Determining Substantial Improvements Under The FBCEB Volume, 5th Edition

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Part I
Florida Building Code,
Existing Building Volume

Chapter 1 Administration

101.1 Title

• These regulations shall be known as the Florida Building Code, Existing Building, hereinafter referred to as “this code.” In addition to the provisions of this chapter, the provisions of Chapter 1, Florida Building Code, Building, shall govern the administration and enforcement of this code.
101.2 Scope

- The provisions of the Florida Building Code, Existing Building, shall apply to the repair, alteration, change of occupancy, addition and relocation of existing buildings.

Exception: For the purpose of public educational facilities and state licensed facilities, see Chapter 4, Special Occupancy, of the Florida Building Code, Building.

101.3 intent

- The intent of this code is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to safeguard the public health, safety and welfare insofar as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings.

101.4 Applicability

- This code shall apply to the repair, alteration, change of occupancy, addition and relocation of all existing buildings, regardless of occupancy, subject to the criteria of Sections 101.4.1 and 101.4.2.
101.4.1 Buildings Not Previously Occupied

- A building or portion of a building that has not been previously occupied or used for its intended purpose in accordance with the laws in existence at the time of its completion shall comply with the provisions of the Florida Building Code, Building or Florida Building Code, Residential, as applicable, for new construction or with any current permit for such occupancy.

101.4.2 Buildings Previously Occupied

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

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

Important Definitions

• ALTERATION. Any construction or renovation to an existing structure other than a repair or addition. Alterations are classified as Level 1, Level 2, and Level 3.

Important Definitions

• CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.
**Important Definitions**

- **DRY FLOODPROOFING.** 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.

**Important Definitions**

- **EXISTING BUILDING.** A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.
- **EXISTING STRUCTURES (for flood hazard areas).** See Section 1612.2 of the Florida Building Code, Building:

  2010 FBCEB definition brought forward for inclusion into the FBCEB, 5th Edition.

**Important Definitions**

- **FLOOD HAZARD AREA.** The greater of the following two areas:
  1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.
  2. The area designated as a flood hazard area on a community’s flood hazard map, or otherwise legally designated.
Important Definitions

• HISTORIC BUILDING. See Section 1102 1202.

2010 FBCEB definition brought forward (and revised) for inclusion into the FBCEB, 5th Edition.

Important Definitions 2010 FBC

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

Definition DELETED!

Important Definitions

• REHABILITATION. Any work, as described by the categories of work defined herein, undertaken in an existing building.

• REHABILITATION, HISTORIC BUILDING. The act or process of making possible a compatible use of a property through repair, alterations and additions while preserving those portions or features which convey its historical, cultural or architectural values. (FSA)
Important Definitions
2010 FBC (FSA)

• REPAIR. The patching, restoration and/or minor replacement of materials, elements, components, equipment and/or fixtures for the purposes of maintaining such materials, elements, components, equipment and/or fixtures in good or sound condition.

Definition DELETED!

Important Definitions

• REPAIR. The restoration to good or sound condition of any part of an existing building for the purpose of its maintenance.

  Definition as contained in the base code.

Important Definitions

• 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.

  This definition ONLY applies when determining compliance with flood damage prevention!
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Important Definitions

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

Important Definitions

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

As with Substantial Damage, the definition of Substantial Improvement ONLY applies when determining compliance with flood damage prevention!

Important Definitions

• VALUE. The estimated current replacement cost of the building in kind.

2010 FBCEB definition brought forward for inclusion into the FBCEB 5th Edition.
Part I
Florida Building Code,
Existing Building Volume
Chapter 3
Compliance Methods

Previously Section 101.5

Compliance Methods

Section 301

301.1 General

• The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 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.
301.1 General...continued

- Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other.
- Where this code requires consideration of the seismic force-resisting system of an existing building subject to repair, alteration, change of occupancy, addition or relocation of existing buildings, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

Exception: Subject to the approval of the code official, 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 is undergoing more than a limited structural alteration as defined in Section 907.4.3.

New structural members added as part of the alteration shall comply with the Florida Building Code. Alterations of existing buildings in flood hazard areas shall comply with Section 701.3.

301.1.1 Prescriptive Compliance Method

- Repairs, alterations, additions and changes of occupancy complying with Chapter 4 of this code in buildings complying with the Florida Fire Prevention Code shall be considered in compliance with the provisions of this code.
301.1.2 Work Area Compliance Method

- Repairs, alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Chapters 5 through 13 of this code shall be considered in compliance with the provisions of this code.

301.1.3 Performance Compliance Method

- Repairs, alterations, additions, changes in occupancy and relocated buildings complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.

Part I
Florida Building Code, Existing Building Volume

Chapter 4
Prescriptive Compliance Method

Previously Chapter 3
Additions

Section 402

402.2 Flood Hazard Areas

- For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential as applicable, any addition that constitutes substantial improvement of the existing structure, as defined in Section 202, 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.

402.2 Flood Hazard Areas...continued

- For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential as applicable, any additions that do not constitute substantial improvement of the existing structure, as defined in Section 202, are not required to comply with the flood design requirements for new construction.
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FBC 5th Edition – Building
1612 Flood Loads

1612.1 General.
• Within flood hazard areas as established in Section 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.

FBC 5th Edition – Residential
R322 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.
• Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

ASCE 24-05

• ASCE 24, Flood Resistant Design and Construction.
• Cited by the FBC-B and FBC-R.
• Specific limitations, minimum requirements, and expected performance for the design and construction of buildings and structures in flood hazard areas.
• NOT a restatement of all of the NFIP regulations – it is limited to requirements pertaining to design of buildings and structures.
Alterations

Section 403

403.2 Flood Hazard Areas

• For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable, any alteration that constitutes substantial improvement of the existing structure, as defined in Section 202, 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.
403.2 Flood Hazard areas...continued

• For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable, any alterations that do not constitute substantial improvement of the existing structure, as defined in Section 202, are not required to comply with the flood design requirements for new construction.

404.5 Flood Hazard Areas

• For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable, any repair that constitutes substantial improvement of the existing structure, as defined in Section 202, 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.
404.5 Flood Hazard Areas...continued

- For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building, or Section R322 of the Florida Building Code, Residential, as applicable, any repairs that do not constitute substantial improvement or repair of substantial damage of the existing structure, as defined in Section 202, are not required to comply with the flood design requirements for new construction.

Historic Buildings

Section 408

408.2 Flood Hazard Areas

- Within flood hazard areas established in accordance with Section 1612.3 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable, where the work proposed constitutes substantial improvement as defined in Section 202, the building shall be brought into conformance with Section 1612 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable.
408.2 Flood Hazard Areas...cont.

**Exception:**
If the program that designated the building as historic determines that it will continue to be an historic building after the proposed work is completed, then the proposed work is not considered to be *substantial improvement*. For the purposes of this exception, an historic building is:

1. Individually listed in the National Register of Historic Places; or
2. A contributing resource within a National Register of Historic Places listed district; or
3. Designated as historic property under an official municipal, county, special district or state designation, law, ordinance or resolution either individually or as a contributing property in a district, provided the local program making the designation is approved by the Department of the Interior (the Florida state historic preservation officer maintains a list of approved local programs); or
4. Determined eligible by the Florida State Historic Preservation Officer for listing in the National Register of Historic Places, either individually or as a contributing property in a district.
601.3
Flood Hazard Areas

• In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Chapter 1612 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable.

601.3.1 Structure 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.

Section added as a Florida Specific Amendment to the base code.

Structural

Section 606
606.2.4
Flood Hazard Areas

In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1612 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable.
701.3 Flood Hazard Areas

- In flood hazard areas, alterations that constitute substantial improvement shall require that the building comply with Section 1612 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable.
Part I
Florida Building Code,
Existing Building Volume

Chapter 11
Additions

Previously Chapter 10

General Requirements

Section 1101

1101.1 Scope

• An addition to a building or structure shall comply with the Florida Building Codes as adopted for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this chapter. Where an addition impacts the existing building or structure, that portion shall comply with this code.
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**Structural**

Section 1103

1003.1 Compliance With The Florida Building Code

- Additions to existing buildings or structures are new construction and shall comply with the Florida Building Code, Building.

1103.5 Flood Hazard Areas

- Additions and foundations in flood hazard areas shall comply with the following requirements:
1103.5 Flood Hazard Areas...continued

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 1612 of the Florida Building Code, Building.
   1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the Florida Building Code, Building.

2. For horizontal additions that are not structurally interconnected to the existing building:
   2.1. The addition shall comply with Section 1612 of the Florida Building Code, Building.
   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 1612 of the Florida Building Code, Building.

3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the Florida Building Code, Building.

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 1612 of the Florida Building Code, Building.
1103.5
Flood Hazard Areas...continued

New Section Added to the FBCEB 5th Edition:
5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 the *Florida Building Code, Building*

### Part I
**Florida Building Code, Existing Building Volume**

**Chapter 12**
Historic Buildings

**Previously Chapter 11**

### General

**Section 1201**
1201.3
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 building shall comply with Section 1612 of the Florida Building Code, Building, or Section R322 of the Florida Building Code, Residential.

Exception:
If the program that designated the building as historic determines that it will continue to be an historic building after the proposed work is completed, then the proposed work is not considered to be substantial improvement.

For the purposes of this exception, an historic building is:

1. Individually listed in the National Register of Historic Places; or
2. A contributing resource within a National Register of Historic Places listed district; or
1201.3 Flood Hazard Areas...continued

3. Designated as historic property under an official municipal, county, special district or state designation, law, ordinance or resolution either individually or as a contributing property in a district, provided the local program making the designation is approved by the Department of the Interior (the Florida state historic preservation officer maintains a list of approved local programs); or

4. Determined eligible by the Florida State Historic Preservation Officer for listing in the National Register of Historic Places, either individually or as a contributing property in a district.

1202 Definitions

HISTORIC BUILDING. For the purposes of this code and the referenced documents, an historic building is defined as a building or structure that is:
1. Individually listed in the National Register of Historic Places; or
2. A contributing property in a National Register of Historic Places listed district; or
3. Designated as historic property under an official municipal, county, special district or state designation, law, ordinance or resolution either individually or as a contributing property in a district; or
4. Determined eligible by the Florida State Historic Preservation Officer for listing in the National Register of Historic Places, either individually or as a contributing property in a district.
Part I
Florida Building Code, Existing Building Volume
Chapter 13
Relocated or Moved Buildings

Previously Chapter 12

Requirements
Section 1302

1302.6 Flood Hazard Areas

• If relocated or moved into a flood hazard area, structures shall comply with Section 1612 of the Florida Building Code, Building or Section R322 of the Florida Building Code, Residential, as applicable.
Part I
Florida Building Code, Existing Building Volume

Chapter 14
Performance Compliance Method

Preceded Chapter 13

1401.1 Scope

• The provisions of this chapter shall apply to the alteration, repair, addition and change of occupancy of existing structures, including historic and moved structures, as referenced in Section 301.1.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in existing buildings while permitting repair, alteration, addition and change of occupancy without requiring full compliance with Chapters 5 through 13, except where compliance with other provisions of this code is specifically required in this chapter.

1401.3 Acceptance

• For repairs, alterations, additions, and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the code official.
1401.3.3 Compliance With Flood Hazard Provisions

- In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the [Florida Building Code, Building](#), or Section R322 of the [Florida Building Code, Residential](#), as applicable, if the work covered by this section constitutes substantial improvement.

### Part II
**FEMA P-758 Substantial Improvement/Substantial Damage Desk Reference**

An Overview

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<th>Description of Content</th>
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<td>1: Introduction</td>
<td>Provides overview of the Desk Reference, other relevant requirements, and suggestions for where to obtain additional help.</td>
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<tr>
<td>2: The NFIP and Responsibilities</td>
<td>Outlines the purposes of the NFIP, offers an overview of how the program's three components work together to support the long-term reduction of flood losses, and explains the roles and responsibilities of community, state agencies, and the Federal Emergency Management Agency (FEMA).</td>
</tr>
<tr>
<td>3: NFIP Substantial Improvement/ Substantial Damage Requirements and Definitions</td>
<td>Provides an introduction to the NFIP's SISD requirements and lists selected definitions and terms (and compares them with those of the building codes published by the International Code Council, Inc. (ICC)).</td>
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<td>4: Making Substantial Improvement and Substantial Damage Determinations</td>
<td>Explains how costs of improvements, costs of repairs, and market values are used to make the SISD determination, and describes ways to obtain or to estimate costs and values.</td>
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<td>5: Administering Substantial Improvement and Substantial Damage Requirements</td>
<td>Outlines community and property owner responsibilities and provides detailed guidance for local officials who are responsible for administering and entering the SISD requirements.</td>
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<tr>
<td>6: Factors to Consider and Illustrations of Substantial Improvement and Repair of Substantial Damage</td>
<td>Describes the key aspects of bringing buildings into compliance with all of the NFIP's requirements and illustrates examples of improvements and repairs.</td>
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<tr>
<td>7: Substantial Damage in the Disaster Recovery Environment</td>
<td>Offers suggestions to prepare for disasters, an overview of the post-disaster process, methods to estimate costs and market values after major disasters, and describes FEMA's Substantial Damage Estimator.</td>
</tr>
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<td>8: Mitigation Projects</td>
<td>Describes the most common types of mitigation projects and briefly summarizes FEMA's free mitigation grant programs.</td>
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</tbody>
</table>
### Intent

- When buildings undergo repair or improvement, it is an opportunity for floodplain management programs to reduce flood damage to existing structures.
- More than 21,000 communities participate in the National Flood Insurance Program (NFIP) by adopting and enforcing regulations and codes that apply to development in Special Flood Hazard Areas (SFHAs).

### Intent

- Local floodplain management regulations and codes contain minimum NFIP requirements that are not only for new structures, but also for existing structures with proposed "substantial improvements" or repair of "substantial damage."

### Overview

- Local officials in communities that participate in the NFIP must determine whether proposed work qualifies as a substantial improvement or repair of substantial damage (referred to as an “SI/SD determination”).
- If work on buildings constitutes SI/SD, then structures must be brought into compliance with NFIP requirements for new construction, including the requirement that lowest floors be elevated to or above the base flood elevation (BFE).
Overview

• Meeting this requirement can also be accomplished by demolition followed by construction of new buildings that meet the NFIP requirements on the same sites or by relocating buildings to locations out-side of the SFHA.
• In some cases after a disaster, communities have worked with owners to buy damaged homes in order to demolish the buildings and preserve the land as open space.

As Defined

• Substantial improvement (SI) means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure (or smaller percentage if established by the community) before the “start of construction” of the improvement. This term includes structures that have incurred “substantial damage,” regardless of the actual repair work performed.

As Defined

• Substantial damage (SD) means 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. Work on structures that are determined to be substantially damaged is considered to be substantial improvement, regardless of the actual repair work performed.
For Discussion

- The 50 percent threshold was chosen as a compromise between two extremes.
- One extreme would be to prohibit all investment in existing structures that do not meet minimum NFIP requirements.
- The other extreme would be to allow structures in flood hazard areas to be improved in any fashion without regard to the flood risk.

NOTE!

- The Desk Reference provides guidance on the minimum requirements of the NFIP regulations.
- State or locally adopted requirements that are more restrictive take precedence (often referred to as “exceeding the NFIP minimums” or “higher standards”).

Purposes and Overview of the NFIP

- The original authorizing legislation for the NFIP was passed in 1968.
- Congress expressly found that “a program of flood insurance can promote the public interest by encouraging sound land use by minimizing exposure of property to flood losses...”
Purposes and Overview of the NFIP

The NFIP is intended to encourage States and local governments to recognize and incorporate flood hazards in their land use and development decisions.

In some communities, this is achieved by guiding development to areas with lower risk.

When a proposal is made to develop within a flood hazard area, application of the criteria set forth in Federal regulation (Title 44 Code of Federal Regulations [CFR] Section (§) 60.3) is intended to minimize exposure and flood-related damage.

Federal flood insurance is:

- Designed to provide an alternative to disaster assistance and disaster loans for home and business owners.
- Another objective of the NFIP is to break the cycle of flood damage.

The NFIP regulations contained in 44 CFR § 59.22 and § 60.3 outline the responsibilities that communities must accept in order to become and remain eligible to participate in the NFIP.

NFIP State Coordinator’s Office, is specifically charged with being a link between Federal, State, and local governments.
SI/SD Requirements

• The purpose of the SI/SD requirements is to protect the property owner’s investment and safety, and, over time, to reduce the total number of buildings that are exposed to flood damage, thus reducing the burden on taxpayers through the payment of disaster assistance.
• The SI/SD requirements are triggered when the local official determines that the cost of repairing or improving a building in an SFHA equals or exceeds 50 percent of the building’s market value (excluding land value).

NFIP and Codes

• FEMA has determined that the provisions in the I-Codes for the design and construction of flood damage-resistant buildings are consistent with the NFIP requirements.
• Adoption of a code based on one or more of the I-Codes does not, by itself, meet all of the NFIP requirements, largely because the model codes deal primarily with buildings and structures.

Table 3-1. Comparison of Definitions and Terms in the NFIP and I-Codes (Partial)

<table>
<thead>
<tr>
<th>Definition</th>
<th>NFIP</th>
<th>I-Codes</th>
<th>NFIP</th>
<th>I-Codes</th>
<th>NFIP</th>
<th>I-Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition</td>
<td>Used in NFIP definition of “Substantial Improvement.” Common NFIP usage: an expansion of a building that increases the total gross square footage.</td>
<td>Not defined in NFIP regulations used in guidance documents.</td>
<td>Not used in the IBC, included in definition of “Additions.”</td>
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<td>Not used in the IBC, included in definition of “Additions.”</td>
<td></td>
</tr>
<tr>
<td>Addition, nonresidential</td>
<td>Nonresidential defined in NFIP regulations used in guidance documents. Common NFIP usage: an expansion of a building that increases the total gross square footage.</td>
<td>Not used in the IBC, included in definition of “Additions.”</td>
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</table>
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SI/SD Determinations

• Administering the SI/SD requirements requires local officials to perform four major actions:
  1. Determine costs,
  2. Determine market values,
  3. Make SI/SD determinations, and
  4. Require owners to obtain permits to bring substantially improved or substantially damaged buildings into compliance with the floodplain management requirements.

Accuracy and Verification

• Costs of proposed repairs or improvements and market values are needed to determine whether proposed work is SI/SD.
• The local official is responsible for reviewing the validity of all cost estimates provided by applicants, whether prepared by licensed contractors, engineers, architects, professional cost estimators, or by property owners.

Accuracy and Verification

• When work is repair of damage, an inspection visit should be made to verify that the proposed work is all of the work that is necessary to restore the building to its pre-damage condition.
• To be consistent, local officials should document their decisions and the documentation should be retained in the community’s permit records.
Determining Costs

- The term “costs of improvements” includes the complete costs associated with all of the types of work.
- The term “costs to repair” includes the costs of all work necessary to restore a damaged building to its pre-damage condition.
- Both terms include the costs of all materials, labor, and other items necessary to perform the proposed work.

Costs Included in SI/SD Determinations

Items that must be included in the costs of improvement and the costs to repair are those that are directly associated with the building:

- Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor.
- Site preparation related to the improvement or repair.
- Demolition and construction debris disposal.

Costs Included in SI/SD Determinations

- Labor and other costs associated with demolishing, moving, or altering building components to accommodate improvements, additions, and making repairs.
- Costs associated with complying with any other regulations or code requirement that is triggered by the work, including costs to comply with the requirements of the Americans with Disabilities Act.
Costs Included in SI/SD Determinations

- Costs associated with elevating a structure when the proposed elevation is lower than the BFE.
- Construction management and supervision.
- Contractor’s overhead and profit.
- Sales taxes on materials.
- Structural elements and exterior finishes.
- Interior finish elements.
- Utility and service equipment.

Structural Elements and Exterior Finishes, Including:

- Foundations (e.g., spread or continuous foundation footings, perimeter walls, chain-walls, pilings, columns, posts, etc.).
- Monolithic or other types of concrete slabs.
- Bearing walls, tie beams, trusses.
- Joists, beams, subflooring, framing, ceilings.
- Interior non-bearing walls.
- Exterior finishes (e.g., brick, stucco, siding, painting, and trim).
- Windows and exterior doors.
- Roofing, gutters, and downspouts.
- Hardware.
- Attached decks and porches.

Interior Finish Elements, Including:

- Floor finishes (e.g., hardwood, ceramic, vinyl, linoleum, stone, and wall-to-wall carpet over subflooring).
- Bathroom tiling and fixtures.
- Wall finishes (e.g., drywall, paint, stucco, plaster, paneling, and marble).
- Built-in cabinets (e.g., kitchen, utility, entertainment, storage, and bathroom).
- Interior doors.
- Interior finish carpentry.
- Built-in bookcases and furniture.
- Hardware.
- Insulation.
Utility and Service Equipment, Including:

- Heating, ventilation, and air conditioning (HVAC) equipment.
- Plumbing fixtures and piping.
- Electrical wiring, outlets, and switches.
- Light fixtures and ceiling fans.
- Security systems.
- Built-in appliances.
- Central vacuum systems.
- Water filtration, conditioning, and recirculation systems.

Costs Excluded in SI/SD Determinations

Items that can be excluded are those that are not directly associated with the building:

- Clean-up and trash removal.
- Costs to temporarily stabilize a building so that it is safe to enter to evaluate and identify required repairs.
- Costs to obtain or prepare plans and specifications.
- Land survey costs.
- Permit fees and inspection fees.

Costs Excluded in SI/SD Determinations

- Carpeting installed over finished flooring such as wood or tile.
- Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures.
- Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes.
- Plug-in appliances such as washing machines, dryers, and stoves.
Acceptable Sources of Cost Information

- Itemized costs of materials and labor, or estimates of materials and labor that are prepared by licensed contractors or professional construction cost estimators.
- Building valuation tables published by building code organizations and cost-estimating manuals and tools available from professional building cost-estimating services. (can be used as long as some limitations are recognized, i.e. local variations in costs and the sources do not list all types and qualities of structures.)

Acceptable Sources of Cost Information

- “Qualified Estimate” of costs that are prepared by the local official using professional judgment and knowledge of local and regional construction costs.
- Most often used post-disaster when there are large numbers of damaged buildings and when permits must be quickly processed.

Acceptable Sources of Cost Information

- Building owners may submit cost estimates that they prepare themselves.
- If the community is willing to consider such estimates, owners should be required to provide as much supporting documentation as possible (such as pricing information from lumber companies and hardware stores).
- The estimate must include the value of labor, including the value of the owner’s labor.
Determining Market Value

Before reviewing options to determine the market value of a structure, it is important to note two basic NFIP requirements:
- Market value must always be based on the condition of the structure before the improvement is undertaken or before the damage occurred.
- Only the market value of the structure is pertinent.

Determining Market Value

- Professional property appraisal.
- Assessed value developed for property tax assessment purposes, adjusted to approximate market value.
- Estimates of a structure’s actual cash value, including depreciation.
- “Qualified estimates” based on the professional judgment of a local official.

Determining Market Value

- The value of the land and site improvements (landscaping, driveway, detached accessory structures, etc.) and the value of the use and occupancy (business income) are not included.
- Any value associated with the location of the property should be attributed to the land, not the building.
Community Responsibilities

- Review permit applications.
- Review descriptions of proposed work.
- Review cost estimates of the proposed work.
- Decide the method to determine market value.
- Determine if proposed improvements are substantial improvements/repair of substantial damage.

Community Responsibilities

- Issue a letter to the property owner to convey the SI/SD determination.
- NOTE: If NFIP-insured buildings are substantially damaged by flooding, this letter is necessary for owners to file an *Increased Cost of Compliance* (ICC) claim to help pay to bring buildings into compliance.

Community Responsibilities

- Retain all versions of the Flood Insurance Rate Maps (FIRMs).
- Maintain in the permit file specific information on all development that occurs within the SFHA.
- Conduct periodic field inspections during construction.
- Perform assessments after events that cause damage.
Property Owner/Applicant Responsibilities

• Find out if a permit is required.
• Submit complete information about all proposed improvements and all repairs.
• Share information from insurance claims adjusters.
• Provide a professional appraisal of the market value of the building (if requested).
• Comply with the approved plans.

Property Owner/Applicant Responsibilities

• Inform the local official if new work is to be added to the work already authorized by an issued permit.
• Contact the community to schedule inspections.
• Provide “as-built” surveyed elevation data.
• Maintain enclosed areas below elevated buildings as compliant enclosures.

Special Circumstances

Change of ownership:
• Change of ownership does not have any bearing on the substantial damage determination.
• Regardless of whether the determination is made before or after the sale, it is to be based on the value prior to the date of damage.
Special Circumstances

Multiple flood events:
• If no repairs are made to a structure after a flood, and a second flood causes additional damage, local officials must include all costs to repair damage from both events.
• The market value of the building used in making an SI/SD determination is the value prior to the first flood.
• If that value cannot be determined, the market value prior to the second flood should be used.

Special Circumstances

Conditions discovered in the course of doing work:
• If the work that is required to address the discovered condition triggers a change in the permit, the community must re-evaluate the SI/SD determination.
• The costs of the new work must be added to the cost of the improvement.
• The market value of the building that was used in the original determination is used in the revised determination.

Other Issues

• Appeals of Decisions
• Variances to the Requirements
• Floodways
• V Zones
• Coastal Barrier Resource Areas
• Revisions of the FIRM
• Recordkeeping
• Cumulative substantial improvement
Factors to Consider

• Several factors must be considered when local officials evaluate permit applications for repairs and improvements to buildings:
  • Whether the building is pre-FIRM or post-FIRM.
  • Whether the building is in an A zone or a V zone.
  • Whether the building is located in more than one flood zone.
  • Whether the building is residential or non-residential.
  • The nature of the proposed repairs and improvements.

Disaster Recovery

• Preliminary Damage Assessments
  — Immediately after large-scale events that cause major damage, community and State officials typically undertake an initial “windshield review” of the extent of damage.
  • Followed by an official Preliminary Damage Assessment (PDA).
    — Performed by teams of representatives from FEMA and/or the State.
    — Local building officials and floodplain managers can participate in PDAs, which usually are coordinated by local emergency managers.

Rapid Evaluations and Detailed Safety Evaluations

• Rapid evaluations, sometimes called “building condition surveys,” typically are based on an exterior inspection.
  • Conducted to:
    — Identify buildings that appear to be so damaged that they are unsafe and should not be reentered without a detailed inspection of structural integrity, and
    — Identify buildings that appear to have damage sufficient to require a permit before they can be repaired or reoccupied.
Rapid Evaluations and Detailed Safety Evaluations

- Most communities perform additional detailed safety evaluations when buildings have sustained significant damage.
- The purpose of the evaluations is to identify restrictions on building access and use.

Rapid Evaluations and Detailed Safety Evaluations

- **Inspected** (typically a green placard).
- This signifies that no apparent hazard was identified, that the original lateral- and vertical-load capacity is not significantly decreased, and there are no restrictions on use or occupancy. It does not mean that work can proceed without a permit.

Rapid Evaluations and Detailed Safety Evaluations

- **Restricted Use** (typically a yellow placard).
- This signifies that the safety of the building is questionable or hazardous conditions exist or are believed to exist and warrant restrictions on occupancy and reuse.
- Further evaluation is necessary (which may or may not be performed by the local official).
Rapid Evaluations and Detailed Safety Evaluations

- **Unsafe** (typically a red placard).
- This signifies that an extreme hazard or unsafe situation is present and there may be a significant risk of further damage or collapse. These buildings are unsafe for occupancy or entry, except as authorized by the local official.
- A “red tag” is not a demolition order, although such an order may be issued depending on subsequent evaluations.

FEMA’s Substantial Damage Estimator Software

- Offers a formalized approach to develop reasonable estimates of building values and reasonable estimates of the cost to repair or reconstruct buildings.
- Enables local officials to calculate a reasonable and defensible estimate of whether a building has been substantially damaged.
- Local officials can use these results from the software to make substantial damage determinations.

End of Presentation

Thank you for your participation!

**QUESTIONS??**

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