | 4/29 |
| | 5/29 |
| Recommendations to Structural TAC & Commission | 8/09 |
| Proposals for 2010 FBC submitted for adoption | 12/09 |
| (See 2010 FBC development schedule) | |

*Status: % Pending*


**Adjournment**

The Workgroup voted unanimously, 9 – 0 in favor, to adjourn at 11:45 AM.

# ATTACHMENT 1

# MEETING EVALUATION RESULTS

**May 29, 2009—Tallahassee, Florida**

*Average rank using a 0* to *10* scale, where *0* means totally disagree and *10* means totally agree.

**1. Please assess the overall meeting.**

9.75 The background information was very useful.
9.88 The agenda packet was very useful.
10.00 The objectives for the meeting were stated at the outset.
10.00 Overall, the objectives of the meeting were fully achieved.

**2. Do you agree that each of the following meeting objectives was achieved?**

9.63 Discussion and Evaluation of Outstanding Key Issues and Options Regarding Incorporating Flood Resistant Standards in the Code.
9.63 Evaluation of Revised Draft Language for Incorporating Flood Resistant Standards in the Code.
10.00 Adoption of Recommendations for Submittal to the Commission.

**3. Please tell us how well the Facilitator helped the participants engage in the meeting.**

9.50 The members followed the direction of the Facilitator.
10.00 The Facilitator made sure the concerns of all members were heard.
10.00 The Facilitator helped us arrange our time well.
9.63 Participant input was documented accurately.

**4. Please tell us your level of satisfaction with the meeting?**

9.75 Overall, I am very satisfied with the meeting.
9.88 I was very satisfied with the services provided by the Facilitator.
9.75 I am satisfied with the outcome of the meeting.

**5. Please tell us how well the next steps were communicated?**

9.86 I know what the next steps following this meeting will be.
9.86 I know who is responsible for the next steps.

**6. What did you like best about the meeting?**

- Support given by staff

**7. How could the meeting have been improved?**

*No comments provided.*

**8. Member Evaluation Comments.**

- Jeff and Staff did great job!

# ATTACHMENT 2

# MEETING ATTENDANCE—PUBLIC

| Public Meeting Attendance |
|---|
| **Name** |
| |
| Jon Hamrick |
| Eberhard Roeder |
| |

# ATTACHMENT 3

# FLOOD RESISTANT STANDARDS CODE LANGUAGE INTEGRATION EVALUATION RESULTS

## 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 1627.3.1~~1612.3.1~~.

*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 ~~1612.3~~ shall comply with Section 1627 ~~1612~~.

**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 ~~1612.3~~ shall comply with Section 1627 ~~1612~~.

*Proposal to modify the I-Code*

**801.1.3 Applicability.** For buildings in flood hazard areas as established in Section 1627.3 ~~1612.3~~, interior finishes, trim and decorative materials shall comply with Section 1627.4 ~~1612.4~~. ~~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 AWPA 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, $F_a$, 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 *FLORIDA BUILDING CODE*

| 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 | 1601 | General |

| | | | |
|---|---|---|---|
| | Completion | | |
| | | 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 13 | Performance Compliance Methods |
| Chapter 6 | Alterations – Level I | 1301 | General |
| 601 | 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 ~~1612~~ (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 that 10 psf (0.48 kN/$m^2$) or more than 20 psf (0.96 kN/$m^2$), 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 ~~1612.3~~, 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 ~~1612.3~~.

*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 |

# Add Flood Provisions to the 2010 FBC, Residential®
## (Adopted Unanimously by the Workgroup May 29, 2009)

*As part of deleting IRC Chapter 1, delete flood provisions.*

~~**Chapter 1**~~

~~**Administration**~~

~~**R102.7 Existing structures.**~~

~~**R102.7.1 Additions, alterations or repairs.** Additions, alterations or repairs to any structure shall conform to the requirements for a new structure without requiring the existing structure to comply with all of the requirements of this code, unless otherwise stated. Additions, alterations or repairs shall not cause an existing structure to become unsafe or adversely affect the performance of the building.~~

~~**R104.10.1 [Modifications] Areas prone to flooding.** The building official shall not grant modifications to any provision related to flood hazard areas as established by Table R301.2(1) without the granting of a variance to such provisions by the board of appeals.~~

~~**R105.2 Work exempt from permit.**~~

~~(1) One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 200 square feet.~~

~~**R105.3.1.1 Substantially improved or substantially damaged existing buildings in flood hazard areas.** For applications for reconstruction, rehabilitation, addition or other improvement of existing buildings or structures located in an area prone to flooding as established by Table R301.2(1), the building official shall examine or cause to be examined the construction documents and shall prepare a finding with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its predamage condition. If the building official finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the finding shall be provided to the board of appeals for a determination of substantial improvement or substantial damage. Applications determined by the board of appeals to constitute substantial improvement or substantial damage shall require all existing portions of the entire building or structure to meet the requirements of R322.~~

~~**R106.1.2 Information for construction in flood hazard areas.** For buildings and structures located in whole or in part in flood hazard areas as established by Table R301.2(1), construction documents shall include:~~

~~1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood~~

elevation, as appropriate;

2. The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO zones), the height of the proposed lowest floor, including basement, above the highest adjacent finished grade; and
3. The elevation of the bottom of the lowest horizontal structural member in coastal high-hazard areas (V Zone); and
4. If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the building official and the applicant shall obtain and reasonably utilize any design flood elevation and floodway data available from other sources.

**R106.2 Site plan.** The construction documents submitted with the application for permit shall be accompanied by a site plan showing the size and location of new construction and existing structures on the site and distances from lot lines. 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.

**R109.1.3 Floodplain inspections.** For construction in areas prone to flooding as established by Table R301.2(1), upon placement of the lowest floor, including basement, and prior to further vertical construction, the building official shall require submission of documentation, prepared and sealed by a registered design professional, of the elevation of the lowest floor, including basement, required in Section R322.

**R112.2.1 Determination of substantial improvement in areas prone to flooding.** When the building official provides a finding required in Section R105.3.1.1, the board of appeals shall determine whether the value of the proposed work constitutes a substantial improvement. A substantial improvement means 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 building or structure before the improvement or repair is started. If the building or structure has sustained substantial damage, all repairs are considered substantial improvement regardless of the actual repair work performed. The term does not include:

1. Improvements of a building or structure required to correct existing health, sanitary or safety code violations identified by the building official and which are the minimum necessary to assure safe living conditions; or
2. Any alteration of a historic building or structure, provided that the alteration will not preclude the continued designation as a historic building or structure. For the purposes of this exclusion, a historic building is:
    - 2.1 Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or
    - 2.2 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
    - 2.3 Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

**R112.2.2 Criteria for issuance of a variance for areas prone to flooding.** A variance shall only

~~be issued upon:~~

1. ~~A showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render the elevation standards of Section 322 inappropriate.~~
2. ~~A determination that failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable.~~
3. ~~A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.~~
4. ~~A determination that the variance is the minimum necessary to afford relief, considering the flood hazard.~~
5. ~~Submission to the applicant of written notice specifying the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation, and stating that construction below the design flood elevation increases risks to life and property.~~

*Proposal to modify IRC*

**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 modified in FBC, Residential [**delete "only" per MM.**]*

**R301.1 Application.** Buildings and structures, and all parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads and wind loads as prescribed by this code. The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets all requirements for the transfer of all loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section.

**Added by FBC: Exception**: Buildings and structures located within the High Velocity Hurricane Zone shall comply ~~only~~ with Sections R302 to R325, inclusive and the provisions of Chapter R44. Buildings and structures located within flood hazard areas established in Table R301.2(1) shall comply with Sections R301.2.4 and R322.

*Proposal to modify the IRC.*

**Table R301.2(1) Climatic and Geographic Design Criteria:**

| Ground Snow Load | Wind Design | | Seismic Design Category[f] | Subject To Damage From | | | Winter Design Temp[e] | Ice shield under-layment Required[h] | Flood Hazards[g] | Air Freezing Index[i] | Mean Annual Temp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Speed[d] (mph) | Topo-graphic Effects[k] | | Weather-ing[a] | Frost line depth[b] | Termite[c] | | | | | |
| | | | | | | | | | | | |

g. The applicable governing authority shall, by local floodplain management ordinance, specify ~~jurisdiction shall fill in this part of the table with~~ (a) the date of the jurisdiction's entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of all currently effective FIRM and FBFM, or other flood hazard map adopted by the authority having jurisdiction, as amended.

*Proposal to retain from IRC*

**R301.2.4 Floodplain construction.** Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1) shall be designed and constructed in accordance with Section R322.

**Exception:** Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with *Flood Resistant Design and Construction* (ASCE 24).

**R301.2.4.1 Alternative provisions.** As an alternative to the requirements in Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

*No modification*

**Added by FBC: R301.2.5 Structures seaward of a coastal construction line.** Structures located seaward of the coastal construction line shall be designed to resist the predicted forces of a 100-year storm event in accordance with Section 3109 of the *Florida Building Code, Building.*

*Proposal to retain from IRC*

**R309.5 [Garages] Flood hazard areas.** For buildings located in flood hazard areas as established by Table R301.2(1), garage floors shall be:

1. Elevated to or above the design flood elevation as determined in Section R322; or
2. Located below the design flood elevation provided they are at or above grade on at least one side, are used solely for parking, building access, or storage, meet the requirements of Section R322, and are otherwise constructed in accordance with this code.

*Proposal to retain from IRC:*

**SECTION 322**
**FLOOD-RESISTANT CONSTRUCTION**

**R322.1 General.** Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1) shall be designed and constructed in accordance with the provisions contained in this section.

**Exception:** Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

*Proposal to retain from IRC*

**R322.1.1 Alternative provisions.** As an alternative to the requirements in Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

**R322.1.2 Structural systems.** All structural systems of all buildings and structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation.

**R322.1.3 Flood–resistant construction.** All buildings and structures erected in flood hazard areas shall be constructed by methods and practices that minimize flood damage.

**R322.1.4 Establishing the design flood elevation.** The design flood elevation shall be used to define areas prone to flooding. At a minimum, the design flood elevation is the higher of:

1. The base flood elevation at the depth of peak elevation of flooding (including wave height) which has a 1 percent (100–year flood) or greater chance of being equaled or exceeded in any given year; or
2. The elevation of the design flood associated with the area designated on a flood hazard map adopted by the community, or otherwise legally designated.

**R322.1.4.1 Determination of design flood elevations.** If design flood elevations are not specified, the building official is authorized to require the applicant to:

1. Obtain and reasonably utilize data available from a federal, state or other source; or
2. Determine the design flood elevation 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. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.

**R322.1.4.2 Determination of impacts.** In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall demonstrate that the effect of the proposed buildings and structures on design flood elevations, including fill, when combined with all other existing and anticipated flood hazard area encroachments, will not increase the design flood elevation more than one foot (305 mm) at any point within the jurisdiction.

**R322.1.5 Lowest floor.** The lowest floor shall be the floor of the lowest enclosed area, including basement, but excluding any unfinished flood–resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.

**R322.1.6 Protection of mechanical and electrical systems.** Electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall be located at or above the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones). If replaced as part of a substantial improvement, electrical systems, equipment and components, and heating, ventilation, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall meet the requirements of this section. Systems, fixtures, and equipment and components shall not be mounted on or penetrate through walls intended to break away under flood loads.

> **Exception:** Electrical systems, equipment and components, and heating, ventilating, air conditioning and plumbing appliances, plumbing fixtures, duct systems, and other service equipment are permitted to be located below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in accordance with ASCE 24 . Electrical wiring systems are permitted to be located below the required elevation provided they conform to the provisions of the electrical part of this code for wet locations.

*Proposal to modify IRC*

**R322.1.7 Protection of water supply and sanitary sewage systems.** New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems in accordance with the plumbing provisions of this code. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters in accordance with the plumbing provisions of this code and in accordance with Chapter 64E-6, Florida Administrative Code, Standards for Onsite Sewage Treatment and Disposal Systems. ~~and Chapter 3 of the *International Private Sewage Disposal Code*.~~

*Proposal to retain from IRC*

**R322.1.8 Flood-resistant materials.** Building materials used below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) shall comply with the following:

1. All wood, including floor sheathing, shall be pressure-preservative-treated in accordance with AWPA U1 for the species, product, preservative and end use or be the decay–resistant heartwood of redwood, black locust or cedars. Preservatives shall conform to Section 4 of AWPA U1.
2. Materials and installation methods used for flooring and interior and exterior walls and wall coverings shall conform to the provisions of FEMA/FIA–TB–2.

*Proposal to modify IRC*

**R322.1.9 Manufactured homes.** In addition to the applicable requirements of the state agency with jurisdiction over installation of manufactured homes, installation of manufactured homes in flood hazard areas is subject to the applicable provisions of the local floodplain management ordinance. ~~New or replacement manufactured homes shall be elevated in accordance with Section R322.2 (flood hazard areas including A Zones) or Section R322.3 in coastal high-hazard areas (V Zones). The anchor and tie-down requirements of Sections AE604 and AE605 of Appendix E shall apply. The foundation and anchorage of manufactured homes to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.~~

*Proposal to retain from IRC*

**R322.1.10 As–built elevation documentation.** A registered design professional shall prepare and seal documentation of the elevations specified in Section R322.2 or R322.3.

**R322.2 Flood hazard areas (including A Zones).** All areas that have been determined to be prone to flooding but not subject to high velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet shall be designated as Coastal A Zones. All buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.3.

**R322.2.1 Elevation requirements.**

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the design flood elevation.
2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or to the design flood elevation, whichever is higher.
3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet (mm) on the FIRM, or at least 2 feet (610 mm) if a depth number is not specified.
4. Basement floors that are below grade on all sides shall be elevated to or above the design flood elevation.

**Exception:** Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R322.2.2.

**R322.2.2 Enclosed area below design flood elevation.** Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings which shall meet the following criteria:

2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
2.2. The total net area of all openings shall be at least 1 square inch (645 $mm^2$) for each square foot (0.093 $m^2$) of enclosed area, or the openings shall be designed and the construction documents shall include a statement by a registered design professional that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.6.2.2 of ASCE 24.
2.3. The bottom of each opening shall be 1 foot (305 mm) or less above the adjacent ground level.
2.4. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.
2.5. Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.
2.6. Openings installed in doors and windows, that meet requirements 2.1 through 2.5, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.

**R322.2.3 Foundation design and construction.** Foundation walls for all buildings and structures erected in flood hazard areas shall meet the requirements of Chapter 4.
**Exception:** Unless designed in accordance with Section 404:

1. The unsupported height of 6-inch (152 mm) plain masonry walls shall be no more than 3 feet (914 mm).
2. The unsupported height of 8-inch (203 mm) plain masonry walls shall be no more than 4 feet (1219 mm).
3. The unsupported height of 8 inch (203 mm) reinforced masonry walls shall be no more than 8 feet (2438 mm).

For the purpose of this exception, unsupported height is the distance from the finished grade of the under-floor space to the top of the wall.

*Proposal to add to R322.2 by adding provisions for pools (language from IRC Appx AG*

**R322.2.4 Pools in flood hazard areas.** Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools, and in-ground pools that involve placement of fill, shall comply with Sections R322.2.4.1 or RB322.2.4.2.

**Exception:** Pools located in riverine flood hazard areas which are outside of designated floodways.

**R322.2.4.1 Pools located in designated floodways.** Where pools are located in designated floodways, documentation shall be submitted to the building official, which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the jurisdiction.

**R322.2.4.2 Pools located where floodways have not been designated.** Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant

shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

*Proposal to retain from IRC*

**R322.3 Coastal high-hazard areas (including V Zones).** Areas that have been determined to be subject to wave heights in excess of 3 feet (914 mm) or subject to high-velocity wave action or wave–induced erosion shall be designated as coastal high-hazard areas. All buildings and structures constructed in whole or in part in coastal high-hazard areas shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

**R322.3.1 Location and site preparation.**

1. New buildings and buildings that are determined to be substantially improved pursuant to Section R105.3.1.1 shall be located landward of the reach of mean high tide.
2. For any alteration of sand dunes and mangrove stands the building official shall require submission of an engineering analysis which demonstrates that the proposed alteration will not increase the potential for flood damage.

**R322.3.2 Elevation requirements.**

1. All buildings and structures erected within coastal high-hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is:
   1.1 Located at or above the design flood elevation, if the lowest horizontal structural member is oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees from the direction of approach, or
   1.2 Located at the base flood elevation plus one foot (305 mm), or the design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular shall mean greater than 20 degrees from the direction of approach.
2. Basement floors that are below grade on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings, and for support of parking slabs, pool decks, patios, and walkways.

   **Exception:** Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

**R322.3.3 Foundations.** All buildings and structures erected in coastal high-hazard areas shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. Piling shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the design flood. Wind loading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the mat, raft or other foundation is subject to scour or

erosion from wave–velocity flow conditions. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundation are designed to resist the additional flood load.

*Proposal to add to R322.3 by adding provisions for pools*

**R322.3.3.1 Pools.** Pools in coastal high-hazard areas shall be designed and constructed in conformance with ASCE 24.

**R322.3.4 Walls below design flood elevation.** Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. **Electrical, mechanical, and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and**
2. Are constructed with insect screening or open lattice; or
3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 (470 Pa) and no more than 20 pounds per square foot (958 Pa); or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), the construction documents shall include documentation prepared and sealed by a registered design professional that:
   4.1. The walls and partitions below the design flood elevation have been designed to collapse from a water load less than that which would occur during the design flood.
   4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the design flood. Wind loading values used shall be those required by this code.

**R322.3.5 Enclosed areas below design flood elevation.** Enclosed areas below the design flood elevation shall be used solely for parking of vehicles, building access or storage.

**R322.3.6 Construction documents.** The construction documents shall include documentation that is prepared and sealed by a registered design professional that the design and methods of construction to be used meet the applicable criteria of this section.

*Proposal to modify IRC as previously modified by FBC, Residential (the text in item #2 was deleted in FBC supplemental)*

**R401.1 [General] Application.** The provisions of this chapter shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding as established by Table R301.2(1) shall meet the provisions of Section R323. Wood foundations shall be designed and installed in accordance with AF&PA Report No. 7 (see Section R301.2.1.1).

**Exceptions:**

1. The provisions of this chapter shall be permitted to be used for wood foundations subject to the following:
   1.1. Buildings shall have no more than two floors and a roof.
   1.2. Interior basement and foundation walls shall be provided at intervals not exceeding 50 feet.
   1.3. When the foundation uplift loads determined from Table R401.1 exceed 0 or when such uplift loads cannot be determined from Table R401.1, an engineered design shall be required.
2. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding shall meet the provisions of Section R322.
3. Buildings and structures located within the High-Velocity Hurricane Zone shall comply with the provisions of Chapter 44, and as applicable, Section R322 in flood hazard areas.

*Proposal to retain from IRC*

**R408.7 [Under-Floor Space] Flood resistance.** For buildings located in areas prone to flooding as established in Table R301.2(1):

1. Walls enclosing the under-floor space shall be provided with flood openings in accordance with Section R322.2.2.
2. The finished ground level of the under-floor space shall be equal to or higher than the outside finished ground level on at least one side.

   **Exception:** Underfloor spaces that meet the requirements of FEMA/FIA TB 11-01.

**M1301.1.1 [General Mechanical System Requirements] Flood-resistant installation.** In areas prone to flooding as established by Table R301.2(1), mechanical appliances, equipment and systems shall be located or installed in accordance with Section R322.1.6

**M1401.5 [Heating and Cooling Equipment] Flood hazard.** In areas prone to flooding as established by Table R301.2(1), heating and cooling equipment and appliances shall be located or installed in accordance with Section R322.1.6

**M1601.3.8 [Duct Construction] Flood hazard areas.** In areas prone to flooding as established by Table R301.2(1), duct systems shall be located or installed in accordance with Section R322.1.6.

**M1701.6 [Combustion air] Opening location.** In areas prone to flooding as established by Table R301.2(1), openings shall be located at or above the elevation required in Section R322.3.1 (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones).

**M2001.4 [Boilers and Water Heaters] Flood-resistant installation.** In areas prone to flooding as established in Table R301.2(1), boilers, water heaters and their control systems shall be located or installed in accordance with Section R322.1.6.

**M2201.6 [Special Piping and Storage Systems] Flood resistant installation.** In areas prone to flooding as established by Table R301.2(1), tanks shall be installed at or above the elevation required in Section R322.3.1 (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones) or shall be anchored to prevent flotation, collapse and lateral movement under conditions of the design flood.

**G2404.7 (301.11) [Fuel Gas] Flood hazard.** For structures located in flood hazard areas, the appliance, equipment and system installations regulated by this code shall be located or installed at or above the design flood elevation and shall comply with the flood-resistant construction requirement of Section R322.

> **Exception:** The appliance, equipment and system installations regulated by this code are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation and shall comply with the flood-resistant construction requirements of Section R322.

**P2601.3 [General Plumbing Requirements] Flood hazard area.** In areas prone to flooding as established by Table R301.2(1), plumbing fixtures, drains, and appliances shall be located or installed in accordance with Section R322.1.6.

**P2602.2 [Individual Water Supply and Sewage Disposal] Flood resistant installation.** In areas prone to flooding as established by Table R301.2(1):

1. Water-supply systems shall be designed and constructed to prevent infiltration of floodwaters.
2. Pipes for sewage disposal systems shall be designed and constructed to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

**P2705.1 [Plumbing Fixtures, Installation] General.**

7. In areas prone to flooding as established by Table R301.2(1), plumbing fixtures shall be located or installed in accordance with Section R322.1.6.

**P3001.3 [Sanitary Drainage] Flood resistant installation.** In areas prone to flooding as established by Table R301.2(1), drainage, waste and vent systems shall be located and installed to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

**P3101.5 [Vent Systems] Flood resistance.** In areas prone to flooding as established by Table R301.2(1), vents shall be located at or above the elevation required in Section R322.3.1 (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones).

*Proposal to modify R4101 to refer to appropriate sections in R322* *(see R322.2 and R322.3)*

SECTION R4101 PRIVATE SWIMMING POOLS

**R4101.4.2 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.

> **R4101.4.2.1. Flood hazard areas.** Pools installed in flood hazard areas established in Section R322 shall comply with Section R322.2.4 (A Zones) or R322.3.3.1 in coastal high-hazard areas (V Zones).

*Proposal to modify HVHZ added by FBC*

**R4403.14.3 Flood resistance.** Where the building or structure is located in a flood hazard area, the foundation, including enclosures below elevated buildings, shall be designed and constructed in accordance with Section R322.

*Proposal to not adopt IRC Appx E Manufactured Housing*

~~**Appendix E Manufactured Housing**~~

~~**AE101 Scope.**~~

~~**Exception:** In addition to these provisions, new and replacement manufactured homes to be located in flood hazard areas as established by Table R301.2(1) of the *International Residential Code* shall meet the applicable requirements of Section R322 of the *International Residential Code*.~~

~~**AE502.3 Footings and foundations.** Footings and foundations, unless otherwise specifically provided, shall be constructed of materials specified by this code for the intended use and in all cases shall extend below the frost line. Footings of concrete and masonry shall be of solid material. Foundations supporting untreated wood shall extend at least 8 inches (203 mm) above the adjacent finish grade. Footings shall have a minimum depth below finished grade of 12 inches (305 mm) unless a greater depth is recommended by a foundation investigation.~~

~~Piers and bearing walls shall be supported on masonry or concrete foundations or piles, or other approved foundation systems which shall be of sufficient capacity to support all loads.~~

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

*Proposal to retain from IEBC [retains last sentence of exception]*

**101.5 Compliance methods.** The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of the methods listed in Sections 101.5.1 through 101.5.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the code official. Sections 101.5.1 through 101.5.3 shall not be applied in combination with each other.

> **Exception:** Alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building has sustained substantial structural damage as defined in Section 506.2, or the building is undergoing more than a limited structural alteration as defined in Section 807.5.3. New structural members added as part of the repair or alteration shall comply with the ~~*International*~~ *Florida Building Code*. Repairs and alterations of existing buildings in flood hazard areas shall comply with Sections 501.4 and 601.3, respectively.

*Proposal to delete per statutory authority re modifications*

~~**104.10 Modifications.** Wherever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner's representative, provided the code official shall first find that special individual reason makes the strict letter o this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the Department of Building Safety.~~

> ~~**104.10.1 Flood hazard areas.** For existing buildings located in flood hazard areas for which the repairs, alterations, and additions constitute substantial improvement, the code official shall not grant modifications to provisions related to flood resistance unless a determination is made that~~
> ~~1. The applicant has presented good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render compliance with the flood-resistant construction provisions inappropriate.~~
> ~~2. Failure to grant the modification would result in exceptional hardship.~~
> ~~3. The granting of the modification will not result in increased flood heights, additional threats to public safety, extraordinary public expense nor create nuisances, cause fraud on or victimization of the public or conflict with existing laws or ordinances.~~
> ~~4. The modification is the minimum necessary to afford relief, considering the flood hazard.~~
> ~~5. A written notice will be provided to the applicant specifying, if applicable, the difference between the design flood elevation and the elevation to which the building is to be built,~~

~~stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation and that construction below the design flood elevation increases risks to life and property.~~

*Proposal to delete from IEBC (captured by Sec. 101.1 reference to FBC, B Chapter 1]*

~~**109.3.3 Lowest floor elevation.** For additions and substantial improvements to existing buildings in flood hazard areas, upon placement of the lowest floor, including basement, and prior to further vertical construction, the elevation documentation required in the *International Building Code* shall be submitted to the code official.~~

*Proposal to add to IEBC*

**EXISTING STRUCTURES (for flood hazard areas).** See Section 1627.2.

*Proposal to retain from IEBC*

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

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

*Proposal to modify from IEBC*

**HISTORIC BUILDING (for flood hazard areas).** Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation, law, or survey; certified as a contributing resource within a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places.

*Proposal to retain from IEBC*

**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 IEBC*

**Section 302 Additions, Alterations or Repairs**

**302.1.1 Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1627.3 ~~1612.3~~ of the *Florida Building Code, Building.* ~~*International Building Code*~~, any additions, alterations or repairs that constitute substantial improvement of the existing structure, as defined in Section 1627.2 ~~1612.2~~ of the *Florida Building Code, Building.* ~~*International Building Code,*~~ 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.

*Proposal to retain from IEBC*

**302.1.2 Flood hazard areas.** For buildings and structures in flood hazard areas established in Section 1627.3 ~~1612.3~~, any additions, alterations or repairs that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1627.2 ~~1612.2~~, are not required to comply with the flood design requirements for new construction.

*Proposal to delete as part of FBC referral to Chapter 11, Historic Buildings*

~~**Section 306 Historic Buildings**~~

~~**306.2 Flood hazard areas.** Within flood hazard areas established in accordance with Section 1612.3 of the *International Building Code*, where the work proposed constitutes substantial improvement as defined in Section 1612.2 of the *International Building Code*, the building shall be brought into conformance with Section 1612 of the *International Building Code.*~~

~~**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. ~~Designed as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

*Proposal to modify from IEBC*

**501.4 Flood hazard areas.** In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building*~~*International Building Code*~~.

**Chapter 5 Repairs**

**506.2.5 [Repairs to damaged buildings] Flood hazard areas.** In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~

Chapter 6 Alterations – Level 1

**601.3 Flood hazard areas.** In flood hazard areas, alterations that constitute substantial improvement shall require that the building comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code*~~

Chapter 10 Additions

**1003.5 Flood Hazard Areas.** Additions and foundations in flood hazard areas shall comply with the following requirements:

1. For horizontal additions that are structurally interconnected to the existing building:
   1.1 If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code*~~.
   1.2 If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code*~~
2. For horizontal additions that are not structurally interconnected to the existing building:
   2.1 The addition shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~
   2.2 If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~
3. For vertical additions and all other proposed work, when combined, that constitute substantial improvement, the existing building shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~
4. For a new, replacement, raised, or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~

*Proposal to retain from IEBC*

**Chapter 11 Historic Building**

**1101.3 (IBC 1101.4) Flood hazard areas.** In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~

**Exception:** If a historic building will continue to be a historic building after the proposed work is completed, then the proposed work is not considered to be a substantial improvement. For the purposes of this exception, a historic building is:

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.

*Proposal to modify IEBC*

**Chapter 12 Relocated or Moved Buildings**

**1202.6 Flood hazard areas.** If relocated or moved into a flood hazard area, structures shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~

**Chapter 13 Compliance Alternatives**

**1301.3.3 Compliance with flood hazard provisions.** In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1627 ~~1612~~ of the *Florida Building Code, Building.* ~~*International Building Code.*~~ if the work covered by this section constitutes substantial improvement.

# Add Flood Provisions to the 2010 FBC, Mechanical®
## (Adopted Unanimously by the Workgroup May 29, 2009)

*No modification to the IMC provisions (other than change IBC to FBC, B)*

**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 area map.

**[B] M301.13 [General Regulations] Flood hazard**. For structures located in flood hazard areas, mechanical systems, equipment and appliances shall be located at or above the design flood elevation.

**Exception:** Mechanical systems, equipment and appliances are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in compliance with the flood-resistant construction requirements of the *Florida Building Code, Building.* ~~*International Building Code.*~~

**M301.13.1 High-velocity wave action.** In flood hazard areas subject to high velocity wave action, mechanical systems and equipment shall not be mounted on or penetrate walls intended to break away under flood loads.

**M401.4 [Ventilation, General] Intake opening location.** Air intake openings shall comply with all of the following:

4. Intake openings on structures in flood hazard areas shall be at or above the design flood level.

**M501.2.1 [Exhaust Systems, General] Location of exhaust outlets.** The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:

4. Exhaust outlets serving structures in flood hazard areas shall be installed at or above the design flood level.

**M602.4 [Duct Systems, General] Flood hazard.** For structures located in flood hazard areas, plenum spaces shall be located above the design flood elevation or shall be designed and constructed to prevent water from entering or accumulating within the plenum spaces during floods up to the design flood elevation. If the plenum spaces are located below the design flood elevation, they shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

**M603.13 [Duct Construction and Installation] Flood hazard areas.** For structures in flood hazard areas, ducts shall be located above the design flood elevation or shall be designed and constructed to prevent water from entering or accumulating within the ducts during floods up to the

design flood elevation. If the ducts are located below the design flood elevation, the ducts shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

**M1206.9.1 [Hydronic Piping, Piping installation] Flood hazard.** Piping located in a flood hazard area shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

**M1305.2.1 [Fuel Oil System Installation] Flood hazard.** All fuel oil pipe, equipment and appliances located in flood hazard areas shall be located above the design flood elevation or shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

## Add Flood Provisions to the 2009 FBC, Plumbing®
## (Adopted Unanimously by the Workgroup May 29, 2009)

*No modification to the IPC provisions* *(other than change IBC to FBC, B)*

**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.

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

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

**P309.1 General**. Plumbing systems and equipment in structures erected in flood hazard areas shall be constructed in accordance with the requirements of this section and the *Florida Building Code, Building.* ~~*International Building Code.*~~

**P309.2 Flood hazard.** For structures located in flood hazard areas, the following systems and equipment shall be located at or above the design flood elevation:

**Exception:** The following systems are permitted to be located below the design flood elevation provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

1. All water service pipes.
2. Pump seals in individual water supply systems where the pump is located below the base flood elevation.
3. Covers on potable water wells shall be sealed, except where the top of the casing well or pipe sleeve is elevated to at least 1 foot (304.8 mm) above the design flood elevation.
4. All sanitary drainage piping.
5. All storm drainage piping.
6. Manhole covers shall be sealed, except where elevated to or above the design flood elevation.
7. All other plumbing fixtures, faucets, fixture fittings, piping systems and equipment.
8. Water heaters.
9. Vents and vent systems.

**309.3 Flood hazard areas subject to high-velocity wave action.** Structures located in flood hazard areas subject to high-velocity wave action shall meet the requirements of Section 309.2. The plumbing systems, pipes and fixtures shall not be mounted on or penetrate through walls intended to breakaway under flood loads.

## Add Flood Provisions to the 2009 FBC, Fuel Gas®
## (Adopted Unanimously by the Workgroup May 29, 2009)

*No modification to the IFGC provisions (other than change IBC to FBC, B)*

**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.

**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 given year.
2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

**FG301.11 [General] Flood hazard.** For structures located in flood hazard areas, the appliance, equipment and system installations regulated by this code shall be located at or above the design flood elevation and shall comply with the flood-resistant construction requirements of the *Florida Building Code, Building.* ~~*International Building Code.*~~

> **Exception:** The appliance, equipment and system installations regulated by this code are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation and shall comply with the flood-resistant construction requirements of the *Florida Building Code, Building.* ~~*International Building Code.*~~