**Roofing Technical Advisory Committee – Comment**

**6th Edition (2017) Florida Building Code, Existing Building**

S/R – Comment #1

**6th Edition (2017) FBC, Existing Building Section 707.3.2**

**Proposed revision**

**Submitted by: Lisa Pate, FRSA**

**706.3.2 Roof diaphragms resisting wind loads in high-wind regions.**
Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building and where reroofing is a substantial improvement (see definition Chapter 2, section 202 General Definition, B) located where the ultimate design wind speed, V*ult*, is greater than 115 mph, as defined in Section 1609 (the HVHZ shall comply with Section 1620) of the *Florida Building Code, Building*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the *Florida Building Code, Building*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the *Florida Building Code, Building*.

\* new language

**[B] 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:

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 ensure safe living conditions; or

2. Any *alteration*of a historic structure, provided that the *alteration*will not preclude the structure’s continued designation as a historic structure.

**Reason:** This section as written requires a simple roof covering replacement to be the trigger mechanism for a complete structural evaluation and possible retrofitting of the roof diaphragm. The burden that this places on the building owner is substantial. Many buildings that were built in compliance with the building code at the time of their construction, cannot meet these requirements without complete replacement of the roof deck (diaphragm). In many cases, it would be more economical to demolished an otherwise perfectly functional building. On many other buildings, the cost for retrofitting the deck will be substantially more expensive than the roof covering replacement. Many building owners may decide to forgo replacement due to these extensive costs. In other cases, they may decide to add an additional roof covering over their existing roof covering (recover), which will eliminate the opportunity to inspect and repair any type of deficiencies with the deck.

A thorough review of the process of adopting this section shows that the substantial financial ramifications of its implementation have never been evaluated.

This suggested change will limit the application of this section to buildings undergoing an alteration (roof covering replacement) that is considered a "substantial improvement" based on the value of the structure.

**See also Attachment #1**

**TAC Recommendation:** Commissioner Boyer entered a motion for a negative roll call for comment #1. Ms. Warseck seconded the motion. The vote was 2 in favor and 7 opposed outcome is NAR.

**Commission Action:** Commissioner Schock entered a motion for purpose of a negative roll call. Commissioner Compton seconded the motion. The vote was 1 in favor and 24 against with outcome of NAR.

S/R – Comment #2

**6th Edition (2017) FBC, Existing Building Section 707.3.2**

**Proposed revision**

**Submitted by: Lisa Pate, FRSA**

**707.3.2 Roof diaphragms resisting wind loads in high-wind regions.**

Where ~~roofing materials are removed from~~ more than ~~50~~ 25 percent of the roof diaphragm ~~or section~~ ~~of~~ is replaced or repaired on a building located where the ultimate design wind speed, V*ult*, is greater than 115 mph, as defined in Section 1609 (the HVHZ shall comply with Section 1620) of the *Florida Building Code, Building*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the *Florida Building Code, Building*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the *Florida Building Code, Building*.

**Reason:** This section as written requires a simple roof covering replacement to be the trigger mechanism for a complete structural evaluation and possible retrofitting of the roof diaphragm. The burden that this places on the building owner is substantial. Many buildings that were built in compliance with the building code at the time of their construction, cannot meet these requirements without complete replacement of the roof deck (diaphragm). In many cases, it would be more economical to demolished an otherwise perfectly functional building. On many other buildings, the cost for retrofitting the deck will be substantially more expensive than the roof covering replacement. Many building owners may decide to forgo replacement due to these extensive costs. In other cases, they may decide to add an additional roof covering over their existing roof covering (recover), which will eliminate the opportunity to inspect and repair any type of deficiencies with the deck.

A thorough review of the process of adopting this section shows that the substantial financial ramifications of its implementation have never been evaluated.

This suggested change will replace the current trigger mechanism with one more appropriate for the structural section in which it appears. It uses a similar approach to that used in section 706.1.1 which states: (Not more than 25 percent of the total roof area or roof section of any existing building or structure shall be repaired, replaced or recovered in any 12 month period unless the entire existing roofing system or roof section is replaced to conform to the requirements of this code). As with 706.1.1 it uses the repair or replacement of the diaphragm (as opposed to the roof covering replacement) as the trigger.

**See also Attachment #1**

**TAC Recommendation:** Ms. Ross entered a motion for a negative roll call for comment #2. Commissioner Boyer seconded the motion. The vote was 4 in favor and 5 opposed outcome is NAR.

**Commission Action:** Commissioner Schock entered a motion for purpose of negative roll call. Commissioner Compton seconded the motion. The vote was 2 in favor and 23 against with outcome of NAR.

R – Comment #3

**6th Edition (2017) FBC, Building**

**Proposed revision**

**Submitted by: T. Eric Stafford**

**6th Edition (2017) Florida Building Code, Building**

**Roofing Correlation Issues**

**Item 1**

**Table 1507.1.1**

**Underlayment Table**

*(table and notes 1 and 2 not shown for brevity)*

**3. Roof slopes from two units vertical in 12 units horizontal (17-percent slope), and greater**. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D 1970 installed in accordance with both the underlayment manufacturer’s and roof covering manufacturer’s installation instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed.

**Exception:**As an alternate, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane complying with ASTM D 1970, installed in accordance with the manufacturer’s instructions for the deck material, shall be permitted to be applied over all joints in the roof decking. An approved underlayment in accordance with Table 1507.1.1 for the applicable roof covering shall be applied over the entire roof over the 4-inch-wide (102 mm) membrane strips.

**Reason:** Clarification that the exception pertains to Note 3. Improves sentence structure. Similar to wording in the 5th Edition (2014) FBCB.

**TAC Recommendation:** Mr. Cone entered a motion for a negative roll call on comment #3 item #1. Commissioner Swope seconded the motion. The vote was 2 in favor and 7 opposed outcome is NAR.

**Commission Action:** Commissioner Schiffer entered a motion for the purpose of a negative roll call. Commissioner Schock seconded the motion. The vote unanimous with a vote of 0 in favor and 23 opposed with two Commissioners out of the room at the time of the vote. Commission action is NAR.

**Item 2**

**1507.2.7 Attachment.** Asphalt shingles shall have the minimum number of fasteners required by the manufacturer~~, but~~ and Section 1504.1. Asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle ~~or two fasteners per strip shingle~~ or two fasteners per individual shingle. Where the roof slope exceeds 21 units vertical in 12 units horizontal (21:12), asphalt shingles shall be installed in accordance with the manufacturer's printed installation instructions for steep-slope roof applications.

**Reason:** Corrects a typographical error on Mod 6643.

**TAC Recommendation:** Mr. Zehnal entered a motion to support Item #2 of Comment #3. Ms. Ross seconded the motion. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** See action on item 5.

**Item 3**

**1507.2.7.1 Wind resistance of asphalt shingles.** Asphalt shingles shall be classified in accordance with ASTM D 3161, ASTM D 7158 or TAS 107. Shingles classified as ASTM D 3161 Class D or ASTM D 7158 Class G are acceptable for use where Vasd is equal to or less than ~~in the~~ 100-mph ~~windzone~~. Shingles classified as ASTM D 3161 Class F, ASTM D 7158~~(2011)~~ Class H or TAS 107 are acceptable for use for ~~in~~ all wind speeds ~~zones~~. Asphalt shingle wrappers shall indicate compliance with one of the required classifications, as shown in Table 1507.2.7.1.

**Reason:** Clarification. The 100 mph limit is based on Vasd. The reference to “windzone” is deleted as we don’t have “zones” and clarifies that those classifications are permitted where the Vasd is less than 100 mph.

**TAC Recommendation:** Mr. Zehnal entered a motion to support Item #3 of Comment #3. Ms. Ross seconded the motion. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** See action on item 5.

**Item 4**

**1508.1 General.** The use of above-deck thermal insulation shall be permitted provided such insulation is covered with an *approved* roof covering and passes the tests of UL 1256 or ~~and~~ NFPA 276 when tested as an assembly.

**Reason:** Corrects a typographical error in Mod 6655. The intent is that tests are performed in accordance with UL 1256 “or” NFPA 276. This is also consistent with the base code.

**TAC Recommendation:** Mr. Zehnal entered a motion to support Item #4 of Comment #3. Ms. Ross seconded the motion. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** See action on item 5.

**Item 5**

**1510.7.2 Fire classification.** Rooftop-mounted photovoltaic systems shall have the same fire classification as required for the roof assembly ~~required~~ by Section 1505.

**Reason:** Improves wording for clarification.

**TAC Recommendation:** Mr. Cone entered a motion to support Item #5 of Comment #3. Ms. Ross seconded the motion. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** Commissioner Schiffer entered a motion to approve comments under items 2, 3, 4 and 5. Commissioner Schock seconded the motion. The motion passed unanimously with a vote of 23 to 0 with two Commissioners out of the room at the time of the vote.

R – Comment #4

**6th Edition (2017) FBC, Residential**

**Proposed revision**

**Submitted by: T. Eric Stafford**

**6th Edition (2017) Florida Building Code, Residential**

**Roofing Correlation Issues**

**Item 1**

**Table R905.1.1**

**Underlayment Table**

*(table and notes 1 and 2 not shown for brevity)*

**3. Roof slopes from two units vertical in 12 units horizontal (17-percent slope), and greater**. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D 1970 installed in accordance with both the underlayment manufacturer’s and roof covering manufacturer’s installation instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed.

**Exception:**As an alternate, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane complying with ASTM D 1970, installed in accordance with the manufacturer’s instructions for the deck material, shall be permitted to be applied over all joints in the roof decking. An approved underlayment in accordance with Table R905.1.1 ~~1507.1.1~~ for the applicable roof covering shall be applied over the entire roof over the 4-inch-wide (102 mm) membrane strips.

**Reason:** Clarification that the exception pertains to Note 3. Improves sentence structure. Similar to wording in the 5th Edition (2014) FBCB.

**TAC Recommendation:** Mr. Zehnal entered a motion to strike “as an alternate, a” and “permitted to be” and leave the R905.1.1 in the comment. Commissioner Boyer seconded the motion as amended. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** See action on item #3.

**Item 2**

**R905.2.6.1 Wind resistance of asphalt shingles.** Asphalt shingles shall be classified in accordance with ASTM D 3161, ASTM D 7158 or TAS 107. Shingles classified as ASTM D 3161 Class D or ASTM D 7158 Class G are acceptable for use where Vasd is equal to or less than ~~in the~~ 100-mph ~~windzone~~. Shingles classified as ASTM D 3161 Class F, ASTM D 7158~~(2011)~~ Class H or TAS 107 are acceptable for use for ~~in~~ all wind speeds ~~zones~~. Asphalt shingle wrappers shall indicate compliance with one of the required classifications, as shown in Table R905.2.6.1.

**Reason:** Clarification. The 100 mph limit is based on Vasd. The reference to “windzone” is deleted as we don’t have “zones” and clarifies that those classifications are permitted where the Vasd is less than 100 mph.

**Item 3**

**R905.17.2 Fire classification**. Rooftop mounted photovoltaic systems shall have the same fire classification as required for the roof assembly ~~required~~ by Section R902.

**Reason:** Improves wording for clarification.

**TAC Recommendation:** Mr. Zehnal entered a motion to support comment on item #2 and item #3. Commissioner Boyer seconded the motion. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** Commissioner Schock entered a motion to approve the TAC recommendations of item #1 to strike “as an alternate, a” and “permitted to be” and leave the R905.1.1 in the comment approve #2 and #3 comments as submitted. Commissioner Schiffer seconded the motion. The motion passed unanimously with a vote of 24 to 0 with one Commissioner out of the room at the time of the vote.

R – Comment #5

**6th Edition (2017) Florida Building Code, Test Protocols for HVHZ**

**From:** Acebo, Jorge L. (RER) [mailto:ACEBO@miamidade.gov]
**Sent:** Monday, February 13, 2017 12:50 PM
**To:** Madani, Mo; Bigelow, Joe
**Cc:** Fischer, Mike (MFischer@kellencompany.com)
**Subject:** FW: 6th Edition (2017) Update to the Florida Building Code (FBC) Rule Development Workshop - Accepting Written Comments
**Importance:** High

Gentlemen,

Attached please find Public Comments submitted on behalf of Miami-Dade and ARMA for the Rule Development Workshop identified below. These are editorial changes to address unintended omissions/changes as previously discussed. Please let me know if these two changes are appropriately formatted. Thank you for your assistance.

Regards,

**Jorge L. Acebo,** Roofing Product Control Examiner
**Miami-Dade County Department of Regulatory and Economic Resources**
786-315-2588 Office

Florida Building Commission

Submitted on behalf of ARMA and Miami-Dade

 **Proposed Modification: TAS 111(C)**

Section 3.1 ~~- “; and/or the RCI Glossary of Terms”~~

Reason: During this cycle, the term and the reference was deleted because it is not a consensus standard and not relevant content for the FBC. While the RCI materials provide an excellent resource material, they are not appropriate for code reference.

 **Proposed Modification: TAS 114 Appendix J**

7.3 A 2:1 margin of safety shall be applied to the passing uplift pressure prior to inclusion in the system manufacturer’s Product Approval.

Reason: This section was not modified during the original proposal phase, but an editorial error during the public comment phase resulted in an inadvertent striking of the requirement. It was not the intent of the proponents to remove the safety factor.

**TAC Recommendation:**  Mr. Cone entered a motion to support the comment. Mr. Zehnal seconded the motion. The motion passed unanimously with a vote of 9 to 0.

**Commission Action:** Commissioner Swope entered a motion to approve the TAC recommendation of approval of this comment. Commissioner Boyer seconded the motion. The motion passed unanimously with a vote of 24 to 0 with one Commissioner out of the room at the time of the vote.

**R – Comment #6**

**6th Edition (2017) FBC, Existing Building Section 403.8**

**Proposed revision**

**Submitted by: T. Eric Stafford, IBHS**

**403.8 Roof diaphragms resisting wind loads in high-wind regions.** Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design wind speed is greater than 115 mph (51 m/s) in accordance with Figure 1609.3(1) of the *Florida Building Code, Building* ~~or in a special wind region~~ as defined in Section 1609 (the HVHZ shall comply with Section 1620) of the *Florida Building Code, Building*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to wall connections shall be evaluated ~~by a registered design professional~~ for the wind loads specified in Section 1609 of the *Florida Building Code, Building*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609 of the *Florida Building Code, Building*.

**Exceptions:**

1. This section does not apply to buildings permitted subject to the *Florida Building Code*.
2. This section does not apply to buildings permitted subject to the 1991 *Standard Building Code*, or later edition, or designed to the wind loading requirements of the ASCE 7-88 or later editions, where an evaluation is performed by a registered design professional to confirm the roof diaphragm, connections of the roof diaphragm to roof framing members, and roof-to-wall connections are in compliance with the wind loading requirements of either of these standards or later editions.
3. Buildings with steel or concrete moment resisting frames shall only be required to have the roof diaphragm panels and diaphragm connections to framing members evaluated for wind uplift.
4. This section does not apply to site built single family dwellings. Site-built single-family dwellings shall comply with Sections 706.7 and 706.8.
5. This section does not apply to buildings permitted within the HVHZ after January 1, 1994 subject to the 1994 *South Florida Building Code*, or later editions, or where the building’s wind design is based on the wind loading requirements of ASCE 7-88 or later editions.

**Reason:** Same as the reason statement submitted regarding Section 707.3.2 Option 2. This proposal revises the section in the prescriptive compliance path that contains the same requirements as Section 707.3.2 in the work area compliance path.

**Commission Action:** Commissioner Gross entered a motion to approve 403.8 with modification removing “by registered design professionals”. Commission Schock seconded the motion. The motion passed unanimously with a vote of 25 to 0.

**6th Edition (2017) FBC, Existing Building Section 707.3.2**

**Proposed revision**

**Submitted by: T. Eric Stafford, IBHS**

**707.3.2 Roof diaphragms resisting wind loads in high-wind regions.**
Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, V*ult*, is greater than 115 mph, as defined in Section 1609 (the HVHZ shall comply with Section 1620) of the *Florida Building Code, Building*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated ~~by a registered design professional~~ for the wind loads specified in the *Florida Building Code, Building*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the *Florida Building Code, Building*.

 **Exceptions:**

1. This section does not apply to buildings permitted subject to the *Florida Building Code*.
2. This section does not apply to buildings permitted subject to the 1991 *Standard Building Code*, or later edition, or designed to the wind loading requirements of the ASCE 7-88 or later editions, where an evaluation is performed by a registered design professional to confirm the roof diaphragm, connections of the roof diaphragm to roof framing members, and roof-to-wall connections are in compliance with the wind loading requirements of either of these standards or later editions.
3. Buildings with steel or concrete moment resisting frames shall only be required to have the roof diaphragm panels and diaphragm connections to framing members evaluated for wind uplift.
4. This section does not apply to site built single family dwellings. Site-built single-family dwellings shall comply with Sections 706.7 and 706.8.
5. This section does not apply to buildings permitted within the HVHZ after January 1, 1994 subject to the 1994 *South Florida Building Code*, or later editions, or where the building’s wind design is based on the wind loading requirements of ASCE 7-88 or later editions.

**Reason:** This proposed revision resolves a conflict with the mitigation provisions for site-built single family dwellings in Section 706, clarifies who is to perform the evaluation of the structural roof components, and provides additional exceptions for buildings confirmed to be built to modern wind loading criteria.

Where more than 50% of a roof covering is removed, Section 707.3.2 requires specific roof structural elements to be retrofitted where those elements are not capable of resisting at least 75% of the wind loads specified in the FBCB. There is concern that owners will put off needed re-roofing and roof repairs due to the costs associated with the evaluation and retrofitting required in this section. The proposed revisions provide reasonable exceptions to this section while still maintaining the required retrofits for the most vulnerable buildings.

New language is added clarifying that the evaluation of the roof diaphragm, it’s connections to the roof framing members, and roof-to-wall connections is to be performed by a registered design professional. It has been brought to our attention that some jurisdictions are requiring the roofing contractor to perform and verify the capacity of the specified structural roof connections. This new language clarifies that the evaluation is to be performed by a registered design professional.

Two new exceptions are added for correlation with similar requirements for site-built single-family dwellings in Section 706.7 and 706.8. Sections 706.7 and 706.8, often referred to as the mitigation provisions, requires re-nailing of the roof deck, the installation of a secondary water barrier, and the installation of roof-to-wall connections under certain circumstances. However, both Sections provide a blanket exception to these provisions for structures built and permitted to the *Florida Building Code* (any edition). The exception was the result of studies in the aftermath of the hurricanes of 2004 and 2005 which generally revealed that homes built to the FBC and designed to modern wind provisions performed well. New language in Exception 1 simply extends the same benefit to this section for commercial buildings.

New Exception 4 clarifies that Section 707.3.2 does not apply to site-built single-family buildings. While Sections 706.7 and 706.8, are specific to site-built single family dwellings, the provisions of Section 707.3.2 are more restrictive for some cases and therefore may result in a confusing regarding which provisions apply. New Exception 2 aligns with the intent of the code and clarifies it’s applicability to site-built single-family buildings.

New Exception 3 clarifies that buildings with moment resisting frames do not require an evaluation of roof-to-wall connections since these types of buildings will not have roof-to-wall connections.

Exceptions 2 and 5 essentially exempt buildings that are confirmed to be built to modern wind loading criteria. Codes and standards developed in the late 1980’s and early 1990’s (ASCE 7-88, 1994 Standard Building Code, and the 1994 South Florida Building Code) contained wind loading criteria for roof components and cladding that is consistent with current loads on roofs. Roof component and cladding loads in codes and standards prior to these codes were significantly less than current criteria. Evaluations of existing buildings can sometimes be difficult and expensive where certain components are hidden by trim, coverings, or other components. It’s reasonable to provide an exception for structures built to these codes and later editions when it can be confirmed that they were designed and built to meet these codes and standards.

**Commission Action: Commission Action:** Commissioner Swope entered a motion to approve 707.3.2 with modification removing “by registered design professionals”. Commission Boyer seconded the motion. The motion passed unanimously with a vote of 25 to 0.