# Code Review
# 2018 Changes to International Codes
## IRC - BUILDING - FLOOD PROVISION - SPEC OCC



FLORIDA BUILDING COMMISSION
"Stronger Codes Through Science and Consensus"

Florida dbpr
Building Codes and Standards

# Residential Code (IRC)-(Special Occupancy)

## RCCIWG and
## Special Occupancy Technical Advisory Committee (TAC)

## 2018 International Residential Code – Flood Provision

## Special Occupancy TAC

| IRC-SO Code Change No. | IRC-SO Section | Change Summary b/t 2015 IRC-SO and 2018 IRC-SO | Change Summary b/t 2017 IRC-SO and 2018 IRC-SO | Staff comments |
|---|---|---|---|---|
| | | | | |
| RB160-16 | R322.3.3, R322.3.4 | Modifies text of Section R322.3.3 "Foundations". Adds new section R322.3.4 "Concrete slabs". Coastal high hazard areas (Zone V) and Coastal A Zones are portions of flood hazard areas along open shorelines where wave action will occur. The presence of concrete slabs can increase damage to elevated buildings, in part by shifting such that added loads or increased scour occurs on the building foundation. This proposal helps clarify what is intended by the requirement in R322.3.3.<br><br>**Cost Impact**: Will not increase the cost of construction. The free of obstruction requirement has been enforced by communities that participate in the National Flood Insurance Program and FEMA guidance has long advised the requirement can be satisfied by requiring concrete slabs to meet the proposed specifications. | Same as change between 2015 IRC-B and 2018 IRC-B | **Flood provisions** |

| RCCIWG – Comment | TAC Action | Commission Action |
|---|---|---|
| Impactful (Explain) ☐ | Accommodate Florida Specific Need:<br>YES (Select Criteria) ☐ NO: ☐<br>a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐<br>Others (Explain): | Accommodate Florida Specific Need:<br>YES (Select Criteria) ☐ NO: ☐<br>a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐<br>Others (Explain): |

| | TAC | Commission |
|---|---|---|
| ☐ No Action Needed | ☐ | ☐ |
| ☐ Overlapping provisions | ☐ | ☐ |

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|---|---|---|---|---|
| RB161-16 | R322.3.6 (New) | Adds new Section R322.3.6 "Stairways and ramps". Coastal high hazard areas (Zone V) and Coastal A Zones are portions of flood hazard areas along open shorelines where wave action will occur. Stairways and ramp for dwellings are affected by flooding, erosion and scour and the presence of stairways and ramps can increase damage to elevated buildings. This proposal helps **clarify** what is intended by the requirement in R322.3.3 that the area below elevated buildings shall be free of obstructions. The | Same as change between 2015 IRC-B and 2018 IRC-B | **Flood provision** |

***Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following: a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design***

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| | | code change was further modified by the Committee as follows: In the modification, Section R322.3.6 Item 1 went from language that is wide open and vague to something that is concrete, which is very helpful in the code. The proposal adds needed clarity. Per comment "The purpose of this public comment is to revise and expand the guidance on stairways and ramps added by this proposal."<br><br>**Cost Impact**: Will not increase the cost of construction. The requirement to avoid obstructions and to have elements below elevated buildings breakaway has been enforced by communities that participate in the NFIP, whether by enforcement of the IRC or local floodplain management regulations. FEMA guidance has long advised the requirement can be satisfied by requiring stairways and ramps to meet the proposed specifications. | | |

| RCCIWG – Comment | TAC Action | Commission Action | | TAC | Commission |
|---|---|---|---|---|---|
| Impactful (Explain) ☐ | Accommodate Florida Specific Need:<br>YES (Select Criteria) ☐ NO: ☐<br>a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐<br>Others (Explain): | Accommodate Florida Specific Need:<br>YES (Select Criteria) ☐ NO: ☐<br>a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐<br>Others (Explain): | ☐ No Action Needed | ☐ | ☐ |
| | | | ☐ Overlapping provisions | ☐ | ☐ |

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|---|---|---|---|---|
| RB162-16 | R322.3.6 (New) | Adds text of Section R322.3.6 "Decks and porches". Coastal high hazard areas (Zone V) and Coastal A Zones are portions of flood hazard areas along open shorelines where wave action will occur. Decks and porches attached to or adjacent to dwellings are affected by flooding, erosion and scour. The presence of decks and porches can increase damage to elevated buildings unless they are constructed in ways intended to minimize damage. This proposal clarifies how decks and porches are treated and is based on the requirements of referenced standard ASCE 24-14, Flood Resistant Design and Construction and best practices documented in several publications issued by the Federal Emergency Management Agency<br><br>**Cost Impact**: Will not increase the cost of construction. The elevation requirement and free of obstruction requirement have | Same as change between 2015 IRC-B and 2018 IRC-B | **Flood Provision** |

***Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following: a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design***

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| | | been enforced by communities that participate in the National Flood Insurance Program and FEMA guidance has long advised the requirement can be satisfied by requiring decks and porches to meet the proposed specifications. | | |

| RCCIWG – Comment | TAC Action | Commission Action | | TAC | Commission |
|---|---|---|---|---|---|
| Impactful (Explain) ☐ | Accommodate Florida Specific Need: YES (Select Criteria) ☐ NO: ☐ a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐ Others (Explain): | Accommodate Florida Specific Need: YES (Select Criteria) ☐ NO: ☐ a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐ Others (Explain): | ☐ No Action Needed | ☐ | ☐ |
| | | | ☐ Overlapping provisions | ☐ | ☐ |

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|---|---|---|---|---|
| RB360-16 | AE101.1, AE101.2 (New) | Modifies text of Section AE101.1 “General”. Adds new Section “AE101.2 Flood hazard areas”. This **proposal is editorial**. The text current in an exception should be a separate section<br><br>**Cost Impact**: Will not increase the cost of construction. Proposal only **clarifies** and puts the provision in proper format. | This change is not similar to that of the FRC. The FRC provides for Florida specific changes to this section | **No action needed.** This appendix is not part of the FRC. |

| RCCIWG – Comment | TAC Action | Commission Action | | TAC | Commission |
|---|---|---|---|---|---|
| Impactful (Explain) ☐ | Accommodate Florida Specific Need: YES (Select Criteria) ☐ NO: ☐ a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐ Others (Explain): | Accommodate Florida Specific Need: YES (Select Criteria) ☐ NO: ☐ a. ☐ b. ☐ c. ☐ d. ☐ e. ☐ f. ☐ Others (Explain): | ☐ No Action Needed | ☐ | ☐ |
| | | | ☐ Overlapping provisions | ☐ | ☐ |

***Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following: a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design***

# Code Change No: RB160-16

**Original Proposal**

**Section(s): R322.3.3, R322.3.4 (New)**

**Proponent:** Gregory Wilson (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, representing Federal Emergency Management Agency (rcquinn@earthlink.net)

**Revise as follows:**

**R322.3.3 Foundations.** Buildings and structures erected in coastal high-hazard areas and Coastal A Zones shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.4. Pilings 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. Spread footing, 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 spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24. ~~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 foundations are designed to resist the additional flood load.~~

**Exception:** In Coastal A Zones, stem wall foundations supporting a floor system above and backfilled with soil or gravel to the underside of the floor system shall be permitted provided the foundations are designed to account for wave action, debris impact, erosion and local scour. Where soils are susceptible to erosion and local scour, stem wall foundations shall have deep footings to account for the loss of soil.

**Add new text as follows:**

**R322.3.4 Concrete slabs** Concrete slabs used as parking pads, enclosure floors, landings, decks, walkways, patios and similar uses that are located beneath or immediately adjacent to structures shall be designed and constructed in accordance with one of the following:

1. To be structurally independent of the foundation system of the structure, to not transfer flood loads to the main structure, and to be frangible and break away under flood conditions prior to base flood conditions. Reinforcing of concrete slabs, including welded wire reinforcement, shall not be used so as to minimize the potential for concrete slabs being a source of debris. Slabs shall not have turned down edges and slab thickness shall be not more than 4 inches.
2. To be self-supporting, structural slabs capable of remaining intact and functional under base flood conditions, including expected erosion and local scour, and the main structure shall be capable of resisting any added flood loads and effects of local scour due to the presence of the slabs.

**Reason:** Coastal high hazard areas (Zone V) and Coastal A Zones are portions of flood hazard areas along open shorelines where wave action will occur. Concrete slabs beneath or immediately adjacent to dwellings are affected by flooding, erosion and local scour. The presence of concrete slabs can increase damage to elevated buildings, in part by shifting such that added loads or

increased scour occurs on the building foundation. In the 2015 cycle when a similar proposal was submitted, it was noted that specifications for concrete slabs may be appropriate for Zone V. The IRC now treats Coastal A Zones, if delineated or designated, like Zone V.

This proposal helps clarify what is intended by the requirement in R322.3.3 that the area below elevated buildings shall be free of obstructions. It is based on the requirements of referenced standard ASCE 24-14, Flood Resistant Design and Construction, and best practices documented in several publications issued by the Federal Emergency Management Agency (especially Technical Bulletin 5, Free-of-Obstruction Requirements). The proposed text has two alternatives. One requires concrete slabs in coastal high hazard areas and Coastal A Zones to be frangible (means "easily broken") and to break away under flood conditions. The expectation is this will minimize the size of debris and thus minimize the likelihood of causing significant damage to structures. For many years, many local floodplain management ordinances adopted by coastal communities have used the term "frangible."

The limitation on turned-down edges is based on FEMA's post-disaster field experience that identified damage to foundations when slabs intended to breakaway have turned-down edges which inhibit the slabs from cleanly breaking away when undermined by wave scour or erosion. In Zone V and Coastal A Zones concrete slabs are not permitted to be used as structural foundation elements, thus it is not problematic to limit turned-down edges and thickness for nonstructural slabs used for the stated purposes. The proposal includes an alternative, also based on ASCE 24-14, to have slabs not intended to break away provided the slabs and the adjacent building are designed to resist flood loads.

*[note on format – renumber subsequent sections]*

**Cost Impact:** Will not increase the cost of construction

The free of obstruction requirement has been enforced by communities that participate in the National Flood Insurance Program and FEMA guidance has long advised the requirement can be satisfied by requiring concrete slabs to meet the proposed specifications.

## Report of Committee Action Hearings

**Committee Action:** **Approve as Submitted**

**Committee Reason:** The proposed language is unenforceable. In addition, there is no test to determine whether local scour is occurring or not. It is not proper to assume the worst case scenario and require this all across America.

**Assembly Action:** **None**

## Public Comments

*Public Comment 2:*

**Gregory Wilson, FEMA, representing Federal Emergency Management Agency (gregory.wilson2@fema.dhs.gov) requests Approve as Modified by this Public Comment.**

**Modify as follows:**

**322.3.4 Concrete slabs.** Concrete slabs used ~~as~~ for parking ~~pads~~, ~~enclosure~~ floors of enclosures, landings, decks, walkways, patios and similar uses that are located beneath structures, or ~~immediately adjacent to structures~~ that are located such that if undermined or displaced during base flood conditions the foundations could sustain structural damage, shall be designed and constructed in accordance with one of the following:

~~1. To be structurally independent of the foundation system of the structure, to not transfer flood loads to the main structure, and to be frangible and break away under flood conditions prior to base flood conditions. Reinforcing of concrete slabs, including welded wire reinforcement, shall not be used so as to minimize the potential for concrete slabs being a source of debris. Slabs shall not have turned down edges and slab thickness shall be not more than 4 inches.~~

~~2. To be self-supporting, structural slabs capable of remaining intact and functional under base flood conditions, including expected erosion and local scour, and the main structure shall be capable of resisting any added flood loads and effects of local scour due to the presence of the slabs.~~

1. To be structurally independent of the foundation system of the structure, to not transfer flood loads to the main structure, and to be frangible and break away under flood conditions prior to base flood conditions. Slabs shall be a maximum of 4 inches in thickness, shall not have turned-down edges, shall not contain reinforcing, shall have isolation joints at pilings and columns, and shall have control or construction joints in both directions spaced not more than 4 feet apart.
2. To be self-supporting, structural slabs capable of remaining intact and fuctional under base flood conditions, including erosion and local scour, and the main structure shall be capable of resisting any added flood loads and effects of local scour due to the presence of the slabs.

**Commenter's Reason:** The existing language applies to any and all concrete slabs regardless of location on a site. The original proposal would have narrowed it to slabs beneath buildings and "immediately adjacent" to buildings. Objections to "immediately adjacent" were raised. We considered modifying the proposal to restore the original, applying it to all slabs.

Instead, this public comment replaces it with a performance statement which would require assessment as to whether damage would result if slabs were displaced.

The existing language for concrete slabs, found at the end of Section R322.3.3, already requires consideration of scour for ALL slabs. During deliberation, opposition was expressed about including scour, and yet that was not changed. Plus, after coastal storm FEMA observes damage associated with slabs that do not take into account scour so it is reasonable to account for scour in areas with erodible soils. This proposal has two options. The first is prescriptive – slabs built as specified will break up when undermined by scour and erosion thus site-specific consideration of scour is not required. The second retains the requirement to consider erosion and local scour (removing the word "expected"), which is necessary for slabs to actually function as self-supporting slabs.

**Final Action Results**

**RB160-16** **AMPC2**

# Code Change No: RB161-16

**Original Proposal**

**Section(s): R322.3.6 (New)**

**Proponent:** Gregory Wilson (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, representing Federal Emergency Management Agency (rcquinn@earthlink.net)

**Add new text as follows:**

**R322.3.6 Stairways and ramps.** Stairways and ramps that are located below the lowest floor elevations specified in Section R322.3.2 shall comply with at least one of the following:

1. Be designed and constructed to resist flood loads and minimize transfer of flood loads to the building or structure, including foundation; or
2. Break away during design flood conditions without causing damage to the building or structure, including foundation; or
3. Be retractable, or able to be raised to or above the lowest floor elevation, provided the ability to be retracted or raised prior to the onset of flooding is not contrary to the means of egress requirements of the code.

**Reason:** Coastal high hazard areas (Zone V) and Coastal A Zones are portions of flood hazard areas along open shorelines where wave action will occur. Stairways and ramp for dwellings are affected by flooding, erosion and scour and the presence of stairways and ramps can increase damage to elevated buildings. In the 2015 cycle when a similar proposal was submitted, it was noted that specifications for stairways and ramps may be appropriate for Zone V. The IRC now treats Coastal A Zones, if delineated or designated, like Zone V.

This proposal helps clarify what is intended by the requirement in R322.3.3 that the area below elevated buildings shall be free of obstructions. It is based on the requirements of referenced standard ASCE 24-14, Flood Resistant Design and Construction and best practices documented in several publications issued by the Federal Emergency Management Agency (especially Technical Bulletin 5, Free-of-Obstruction Requirements). Post-disaster investigations reveal stairways do break away; if properly detailed, they can break away with no significant damage to the remaining building.

ASCE 24 commentary and FEMA guidance advises satisfying the requirement to resist flood-related loads can be best achieved by using railings and treads that are open to the extent allowed by code to facilitate the passage of floodwater. Massive stairs, especially masonry stairs, do not meet the requirement in R322.3.3 that the area below elevated buildings is free of obstruction (obstructions divert waves onto the foundation or adjacent buildings and can exacerbate scour). Ramps should be positioned to avoid alignment with approaching waves, which would allow floodwater to surge up the ramps perhaps even higher than the peak flood elevation, thus flowing into buildings.

Stairways and ramps must be designed to carry normal loads required by the IRC, which must be considered when evaluating the alternative to provide stairways and ramps that are designed to breakaway under flood loads.

**Cost Impact:** Will not increase the cost of construction
The requirement to avoid obstructions and to have elements below elevated buildings breakaway has been enforced by communities that participate in the NFIP, whether by enforcement of the IRC or local floodplain management regulations. FEMA guidance has long advised the requirement can be satisfied by requiring stairways and ramps to meet the proposed specifications.

**Report of Committee Action Hearings**

**Committee Action:** **Approved as Modified**

**Modify as follows:**

**R322.3.6 Stairways and ramps.** Stairways and ramps that are located below the lowest floor elevations specified in Section R322.3.2 shall comply with at least one of the following:

1. Be designed and constructed with open or partially open risers and railings to allow the free passage of floodwater and waves under the building and structure and to resist flood loads and minimize transfer of flood loads to the building or structure, including foundation; or

2. Break away during design flood conditions without causing damage to the building or structure, including foundation; or
3. Be retractable, or able to be raised to or above the lowest floor elevation, provided the ability to be retracted or raised prior to the onset of flooding is not contrary to the means of egress requirements of the code.

**Committee Reason:** In the modification, Section R322.3.6 Item 1 went from language that is wide open and vague to something that is concrete, which is very helpful in the code. The proposal adds needed clarity.

**Assembly Action:** **None**

**Public Comments**

*Public Comment 1:*

**Gary Ehrlich, National Association of Home Builders, representing National Association of Home Builders (gehrlich@nahb.org) requests Approve as Modified by this Public Comment.**

**Further modify as follows:**

**R322.3.6 Stairways and ramps.** Stairways and ramps that are located below the lowest floor elevations specified in Section R322.3.2 shall comply with at least one of the following:

1. Be designed and constructed with open or partially open risers and ~~railings to allow the free passage of floodwater and waves under the building and structure and to resist flood loads and minimize transfer of flood loads to the building or structure, including foundation~~ guards; or
2. ~~Break~~ Stairways and ramps not part of a required means of egress shall be designed and constructed to break away during design flood conditions without causing damage to the building or structure, including foundation; or
3. Be retractable, or able to be raised to or above the lowest floor elevation, provided the ability to be retracted or raised prior to the onset of flooding is not contrary to the means of egress requirements of the code; or
4. Be designed and constructed to resist flood loads and minimize transfer of flood loads to the building or structure, including foundation.

Areas below stairways and ramps shall not be enclosed with walls below the design flood elevation, unless such walls are constructed in accordance with Section R322.3.4.

**Commenter's Reason:** The purpose of this public comment is to revise and expand the guidance on stairways and ramps added by this proposal. The original proposal brings over language from ASCE 24-14 into the IRC. However, the ASCE 24 provisions contains two significant flaws. First, the ASCE 24 provisions are written in performance language, whereas the IRC is intended as a prescriptive code. Second, the provisions fall short in bringing forward all of the guidance and recommendations on stairways and ramps available in FEMA TB-5.

NAHB agrees with the concept of constructing stairs with open (or partially open) treads and open guards, as recommended in FEMA TB-5, as one option for dealing with access to and egress from a building in Zone V. While doing so may result in additional costs if the stair needs to be extended to meet the 4" tread height limit, nonetheless open treads and guards are probably the most cost-effective solution for stairs and ramps. The proposal as modified by the committee is amended to separate the prescriptive specification from performance language, introduce the performance language as its own Option #4, and remove commentary language. Code terminology is also corrected ("guards" instead of "railings").

NAHB members building in coastal regions (including Zone V) have expressed concern about ASCE 24 and the IRC and endorsing the construction of a breakaway stair that also acts as the means of egress from the dwelling. Such a stair could potentially fail in a non-flood event, or even in a flood event before occupants have evacuated, presenting a significant life safety issue. FEMA TB-5 hints that breakaway stairs should not be constructed where such stairs would be part of a means of egress. Language similar to that used in R311 (see Sections R311.7.10.2 and R311.7.12 is adapted to modify Option #2 to clarify the point.

Significant damage has occurred to stairs where solid walls extended from the bottom of stair/stringer down to grade. Technically, this would be considered a violation of the "free-of-obstruction" rule under the NFIP, as such construction would not allow the free passage of floodwater and waves under the building and stair. Such enclosures under stairs and ramps are generally discouraged and negatively affect flood insurance rates, but if desired the requirements in IRC Section R322.3.4 for open lattice or breakaway walls must be followed for such construction. A provision is added to clarify this requirement, and would apply regardless of which option or options are selected from the numbered list above.

**Final Action Results**

**RB161-16** **AMPC1**

# Code Change No: RB162-16

**Original Proposal**

**Section: R322.3.6 (New)**

**Proponent:** Gregory Wilson (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, representing Federal Emergency Management Agency (rcquinn@earthlink.net)

**Add new text as follows:**

**R322.3.6 Decks and porches.** Attached decks and porches shall meet the elevation requirements of Section R322.3.2 and shall either meet the foundation requirements of this section or shall be cantilevered from or knee braced to the building or structure. Self-supporting decks and porches that are below the elevation required in Section R322.3.2 shall not be enclosed by solid, rigid walls, including walls designed to break away. Self-supporting decks and porches shall be designed and constructed to remain in place during base flood conditions or shall be frangible and break away under base flood conditions.

**Reason:** Coastal high hazard areas (Zone V) and Coastal A Zones are portions of flood hazard areas along open shorelines where wave action will occur. Decks and porches attached to or adjacent to dwellings are affected by flooding, erosion and scour. The presence of decks and porches can increase damage to elevated buildings unless they are constructed in ways intended to minimize damage. In the 2015 cycle when a similar proposal was submitted, it was noted that specifications for decks and porches may be appropriate for Zone V. The IRC now treats Coastal A Zones, if delineated or designated, like Zone V.

This proposal clarifies how decks and porches are treated and is based on the requirements of referenced standard ASCE 24-14, Flood Resistant Design and Construction and best practices documented in several publications issued by the Federal Emergency Management Agency (especially Technical Bulletin 5, Free-of-Obstruction Requirements). Attached decks must be at or above the same elevation as dwellings because they are, in effect, extensions of the dwellings. Also, if attached and lower than the elevation of a dwelling, a deck or porch would be an obstruction and thus not permitted by the free-of-obstruction requirement in R322.3.3.

Self-supporting decks and porches are separate structures. If permitted below the elevation required for dwellings, they must not be enclosed by walls because decks enclosed with walls are buildings that must meet all requirements for buildings in flood hazard areas. Whether self-supporting decks and porches are elevated or below the require elevation, they must either be designed to resist flood loads or to break away under flood and wave conditions associated with the base flood. The term frangible means "easily broken," the expectation is this will minimize the size of debris and thus minimize the likelihood of causing significant damage to structures by the presence of water-borne debris. For many years, many local floodplain management ordinances adopted by coastal communities have used the term "frangible."

**Cost Impact:** Will not increase the cost of construction
The elevation requirement and free of obstruction requirement have been enforced by communities that participate in the National Flood Insurance Program and FEMA guidance has long advised the requirement can be satisfied by requiring decks and porches to meet the proposed specifications.

**Report of Committee Action Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** This proposal gives better guidance regarding decks and porches.

**Assembly Action:** **None**

**Final Action Results**

**RB162-16** **AS**

# Code Change No: RB360-16

**Original Proposal**

**Section: AE101.1, AE101.2 (New)**

**Proponent:** Gregory Wilson, Federal Emergency Management Agency, representing Federal Emergency Management Agency (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc. (rcquinn@earthlink.net)

**Revise as follows:**

**AE101.1 General.** These provisions shall be applicable only to a *manufactured home* used as a single *dwelling unit* installed on privately owned (nonrental) lots and shall apply to the following:

1. Construction, *alteration* and repair of any foundation system that is necessary to provide for the installation of a *manufactured home* unit.
2. Construction, installation, *addition*, *alteration*, repair or maintenance of the building service *equipment* that is necessary for connecting *manufactured homes* to water, fuel, or power supplies and sewage systems.
3. *Alterations*, *additions* or repairs to existing *manufactured homes*. The construction, *alteration*, moving, demolition, repair and use of accessory buildings and structures, and their building service *equipment*, shall comply with the requirements of the codes adopted by this *jurisdiction*.

These provisions shall not be applicable to the design and construction of *manufactured home*s and shall not be deemed to authorize either modifications or *additions* to *manufactured homes* where otherwise prohibited.

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

**Add new text as follows:**

**AE101.2 Flood hazard areas.** New and replacement *manufactured home*s to be installed in flood hazard areas as established in Table R301.2(1) of the *International Residential Code* shall also meet the applicable requirements of Section R322 of the *International Residential Code*.

**Reason:** This proposal is editorial. The text current in an exception should be a separate section. It is not good code writing to have an exception written to add to the basic requirement.

**Cost Impact:** Will not increase the cost of construction
Proposal only clarifies and puts the provision in proper format.

**Report of Committee Action Hearings**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The proposal makes a useful editorial clarification.

**Assembly Action:** **None**

**Final Action Results**

**RB360-16** **AS**