TAC: Roofing

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850-487-1824

TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Building

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R11744

Date Submitted	02/05/2025	**Section**	1507.2.7.2	**Proponent**	Aaron Phillips
Chapter	15	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

11833 - coordinating mod for FBC, Building HVHZ section 11748 - coordinating mod for FBC, Residential 11745 - adds pointer in RAS 115

Summary of Modification

Add new requirements for wind resistance of asphalt hip and ridge shingles.

Rationale

Areas of roofing systems where wind flow is diverted, such as at hips and ridges, may generate larger uplift pressures, making the products installed in these areas more vulnerable to damage in windstorms. Post-storm investigations conducted by the Federal Emergency Management Agency and other stakeholders document the vulnerability of these transition areas. Although post-storm investigations do not identify specific causes for damage to hip and ridge shingles during wind events, the associated observations that products are sometimes damaged in these areas is a reason to consider improved testing or installation options to reduce the likelihood of damage. This modification adds a new requirement that hip and ridge shingles used on asphalt shingle roofs either demonstrate compliance to a third-party test that evaluates wind resistance or be installed using a prescriptive method designed to increase resistance to uplift in wind events. The prescriptive alternative recognizes common roof cements which comply with ASTM standards or other adhesives which are specified by the hip or ridge shingle manufacturer. Also, it clarifies that fasteners used to install hip and ridge shingles are to comply with the existing asphalt shingle fastener requirements. Finally, it makes an editorial change to position the reference to ASTM F1667 with the other fastener requirements instead of as a stand-alone sentence. UL 2375 is a fan-induced wind resistance test which is modified from ASTM D3161 specifically for testing hip and ridge shingles. Decks are constructed to simulate a roof ridge, and tests are conducted in two orientations (i.e., with fan-induced wind perpendicular or parallel to the ridge). Like ASTM D3161, UL 2375 is conducted at a fixed wind speed for two hours. As written, UL 2375 is performed at 60 mph. The proposal modifies the wind test speed to 110 mph to align with the Class F designation associated with ASTM D3161.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Introduces a new provision for enforcement.

Impact to building and property owners relative to cost of compliance with code

None.

Impact to industry relative to the cost of compliance with code

Neutral or increase.

Impact to small business relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improved performance of asphalt roofing systems in wind events.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improved performance of asphalt roofing systems in wind events.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Applies to hips and ridges on all asphalt shingle roofs.

Does not degrade the effectiveness of the code

Improves effectiveness of the code.

Alternate Language

2nd Comment Period

R11744-A1

Proponent Aaron Phillips **Submitted** 7/15/2025 10:28:02 PM **Attachments** No

Rationale:

This comment requests correction of the title of UL 2375, which is incorrectly shown in the original Mod. All other changes made by the original Mod are to be retained.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The comment corrects the title of a referenced standard, improving understanding of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The comment corrects the title of a referenced standard, improving understanding of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination.

Does not degrade the effectiveness of the code

Improves effectiveness of the code by correcting the title of a referenced standard.

R11744-A1Text Modification

Revise title of UL 2375 added into Chapter 35 as follows:

2375-2006 Outline of Investigation for Hip and Ridge Shingles

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R11744Text Modification

Revise as follows:

1507.2.6 Fasteners. Fasteners for asphalt shingles, including hip and ridge shingles, shall be galvanized, stainless steel, aluminum or copper roofing nails, minimum 12-gage [0.105 inch (2.67 mm)] shank with a minimum 3/8-inch-diameter (9.5 mm) head, complying with ASTM F1667, of a length to penetrate through the roofing materials and a minimum of 3/4 inch (19.1 mm) into the roof sheathing. Where the roof sheathing is less than 3/4 inch (19.1 mm) thick, the nails shall penetrate through the sheathing. ~~Fasteners shall comply with ASTM F1667.~~

Add new sections as follows:

1507.2.7.2 Wind resistance of hip and ridge shingles. Hip and ridge shingles shall comply with Section 1507.2.7.2.1 or 1507.2.7.2.2.

1507.2.7.2.1 Testing of hip and ridge shingles. Hip and ridge shingles shall be tested and classified in accordance with the wind test requirements in UL 2375 modified to use a wind speed of 110 mph (177 km/hr). Hip and ridge shingle packaging shall bear a *label* to indicate compliance with the modified version of UL 2375.

1507.2.7.2.2 Prescriptive alternative for attaching hip and ridge shingles. Prior to installing each hip or ridge shingle, two minimum 1-inch diameter spots of roof cement complying with ASTM D3019 or ASTM D4586, or other adhesive specified by the hip or ridge shingle manufacturer, shall be placed on each side of the hip or ridge. The spots shall be placed near the leading edge and fully covered by the exposed portion of the hip or ridge shingle. Each hip or ridge shingle shall be fastened in accordance with the hip or ridge shingle manufacturer's installation instructions.

Add the following new standard in Chapter 35:

UL	UL LLC 333 Pfingsten Road Northbrook, IL 60062	
2375-2006	Outline for Hip and Ridge Shingles	

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TAC: Roofing

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R11862

Date Submitted	02/07/2025	**Section**	1511.3	**Proponent**	Michael Silvers (FRSA)
Chapter	15	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

EB706.3 R908.3

Summary of Modification

Provides options to remove the upper (second) roof covering or roof system only. To preserve insulation from the lower roof system without removing it down to the roof deck. To use LWIC (Lightweight Insulating Concrete) that has been previously applied over an existing roof system.

Rationale

This modification provides the option to remove the upper (second) roof covering or roof system only, when recovering. The option to preserve insulation from the lower roof system without removing it down to the roof deck. An option to use LWIC (Lightweight Insulating Concrete) that has been previously applied over an existing roof system without removal down to the original roof deck.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact.
Impact to building and property owners relative to cost of compliance with code
No impact.
Impact to industry relative to the cost of compliance with code
No impact.
Impact to small business relative to the cost of compliance with code
No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

Alternate Language

2nd Comment Period

FR11862-A1

Proponent Aaron Phillips **Submitted** 8/19/2025 9:13:21 AM **Attachments** No

Rationale:

This comment adds an additional phrase ("or the upper roof system and original roof covering are removed") into Exception 2 of the original Mod to clearly recognize the option to remove all of the second roof system and only the membrane of the original roof system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies provisions of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies provisions of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves effectiveness by clarifying provisions.

R11862-A1Text Modification

Replace original modification with the following:

1511.3 Recovering versus replacement.

New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof covering or roof system components ~~covering is~~ are water soaked or ~~has~~ have deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
5. Where the existing roof covering is to be used for attachment for a new roof system and compliance with the securement provisions of Section 1504.1 of the *Florida Building Code, Building* cannot be met.

Exceptions:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. ~~Reserved.~~ Where two roof covering applications exist and the upper roof system or roof coverings are removed, or the upper roof system and original roof covering are removed, leaving an existing or repaired substrate that is adequate for installation of a new approved roof covering or roof system.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
4. Where the existing roof assembly includes a~~n ice barrier~~ vapor barrier or self-adhering membrane that is adhered to the roof deck, the existing ~~ice barrier~~ membrane shall be permitted to remain in place and covered with an additional layer of ~~ice barrier~~ membrane in accordance with Section 1507.

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R11862Text Modification

1511.3 Recovering versus replacement.

New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof covering or roof system components ~~covering is~~ are water soaked or ~~has~~ have deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
5. Where the existing roof covering is to be used for attachment for a new roof system and compliance with the securement provisions of Section 1504.1 of the *Florida Building Code, Building* cannot be met.

Exceptions:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. ~~Reserved.~~ Where two roof covering applications exist, and the upper roof system or roof coverings are removed leaving an existing or repaired substrate that is adequate for installation of a new approved roof covering or roof system.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
4. Where the existing roof assembly includes ~~an ice barrier~~ vapor barrier or self-adhering membrane that is adhered to the roof deck, the existing ~~ice barrier~~ membrane shall be permitted to remain in place and covered with an additional layer of ~~ice barrier~~ membrane in accordance with Section 1507.

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Mod11862_TextOfModification.pdf

TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Building

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R12038

Date Submitted	02/12/2025	**Section**	1522.2	**Proponent**	Jeanne Clarke
Chapter	15	**Affects HVHZ**	Yes	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

Summary of Modification

This section specifies that fully-ballasted systems are not allowed in the HVHZ

Rationale

Fully ballasted systems are problematic in that they can often exceed the design load of a roof, can move under wind load and may affect roof drainage systems

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
None
Impact to building and property owners relative to cost of compliance with code
None
Impact to industry relative to the cost of compliance with code
None
Impact to small business relative to the cost of compliance with code
None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Avoids over-stressing existing structure
Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Provides a reliable load-path
Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
allows other systems to be used

Does not degrade the effectiveness of the code

It removes possibility of exceeding roof design limits

Alternate Language

2nd Comment Period

Proponent Jeanne Clarke **Submitted** 8/13/2025 8:35:13 AM **Attachments** No

R12038-A1

Rationale:

Provides requirements for use of ballasted systems

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
None

Impact to building and property owners relative to cost of compliance with code
None

Impact to industry relative to the cost of compliance with code
None

Impact to small business relative to the cost of compliance with code
None

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Requires a mechanical connection for roof-mounted equipment

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Improves attachment of equipment to roof structure

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
Hybrid systems allow for use of weighted system while requiring mechanical attachment

Does not degrade the effectiveness of the code
This clarifies 'gray area' of ballasted system in HVHZ

R12038-A1Text Modification

1522.2.1 ~~Fully ballasted systems are not allowed in the High Velocity Hurricane Zone.~~

Ballasted systems shall comply with Section 1522.4.

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R12038Text Modification

1522.2.1 Fully ballasted systems are not allowed in the High Velocity Hurricane Zone.

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TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Building

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R12074

Date Submitted	02/13/2025	**Section**	1507	**Proponent**	T Stafford
Chapter	15	**Affects HVHZ**	No	**Attachments**	**Yes**
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

Summary of Modification

Secures the edge of underlayment by requiring drip edge to be installed at eaves and rakes for all steep slope roof coverings and requires it to be installed over the underlayment.

Rationale

This proposal addresses underlayment securement at eave and rake locations for steep slope roof coverings as currently required for asphalt shingles. The roof underlayment methods required in FBCB are intended to provide a secondary barrier against water infiltration through the roof deck if the primary roofing material fails. Given its importance, properly securing underlayment is vital to this function. For many roof configurations, wind pressures are highest along the eave edge, particularly the eave and rake edge corners, due to the wind's interaction with the roof structure. Considering that underlayment is installed shingle fashion, inadequate securement at the eave and rake can lead to underlayment failure at these locations during high-wind events, potentially causing a cascading failure across other rows of underlayment and compromise the entire underlayment system. This proposal addresses this vulnerability by specifically requiring the use of a drip edge mechanically fastened at 4 inches on center to secure the edges of the underlayment. A separate proposal is being submitted by ARMA to change the drip edge fastener spacing for asphalt shingles from 6 inches or 12 inches on center to 4 inches on center applicable for any wind speed. This proposal will align the edge securement of other steep slope roof coverings with those being proposed for asphalt shingles by ARMA.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entities relative to enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

Minimal to no impact to building and property owners relative to the cost of compliance with the code.

Impact to industry relative to the cost of compliance with code

No impact to industry relative to the cost compliance with the code.

Impact to small business relative to the cost of compliance with code

No impact to small business relative to the cost compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal improves the water penetration resistance of roofs where the primary roof covering is damaged or is blown off.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal improves and strengthens the code by requiring mechanically fastened underlayment to be secured at eaves and rakes for all roof covering types.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Alternate Language

2nd Comment Period

R12074-A4

Proponent Michael Silvers (FRSA) **Submitted** 8/20/2025 10:10:22 AM **Attachments** No

Rationale:

The rationales are shown in red in each changed section due to multiple sections being changed in the original modification.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
None.

Impact to building and property owners relative to cost of compliance with code
None.

Impact to industry relative to the cost of compliance with code
None.

Impact to small business relative to the cost of compliance with code
No impact to small business relative to the cost compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
Yrs.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
Does not discriminate.

Does not degrade the effectiveness of the code
Does not degrade.

1st Comment Period History

R12074-A1

Proponent Kelsey Archer **Submitted** 4/16/2025 6:40:43 PM **Attachments** No

Rationale:

It is good roofing practice with self-adhered underlayments (direct to deck) to install the underlayment on top of the drip edge flange so that it is continuous to the roof edge and does not buck water against the edge of the drip edge flange. In these cases though, there needs to be some sort of buffer between the drip edge and the deck. So a stripping ply is needed first, then the drip edge over it, then the underlayment. this is a standard detail with all self-adhered underlayment manufacturers.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact.

Impact to building and property owners relative to cost of compliance with code
No impact.

Impact to industry relative to the cost of compliance with code
No impact.

Impact to small business relative to the cost of compliance with code
No impact to small business relative to the cost compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This mod comment has a connection with health safety and welfare of general public.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This mod comment strengthens and improves the code to be more in accordance with common material/ manufacturers recommended installation instructions.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This mod comment does not discriminate against materials products methods or system of construction.

Does not degrade the effectiveness of the code

This mod does not degrade the effectiveness of the code.

R12074-A4Text Modification

Alternate Language 12074

Notes: Section titles are added for clarity. Changes to the original modification are highlighted. The original modification was already underscored. New alternative language is not underscored, language to be removed is stricken. Rational is in red shown below each changed section due to multiple sections in one modification.

1507.3 Clay and concrete tile.

1507.3.9.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be applied according to *the FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition*. ~~shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale: Tile roofs use the FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation manual for installation instructions for tile as a reference standard.

1507.4 Metal roof panels

1507.4.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.5 Metal roof shingles.

1507.5.7.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.6 Mineral-surfaced roll roofing.

1507.6.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.7 Slate shingles.

1507.7.7.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.8 Wood shingles.

1507.8.8 Drip edge ~~**Flashing.** Reserved~~ Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. ~~Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale:Self-adhering underlayment is not permitted for wood shingles or shakes. See section below for the exception.

1507.1.1.1

1. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D1970 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.

Exceptions:

1. *This method is not permitted for wood shingles or shakes.*

1507.9 Wood shakes.

1507.9.9 Drip edge ~~**Flashing.** Reserved~~ Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. ~~Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale: Self-adhering underlayment is not permitted for wood shingles or shakes. See section below for the exception.

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R12074-A4Text Modification

1507.1.1.1

1. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D1970 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.

Exceptions:

1. *This method is not permitted for wood shingles or shakes.*

1507.10 Built-up roofs.

No Change was proposed in original modification. Metal flanges are imbedded between layers. See Modified bitumen.

1507.11 Modified bitumen roofing.

~~**1507.11.3 Drip edge.** Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale:No Change Needed. Metal flanges are imbedded between layers. *See Built-up roofs.*

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1507.17 Photovoltaic modules/shingles.

1507.17.9 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.18 Solar photovoltaic panels and modules.

~~**1507.18.2 Drip edge.** Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale: Not Needed. Photovoltaic panels and modules do not have drip edge.

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R12074-A1Text Modification

For all section changes:

1507.3.9.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment or an approved stripping ply. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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Mod12074_A1_TextOfModification.pdf

R12074Text Modification

1507.3.9.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.4.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.5.7.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.6.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.7.7.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.8.8 Drip edge ~~Flashing~~. ~~Reserved~~ Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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1507.9.9 Drip edge ~~Flashing~~. ~~Reserved~~ Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.11.3 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.17.9 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^1/_2$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment

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R12074Text Modification

complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

1507.18.2 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Existing Building

5

R11861

Date Submitted	02/07/2025	**Section**	706.3	**Proponent**	Michael Silvers (FRSA)
Chapter	7	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

1511.3, R908.3

Summary of Modification

Provides options to remove the upper (second) roof covering or roof system only. To preserve insulation from the lower roof system without removing it down to the roof deck. To use LWIC (Lightweight Insulating Concrete) that has been previously applied over an existing roof system

Rationale

This modification provides the option to remove the upper (second) roof covering or roof system only, when recovering. The option to preserve insulation from the lower roof system without removing it down to the roof deck. An option to use LWIC (Lightweight Insulating Concrete) that has been previously applied over an existing roof system without removal down to the original roof deck.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact.
Impact to building and property owners relative to cost of compliance with code
No impact
Impact to industry relative to the cost of compliance with code
No impact
Impact to small business relative to the cost of compliance with code
No impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

Alternate Language

2nd Comment Period

FR11861-A1

Proponent Aaron Phillips **Submitted** 8/19/2025 9:15:34 AM **Attachments** No

Rationale:

This comment adds an additional phrase ("or the upper roof system and original roof covering are removed") into Exception 3 of the original Mod to clearly recognize the option to remove all of the second roof system and only the membrane of the original roof system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

No impact

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies provisions of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies provisions of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination.

Does not degrade the effectiveness of the code

Improves effectiveness by clarifying provisions.

R11861-A1Text Modification

Replace original modification with the following:

706.3 Recovering versus replacement.

New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof covering or roof system components ~~covering is~~ are water soaked or ~~has~~ have deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
5. Where the existing roof covering is to be used for attachment for a new roof system and compliance with the securement provisions of Section 1504.1 of the *Florida Building Code, Building* cannot be met.

   Exceptions:

   1. Buildings and structures located within the High-Velocity Hurricane Zone shall comply with the provisions of Sections 1512 through 1525 of the *Florida Building Code, Building*.
   2. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
   3. ~~Reserved.~~ Where two roof covering applications exist and the upper roof system or roof coverings is removed, or the upper roof system and original roof covering are removed, leaving an existing or repaired substrate that is adequate for installation of a new approved roof covering or roof system.
   4. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
   5. ~~Roof Coating. Application of elastomeric and or maintenance coating systems over existing asphalt shingles shall be in accordance with the shingle manufacturer's approved installation instructions~~.

      Where the existing roof assembly includes a vapor barrier or self-adhering membrane that is adhered to the roof deck, the existing membrane shall be permitted to remain in place and covered with an additional layer of membrane in accordance with Sections 1507 or R905.

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R11861Text Modification

706.3 Recovering versus replacement.

New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof covering or roof system components ~~covering is~~ are water soaked or ~~has~~ have deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
5. Where the existing roof covering is to be used for attachment for a new roof system and compliance with the securement provisions of Section 1504.1 of the *Florida Building Code, Building* cannot be met.

Exceptions:

1. Buildings and structures located within the High-Velocity Hurricane Zone shall comply with the provisions of Sections 1512 through 1525 of the *Florida Building Code, Building*.
2. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
3. ~~Reserved.~~ Where two roof covering applications exist, and the upper roof system or roof coverings are removed leaving an existing or repaired substrate that is adequate for installation of a new approved roof covering or roof system.
4. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
5. ~~Roof Coating. Application of elastomeric and or maintenance coating systems over existing asphalt shingles shall be in accordance with the shingle manufacturer's approved installation instructions~~.

Where the existing roof assembly includes a vapor barrier or self-adhering membrane that is adhered to the roof deck, the existing membrane shall be permitted to remain in place and covered with an additional layer of membrane in accordance with Sections 1507 or R905.

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Mod11861_TextOfModification.pdf

TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Residential

6

R11748

Date Submitted	02/05/2025	**Section**	905.2.5	**Proponent**	Aaron Phillips
Chapter	9	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

11744 - coordinating mod for FBC, Building 11833 - coordinating mod for FBC, Building HVHZ section 11745 - adds pointer in RAS 115

Summary of Modification

Add new requirements for wind resistance of asphalt hip and ridge shingles.

Rationale

Areas of roofing systems where wind flow is diverted, such as at hips and ridges, may generate larger uplift pressures, making the products installed in these areas more vulnerable to damage in windstorms. Post-storm investigations conducted by the Federal Emergency Management Agency and other stakeholders document the vulnerability of these transition areas. Although post-storm investigations do not identify specific causes for damage to hip and ridge shingles during wind events, the associated observations that products are sometimes damaged in these areas is a reason to consider improved testing or installation options to reduce the likelihood of damage. This modification adds a new requirement that hip and ridge shingles used on asphalt shingle roofs either demonstrate compliance to a third-party test that evaluates wind resistance or be installed using a prescriptive method designed to increase resistance to uplift in wind events. The prescriptive alternative recognizes common roof cements which comply with ASTM standards or other adhesives which are specified by the hip or ridge shingle manufacturer. Also, it clarifies that fasteners used to install hip and ridge shingles are to comply with the existing asphalt shingle fastener requirements. UL 2375 is a fan-induced wind resistance test which is modified from ASTM D3161 specifically for testing hip and ridge shingles. Decks are constructed to simulate a roof ridge, and tests are conducted in two orientations (i.e., with fan-induced wind perpendicular or parallel to the ridge). Like ASTM D3161, UL 2375 is conducted at a fixed wind speed for two hours. As written, UL 2375 is performed at 60 mph. The proposal modifies the wind test speed to 110 mph to align with the Class F designation associated with ASTM D3161.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

Introduces a new provision for enforcement.

Impact to building and property owners relative to cost of compliance with code

None.

Impact to industry relative to the cost of compliance with code

Neutral or increase.

Impact to small business relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Improved performance of asphalt roofing systems in wind events.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Improved performance of asphalt roofing systems in wind events.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Applies to hip and ridges on all asphalt shingle roofs.

Does not degrade the effectiveness of the code

Improves effectiveness of the code.

Alternate Language

2nd Comment Period

Proponent Aaron Phillips **Submitted** 7/15/2025 10:22:50 PM **Attachments** No

R11748-A1

Rationale:

This comment requests correction of the title of UL 2375, which is incorrectly shown in the original Mod. All other changes made by the original Mod are to be retained.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

None.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The comment corrects the title of a referenced standard, improving understanding of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The comment corrects the title of a referenced standard, improving understanding of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination.

Does not degrade the effectiveness of the code

Improves effectiveness of the code by correcting the title of a referenced standard.

R11748-A1Text Modification

Revise title of UL 2375 added into Chapter 46 as follows:

2375-2006 Outline of Investigation for Hip and Ridge Shingles

Page: 1

Mod11748_A1_TextOfModification.pdf

R11748Text Modification

Revise as follows:

R905.2.5 Fasteners. Fasteners for asphalt shingles, including hip and ridge shingles, shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12-gage [0.105 inch (3 mm)] shank with a minimum 3/8-inch-diameter (9.5 mm) head, complying with ASTM F1667, of a length to penetrate through the roofing materials and not less than 3/4 inch (19.1 mm) into the roof sheathing. Where the roof sheathing is less than 3/4 inch (19.1 mm) thick, the fasteners shall penetrate through the sheathing.

Exception: If the architectural appearance is to be preserved from below, an alternate method of attachment complying with the wind load requirements of Chapter 16 of the *Florida Building Code, Building* may be proposed unless otherwise addressed in Chapter 9. The alternative attachment shall be prepared, signed and sealed by a Florida-registered architect or a Florida-registered engineer, which architect or engineer shall be proficient in structural design.

Add new sections as follows:

R905.2.6.2 Wind resistance of hip and ridge shingles. Hip and ridge shingles shall comply with Section R905.2.6.2.1 or R905.2.6.2.2.

R905.2.6.2.1 Testing of hip and ridge shingles. Hip and ridge shingles shall be tested and classified in accordance with the wind test requirements in UL 2375 modified to use a wind speed of 110 mph (177 km/hr). Hip and ridge shingle packaging shall bear a *label* to indicate compliance with the modified version of UL 2375.

R905.2.6.2.2 Prescriptive alternative for attaching hip and ridge shingles. Prior to installing each hip or ridge shingle, two minimum 1-inch diameter spots of roof cement complying with ASTM D3019 or ASTM D4586, or other adhesive specified by the hip or ridge shingle manufacturer, shall be placed on each side of the hip or ridge. The spots shall be placed near the leading edge and fully covered by the exposed portion of the hip or ridge shingle. Each hip or ridge shingle shall be fastened in accordance with the hip or ridge shingle manufacturer's installation instructions.

Add the following new standard in Chapter 46:

UL	UL LLC 333 Pfingsten Road Northbrook, IL 60062	
2375-2006	Outline for Hip and Ridge Shingles	

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Mod11748_TextOfModification.pdf

TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Residential

7

R11830

Date Submitted	02/07/2025	**Section**	905.17.5	**Proponent**	Michael Silvers (FRSA)
Chapter	9	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

1503.2, 1503.2.1, 1507.3.9, 1507.4.6, 1507.5.7, 1507.6.6, 1507.7.1, 1507.8.8, 1507.9.9, 1507.10.4, 1507.11.3, 1507.12.4, 1507.16.2, 1507.17.9, 1507.18.2, R903.2, R903.2.1, R905.4.6.1, R905.5.6, R905.6.6.1, R905.7.6.1, R905.8.8.1, R905.9.4, R905.11.4, R905.15.4 and R905.16.8

Summary of Modification

This is one of 27 changes or additions to the roofing sections to address flashing. They will incorporate the many types of flashing and where they are required to be located. They will also add a flashing section to any roof covering type where one doesn't currently exist.

Rationale

The current code language addressing flashing can be confusing, conflicting, misleading and often lacking or nonexistent.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact.
Impact to building and property owners relative to cost of compliance with code
No impact.
Impact to industry relative to the cost of compliance with code
No impact.
Impact to small business relative to the cost of compliance with code
No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

Alternate Language

2nd Comment Period

Proponent Michael Silvers (FRSA) **Submitted** 8/18/2025 10:44:23 AM **Attachments** No

R11830-A1

Rationale:

This photovoltaic module/shingle language was improperly included in this modification. Flashing for photovoltaic panels and modules rely on the roof covering for proper protection from water intrusion.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

R11830-A1Text Modification

R905.17.4 Photovoltaic panels and modules.

R905.17.5 Flashing

Flashing shall comply with this Chapter and the roof covering ~~photovoltaic module/shingle~~ manufacturer's installation instructions.

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R11830Text Modification

R905.17.4 Photovoltaic panels and modules.

R905.17.5 Flashing

Flashing shall comply with this Chapter and the photovoltaic module/shingle manufacturer's installation instructions.

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TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Residential

8

R11863

Date Submitted	02/07/2025	**Section**	908.3	**Proponent**	Michael Silvers (FRSA)
Chapter	9	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

1511.3, EB706.3

Summary of Modification

Provides options to remove the upper (second) roof covering or roof system only. To preserve insulation from the lower roof system without removing it down to the roof deck. To use LWIC (Lightweight Insulating Concrete) that has been previously applied over an existing roof system.

Rationale

This modification provides the option to remove the upper (second) roof covering or roof system only, when recovering. The option to preserve insulation from the lower roof system without removing it down to the roof deck. An option to use LWIC (Lightweight Insulating Concrete) that has been previously applied over an existing roof system without removal down to the original roof deck.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact.
Impact to building and property owners relative to cost of compliance with code
No impact.
Impact to industry relative to the cost of compliance with code
No impact.
Impact to small business relative to the cost of compliance with code
No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

Alternate Language

2nd Comment Period

R11863-A1

Proponent Aaron Phillips **Submitted** 8/19/2025 9:16:39 AM **Attachments** No

Rationale:

This comments adds an additional phrase ("or the upper roof system and original roof covering are removed") into Exception 2 of the original Mod to clearly recognize the option to remove all of the second roof system and only the membrane of the original roof system.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None

Impact to building and property owners relative to cost of compliance with code

None

Impact to industry relative to the cost of compliance with code

None

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Clarifies provisions of the code.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Clarifies provisions of the code.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Improves effectiveness by clarifying provision.

R11863-A1Text Modification

Replace original modification with the following:

908.3 Recovering versus replacement.

New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof covering or roof system components ~~covering is~~ are water soaked or ~~has~~ have deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
5. Where the existing roof covering is to be used for attachment for a new roof system and compliance with the securement provisions of Section 1504.1 of the *Florida Building Code, Building* cannot be met.

Exceptions:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. ~~Reserved.~~ Where two roof covering applications exist and the upper roof system or roof coverings are removed, or the upper roof system and original roof covering are removed, leaving an existing or repaired substrate that is adequate for installation of a new approved roof covering or roof system.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
4. Reserved
5. ~~Roof Coating. Application of elastomeric and or maintenance coating systems over existing asphalt shingles shall be in accordance with the shingle manufacturer's approved installation instructions~~.

Where the existing roof assembly includes a vapor barrier or self-adhering membrane is adhered to the roof deck, the existing membrane shall be permitted to remain in place and covered with an additional layer of membrane in accordance with Section R905.

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R11863Text Modification

908.3 Recovering versus replacement.

New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occur:

1. Where the existing roof covering or roof system components ~~covering is~~ are water soaked or ~~has~~ have deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
5. Where the existing roof covering is to be used for attachment for a new roof system and compliance with the securement provisions of Section 1504.1 of the *Florida Building Code, Building* cannot be met.

Exceptions:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. ~~Reserved.~~ Where two roof covering applications exist, and the upper roof system or roof coverings are removed leaving an existing or repaired substrate that is adequate for installation of a new approved roof covering or roof system.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
4. Reserved
5. ~~Roof Coating. Application of elastomeric and or maintenance coating systems over existing asphalt shingles shall be in accordance with the shingle manufacturer's approved installation instructions~~.

Where the existing roof assembly includes a vapor barrier or self-adhering membrane is adhered to the roof deck, the existing membrane shall be permitted to remain in place and covered with an additional layer of membrane in accordance with Section R905.

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TAC: Roofing

Total Mods for **Roofing** in **Approved as Submitted : 9**

Total Mods for report: 15

Sub Code: Residential

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R12071

Date Submitted	02/13/2025	**Section**	905	**Proponent**	T Stafford
Chapter	9	**Affects HVHZ**	No	**Attachments**	**Yes**
TAC Recommendation	Approved as Submitted				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

Summary of Modification

Secures the edge of underlayment by requiring drip edge to be installed at eaves and rakes for all steep slope roof coverings and requires it to be installed over the underlayment.

Rationale

This proposal addresses underlayment securement at eave and rake locations for steep slope roof coverings as currently required for asphalt shingles. The roof underlayment methods required in FBCB are intended to provide a secondary barrier against water infiltration through the roof deck if the primary roofing material fails. Given its importance, properly securing underlayment is vital to this function. For many roof configurations, wind pressures are highest along the eave edge, particularly the eave and rake edge corners, due to the wind's interaction with the roof structure. Considering that underlayment is installed shingle fashion, inadequate securement at the eave and rake can lead to underlayment failure at these locations during high-wind events, potentially causing a cascading failure across other rows of underlayment and compromise the entire underlayment system. This proposal addresses this vulnerability by specifically requiring the use of a drip edge mechanically fastened at 4 inches on center to secure the edges of the underlayment. A separate proposal is being submitted by ARMA to change the drip edge fastener spacing for asphalt shingles from 6 inches or 12 inches on center to 4 inches on center applicable for any wind speed. This proposal will align the edge securement of other steep slope roof coverings with those being proposed for asphalt shingles by ARMA.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entities relative to enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

Minimal to no impact to building and property owners relative to the cost of compliance with the code.

Impact to industry relative to the cost of compliance with code

No impact to industry relative to the cost compliance with the code.

Impact to small business relative to the cost of compliance with code

No impact to small business relative to the cost of compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal improves the water penetration resistance of roofs where the primary roof covering is damaged or is blown off.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal improves and strengthens the code by requiring mechanically fastened underlayment to be secured at eaves and rakes for all roof covering types.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities.

Does not degrade the effectiveness of the code

This proposal does not degrade the effectiveness of the code.

Alternate Language

2nd Comment Period

Proponent Michael Silvers (FRSA) **Submitted** 8/20/2025 10:18:31 AM **Attachments** No

R12071-A1

Rationale:

The rationales are shown in red in each changed section due to multiple sections being changed in the original modification.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

None.

Impact to industry relative to the cost of compliance with code

None.

Impact to small business relative to the cost of compliance with code

No impact to small business relative to the cost of compliance with the code.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

R12071-A1Text Modification

Alternate Language 12071

Notes: Section titles are added for clarity. Changes to the original modification are highlighted. The original modification was already underscored. New alternative language is not underscored, language to be removed is stricken. Rational is in red shown below each changed section due to multiple sections in one modification.

R905.3 Clay and concrete tile.

R905.3.8.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be applied according to the *FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual, Seventh Edition.* ~~shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale: Tile roofs use the FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation manual for installation instructions as a reference standard.

R905.4 Metal roof shingles.

R905.4.6.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.5 Mineral-surfaced roll roofing.

R905.5.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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R905.6 Slate and slate-type shingles.

R905.6.6.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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R905.7 Wood shingles.

R905.7.8 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. ~~Self-adhering underlayment~~

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Mod12071_A1_TextOfModification.pdf

~~complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

-

(Rationale: Self-adhering underlayment is not permitted for wood shingles or shakes. See section below for the exception.

R905.1.1.1

1. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D1970 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.

Exceptions:

1. This method is not permitted for wood shingles or shakes.)

R905.8 Wood shakes.

R905.8.10 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. ~~Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

-

(Rationale: Self-adhering underlayment is not permitted for wood shingles or shakes. See section below for the exception.

R905.1.1.1

1. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D1970 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.

Exceptions:

1. This method is not permitted for wood shingles or shakes.)

R905.9 Built-up roofs.

(No Change proposed in original modification. Metal flanges are imbedded between layers. See Modified bitumen)

R905.10 Metal roof panels.

R905.10.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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R905.11 Modified bitumen roofing.

~~**R905.11.4 Drip edge.** Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back~~

~~on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale: No Change Needed. Metal flanges are imbedded between layers. See *Built-up roofs.*

R905.16 Building-integrated photovoltaic roofing modules/shingles.

R905.16.8 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.17 Photovoltaic systems.

~~**R905.17.5 Drip edge.** Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.~~

Rationale: Not Needed. The Photovoltaic systems section title is different than in Chapter 15 of FBC Building which is *1507.18 Solar photovoltaic panels and modules.* Since the Residential subcode has a section titled *R905.16 Building-integrated photovoltaic roofing modules/shingles* the drip edge reference in this section the change is not needed. *Section R905.17.4 Photovoltaic panels and modules* contained within this section clarifies that this section is for panels not roof coverings.

R12071Text Modification

R905.3.8.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.4.6.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.5.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.6.6.1 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.7.8 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.8.10 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.10.6 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.11.4 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

R905.16.8 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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R12071Text Modification

R905.17.5 Drip edge. Drip edge shall be installed at eaves and gables of steep slope roofs (2:12 and above). Drip edge shall be lapped a minimum of 3 inches (76 mm). Eave drip edges shall extend $^{1}/_{2}$ inch (13 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be installed over the underlayment. Self-adhering underlayment complying with ASTM D1970 is permitted to be installed over a primed drip edge flange. Drip edge shall be mechanically fastened a maximum of 4 inches (102 mm) on center.

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TAC: Roofing

Total Mods for **Roofing** in **Denied : 6**

Total Mods for report: 15

Sub Code: Building

10

R12064

Date Submitted	02/17/2025	**Section**	1504.3	**Proponent**	Robert Zabcik
Chapter	15	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Denied				
Commission Action	Pending Review				

Comments

General Comments Yes **Alternate Language Yes**

Related Modifications

12070

Summary of Modification

Testing requirements for edge and ridge metal systems for metal panel roofs over solid and closely fitted decks in hurricane-prone regions. (FBC)

Rationale

Note: Proposed new reference standard, ANSI/MCA FTS-1 2019 is attached to Mod 12070. The purpose of this proposal is to add new requirements to determination of wind load resistance values of metal roof panel assemblies over solid or closely fitted deck in hurricane-prone regions. These changes are consistent with the recommendations of FEMA P-2342. This proposal also aligns panel testing requirements in hurricane-prone regions with Section 8 of the Florida Building Code (FBC) Test Application Standard TAS-125. This is necessary because UL 580 testing ceases at Class 90 (105 psf net uplift/52.5 psf design load) and will not produce results addressing wind loads in the edge and corner zones required by ASCE 7 2016 in hurricane-prone regions. While UL 1897 does not have this limitation, it lacks the two 1-hour-long oscillating load sequences required by UL 580 and is generally considered less rigorous for that reason. Section 8 of TAS-125 addresses these issues quite well and the resulting practice is already widely used in the metal roofing industry. Finally, this proposal moves the other roofs section (Currently 1504.4.1) to 1504.4.5 as "other" is typically used at the end of a list, not the beginning. See attachment for technical explanation.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will not create any additional cost on the local entity as the product approval listings will be updated with the new requirements once the code goes into effect, but the permit submission and approval processes remain the same as current state.

Impact to building and property owners relative to cost of compliance with code

Property owners could see a very slight increase in cost if manufactures carry additional costs to the consumer. However, the attachment shows this impact to be less than one percent increase.

Impact to industry relative to the cost of compliance with code

This proposal will not impact industry other than as property owners covered above.

Impact to small business relative to the cost of compliance with code

This proposal will not impact small business other than as property owners covered above.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal increases the HSW of the people of Florida as it directly addresses the water ingress and windborne debris risks identified by FEMA and RICOWI in their Hurricane Ian investigations, as well as other storms.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal strengthens and improves the code as it directly and appropriately addresses the water ingress and windborne debris risks identified by FEMA and RICOWI in their Hurricane Ian investigations, as well as other recent storms.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against any existing materials, products or construction methods. It impacts only metal panel roofs over solid and closely fitted decks and is being proposed by a trade association representing companies which manufacture systems in that space.

Does not degrade the effectiveness of the code

This code change does not increase costs experienced by the consumer substantially, however it should result in an increase in the already long functional life span of metal roof over deck significantly. This will lower cost-of-ownership over the lifespan of the roof.

Alternate Language

2nd Comment Period

R12064-A10

Proponent Pataya Scott **Submitted** 8/24/2025 2:06:39 PM **Attachments** Yes

Rationale:

This proposed modification simplifies the original proposal by only addressing wind resistance testing of hip and ridge covers for metal roofs. Metal roofs were one of the most common roof coverings observed by the FEMA Mitigation Assessment Team (MAT) after Hurricane Ian and the most common damage was to hip and ridge covers. The two photos in the attachments are an example from the MAT report and an additional photo of the same home taken by the MAT team. The estimated wind speed at this location (115 mph) was well below the design wind speed (161 mph), yet there was still damage along the hip. Similar concerns regarding hip and ridge asphalt shingles were also raised by the MAT. As a result of the MAT observations, Modifications 11744, 11833, and 11748 addressing hip and ridge attachment of asphalt shingles were submitted by ARMA and were approved as submitted by the Roofing TAC at the June 2025 meeting. Improved hip and ridge attachment for tile roofs was adopted by the FBC around 2006. The FEMA MAT report can be found here: https://www.fema.gov/sites/default/files/documents/fema_rm-hurriance-ian-mat-report-12-2023.pdf

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity relative to enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

See original proponent's cost of compliance with the code.

Impact to industry relative to the cost of compliance with code

See original proponent's cost of compliance with the code, costs likely passed on to consumer.

Impact to small business relative to the cost of compliance with code

This proposal will not impact small business other than as property owners covered above.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes, this would help prevent roof damage.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, this would help prevent roof damage.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate against materials and will make metal roof requirements align with tile and asphalt shingles.

Does not degrade the effectiveness of the code

No, this does not degrade the effectiveness of the code.

2nd Comment Period

R12064-A8

Proponent Robert Zabcik **Submitted** 8/22/2025 10:15:50 PM **Attachments** No

Rationale:

This comment modifies Mod 12064 to reflect testimony made during the June 23rd Roofing TAC meeting as well as a general comment entered during the 45-day language period. It adds the requested clarifications regarding architectural metal roofs, removes the references to Section 8 of TAS 125 (replacing it with the specific test requirements therein) and removes the reference to hurricane-prone region. It also adds a requirement for a maximum strength reduction factor for use with LRFD provisions. The balance of the rationale statement still applies.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
The statement for the original Mod 12054 still applies.
Impact to building and property owners relative to cost of compliance with code
The statement for the original Mod 12054 still applies.
Impact to industry relative to the cost of compliance with code
The statement for the original Mod 12054 still applies.
Impact to small business relative to the cost of compliance with code
This proposal will not impact small business other than as property owners covered above.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
The statement for the original Mod 12054 still applies.
Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
The statement for the original Mod 12054 still applies.
Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities
The statement for the original Mod 12054 still applies.
Does not degrade the effectiveness of the code
The statement for the original Mod 12054 still applies.

1st Comment Period History

R12064-G1

Proponent David Eng Submitted 4/16/2025 12:14:07 PM Attachments Yes
Comment:
Virtually every metal roofing panel tested to UL 580 is also tested to UL 1897—requiring Section 8 of TAS 125 is unnecessary and does not solve the indicated problem. Requiring metal trim to be tested to ANSI/MCA FTS-1 may be a helpful development, but as written is likely to be more disruptive and costly than currently assumed. A more thoroughly developed implementation plan is likely to deliver better results.

R12064-A10Text Modification

Replace the original proposal with the following:

1504.3.1.1 Metal hip and ridge covers. *Metal roof* hip and ridge covers shall be tested for uplift resistance in accordance with ANSI/MCA FTS-1.

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Mod12064_A10_TextOfModification.pdf

R12064-A8Text Modification

1504.3 Unchanged

1504.3.1 Metal roof panel systems over deck. *Metal roof panel* systems applied to a solid or closely fitted deck shall be tested in accordance with this section. Wind resistance shall be taken as the average result from a minimum of two tests. A minimum 2 to 1 margin of safety shall apply for *allowable stress design* and a strength reduction factor of no more than 0.7 shall apply for *load and resistance factor design*. ~~*Metal roof panels* applied to a solid or closely fitted deck in non-*hurricane-prone* regions shall be tested in accordance with FM 4474, UL 580, or Part I of UL 1897. *Metal roof panels* and related hip, ridge and edge systems in *hurricane-prone* regions shall be tested in accordance with Section 1504.3.1.1 and 1504.3.1.2.~~

1504.3.1.1 Metal roof panels. *Metal roof panels* shall be tested in accordance with UL 580. Where wind resistance in excess of that provided by Class 90 is required for design, UL 1897 Part I shall be used to determine wind resistance as follows: ~~*Metal roof panels* in *hurricane-prone regions* shall be tested in accordance with UL 580 as modified by Section 8 of TAS-125.~~

1. The positive pressure applied below the assembly shall be held at 48.5 psf (240 kPa) throughout the test.
2. The negative pressure applied above the assembly shall be 63.5 psf (310 kPa) initially and increased in intervals of 15 psf (75 kPa). Each interval shall be held for at least one minute.
3. The wind resistance shall be taken as the average of the highest completed interval of no fewer than two samples subsequent to completing Phase 5 of the Class 90 test sequence of UL 580.

1504.3.1.2 Metal edge systems. Metal hip, ridge, and edge systems, excluding gutters, shall be tested for wind ~~uplift~~ resistance in accordance with ANSI/MCA FTS-1.

1504.3.2 Unchanged

1504.3.3 Unchanged

1504.3.4 Other roof systems. Built-up, modified bitumen, fully adhered or mechanically attached single-ply roof systems, and other types of membrane roof coverings shall be tested in accordance with FM 4474, UL 580 or UL 1897.

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Mod12064_A8_TextOfModification.pdf

R12064Text Modification

1504.3 Unchanged

~~**1504.3.1 Other roof systems.** Built-up, modified bitumen, fully adhered or mechanically attached single-ply roof systems, metal panel roof systems applied to a solid or closely fitted deck and other types of membrane roof coverings shall be tested in accordance with FM 4474, UL 580 or UL 1897.~~

1504.3.1 Metal roof panel systems over deck. *Metal roof panels* applied to a solid or closely fitted deck in non-*hurricane-prone* regions shall be tested in accordance with FM 4474, UL 580, or Part I of UL 1897. *Metal roof panels* and related hip, ridge and edge systems in *hurricane-prone* regions shall be tested in accordance with Section 1504.3.1.1 and 1504.3.1.2.

1504.3.1.1 Metal roof panels. *Metal roof panels* in *hurricane-prone regions* shall be tested in accordance with UL 580 as modified by Section 8 of TAS-125.

1504.3.1.2 Metal edge systems. Metal hip, ridge, and edge systems, excluding gutters, shall be tested for uplift resistance in accordance with ANSI/MCA FTS-1.

1504.3.2 Unchanged

1504.3.3 Unchanged

1504.3.4 Other roof systems. Built-up, modified bitumen, fully adhered or mechanically attached single-ply roof systems, and other types of membrane roof coverings shall be tested in accordance with FM 4474, UL 580 or UL 1897.

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15 April 2025

To the Florida Building Commission and related committees,

Thanks for the opportunity to submit comments on proposed code modifications. While I support continuing to refine code requirements to protect life and property, I have concerns with the proposed modifications 12064 and 12077.

For background, I work with over 30 metal roofing manufacturers that sell products in the state of Florida. I provide consultation on developing testing portfolios and prepare evaluation reports for Florida product approvals pursuant to method D of FL Rule 61G20-3. The manufacturers I work with range in size from small businesses with just a single machine and a single product approval to large national conglomerates with over 100 product approvals.

Having worked specifically in the metal roofing space, I would note that metal roofing is a potentially unique segment of the roofing industry. Unlike asphalt shingles or tile with just a few large national players, the build-to-order nature of metal roofing has kept the metal roofing industry in FL fragmented. While there are a few large national players, a large portion of the industry is represented by many small local businesses producing panels and trim. As a proxy for fragmentation, on https://floridabuilding.org/, there are 2 pages of product approvals for *Roofing Tiles* and 2 pages for *Asphalt Shingles*. *Metal Roofing* has 20 pages. As such, the impact of changing testing requirements on a GAF or a Ludowici with large corporate resources are markedly different than the impact on a small, local manufacturer with limited resources.

Succinctly, my concerns are: 1.) requiring section 8 of TAS 125 is unnecessary/redundant and does not solve the indicated problem. And, 2.) the proposed requirement of ANSI/MCA FTS-1 is unclear and is likely to be more burdensome than considered in the impact statements.

Less succinctly, my concerns are thus:

1. Extending the requirements of Section 8 of TAS 125 to virtually all of FL is unnecessary, does not solve the indicated problem, and would result in significant costs.
    a. <u>This change is unnecessary; testing to UL 1897 is the de facto requirement.</u> If a manufacturer publishes a product approval with only UL 580, it will be listed with that 52.5 psf as the max design pressure from the class 90. Since this pressure is not useful in much of Florida, virtually every UL 580 test run also runs UL 1897. From what I've seen, this is how all the major labs quote the test (UL 580/1897)—you would have to

explicitly ask to only do UL 580. In several hundred product approvals, I think I've seen only one with just UL 580. *The testing and product approval process functionally already requires UL 1897, because the pressure from UL 580 class 90 is generally insufficient.*

b. Section 8 of TAS 125 does not solve the indicated problem. The stated problem is that "*UL 580 testing ceases at Class 90 (105 psf net uplift/52.5 psf design load) and will not produce results addressing wind loads in the edge and corner zones required by ASCE 7 2016 in hurricane-prone regions*".
TAS 125 does NOT solve for this problem either, as it does NOT require the additional static pressures after the conclusion of Phase 5 of Class 90—
TAS 125
8.7.4 Subsequent to the completion of Phase 5 of the Class 90 test sequence, the test specimen ***may*** be subjected to additional static uplift pressures. ***Continuation of the test to increased pressure levels is the option of the manufacturer***.
(https://codes.iccsafe.org/content/FLTP2023P1/testing-application-standard-tas-125-03-standard-requirements-for-metal-roofing-systems
with emphasis added)

c. While unnecessary, if this change was to be implemented, a more targeted and effective solution would be to require UL 1897 when UL 580 is used instead of requiring TAS 125. As noted, TAS 125 does not solve the indicated problem, however requiring UL 1897 when UL 580 is used *would* present both the cyclic loading of UL 580, while also testing to failure under UL 1897 to get the higher maximum design pressures. This would reduce or nearly eliminate the cost burden described in item d.) below, as virtually every approval predicated on UL 580 also includes a max design pressure form a UL 1897 test.

d. The cost burden to retest to TAS 125 is likely to be more significant than assumed, and likely insurmountable for many small businesses. While the 8 profiles referenced in the cost impact writeup is reasonable (rib, 5V, PBR, 1" nailstrip, 1.5" clipped snaplock, 1.75" clipped snaplock, 1.5" mechanical, 2.0" mechanical), most manufacturers carry a diverse portfolio of metals (e.g. 24ga, 26ga, 29ga, 032 aluminum) on a range of substrates (e.g. 15/32" plywood, 7/16" OSB, 1x4 battens on plywood/OSB, B-deck, etc). This commonly creates at least *3-4 configuration permutations per profile*, sometimes as many as 8-10+.
Note also that section 8 of *TAS 125 requires a minimum of (3) tests*, while UL580/1897 does not. (I.e. each TAS 125 test is really 3 UL 580 uplift

tests.) *For many manufacturers, 8 profiles would result in a requirement to run 50-150+ test decks*.
In the past 12 months, I routinely have seen a single UL580/UL1897 test (TAS 125 modified or not) quoted closer to the range of $3500-$4500. This is before considering the costs of materials, shipment, and labor, and before considering the costs of engineering/validation/state fees for the product approval.
For many of the manufacturers that I work with, to retest their portfolios to TAS 125 would likely drive $250,000+ in costs, some much more. Particularly in a world with uncertainty around steel/aluminum tariffs, this would be an insurmountable regulatory burden for many small businesses that produce metal roof panels.

e. The TAS 125 retest timeframe would be infeasible. With typically 6 months from final code publication to the effective date, and accounting for processing time for product approvals, many manufacturers would need to complete dozens to hundreds of tests within just a few months. This would create significant turmoil and is likely infeasible. Many small businesses already struggle just to revise/renew their existing approvals to the new code each cycle, without any retesting required.
f. Use of the *Hurricane-Prone* region in FL is likely to create confusion and would create additional impact to enforcement of the code. From a procedural standpoint, to date, the FBC has largely not used the *Hurricane-Prone* region designation from IBC. *High Velocity Hurricane Zone* and *Wind-Borne Debris Regions* and their respective requirements are somewhat understood, but imperfectly. Adding another regional classification should be done thoughtfully where the distinction adds significant value. Inasmuch as the *Hurricane-Prone* region includes most of the populated areas of Florida, the exclusion of a handful of counties risks creating more confusion.
Few manufacturers limit their sales region to these counties—most would likely test to the *Hurricane Prone* requirement anyway, so the exclusion is of limited value. If this requirement were to be implemented, it should just apply to all of FL. Use of the *Hurricane Prone* region would require plans examiners to explicitly look for an additional item on every product approval and for manufacturers and roofers to understand and track an additional distinction and the appropriate requirements.

2. While more rigorous codes for metal trim may be beneficial/necessary, as written, the proposal for ANSI/MCA FTS-1 is unclear and overly burdensome.

a. Lack of clarity on which trim items would require testing: “hip, ridge, and edge systems, excluding gutters” creates opportunity for numerous questions of interpretation. If this were to be implemented, the code should explicitly indicate the trim items which require testing to avoid varying interpretations.
b. The cost burden is likely to be more substantial than assumed. The cost impact statement assumes 4-8 styles of edge metal and $1,500/test. Depending on which items this test will be required, I would anticipate at the top end of that range. I imagine the following items might be covered by this requirement: high side cap, ridge/hip cap, gable rake, eave drip, sidewall, endwall, gambrel (7 items).
   Virtually every manufacturer carries one or more exposed fastener version(s) that is/are direct fastened, AND one or more standing seam version(s) that is/are cleated, resulting in likely at least 14 trim styles to be tested.
   Most manufactures also carry a variety of materials (24ga, 26ga, 032 aluminum) on a variety of substrates (15/32 plywood, 7/16 OSB, B deck), which can quickly climb to 5-10 permutations per trim item, potentially now reaching 100’s of tests per manufacturer.
   This does not consider that many manufactures offer multiple styles of cleats and varying installation methods, which would further increase the number of permutations to test. Some combinations and redesigns could reduce the number of total tests, but assuming 4-8 tests per manufacturer likely significantly underestimates the testing burden.
c. The 4” and 2” face exclusions may lead to unintended consequences. FTS-1 does not apply to flashings with faces less than 4” if direct fastened, nor does it apply to other flashings with faces less than 2”. This may lead to manufacturers simply reducing their flashing face sizes to avoid the testing requirement. While these flashings may perform for wind uplift based on the smaller exposed faces, the resulting assembles may be less protected from water intrusion and otherwise result in unideal designs.
d. The testing timeframe would be infeasible. As noted for the TAS 125, this would be a challenging ask for many metal roofing manufacturers. It is also unclear if sufficient testing capacity exists for what appears to be a fairly new test with currently limited application.
e. Prescriptive options should be provided, especially for direct fastened options. It is not uncommon for roofers to have a brake and bend their own trim on-site, especially for direct fastened trim/exposed fastener panels. These shapes will realistically never be tested by the roofer, and simple prescriptive options should be provided, similar to FBC

1507.2.9/R905.2.8 for asphalt shingles. Alternatively, an external document could be created similar to FRSA-TRI with a series of prescriptive options that do not require testing.

Obviously, I have a bias as a service provider—I would personally benefit from the additional consulting work created by these proposed modifications in their current form. Further, I have an ethical obligation as an engineer to hold paramount the safety/health/welfare of the public. Those items notwithstanding, I am skeptical if the proposed modifications will result in the desired outcomes, and am concerned that the proposed implementation will result in significant cost and turmoil, especially for small businesses.

I fully support continued refinement of the code to ensure that Florida structures can sufficiently protect occupants from the destructive natural forces of a storm. However, I would ask that the Commission and the appropriate committees carefully consider the most targeted ways to reach the desired goals of these modifications, and/or consider delaying these items until a more effective and less disruptive implementation can be designed.

Thank you for the opportunity present comments on this modification. I am available for follow-up and/or further conversation at david.eng@timberlakecove.com.

Very respectfully,

David Eng, PE
Technical Director, Timberlake Cove

Figure 4-25: Typical hip cover damage on a metal panel roof (EWS: 115 mph; DWS: 161 mph) (St. James City)

Technical Background for Mod 12064 and 12070

The technical changes for this proposal fall into the following areas and are discussed in detail as shown below:

1. Addressing limitations of UL 580, which terminates at Class 90 instead of progressing to failure, and UL 1897, which does not require oscillation, by citing UL 580 as modified by Section 8 of TAS-125.
2. Introduces new test requirements for edge, hip and roof systems to address issues observed by FEMA and RICOWI in their Hurricane Ian investigations.

Item 1

Item 1 requires UL 580 testing as modified by Section 8 of TAS-125 in hurricane-prone regions in lieu of UL 580 or UL 1897 alone to determine appropriate wind load resistance values as represented by common industry practice.

UL 580 and 1897 are very different tests. UL 1897 utilizes steady-state load sequencing progressing until system failure and often takes less than 20 minutes to complete. However, UL 580 is designed to evaluate overall system integrity using a cyclic load sequence and yields a performance rating (Classification) from a fixed set of options. UL 580 involves two separate hour-long periods of cyclic loading and is generally considered the more rigorous test, but the test standard does not allow for additional testing to failure once the highest classification (Class 90) is achieved. Class 90 provides a net uplift value of 105 psf, which equates to a safe working load of 52.5 psf. With the current version of ASCE 7 Chapter 30, this result is not useful in the extreme edge or corner zones of roofs in hurricane-prone regions of the US. Section 8 of TAS-125 addresses these issues quite well by hybridizing the UL tests and the resulting practice is already widely used in the metal roofing industry.

Item 2

Item 2 also only applies within hurricane-prone regions, as defined by IBC and adds requirements for testing of ridge, hip and edge metal systems similar to those currently in place for low-slope built-up, modified bitumen and single-ply roof systems in Section 1504.5 of FBC. It is being put forth to address issues observed by the Roofing Industry Committee on Weather Issues (RICOWI) through their Windstorm Investigation Program (WIP) as well as FEMA's Hurricane Ian investigation.

The test standard cited, ANSI/MCA FTS-1-2019, was developed by MCA through the Single Ply Roofing Institute's (SPRI) ANSI-accredited canvassing process. The RICOWI and FEMA WIP field studies revealed instances where metal ridge, hip and/or edge system with cleats (See Figures 1 and 2) were torn from the perimeter of a building with a metal roof, exposing a longer leading edge of the incorporated roof panel and initiating a partial failure of the roof system, particularly near the corners and gable edges of the roof. Although the damage was very localized, it did allow water to enter the building and in cases, the edge metal became a wind-borne debris threat. Most commonly, this occurred in two situations:

- Where a multi-piece edge trim assembly incorporating cleats deformed enough to disengage from the cleat. (Figures 1a and 2a)
- Where the metal edge trim assembly was fastened to a non-metal substrate such as wood or masonry, leaving to question the appropriateness of the fastener used since it would often not be provided by the edge system manufacturer for non-metal substrates. (Figures 1b and 2b)

These tendencies were also observed by FEMA in their Mitigation Assessment Team Report for Hurricane Ian. (https://tinyurl.com/mmrstxju) Section 6.3 of this report includes Conclusion FL-10, as shown in Figure 3, recommending that FEMA support industry stakeholders in supporting code change proposals to requiring testing of hip and ridge roof coverings. (FEMA P-2342, Page 6-9)

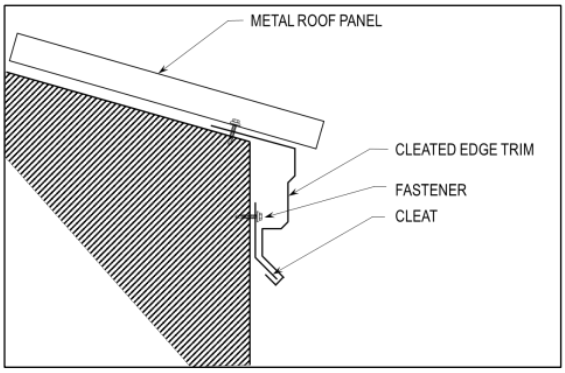

Figure 1 – Cleated Eave Edge Metal System

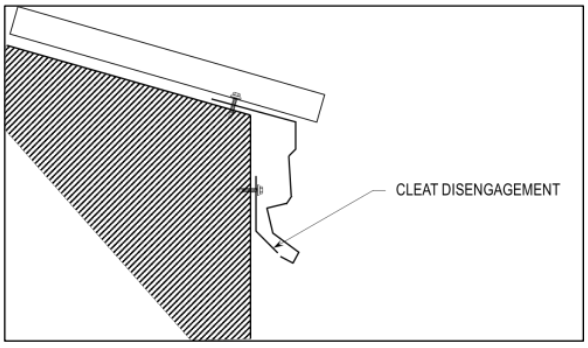

Figure 1a – Cleated Eave Edge Metal System – Cleat Disengagement

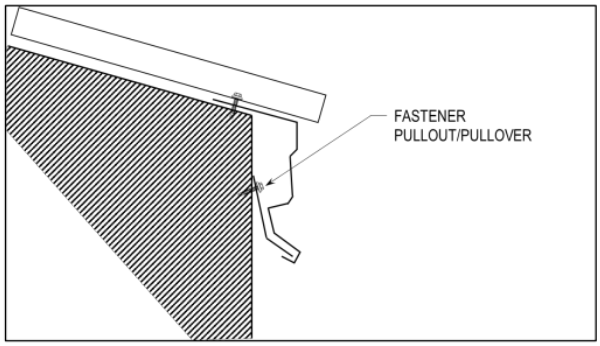

Figure 1b – Cleated Eave Edge Metal System – Fastener Failure

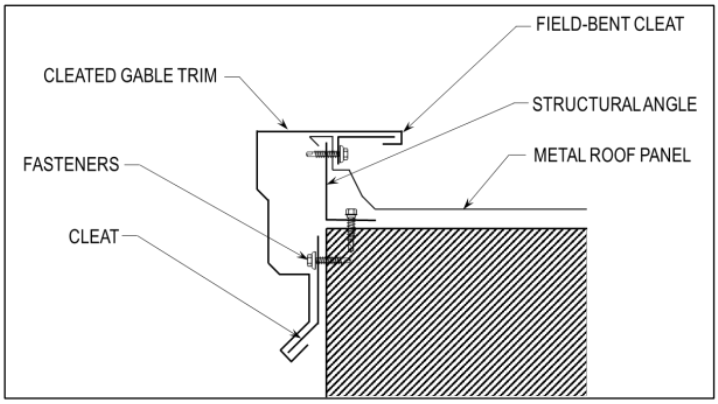

Figure 2 – Cleated Gable Edge Metal System

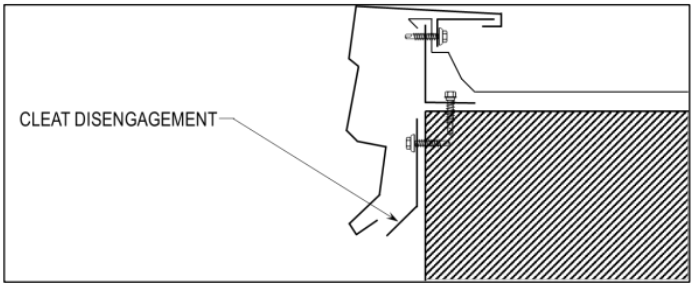

Figure 2a – Cleated Gable Edge Metal System – Cleat Disengagement

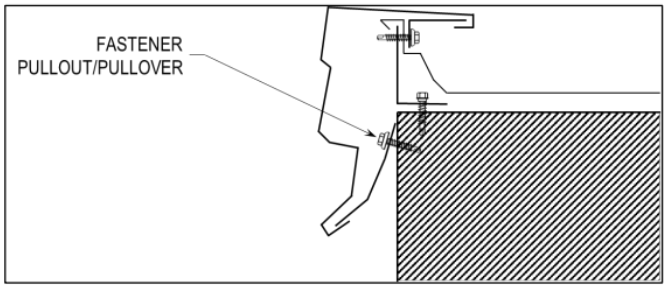

Figure 2b – Cleated Gable Edge Metal System – Fastener Failure

County to capture any lessons learned from the process as the damage assessment dashboard would be an effective tool to include in preparedness exercises and training. It would be highly beneficial to SLTTs to have access to street-level panoramic imagery and helicopter videography following an event like Hurricane Ian to support various response, recovery, mitigation, and preparedness efforts.

6.3. Wind-Related Building Codes, Standards, and Regulations Conclusions and Recommendations

Conclusion FL-10

Hip and ridge roof coverings for many residential buildings appeared to have inadequate resistance to wind loads. Failure of hip and ridge roof coverings on asphalt shingle and metal panel roof coverings was widespread and the most common roof covering failure observed by the MAT. While some asphalt shingle manufacturers test hip and ridge shingles to a modified version of ASTM D3161, the IBC, IRC, and FBC do not specifically require testing of hip and ridge asphalt shingles or metal panel roof coverings.

Recommendation FL-10a. **FEMA should consider submitting code change proposals or supporting code change proposals from other stakeholders—such as IBHS, Asphalt Roofing Manufacturers Association (ARMA), National Roofing Contractors Association (NRCA), and other aligned groups to the IBC, IRC, and the FBC—to require testing of hip and ridge roof coverings for asphalt shingle roof coverings.** The IBC, IRC, and the FBC require asphalt shingles to be tested for wind loads in accordance with ASTM D7158 or ASTM D3161. Underwriters Laboratories (UL) 2375, *Outline of Investigation for Hip and Ridge Shingles* (2016), provides a methodology to use a modified version of ASTM D3161 to test hip and ridge shingles for wind resistance. As an alternative to testing, a prescriptive solution that includes the use of an appropriate adhesive should be developed and included in the IBC, IRC, and FBC.

Recommendation FL-10b. **FEMA should consider submitting code change proposals or supporting code change proposals from other stakeholders—such as IBHS, Metal Construction Association (MCA), NRCA, and other aligned groups to the IBC, IRC, and the FBC—to require testing of hip and ridge roof coverings for metal panel roof coverings.** The ANSI/MCA FTS-1, *Test Method for Wind Load Resistance of Flashings Used with Metal Roof Systems* (2019), specifies wind load resistance testing of hip covers on metal panel roof systems in addition to other edge/flashing metal.

Recommendation FL-10c. **FEMA should consider submitting code change proposals or supporting code change proposals from other stakeholders—such as IBHS, ARMA, NRCA, and other aligned groups to the IBC, IRC, and the FBC—to require a minimum of 6 inches overlap of the roof underlayment to hip and ridges that do not have ventilation components.** Wrapping underlayment over hips and ridges that don't have ventilation components will

Figure 3 – Excerpt from FEMA P-2342

Metal Construction Association

This proposal is being brought forward by The Metal Construction Association. (MCA) Founded in 1983, the MCA is a 501(c)(6) organization promoting the use of metal in the building envelope by bringing together manufacturers and suppliers of metal products used in structures throughout the world to collaborate on marketing, education and advocacy. For more information, see the MCA website at www.metalconstruction.org.

Bibliography:

Federal Emergency Management Association (FEMA); Mitigation Assess Team Report Hurricane Ian in Florida; FEMA P-2342, December 2023; Page 6-9.

Roofing Industry Committee on Weather Issues (RICOWI); Wind Investigation Report: Hurricane Ian; September 2023; Pages 87-90.

R12064Impact Statement

Mod 12064 Cost Impact Statement Attachment

ANSI/MCA FTS-1 testing is estimated to be $1,500/test and most manufacturers carry 4-8 styles of edge metal systems different enough to test separately. Thus, total cost is estimated to be $36,000. Similarly, the TAS-125 testing required for wind resistance of the panel system is estimated as $2,500 per test over a product line of 8 profiles for $40,000. This is a total of $76,000 to carry both.

If this cost is accrued over the life of the product lines, assumed to be at least 1,000 buildings, this results in a nominal increase of at most $76 per building. A typical building of this construction is 5,000 square feet of roof area at $6/square foot and 600 lineal feet of edge/hip/ridge materials valued at $5/lineal foot, this represents a total cost of $33,000 installed. At a total cost of $30/square foot, the building would be $150,000, making the roof 22% of the total cost, which is consistent with industry estimation practices. The increase over the total building cost is 76/150,000, or 0.5%.

Note: Cost estimates are based on general experience of industry stakeholders and are not available publicly due to antitrust restrictions.

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Mod_12064_Impact_Cost Impact Statement 12064.pdf

TAC: Roofing

Total Mods for **Roofing** in **Denied : 6**

Total Mods for report: 15

Sub Code: Building

11

R12141

Date Submitted	02/14/2025	**Section**	1510.8.6	**Proponent**	Amanda Hickman
Chapter	15	**Affects HVHZ**	No	**Attachments**	**Yes**
TAC Recommendation	Denied				
Commission Action	Pending Review				

Comments

General Comments Yes **Alternate Language Yes**

Related Modifications

no

Summary of Modification

Updates Rooftop Structures for LPS

Rationale

Lightning Protection systems (LPS) are required to be installed on roofs of hospitals and nursing facilities per the FL code. However, no guidance exists in the code on how to appropriately attach LPS to the roof so that damage does not occur to the roof. This proposal was added to the 2024 IBC to address this concern even though LPS is not required anywhere per the IBC. Therefore, it is imperative that it be added to the FBC to ensure LPS WHEN installed it is done so in protection of the roof and roof components.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
Provides guidance on appropriate installation of LPS to safeguard the roof.
Impact to building and property owners relative to cost of compliance with code
None. Provides guidance on appropriate installation of LPS to safeguard the roof.
Impact to industry relative to the cost of compliance with code
None. Provides guidance on appropriate installation of LPS to safeguard the roof.
Impact to small business relative to the cost of compliance with code
None. Provides guidance on appropriate installation of LPS to safeguard the roof.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Provides guidance on appropriate installation of LPS to safeguard the roof.
Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Provides guidance on appropriate installation of LPS to safeguard the roof.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No. Provides industry standard practices for installation.

Does not degrade the effectiveness of the code

Provides guidance on appropriate installation of LPS to safeguard the roof.

Alternate Language

2nd Comment Period

R12141-A2

Proponent Michael Silvers (FRSA) **Submitted** 8/24/2025 12:17:56 PM **Attachments** No

Rationale:

The original modification would allow attachment to metal edge systems where they are thought to meet ANSI/SPRI FM 4435/ES-1 or ANSI/SPRI GT-1 even though these systems have not been tested to resist the additional wind loads that LPS would cause. Like all roof top equipment LPS should be attached in a manner to resist wind loads. Hoping for wind resistance isn't sufficient. Severe damage to roof coverings occurs when roof top equipment becomes displaced and impacts roof coverings, particularly when the equipment includes spike shaped items That can easily cause water intrusion or catastrophic roof covering failure. This is even more important when one considers that LPS appears mostly on important or essential facilities.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

None.

Impact to industry relative to the cost of compliance with code

Cost similar to other rooftop equipment to demonstrate resistance to design wind loads.

Impact to small business relative to the cost of compliance with code

None. Provides guidance on appropriate installation of LPS to safeguard the roof.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

2nd Comment Period

R12141-G6

Proponent Tyler Baumert Submitted 8/23/2025 1:50:00 PM Attachments No

Comment:

I support general comment made by Mark Morgan

1st Comment Period History

R12141-G1

Proponent Dillon Mike Submitted 4/10/2025 11:47:08 AM Attachments No

Comment:
My name is Michael Dillon, and I am with Bonded Lightning Protection. I represent the Lightning Protection Industry, as an installer in Florida. I support this because it aligns FLorida roofing construction with the national model code (IBC) and ensures LPS installations do not negatively impact roofing systems. This will help reduce LPS installer liability for damaged/leaking roofing systems and help standardize LPS practices associated with roofing systems.

1st Comment Period History

R12141-G2

Proponent Tyler Baumert Submitted 4/14/2025 2:55:40 PM Attachments No

Comment:
My name is Tyler Baumert, and I represent the Lightning Protection Coalition. I am writing to express strong support for Proposal R12141. Proposal R12141 ensures that lightning protection systems are installed without compromising roof performance or warranties. It requires the use of compatible components and compliance with guidance from manufacturers or design professionals. This proposal promotes safety, quality, and accountability—without adding cost burdens to building owners or contractors—and aligns Florida's code with national best practices already reflected in the 2024 IBC.

1st Comment Period History

R12141-G3

Proponent Bret Peifer Submitted 4/14/2025 3:49:17 PM Attachments No

Comment:
As a licensed lightning protection contractor, Bret Peifer of Mr. Lightning, I fully support the proposed addition of Section 1510.8.6 to the Florida Building Code, which provides clear guidance on the installation of lightning protection systems on metal edge systems, gutters, and roof coverings. Florida experiences some of the highest rates of lightning activity in the nation, making comprehensive protection measures essential for preserving both property and public safety. This proposal enhances clarity and ensures that lightning protection system components are installed in a manner consistent with tested and approved methods. Requiring compatibility with ANSI/SPRI/FM standards and adherence to manufacturer guidelines or design professional oversight will help prevent damage to roofing systems and maintain the integrity of waterproofing details. By outlining responsibilities when manufacturer instructions are unavailable, this change also helps ensure safe, consistent installations across the state. These provisions represent a thoughtful balance between safety, performance, and practicality, and I commend the initiative to strengthen Florida's resilience to lightning-related hazards.

1st Comment Period History

R12141-G4

Proponent harger Tim Submitted 4/15/2025 4:35:23 PM Attachments No

Comment:
My name is Tim Harger from the Lightning Protection Institute, and I support Proposal R12141. This update ensures that lightning protection systems are installed without compromising the performance or warranty of roofing systems. By requiring the use of compatible components and adherence to manufacturer or design professional guidance, this proposal promotes quality, safety, and accountability—without adding costs to building owners or contractors. It helps protect structures, reduce liability, and align Florida's code with national best practices already adopted in the 2024 IBC.

1st Comment Period History

R12141-G5

Proponent	George Po	Submitted	4/16/2025 4:05:05 PM	Attachments	Yes

Comment:

Support of R122141

R12141-A2Text Modification

Note: Delete the stricken portion of the original modification and insert underscored language

~~**1510.8.6.1 Installation on metal edge systems or gutters.**~~

~~Lightning protection system components attached to a ANSI/SPRI/ FM 4435/ES-1 or ANSI/SPRI GT-1 tested metal edge systems for gutters shall be installed with compatible brackets, fasteners or adhesives, in accordance with the metal edge systems or gutter manufacturer's installation instructions. Where the metal edge system or gutter manufacturer is unknown, installation shall be directed by a *registered design professional*.~~

-

~~**1510.8.6.2 Installation on roof coverings.**~~

~~Lightning protection system components directly attached to or through the *roof covering* shall be installed in accordance with this chapter and the *roof covering* manufacturer's installation instructions. Flashing shall be installed in accordance with the *roof assembly* manufacturer's installation instructions and section 1503.2 and 1507 where the lightning protection system installation results in a penetration through the *roof covering*. Where the *roof covering* manufacturer is unknown, installation shall be directed by a *registered design professional*.~~

1510.8.6.1 Installation on roof coverings and components.

Lightning protection system components directly attached to or through metal edge systems, gutters or *roof covering* shall be installed in accordance with this chapter, with compatible brackets, *flashing*, fasteners or adhesives, installed in accordance with the metal edge, gutter or *roof covering* manufacturer's installation instructions. Flashing shall be installed in accordance with the *roof covering* manufacturer's installation instructions and section 1503.2 and 1507 where the lightning protection system installation results in attachment to or a penetration through the *roof covering*. Lightning protection system component attachment methods shall be designed by a *registered design professional to resist design wind loads.*

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Mod12141_A2_TextOfModification.pdf

R12141Text Modification

1510.8.6 Lightning protection systems. Where provided,Lightning protection systems shall be installed in accordance with Sections 1510.8.6.1 and 1510.8.6.2.

1510.8.6.1 Installation on metal edge systems or gutters.
Lightning protection system components attached to a ANSI/SPRI/ FM 4435/ES-1 or ANSI/SPRI GT-1 tested metal edge systems for gutters shall be installed with compatible brackets, fasteners or adhesives, in accordance with the metal edge systems or gutter manufacturer's installation instructions. Where the metal edge system or gutter manufacturer is unknown, installation shall be directed by a *registered design professional*.

1510.8.6.2 Installation on roof coverings.
Lightning protection system components directly attached to or through the *roof covering* shall be installed in accordance with this chapter and the *roof covering* manufacturer's installation instructions. Flashing shall be installed in accordance with the *roof assembly* manufacturer's installation instructions and section 1503.2 and 1507 where the lightning protection system installation results in a penetration through the *roof covering*. Where the *roof covering* manufacturer is unknown, installation shall be directed by a *registered design professional.*

Page: 1

Mod12141_TextOfModification.pdf

R12141-G5General Comment

George Portfleet here, a member of the United Lightning Protection Association. I support Proposal R12141. This update ensures that lightning protection systems are installed without compromising the performance or warranty of roofing systems. This Proposal requiring the use of compatible components and adherence to manufacturer or design professional guidance, while also promoting quality, safety, and accountability without adding costs to building owners or contractors. It helps protect structures, reduce liability, and aligns Florida's code with national best practices already adopted in the 2024 IBC.

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Mod_12141_G5_General_IBC 12141.pdf

TAC: Roofing

Total Mods for **Roofing** in **Denied : 6**

Total Mods for report: 15

Sub Code: Building

12

R12070

Date Submitted	02/17/2025	**Section**	1	**Proponent**	Robert Zabcik
Chapter	35	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Denied				
Commission Action	Pending Review				

Comments

General Comments Yes **Alternate Language No**

Related Modifications

12064

Summary of Modification

Adding ANSI/MCA FTS-1 Standard to Chapter 35 (FBC)

Rationale

This proposal adds ANSI/MCA FTS-1 as a referenced standard as required for Proposal 12064. Please see rationale for proposal 12064. A current copy of the FTS-1 standard is attached to this proposal.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
See impact statement for Mod 12064.
Impact to building and property owners relative to cost of compliance with code
See impact statement and attachment for Mod 12064.
Impact to industry relative to the cost of compliance with code
See impact statement for Mod 12064.
Impact to small business relative to the cost of compliance with code
See impact statement for Mod 12064.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
See statement for Mod 12064
Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction
See statement for Mod 12064
Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

See statement for Mod 12064

Does not degrade the effectiveness of the code

See statement for Mod 12064

2nd Comment Period

R12070-G1

Proponent Robert Zabcik Submitted 8/22/2025 9:40:44 PM Attachments No

Comment:

This comment is being entered to place Mod 12070 on the public comment hearing agenda as it adds a referenced standard in support of Mod 12064, which was denied at the Roofing TAC meeting on June 23rd. An alternate language comment has been entered for Mod 12064, which again requires this referenced standard to be added to Chapter 35.

2nd Comment Period

R12070-G2

Proponent Pataya Scott Submitted 8/24/2025 2:20:30 PM Attachments No

Comment:

Requesting approved as submitted in accordance with alternate language comments R12064.

R12070Text Modification

MCA Metal Construction Association

1601 American Lane Suite 310

Schaumburg IL 60631

ANSI/MCA FTS-1 2019 Test Method for Wind Load Resistance of Flashings Used with Metal Roof Systems

Page: 1

Mod12070_TextOfModification.pdf

ANSI/MCA FTS-1-2019

Test Method for Wind Load Resistance of Flashings Used with Metal Roof Systems

Approved 6/25/19

1.0 Scope

1.1 This test method evaluates the wind load resistance of flashings to be installed at the roof perimeter and roof plan transitions of metal roof systems by testing the flashing and its attachment to the supporting structure using line loads.

1.2 The provisions of this test method apply to exposed flashings with a face 4 inches or greater that are direct-fastened, and hem-and-cleat connections, or other attachment methods with a face 2 inches or greater.

1.3 This test method provides a standard procedure to demonstrate wind load resistance under uniform line load. This procedure is intended to represent the effects of uniform loading on exposed elements on a building surface. Two methods of testing are provided: 1) Face Load and 2) Face Load and Top Load.

3.0 Terminology

Where the following terms appear in this standard they are in italics and shall have the meaning defined herein. Terms not defined in Section 3 of this standard shall have the ordinary accepted meaning for the context in which they are used.

Anticipated ultimate load – the estimated maximum load that the *specimen* is expected to resist.

Cleat – a continuous metal strip to which a flashing with an open hem is engaged.

Clip – a non-continuous metal component used to secure two or more metal components together.

Coping – the covering piece on top of a parapet wall exposed to the weather, usually made of metal and sloped to carry off water.

Direct-fastened – an attachment method that involves a *fastener* passing through the attached member rather than attaching with a *cleat* or other similar method.

Drip edge – the outward projecting lower edge of a flashing used to control the direction of dripping water and to protect underlying building components.

***Face*—**the exposed surface or surfaces of a flashing to which one load is applied

Failure – fracture, disengagement or unrestrained deformation of components, including *fasteners*, such that the *specimen* is not capable of resisting additional load.

Fastener – any of a wide variety of mechanical devices and assemblies, including nails, staples, screws, rivets and bolts for securing components to a building.

Load case – one orientation of load or loads that is applied for a *test cycle*.

Specimen – the entire assembled unit submitted for testing.

Sustained load – a load resisted for specified time.

Test cycle – a series of increasing, *sustained loads*.

Ultimate load – the maximum *sustained load* resisted by the *specimen*.

4.0 Units and Terms

Any compatible system of measurement units is acceptable to be used in this standard, except where explicitly stated otherwise. The unit systems in this standard shall include U.S. customary units (force in kips and length in inches) and SI units (force in newtons and length in millimeters).

5.0 Summary of Test Method

5.1 This test method shall include all of the following: (1) attachment of the stiffening plate or other test apparatus components to the flashing *specimen* as needed, (2) attachment of the flashing *specimen* to the bed of the test apparatus, (3) application of a series of uniform line loads to the test *specimen* and (4) observation and recording of the loads resisted and mode or modes of *failure* of the test *specimen*.

5.2 The increments of load application shall be chosen so that results from a minimum of four *sustained loads* are recorded. If *failure* occurs before a minimum of four loads have been sustained, the test shall be deemed invalid.

6.0 Apparatus

6.1 Description of Apparatus

The apparatus for single load tests shall include the major components shown in Figure 1. The apparatus for two load tests shall include the major components shown in Figure 2 and Figure 3. The Optional Stiffening Plate shown in these figures, if used, shall be no wider than 2" (51 mm) and no thicker than 1/8" (3.2 mm). Figures 1, 2 and 3 indicate how loads are applied to various generic flashing configurations. Actual flashing and configuration connection shall be per the design and manufacture of the flashing to be tested.

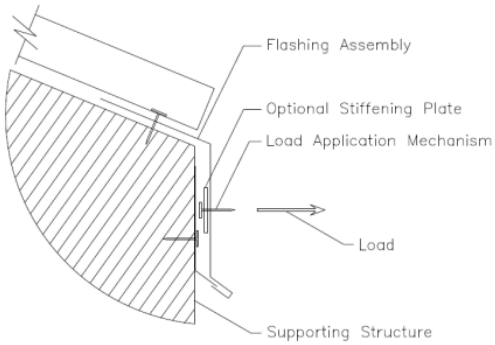


Figure 1 – Single Load Test Apparatus

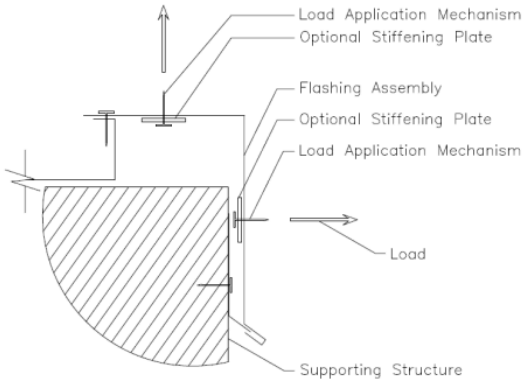


Figure 2 – Two Load Test Apparatus

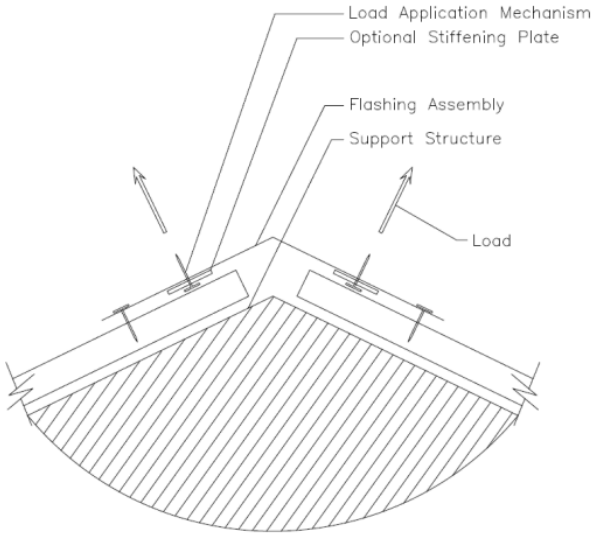


Figure 3 – Two Load Test Apparatus

6.2 Supporting Structure

The supporting structure shall be representative of field conditions and sized to allow the secure attachment of the *specimen*. Anchorage shall be required to hold the supporting structure in place while load is applied during the test. The supporting structure shall be representative of field conditions.

6.3 Load Application System

6.3.1 The load application system shall consist of a tensile tester or other device capable of providing concentrated load and fitted with a load cell capable of indicating loads of at least the *anticipated ultimate load*.

6.3.2 The load application system shall be attached to the *specimen* in the center of the tested face and shall be capable of uniformly distributing the load to the *specimen*. The spacing of the *specimen* attachment to the load application system shall be no greater than 12 inches (300 mm) on center. The load application system shall be attached to the face centered on its width.

6.3.3 The precision of the load application system shall be +/- 10 pounds (4.5 kg) based on calibration within 12 months of the test date. The maximum calibration load shall not be exceeded in testing.

7.0 Test Specimen

7.1 The *specimen* shall consist of all parts relevant to the assembly. Field-application conditions of the *specimen* shall be simulated. The *specimen* shall be full size. Supporting structure shall be of a length no less than the length of the test *specimens*.

The ends of the *specimen* shall not be restrained, but free to deflect under load. End and edge restraint shall be representative of field conditions and shall be documented in the test report.

7.2 The flashing *specimen* shall be a minimum of 120 inches (3000 mm) in length, without laps in the flashing, unless the flashing is only produced in lengths less than 120 inches (3000 mm).

7.3 A face shall consist of a flat segment of a flashing profile plus adjacent segments such as *drip edge* or hem that are within 45 degrees of being inline. Two parallel, flat segments offset by less than 1 inch (25 mm) shall be tested as one face.

7.4 The minimum number of *specimens* shall be based on the number of *load cases* and *test cycles* required for the flashing. Three *test cycles* shall be performed for each *load case*. A new specimen shall be used for each test cycle.

7.4.1 For flashings with only one exposed face, one *load case* shall be required, therefore three *specimens* are required. Loads shall be applied perpendicular to the exposed face. The Single Load Test Apparatus shall be employed for this purpose.

7.4.2 For flashings with two exposed faces, one *load case* shall be required; therefore, three specimens are required. Loads shall be applied to the two faces simultaneously. Loads shall be applied with a ratio of 2 psf (96 Pa) vertical to 1 psf (48 Pa) horizontal. If both faces are expected to receive approximately equal loading in field applications (e.g. ridge cap), then both faces shall be tested with equal load simultaneously. The Two Load Test Apparatus shall be employed for flashings in this category. Load shall be applied perpendicular to the face.

7.4.3 For flashings with three or more exposed faces, the number of required *load cases* shall equal the number of pairs of adjacent faces. In the case of a *coping*, two *load cases* shall be required; therefore, six specimens are required. In the first *load case*, loads shall be applied simultaneously to the top (upward) and to one of the vertical faces (lateral). In the second *load case*, loads shall be applied simultaneously to the top (upward) and

to the other vertical face (lateral). Loads shall be applied with a ratio of 2 psf (96 Pa) upward on the top surface to 1 psf (48 Pa) horizontal on the wall coverage surfaces. The Two Load Test Apparatus shall be employed for flashings in this category. Load shall be applied to each face in a manner that is perpendicular to the roof or wall surface plane covered by that face. For top surfaces sloped less than 10 degrees, the top surface load is permitted to be applied vertically.

8.0 Loading Procedure

8.1 Orientation

The test set up shall be oriented such that gravity shall not have an undue influence on the test other than that experienced by in-place field applications. Only loads resisted by the *specimen* shall be included in the reported loads.

8.2 Procedure

This procedure shall be designed to produce a *test cycle* with a minimum of four *sustained loads*.

8.2.1 The typical loading cycle shall consist of two phases: a load phase and an unload phase.

8.2.2 The load phase shall apply the line loading in increasing magnitudes. The first loading shall be at one third of the *anticipated ultimate load*. Subsequent loadings shall be increased by up to one sixth of the *anticipated ultimate load*. For loads of up to 150 psf (7.2 kPa), the load shall be achieved within 1 minute. For loads greater than 150 psf (7.2 kPa), the load shall be achieved within 2 minutes. Each loading shall be held for at least 1 minute.

Loads shall be recorded to a precision of five percent of the *anticipated ultimate load* during applications of the test loads.

8.2.3 The unload phase shall relax the load to zero. This phase shall last no longer than 5 minutes. This phase shall be followed by the next loading cycle.

8.2.4 For flashings loaded on two separate faces simultaneously, the loading shall progress as described above based upon the *anticipated ultimate* vertical *load* (applied to the more horizontal surface.

8.2.5 The test shall be concluded when any of the following happen, the *specimen* fails, the capacity of the test apparatus is reached, or at the direction of the party conducting

the test. *Failure* in the *specimen* shall be when any of the following conditions occur: 1) *Fastener failure* (ex. pull-out, pull-over or breakage), 2) Unlatching of a panel or flashing, 3) Component *failure* (ex. Rupture, tearing or cracking),

8.2.6 A minimum of four *sustained loads* shall be recorded before a *test cycle* is concluded. If the *specimen* fails before four *sustained loads* are recorded the *test cycle* shall be deemed invalid and shall be repeated with a lower *anticipated ultimate load* that will yield four *sustained loads*.

9.0. Test Report

9.1 Date of test and date of report shall be included in the test report along with the name of the testing organization and location. The observers, their qualifications and affiliation shall be included.

9.2 The test report shall describe the *specimen*, including the manufacturer, location of manufacture and dimensions. The testing equipment including load cell and load application device shall be described.

9.3 The test report shall include cross-section drawings of the *specimen* including flashing, panels, panel attachment method and supporting structure. The drawings shall identify type, location and spacing of *fasteners* and show how and where the test apparatus is attached to the specimen.

9.5 The test report shall include the measured thickness and yield strength of the *specimen*.

9.6 Tabulation of the loadings and load durations, including the *anticipated ultimate load*, shall be included in the test report.

9.7 The test report shall include visual observations including *failure* mode, the *sustained loads* applied, and the *ultimate loads*. The *ultimate loads* from the performed *test cycles* shall be averaged and recorded as the test result.

9.8 The test report shall include a statement that the test(s) were conducted in accordance with this test method, noting any deviations.

ANSI/MCA FTS-1-2019

Commentary

This commentary consists of explanatory and supplementary material designed to help in applying the requirements of the preceding Standard.
This commentary is intended to create an understanding of the requirement through brief explanations of the reasoning employed in arriving at these requirements.
The sections of this commentary are numbered to correspond to sections of the Standard to which they refer. Since having comments for every section of the Standard is not necessary, not all section numbers appear in this commentary.

C1.0 Scope

In significant wind events, *failure* frequently begins at the flashing attachment at the roof edge, e.g. eaves and gables, and at roof plane transitions with a reflex angle, e.g. hips and ridges. This test method is intended to determine the capacity of these flashings to withstand the anticipated wind loads.

C1.2 For *direct-fastened* faces less than 4 inches (100 mm) it is anticipated that the mode of *failure* will be *fastener* pull-out; therefore, testing of faces less than 4 inches (100 mm) is not required. *Fasteners* used to *direct-fasten* faces less than 4 inches (100 mm) must have adequate pull-out resistance for the design loads.

For *cleated* faces less than 2 inches (50 mm) the design loads will yield a line load that is too low to allow for a significantly meaningful series of *test cycles*; therefore, testing is not required for flashing with faces less than 2 inches (50 mm).

C2.0 Referenced Documents

The following documents were considered during the development of this document.

1. ASTM E 1592-05(2017) Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference

2. 2017 Florida Building Code Test Protocols for High Velocity Hurricane Zones:
(TAS) No. 111(B)-95 Test Procedure for Edge Metal Pull-Off Performance
(TAS) No. 111(C)-95 Test Procedure for Coping Cap Pull-Off Performance

3. ANSI/SPRI/FM 4435/ES-1 2017 Test Standard for Edge Systems Used with Low Slope Roofing Systems

C5.0 Summary of Test method

This summary is to outline the general steps that are required for testing. The attachment of test apparatus connections to the test *specimen* may be made before or after the *specimen* is mounted to the apparatus test bed.

C5.2 Metal flashings are subjected to repeated loading from gusting winds; therefore, a critical component of the test is that the test load is applied and relaxed a minimum of four times prior to the application of the *Ultimate Load*. If *failure* occurs before four loads are applied, the *anticipated ultimate load*, and therefore the load increments, must be decreased and the test repeated, until a minimum of four *sustained loads* have been recorded.

C6.0 Apparatus

C6.1 The apparatus is general in nature. Any equipment capable of performing the test procedure within the allowable tolerances described in this section is acceptable.

The purpose of the Optional Stiffening Plate is to reduce complications of fastener(s) in the Load Application Mechanism pulling through the flashing, or the flashing bending along the line of fasteners, by better distributing the load on the loaded face.

C6.2 To simplify and standardize testing, the apparatus does not need to be an exact replication of the substrate expected in field application; however, the apparatus must provide no greater pull-out resistance for the *specimen fasteners* than what will be achieved in field application.

C7.0 Test Specimen

C7.1 The *specimen* includes the supporting structure such as wood or steel, the exterior metal panel(s), panel *clips*, sealant, *fasteners, cleats* and the flashing as applicable.

C7.4.2 and 7.4.3 The ratio between the vertical and horizontal GC_p values used to calculate wind loads vary with building height, roof zone location, and the version of ASCE7 being used. To standardize the testing, and to avoid necessitating that multiple tests be run with several different vertical:horizontal ratios, a simple and conservative ratio of 2:1 was selected.

C9.0 Test Report

C9.5 Both material thickness and yield strength can greatly affect the performance of a flashing system; therefore, the thickness and strength of the tested specimen is needed to confirm that the product produced for use in the field is of equal or greater thickness and yield strength. Yield strength may be determined by methods such as ASTM A 370-17a, ASTM B 557-15, etc. as appropriate for the material being tested.

TAC: Roofing

Total Mods for **Roofing** in **Denied : 6**

Total Mods for report: 15

Sub Code: Existing Building

13

R11854

Date Submitted	02/07/2025	**Section**	706.7.2	**Proponent**	Michael Silvers (FRSA)
Chapter	7	**Affects HVHZ**	No	**Attachments**	No
TAC Recommendation	Denied				
Commission Action	Pending Review				

Comments

General Comments No **Alternate Language Yes**

Related Modifications

Summary of Modification

This modification brings sections that are in Building and Residential sub codes that addresses existing self-adhering underlayment applied direct to deck in roof replacement work. This condition only applies to existing buildings and should be included in the Existing Building sub code.

Rationale

This modification aligns with current sections in FBCB Chapter 15 and FBCR Chapter 9 which address how to proceed with new underlayment (secondary water barrier) when an existing self-adhered underlayment is applied directly to a wood deck. This condition typically occurs on existing buildings and should be included in the Existing Building sub-code.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
No impact.
Impact to building and property owners relative to cost of compliance with code
No impact.
Impact to industry relative to the cost of compliance with code
No impact.
Impact to small business relative to the cost of compliance with code
No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public
Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

Alternate Language

2nd Comment Period

R11854-A1

Proponent Michael Silvers (FRSA) **Submitted** 8/19/2025 1:29:46 PM **Attachments** No

Rationale:

This modification failed to achieve a 67% vote by the TAC to either deny or approve. We are submitting alternate language in an effort to receive approval. The portion sighting the deem to comply language was redundant as it is already in 706.7.2. The title change addresses that when an existing self-adhering membrane is part of a low slope roof system installed direct to deck it should be referred to as a base sheet not underlayment. These conditions only occur on an existing building, so these code compliant approaches should be included in the FBC Existing Building subcode.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

None.

Impact to building and property owners relative to cost of compliance with code

None.

Impact to industry relative to the cost of compliance with code

None.

Impact to small business relative to the cost of compliance with code

No impact.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

Does not discriminate.

Does not degrade the effectiveness of the code

Does not degrade.

Notes: Changes to the original modification both deletions and additions shown below are highlighted. Since the original modification was already underscored, new alternative language is not underscored, language to be removed is stricken.

706.7.2 Roof secondary water barrier for existing structures with wood roof decks.

When a roof covering is removed and replaced, a secondary water barrier shall be installed in accordance with Section 1507.1.1 or 1518.2 of the Florida Building Code, Building or Section R905.1.1 of the Florida Building Code, Residential.

Exceptions:

1. Roof slopes < 2:12 having a continuous roof system shall be deemed to comply with Section 706.7.2 requirements for a secondary water barrier.

2. Clay and concrete tile roof systems installed as required by the *Florida Building Code* are deemed to comply with the requirements of Section 706.7.2 for Secondary Water Barriers.

706.7.3 Existing self-adhering underlayment or base sheet applied direct to deck.

706.7.3.1 During roof covering replacement of asphalt shingles, metal roof panels or shingles, mineral surfaced roll roofing, slate and slate-type shingles, wood shakes and wood shingles where an existing self-adhering modified bitumen underlayment that has been previously installed over the roof decking and, where it is required, renailing off the roof sheathing in accordance with Section 706.7.1 of the Florida Building Code, Existing Building can be confirmed or verified. An approved underlayment in accordance with Table 1507.1.1.1 or 1518.2.1 of the Florida Building Code, Building or section 905.1.1.1 of the Florida Building Code Residential ~~Building~~ for the applicable roof covering shall be applied over the entire roof over the existing self-adhered modified bitumen underlayment.

706.7.3.2 ~~Clay and concrete tile roof systems installed as required by the Florida Building Code are deemed to comply with the requirements of Section 706.7.2 for Secondary Water Barriers.~~ During the replacement of a clay and concrete roof covering where an existing self-adhering modified bitumen underlayment that has been previously installed directly over the roof decking and, where it is required, renailing of the roof sheathing in accordance with Section 706.7.1 of the *Florida Building Code, Existing Building* can be confirmed or verified. An approved underlayment in accordance with a two-ply system as described in the FRSA/TRI *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, Seventh Edition shall be applied over the entire roof over the existing self-adhered modified bitumen underlayment.

706.7.3.3 ~~Continuous roof system having a roof slope < 2:12 shall be deemed to comply with Section 706.7.2 requirements for a secondary water barrier.~~ During the replacement of a continuous roof system having a roof slope < 2:12 where an existing self-adhering modified bitumen roof system has been previously installed over the roof decking and, where it is required, renailing of the roof sheathing in accordance with Section 706.7.1 of the *Florida Building Code, Existing Building* can be confirmed or verified. An approved roof system in accordance with Sections 1507.10 through 1507.16 or Section 1519 of the Florida Building Code, Building or Sections R905.9 through R905.15 of the Florida Building Code, Residential shall be applied over the entire roof over the existing self-adhered modified bitumen roof system ~~underlayment~~.

R11854Text Modification

706.7.2 Roof secondary water barrier for existing structures with wood roof decks.

When a roof covering is removed and replaced, a secondary water barrier shall be installed in accordance with Section 1507.1.1 or 1518.2 of the Florida Building Code, Building or Section R905.1.1 of the Florida Building Code, Residential.

706.7.3 Existing self-adhering underlayment applied direct to deck.

706.7.3.1 During roof covering replacement of asphalt shingles, metal roof panels or shingles, mineral surfaced roll roofing, slate and slate-type shingles, wood shakes and wood shingles where an existing self-adhering modified bitumen underlayment that has been previously installed over the roof decking and, where it is required, renailing off the roof sheathing in accordance with Section 706.7.1 of the Florida Building Code, Existing Building can be confirmed or verified. An approved underlayment in accordance with Table 1507.1.1.1 or 1518.2.1 of the Florida Building Code, Building or section 905.1.1.1 of the Florida Building Code Building for the applicable roof covering shall be applied over the entire roof over the existing self-adhered modified bitumen underlayment.

706.7.3.2 Continuous roof system having a roof slope < 2:12 shall be deemed to comply with Section 706.7.2 requirements for a secondary water barrier. Where an existing self-adhering modified bitumen roof system has been previously installed over the roof decking and, where it is required, renailing of the roof sheathing in accordance with Section 706.7.1 of the *Florida Building Code, Existing Building* can be confirmed or verified. An approved roof system in accordance with Sections 1507.10 through 1507.16 or Section 1519 of the Florida Building Code, Building or Sections R905.9 through R905.15 of the Florida Building Code, Residential shall be applied over the entire roof over the existing self-adhered modified bitumen underlayment.

706.7.3.3 Clay and concrete tile roof systems installed as required by the Florida Building Code are deemed to comply with the requirements of Section 706.7.2 for Secondary Water Barriers. Where an existing self-adhering modified bitumen underlayment that has been previously installed directly over the roof decking and, where it is required, renailing of the roof sheathing in accordance with Section 706.7.1 of the *Florida Building Code, Existing Building* can be confirmed or verified. An approved underlayment in accordance with a two-ply system as described in the FRSA/TRI *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, Seventh Edition shall be applied over the entire roof over the existing self-adhered modified bitumen underlayment.

Page: 1

Mod11854_TextOfModification.pdf

TAC: Roofing

Total Mods for **Roofing** in **Denied : 6**

Total Mods for report: 15

Sub Code: Residential

14

R12325

Date Submitted	02/18/2025	**Section**	806	**Proponent**	Nelson Conarroe
Chapter	8	**Affects HVHZ**	No	**Attachments**	**Yes**
TAC Recommendation	Denied				
Commission Action	Pending Review				

Comments

General Comments Yes **Alternate Language No**

Related Modifications

R806.5 Unvented Attic and Unvented Enclosed Rafter Assemblies

Summary of Modification

R806.5.5.2 - language change to align with upcoming ICC language changes. R806.5.5.2 - adding necessary language to address the burying of ducts in attic insulation where installed in an unvented attic including a vapor diffusion vent located at the roof ridge.

Rationale

buried ducts when used in an unvented attic including a vapor diffusion vent and supply air has been proven as a safe, scalable and cost-effective method to achieve ducts in conditioned space. Work over the last 3+ years in conjunction with UCF/FSEC has proven efficacy of this application. This is a low-cost method to achieve Ducts in Conditioned Space compared to other builder options. This application does not provide any preferences or limit manufacturer choices.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code
Enforcment of the code is zero to minimal impact through basic visual inspection and the addition of duct rulers with insulation depth.

Impact to building and property owners relative to cost of compliance with code
considered one of the lowest cost options to meet Ducts in Conditioned Space

Impact to industry relative to the cost of compliance with code
considered one of the lowest cost options to meet Ducts in Conditioned Space

Impact to small business relative to the cost of compliance with code
considered one of the lowest cost options to meet Ducts in Conditioned Space

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

safe for the general public

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

provides an alternative, low-cost method to achieve Ducts in Conditioned Space

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

No discrimination. All insulations can participate.

Does not degrade the effectiveness of the code

Does not degrade. Provides an alternative, low-cost path to Energy Star and Net Zero Ready Home performance standards.

2nd Comment Period

R12325-G1

Proponent Nelson Conarroe Submitted 8/24/2025 4:43:05 PM Attachments Yes

Comment:

In light of energy conservation to reconsider mod 12326, we are asking that this language to be reconsidered as it addresses the roofing vapor diffusion language for the buried ducts application. Burying attic located ducts is a safe, cost-effective option to meet ducts in conditioned space should be reconsidered in the code language. As stated in the original submittal, there has been a multi-year lab and field testing effort that has validated the efficacy of this application to be cost effective, constructable in field, lowers operational energy use for the occupant and can operate without the risk of harm or damage from condensation. Meets the Florida code requirements to provide a reasonable and substantial connection with the health, safety, and welfare of the general public and provides a cost-effective solution that positively impacts the operational cost of the occupant. Addressing comments from the original energy conservation TAC review. Yes, there is additional supply air proposed to the attic at 50 cfm / 1,000 sq ft of attic floor to aid in drying the attic from external and internal sourced moisture. This small amount of supply air is effective at keeping duct of duct RH below the ASHRAE safety standard of 80%. A couple of key questions were raised around this topic of supply air. There has not been any evidence of that small amount of supply air creating pressurization or depressurization problems. Secondly, the additional supply air going to the attic does not pose any significant energy penalty. In all models, tests and trial homes, the total energy of buried ducts operated consistently with other applications already considered as Ducts in Conditioned Space. That energy usage would include the 50cfm/1,000 sq ft of attic floor. this language is referecning Mod 12326 & 12329

R12325Text Modification

R806.5 Unvented Attic and Unvented Enclosed Rafter Assemblies

Unvented *attics* and unvented enclosed roof framing assemblies created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:

1. The unvented *attic* space is completely within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, a minimum $^{1}/_{4}$-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing *underlayment* above the structural sheathing.
4. In *Climate Zones* 5, 6, 7 and 8, any *air-impermeable insulation* shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall comply with Item 5.3 and Item 5.1. As an alternative, where air-permeable insulation is located on top of the attic floor or on top of the attic ceiling, insulation shall comply with Item 5.3 and Item 5.2.

   5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.

   Where only *air-impermeable insulation* is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.

   Where *air-permeable insulation* is provided inside the building thermal envelope, it shall be installed in accordance with Section 5.1.1. In addition to the *air-permeable insulation* installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R-values in Table R806.5 for condensation control.

   Where both *air-impermeable* and *air-permeable insulation* are provided, the *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R-values in Table R806.5 for condensation control. The *air-permeable insulation* shall be installed directly under the *air-impermeable insulation*.

   Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

   5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics on the top of the attic floor or on top of the ceiling shall meet the following requirements:

   An approved *vapor diffusion* ~~*port*~~ *vent*shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.

   The ~~port~~ vent area shall be greater than or equal to ~~1:600~~ 1:150 of the ceiling area. Where there are multiple ports in the *attic*, the sum of the port areas shall be greater than or equal to the area requirement.

   The vapor-permeable membrane in the *vapor diffusion* ~~*port*~~ *vent* shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.

   The *vapor diffusion* ~~*port*~~ *vent* shall serve as an *air barrier* between the *attic* and the exterior of the building.

   The *vapor diffusion* ~~*port*~~ *vent* shall protect the *attic* against the entrance of rain and snow.

Page: 1

Mod12325_TextOfModification.pdf

R12325Text Modification

Framing members and blocking shall not block the free flow of water vapor to the vent. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing.

The roof slope shall be greater than or equal to 3:12 (vertical/horizontal).

Air-permeable insulation shall be installed on top of the attic floor or on top of the ceiling.

Where supply and return ductwork is partially, completely, or deeply buried in ceiling or attic floor insulation:

Such ductwork shall comply with Section R403.3.2 of the Florida Building Code, Energy Conservation.

Air shall be supplied to the unvented attic at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m^2) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, conditioned air shall be supplied by a supply fan into the attic when the conditioning system is operating.

5.3. Where preformed insulation board is used as the *air-impermeable insulation* layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

Page: 2

Mod12325_TextOfModification.pdf

R806.5 Unvented Attic and Unvented Enclosed Rafter Assemblies

Unvented *attics* and unvented enclosed roof framing assemblies created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:

1. The unvented *attic* space is completely within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, a minimum $^1/_4$-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing *underlayment* above the structural sheathing.
4. In *Climate Zones* 5, 6, 7 and 8, any *air-impermeable insulation* shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall comply with Item 5.3 and Item 5.1. As an alternative, where air-permeable insulation is located on top of the attic floor or on top of the attic ceiling, insulation shall comply with Item 5.3 and Item 5.2.

5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.

5.1.1. Where only *air-impermeable insulation* is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.

5.1.2. Where *air-permeable insulation* is provided inside the building thermal envelope, it shall be installed in accordance with Section 5.1.1. In addition to the *air-permeable insulation* installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R-values in Table R806.5 for condensation control.

5.1.3. Where both *air-impermeable* and *air-permeable insulation* are provided, the *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R-values in Table R806.5 for condensation control. The *air-permeable insulation* shall be installed directly under the *air-impermeable insulation*.

5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics on the top of the attic floor or on top of the ceiling shall meet the following requirements:

5.2.1. An approved *vapor diffusion* ~~*port*~~ *vent* shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.

5.2.2. The ~~port~~ vent area shall be greater than or equal to ~~1:600~~ 1:150 of the ceiling area. Where there are multiple ports in the *attic*, the sum of the port areas shall be greater than or equal to the area requirement.

5.2.3. The vapor-permeable membrane in the *vapor diffusion* ~~*port*~~ *vent* shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.

5.2.4. The *vapor diffusion* ~~*port*~~ *vent* shall serve as an *air barrier* between the *attic* and the exterior of the building.

5.2.5. The *vapor diffusion* ~~*port*~~ *vent* shall protect the *attic* against the entrance of rain and snow.

5.2.6. Framing members and blocking shall not block the free flow of water vapor to the vent. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing.

5.2.7. The roof slope shall be greater than or equal to 3:12 (vertical/horizontal).

5.2.8. Air-permeable insulation shall be installed on top of the attic floor or on top of the ceiling.

5.2.9. Where supply and return ductwork is partially, completely, or deeply buried in ceiling or attic floor insulation:

5.2.9.1. Such ductwork shall comply with Section R403.3.2 of the Florida Building Code, Energy Conservation.

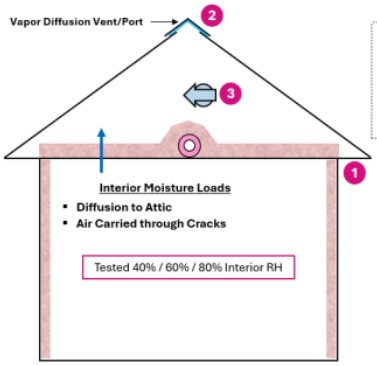
5.2.9.2. Air shall be supplied to the unvented attic at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m^2) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, conditioned air shall be supplied by a supply fan into the attic when the conditioning system is operating.

5.3. Where preformed insulation board is used as the *air-impermeable insulation* layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

This new language to bury attic located ducts is a safe, cost-effective option to meet ducts in conditioned space should be reconsidered in the code language. As stated in the original submittal, there has been a multi-year lab and field testing effort that has validated the efficacy of this application to be cost effective, constructable in field, lowers operational energy use for the occupant and can operate without the risk of harm or damage from condensation. Meets the Florida code requirements to provide a reasonable and substantial connection with the health, safety, and welfare of the general public and provides a cost-effective solution that positively impacts the operational cost of the occupant.

Addressing comments from the original TAC review. Yes, there is additional supply air proposed to the attic at 50 cfm / 1,000 sq ft of attic floor to aid in drying the attic from external and internal sourced moisture. This small amount of supply air is effective at keeping duct of duct RH below the ASHRAE safety standard of 80%. A couple of key questions were raised around this topic of supply air. There has not been any evidence of that small amount of supply air creating pressurization or depressurization problems. Secondly, the additional supply air going to the attic does not pose any significant energy penalty. In all models, tests and trial homes, the total energy of buried ducts operated consistently with other applications already considered as Ducts in Conditioned Space. That energy usage would include the 50cfm/1,000 sq ft of attic floor.

UNVENTED ATTIC + VAPOR DIFFUSION PORT + SUPPLY AIR



1. **Unventing of the Attic reduces exterior air carried moisture to the attic (12-15% reduction to top of Duct RH)**
   - ✓ Top Plate Truss Blocking (22.5" block) + Air Sealing + Soffit
   - ✓ Top Plate Truss Blocking (22.5" block) + Air Sealing + No Soffit
   - ✓ Stucco soffit
   - ✓ Hard Stock soffit (OSB/FC type) – caulked at butt joints
   - ✓ Aluminum/Vinyl soffit – caulk embedded in F/J channel

   → Consistent with spray foam attic air leakage (guarded testing)

2. **The Vapor Diffusion Vent/Port works in Hot Climates to remove moisture in unvented attic**
   - ➢ Provides the moisture safety valve

3. **Supply Air to the Attic → Add a small amount of supply air to dry the attic**
   - ➢ Highly impactful in keeping top of duct RH low → drying the attic & ducts
   - ➢ Very small energy penalty
   - ➢ Will provide drying to external or internal sourced moisture loads in the attic

Example of energy consumption/energy lost of a home in Boca Raton, FL based on duct location and leakage. The buried ducts options even with the added 50 cfm of supply air per 1,000 sq ft of attic floor is still highly impactful in energy usage reduction.

Comparing:

- Suspended Ducts
- Buried Ducts
- Ducts located under R-22 thermal roof deck (open cell SPF) which is considered a Ducts in Conditioned Space application.

Duct leakage is also varied at 1.5%, 4% and 10% total system leakage.

Ductwork as a % to Total Building Energy Consumption (Ductwork located in Attic)

Example: Climate Zone 2A - Boca Raton, FL

Existing Housing (Typical)		Duct Air Leakage	Ductwork as % of Total Building Energy Consumption: Heating %	Ductwork as % of Total Building Energy Consumption: Cooling %	Heating & Cooling Impact (Based on Run Time) Annual: Heating Loss BTU	Cooling Loss BTU	Total Loss BTU		Homeowner $$s lost due to Inefficiency (Annual Cooling Days Only / Electric): Lowest Cost @ 0.10/kWh	Average Cost @ 0.15/kWh	Highest Cost @ 0.30/kWh
Suspended Ducts (Attic Location)	R-4.2 Duct	32-33%	33.8	35.6	959,892	44,906,616	45,866,508		$ 1,316	$ 1,974	$ 3,948
	R-4.2 Duct	26-27%	27.8	30	724,388	34,805,160	35,529,548		$ 1,020	$ 1,530	$ 3,060
New Construction											
Suspended Ducts (Attic Location)	R-6 Duct	10%	14.2	17.6	310,452	17,356,752	17,667,204		$ 509	$ 763	$ 1,526
	R-8 Duct	10%	**11.9**	**14.7**	252,888	14,018,544	14,271,432		$ 411	$ 616	$ 1,233
	R-6 Duct	4%	12.8	16.5	275,028	16,001,208	16,276,236		$ 469	$ 703	$ 1,407
	R-8 Duct	4%	10.6	13.6	221,728	**12,745,008**	12,966,736	baseline	$ 374	$ 560	$ 1,121
					includes 50cfm/1,000sf of supply air						
Completely Buried Ducts (Attic Location)	Effective R-25 (R-8 Duct + R-19 over duct)	10%	6.3	7.1	126,936	6,251,904	6,378,840	-51%	$ 183	$ 275	$ 550
		4%	4.8	5.7	95,284	**4,934,952**	5,030,236	-61%	$ 145	$ 217	$ 434
		1.5% (E*)	4.1	5	80,688	4,312,656	4,393,344	-66%	$ 126	$ 190	$ 379
					includes 50cfm/1,000sf of supply air						
Deeply Buried Ducts (Attic Location)	Effective R-38 (R-8 Duct + R-30 over duct)	10%	5.7	6.1	131,036	6,127,750	6,258,786	-52%	$ 180	$ 269	$ 539
		4%	**3.7**	**4.2**	90,692	**4,342,500**	4,433,192	-66%	$ 127	$ 191	$ 382
		1.5% (E*)	3.1	3.6	75,768	3,691,125	3,766,893	-71%	$ 108	$ 162	$ 325
R-22 open cell @ Roof Deck (Attic Location)	R-4.2 or 6 Duct	4%	**9.9**	**8.3**	198,604	**7,202,232**	7,400,836	-43%	$ 211	$ 317	$ 633
	R-4.2 or 6 Duct	1.5%	8.6	6.9	169,576	5,870,808	6,040,384	-54%	$ 172	$ 258	$ 516

Envelope tightness @ 3.0ACH via whole house blower door with attic hatch open

TAC: Roofing

Total Mods for **Roofing** in **Denied : 6**

Total Mods for report: 15

Sub Code: Residential

15

R12073

Date Submitted	02/17/2025	**Section**	905.10	**Proponent**	Robert Zabcik
Chapter	9	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Denied				
Commission Action	Pending Review				

Comments

General Comments Yes **Alternate Language Yes**

Related Modifications

12077

Summary of Modification

Addition of ANSI/MCA FTS-1 in Hurricane-Prone and TAS-125 Alignment (FBC)

Rationale

Note: Proposed new reference standard, ANSI/MCA FTS-1 2019 is attached to Mod 12077. The purpose of this proposal is to add new requirements to determination of wind load resistance values of metal roof panel assemblies over solid or closely fitted deck in hurricane-prone regions. These changes are consistent with the recommendations of FEMA P-2342. This proposal also aligns panel testing requirements in hurricane-prone regions with Section 8 of the Florida Building Code (FBC) Test Application Standard TAS-125. This is necessary because UL 580 testing ceases at Class 90 (105 psf net uplift/52.5 psf design load) and will not produce results addressing wind loads in the edge and corner zones required by ASCE 7 2016 in hurricane-prone regions. While UL 1897 does not have this limitation, it lacks the two 1-hour-long oscillating load sequences required by UL 580 and is generally considered less rigorous for that reason. Section 8 of TAS-125 addresses these issues quite well and the resulting practice is already widely used in the metal roofing industry. See attachment for technical explanation.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

This proposal will not create any additional cost on the local entity as the product approval listings will be updated with the new requirements once the code goes into effect, but the permit submission and approval processes remain the same as current state.

Impact to building and property owners relative to cost of compliance with code

Property owners could see a very slight increase in cost if manufactures carry additional costs to the consumer. However, the attachment shows this impact to be less than one percent increase.

Impact to industry relative to the cost of compliance with code

This proposal will not impact industry other than as property owners covered above.

Impact to small business relative to the cost of compliance with code

This proposal will not impact small business other than as property owners covered above.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

This proposal increases the HSW of the people of Florida as it directly addresses the water ingress and windborne debris risks identified by FEMA and RICOWI in their Hurricane Ian investigations, as well as other storms.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

This proposal strengthens and Improves the code as it directly and appropriately addresses the water ingress and windborne debris risks identified by FEMA and RICOWI in their Hurricane Ian investigations, as well as other recent storms.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This proposal does not discriminate against any existing materials, products or construction methods. It impacts only metal panel roofs over solid and closely fitted decks and is being proposed by a trade association representing companies which manufacture systems in that space.

Does not degrade the effectiveness of the code

This code change does not increase costs experienced by the consumer substantially, however it should result in an increase in the already long functional life span of metal roof over deck significantly. This will lower cost-of-ownership over the lifespan of the roof.

Alternate Language

2nd Comment Period

R12073-A2

Proponent Pataya Scott **Submitted** 8/24/2025 2:17:50 PM **Attachments** Yes

Rationale:

This proposed modification simplifies the original proposal by only addressing wind resistance testing of hip and ridge covers for metal roofs. Metal roofs were one of the most common roof coverings observed by the FEMA Mitigation Assessment Team (MAT) after Hurricane Ian and the most common damage was to hip and ridge covers. The two photos in the attachment are an example from the MAT report and an additional photo of the same home taken by the MAT team. The estimated wind speed at this location (115 mph) was well below the design wind speed (161 mph), yet there was still damage along the hip. Similar concerns regarding hip and ridge asphalt shingles were also raised by the MAT. As a result of the MAT observations, Modifications 11744, 11833, and 11748 addressing hip and ridge attachment of asphalt shingles were submitted by ARMA and were approved as submitted by the Roofing TAC at the June 2025 meeting. Improved hip and ridge attachment for tile roofs was adopted by the FBC around 2006. The FEMA MAT report can be found here: https://www.fema.gov/sites/default/files/documents/fema_rm-hurriance-ian-mat-report-12-2023.pdf

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

No impact to local entity relative to enforcement of the code.

Impact to building and property owners relative to cost of compliance with code

See original proponent's cost of compliance with the code.

Impact to industry relative to the cost of compliance with code

See original proponent's cost of compliance with the code, costs likely passed on to consumer.

Impact to small business relative to the cost of compliance with code

This proposal will not impact small business other than as property owners covered above.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

Yes, this would help prevent roof damage.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

Yes, this would help prevent roof damage.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

This does not discriminate against materials and will make metal roof requirements align with tile and asphalt shingles.

Does not degrade the effectiveness of the code

No, this does not degrade the effectiveness of the code.

2nd Comment Period

R12073-A1

Proponent Robert Zabcik **Submitted** 8/22/2025 10:15:20 PM **Attachments** No

Rationale:

This comment modifies Mod 12073 to reflect testimony made during the June 23rd Roofing TAC meeting as well as a general comment entered during the 45-day language period. It adds the requested clarifications regarding architectural metal roofs, removes the references to Section 8 of TAS 125 (replacing it with the specific test requirements therein) and removes the reference to hurricane-prone region. The balance of the rationale statement still applies.

Fiscal Impact Statement

Impact to local entity relative to enforcement of code

The statement made for Mod 12073 still applies.

Impact to building and property owners relative to cost of compliance with code

The statement made for Mod 12073 still applies.

Impact to industry relative to the cost of compliance with code

The statement made for Mod 12073 still applies.

Impact to small business relative to the cost of compliance with code

This proposal will not impact small business other than as property owners covered above.

Requirements

Has a reasonable and substantial connection with the health, safety, and welfare of the general public

The statement made for Mod 12073 still applies.

Strengthens or improves the code, and provides equivalent or better products, methods, or systems of construction

The statement made for Mod 12073 still applies.

Does not discriminate against materials, products, methods, or systems of construction of demonstrated capabilities

The statement made for Mod 12073 still applies.

Does not degrade the effectiveness of the code

The statement made for Mod 12073 still applies.

1st Comment Period History

R12073-G1

Proponent David Eng Submitted 4/16/2025 12:16:17 PM Attachments Yes

Comment:

Virtually every metal roofing panel tested to UL 580 is also tested to UL 1897—requiring Section 8 of TAS 125 is unnecessary and does not solve the indicated problem. Requiring metal trim to be tested to ANSI/MCA FTS-1 may be a helpful development, but as written is likely to be more disruptive and costly than currently assumed. A more thoroughly developed implementation plan is likely to deliver better results.

R12073-A2Text Modification

Replace the original proposal with the following:

R905.10.4.1 Metal hip and ridge covers. *Metal roof* hip and ridge covers shall be tested for uplift resistance in accordance with ANSI/MCA FTS-1.

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Mod12073_A2_TextOfModification.pdf

R12073-A1Text Modification

R905.10.1 Deck Requirements. *Metal roof panel* roof coverings shall be applied to solid or spaced sheathing.

Exception: *Metal roof panels* specifically designed to be applied to spaced supports.

R905.10.1.1 Wind Resistance. *Metal roof panels* and related hip, ridge and edge systems ~~*in hurricane-prone* regions~~ shall be tested in accordance with Section R905.10.1.1.1 and R905.10.1.1.2. A margin of safety of 2:1 shall be applied to all test results except when a margin of safety is specified in the test standard.

R905.10.1.1.1 Roof Coverings. *Metal roof panels* shall be tested in accordance with UL 580 ~~as modified by Section 8 of TAS-125~~. Where wind resistance in excess of that provided by Class 90 is required for design, UL 1897 Part I shall be used to determine wind resistance as follows:

1. The positive pressure applied below the assembly shall be held at 48.5 psf (240 kPa) throughout the test.
2. The negative pressure applied above the assembly shall be 63.5 psf (310 kPa) initially and increased in intervals of 15 psf (75 kPa). Each interval shall be held for at least one minute.
3. The wind resistance shall be taken as the average of the highest completed interval of no fewer than two samples subsequent to completing Phase 5 of the Class 90 test sequence of UL 580.

R905.10.1.2 Metal edge systems. Metal hip, ridge, and edge systems, excluding gutters, shall be tested for uplift resistance in accordance with ANSI/MCA FTS-1.

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Mod12073_A1_TextOfModification.pdf

R12073Text Modification

R905.10.1 Deck Requirements. *Metal roof panel* roof coverings shall be applied to solid or spaced sheathing.~~, except where the roof covering is specifically designed to be applied to spaced supports.~~

Exception: *Metal roof panels* specifically designed to be applied to spaced supports.

R905.10.1.1 Wind Resistance. *Metal roof panels* and related hip, ridge and edge systems in *hurricane-prone* regions shall be tested in accordance with Section R905.10.1.1.1 and R905.10.1.1.2. A margin of safety of 2:1 shall be applied to all test results except when a margin of safety is specified in the test standard.

R905.10.1.1.1 Roof Coverings. *Metal roof panels* shall be tested in accordance with UL 580 as modified by Section 8 of TAS-125.

R905.10.1.2 Metal edge systems. Metal hip, ridge, and edge systems, excluding gutters, shall be tested for uplift resistance in accordance with ANSI/MCA FTS-1.

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Mod12073_TextOfModification.pdf

15 April 2025

To the Florida Building Commission and related committees,

Thanks for the opportunity to submit comments on proposed code modifications. While I support continuing to refine code requirements to protect life and property, I have concerns with the proposed modifications 12064 and 12077.

For background, I work with over 30 metal roofing manufacturers that sell products in the state of Florida. I provide consultation on developing testing portfolios and prepare evaluation reports for Florida product approvals pursuant to method D of FL Rule 61G20-3. The manufacturers I work with range in size from small businesses with just a single machine and a single product approval to large national conglomerates with over 100 product approvals.

Having worked specifically in the metal roofing space, I would note that metal roofing is a potentially unique segment of the roofing industry. Unlike asphalt shingles or tile with just a few large national players, the build-to-order nature of metal roofing has kept the metal roofing industry in FL fragmented. While there are a few large national players, a large portion of the industry is represented by many small local businesses producing panels and trim. As a proxy for fragmentation, on https://floridabuilding.org/, there are 2 pages of product approvals for *Roofing Tiles* and 2 pages for *Asphalt Shingles*. *Metal Roofing* has 20 pages. As such, the impact of changing testing requirements on a GAF or a Ludowici with large corporate resources are markedly different than the impact on a small, local manufacturer with limited resources.

Succinctly, my concerns are: 1.) requiring section 8 of TAS 125 is unnecessary/redundant and does not solve the indicated problem. And, 2.) the proposed requirement of ANSI/MCA FTS-1 is unclear and is likely to be more burdensome than considered in the impact statements.

Less succinctly, my concerns are thus:

1. Extending the requirements of Section 8 of TAS 125 to virtually all of FL is unnecessary, does not solve the indicated problem, and would result in significant costs.
    a. <u>This change is unnecessary; testing to UL 1897 is the de facto requirement.</u> If a manufacturer publishes a product approval with only UL 580, it will be listed with that 52.5 psf as the max design pressure from the class 90. Since this pressure is not useful in much of Florida, virtually every UL 580 test run also runs UL 1897. From what I've seen, this is how all the major labs quote the test (UL 580/1897)—you would have to

explicitly ask to only do UL 580. In several hundred product approvals, I think I've seen only one with just UL 580. *The testing and product approval process functionally already requires UL 1897, because the pressure from UL 580 class 90 is generally insufficient.*

b. Section 8 of TAS 125 does not solve the indicated problem. The stated problem is that "*UL 580 testing ceases at Class 90 (105 psf net uplift/52.5 psf design load) and will not produce results addressing wind loads in the edge and corner zones required by ASCE 7 2016 in hurricane-prone regions*".
TAS 125 does NOT solve for this problem either, as it does NOT require the additional static pressures after the conclusion of Phase 5 of Class 90—
TAS 125
8.7.4 Subsequent to the completion of Phase 5 of the Class 90 test sequence, the test specimen ***may*** be subjected to additional static uplift pressures. ***Continuation of the test to increased pressure levels is the option of the manufacturer***.
(https://codes.iccsafe.org/content/FLTP2023P1/testing-application-standard-tas-125-03-standard-requirements-for-metal-roofing-systems
with emphasis added)

c. While unnecessary, if this change was to be implemented, a more targeted and effective solution would be to require UL 1897 when UL 580 is used instead of requiring TAS 125. As noted, TAS 125 does not solve the indicated problem, however requiring UL 1897 when UL 580 is used *would* present both the cyclic loading of UL 580, while also testing to failure under UL 1897 to get the higher maximum design pressures. This would reduce or nearly eliminate the cost burden described in item d.) below, as virtually every approval predicated on UL 580 also includes a max design pressure form a UL 1897 test.

d. The cost burden to retest to TAS 125 is likely to be more significant than assumed, and likely insurmountable for many small businesses. While the 8 profiles referenced in the cost impact writeup is reasonable (rib, 5V, PBR, 1" nailstrip, 1.5" clipped snaplock, 1.75" clipped snaplock, 1.5" mechanical, 2.0" mechanical), most manufacturers carry a diverse portfolio of metals (e.g. 24ga, 26ga, 29ga, 032 aluminum) on a range of substrates (e.g. 15/32" plywood, 7/16" OSB, 1x4 battens on plywood/OSB, B-deck, etc). This commonly creates at least *3-4 configuration permutations per profile*, sometimes as many as 8-10+.
Note also that section 8 of *TAS 125 requires a minimum of (3) tests*, while UL580/1897 does not. (I.e. each TAS 125 test is really 3 UL 580 uplift

tests.) *For many manufacturers, 8 profiles would result in a requirement to run 50-150+ test decks*.
In the past 12 months, I routinely have seen a single UL580/UL1897 test (TAS 125 modified or not) quoted closer to the range of $3500-$4500. This is before considering the costs of materials, shipment, and labor, and before considering the costs of engineering/validation/state fees for the product approval.
For many of the manufacturers that I work with, to retest their portfolios to TAS 125 would likely drive $250,000+ in costs, some much more. Particularly in a world with uncertainty around steel/aluminum tariffs, this would be an insurmountable regulatory burden for many small businesses that produce metal roof panels.

e. The TAS 125 retest timeframe would be infeasible. With typically 6 months from final code publication to the effective date, and accounting for processing time for product approvals, many manufacturers would need to complete dozens to hundreds of tests within just a few months. This would create significant turmoil and is likely infeasible. Many small businesses already struggle just to revise/renew their existing approvals to the new code each cycle, without any retesting required.
f. Use of the *Hurricane-Prone* region in FL is likely to create confusion and would create additional impact to enforcement of the code. From a procedural standpoint, to date, the FBC has largely not used the *Hurricane-Prone* region designation from IBC. *High Velocity Hurricane Zone* and *Wind-Borne Debris Regions* and their respective requirements are somewhat understood, but imperfectly. Adding another regional classification should be done thoughtfully where the distinction adds significant value. Inasmuch as the *Hurricane-Prone* region includes most of the populated areas of Florida, the exclusion of a handful of counties risks creating more confusion.
Few manufacturers limit their sales region to these counties—most would likely test to the *Hurricane Prone* requirement anyway, so the exclusion is of limited value. If this requirement were to be implemented, it should just apply to all of FL. Use of the *Hurricane Prone* region would require plans examiners to explicitly look for an additional item on every product approval and for manufacturers and roofers to understand and track an additional distinction and the appropriate requirements.

2. While more rigorous codes for metal trim may be beneficial/necessary, as written, the proposal for ANSI/MCA FTS-1 is unclear and overly burdensome.

a. Lack of clarity on which trim items would require testing: “hip, ridge, and edge systems, excluding gutters” creates opportunity for numerous questions of interpretation. If this were to be implemented, the code should explicitly indicate the trim items which require testing to avoid varying interpretations.
b. The cost burden is likely to be more substantial than assumed. The cost impact statement assumes 4-8 styles of edge metal and $1,500/test. Depending on which items this test will be required, I would anticipate at the top end of that range. I imagine the following items might be covered by this requirement: high side cap, ridge/hip cap, gable rake, eave drip, sidewall, endwall, gambrel (7 items).
   Virtually every manufacturer carries one or more exposed fastener version(s) that is/are direct fastened, AND one or more standing seam version(s) that is/are cleated, resulting in likely at least 14 trim styles to be tested.
   Most manufactures also carry a variety of materials (24ga, 26ga, 032 aluminum) on a variety of substrates (15/32 plywood, 7/16 OSB, B deck), which can quickly climb to 5-10 permutations per trim item, potentially now reaching 100’s of tests per manufacturer.
   This does not consider that many manufactures offer multiple styles of cleats and varying installation methods, which would further increase the number of permutations to test. Some combinations and redesigns could reduce the number of total tests, but assuming 4-8 tests per manufacturer likely significantly underestimates the testing burden.
c. The 4” and 2” face exclusions may lead to unintended consequences. FTS-1 does not apply to flashings with faces less than 4” if direct fastened, nor does it apply to other flashings with faces less than 2”. This may lead to manufacturers simply reducing their flashing face sizes to avoid the testing requirement. While these flashings may perform for wind uplift based on the smaller exposed faces, the resulting assembles may be less protected from water intrusion and otherwise result in unideal designs.
d. The testing timeframe would be infeasible. As noted for the TAS 125, this would be a challenging ask for many metal roofing manufacturers. It is also unclear if sufficient testing capacity exists for what appears to be a fairly new test with currently limited application.
e. Prescriptive options should be provided, especially for direct fastened options. It is not uncommon for roofers to have a brake and bend their own trim on-site, especially for direct fastened trim/exposed fastener panels. These shapes will realistically never be tested by the roofer, and simple prescriptive options should be provided, similar to FBC

1507.2.9/R905.2.8 for asphalt shingles. Alternatively, an external document could be created similar to FRSA-TRI with a series of prescriptive options that do not require testing.

Obviously, I have a bias as a service provider—I would personally benefit from the additional consulting work created by these proposed modifications in their current form. Further, I have an ethical obligation as an engineer to hold paramount the safety/health/welfare of the public. Those items notwithstanding, I am skeptical if the proposed modifications will result in the desired outcomes, and am concerned that the proposed implementation will result in significant cost and turmoil, especially for small businesses.

I fully support continued refinement of the code to ensure that Florida structures can sufficiently protect occupants from the destructive natural forces of a storm. However, I would ask that the Commission and the appropriate committees carefully consider the most targeted ways to reach the desired goals of these modifications, and/or consider delaying these items until a more effective and less disruptive implementation can be designed.

Thank you for the opportunity present comments on this modification. I am available for follow-up and/or further conversation at david.eng@timberlakecove.com.

Very respectfully,

David Eng, PE
Technical Director, Timberlake Cove

Figure 4-25: Typical hip cover damage on a metal panel roof (EWS: 115 mph; DWS: 161 mph) (St. James City)

Technical Background for Mod 12073 and 12077

The technical changes for this proposal fall into the following areas and are discussed in detail as shown below:

1. Addressing limitations of UL 580, which terminates at Class 90 instead of progressing to failure, and UL 1897, which does not require oscillation, by citing UL 580 as modified by Section 8 of TAS-125.
2. Introduces new test requirements for edge, hip and roof systems to address issues observed by FEMA and RICOWI in their Hurricane Ian investigations.

Item 1

Item 1 requires UL 580 testing as modified by Section 8 of TAS-125 in hurricane-prone regions in lieu of UL 580 or UL 1897 alone to determine appropriate wind load resistance values as represented by common industry practice.

UL 580 and 1897 are very different tests. UL 1897 utilizes steady-state load sequencing progressing until system failure and often takes less than 20 minutes to complete. However, UL 580 is designed to evaluate overall system integrity using a cyclic load sequence and yields a performance rating (Classification) from a fixed set of options. UL 580 involves two separate hour-long periods of cyclic loading and is generally considered the more rigorous test, but the test standard does not allow for additional testing to failure once the highest classification (Class 90) is achieved. Class 90 provides a net uplift value of 105 psf, which equates to a safe working load of 52.5 psf. With the current version of ASCE 7 Chapter 30, this result is not useful in the extreme edge or corner zones of roofs in hurricane-prone regions of the US. Section 8 of TAS-125 addresses these issues quite well by hybridizing the UL tests and the resulting practice is already widely used in the metal roofing industry.

Item 2

Item 2 also only applies within hurricane-prone regions, as defined by IBC and adds requirements for testing of ridge, hip and edge metal systems similar to those currently in place for low-slope built-up, modified bitumen and single-ply roof systems in Section 1504.5 of FBC. It is being put forth to address issues observed by the Roofing Industry Committee on Weather Issues (RICOWI) through their Windstorm Investigation Program (WIP) as well as FEMA's Hurricane Ian investigation.

The test standard cited, ANSI/MCA FTS-1-2019, was developed by MCA through the Single Ply Roofing Institute's (SPRI) ANSI-accredited canvassing process. The RICOWI and FEMA WIP field studies revealed instances where metal ridge, hip and/or edge system with cleats (See Figures 1 and 2) were torn from the perimeter of a building with a metal roof, exposing a longer leading edge of the incorporated roof panel and initiating a partial failure of the roof system, particularly near the corners and gable edges of the roof. Although the damage was very localized, it did allow water to enter the building and in cases, the edge metal became a wind-borne debris threat. Most commonly, this occurred in two situations:

- Where a multi-piece edge trim assembly incorporating cleats deformed enough to disengage from the cleat. (Figures 1a and 2a)
- Where the metal edge trim assembly was fastened to a non-metal substrate such as wood or masonry, leaving to question the appropriateness of the fastener used since it would often not be provided by the edge system manufacturer for non-metal substrates. (Figures 1b and 2b)

These tendencies were also observed by FEMA in their Mitigation Assessment Team Report for Hurricane Ian. (https://tinyurl.com/mmrstxju) Section 6.3 of this report includes Conclusion FL-10, as shown in Figure 3, recommending that FEMA support industry stakeholders in supporting code change proposals to requiring testing of hip and ridge roof coverings. (FEMA P-2342, Page 6-9)

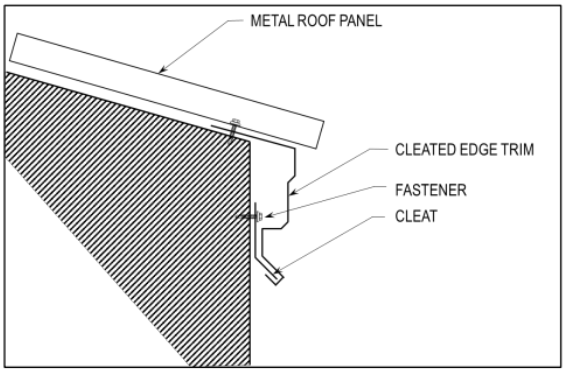

Figure 1 – Cleated Eave Edge Metal System

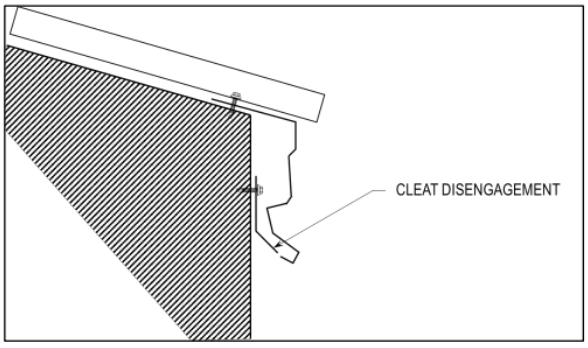

Figure 1a – Cleated Eave Edge Metal System – Cleat Disengagement

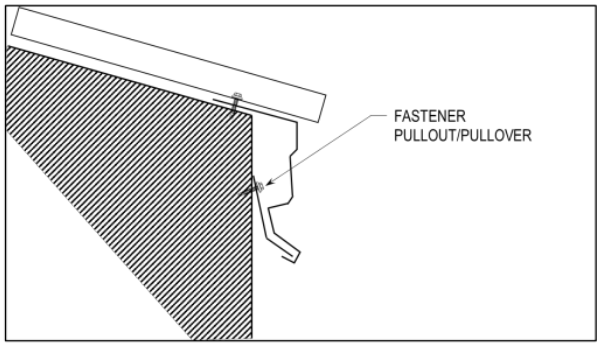

Figure 1b – Cleated Eave Edge Metal System – Fastener Failure

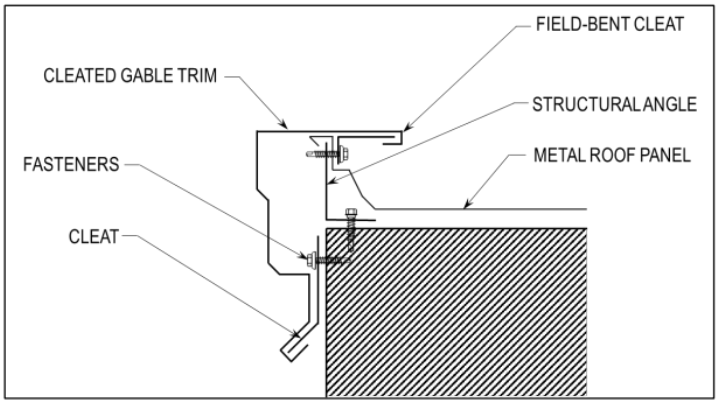

Figure 2 – Cleated Gable Edge Metal System

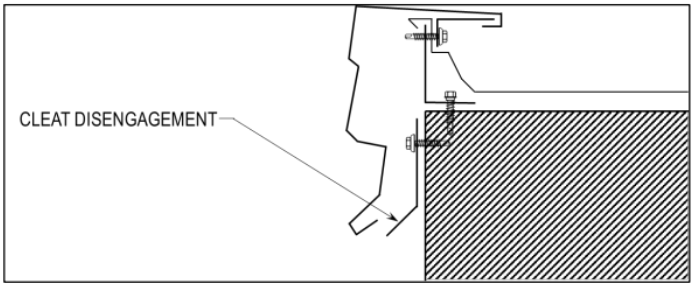

Figure 2a – Cleated Gable Edge Metal System – Cleat Disengagement

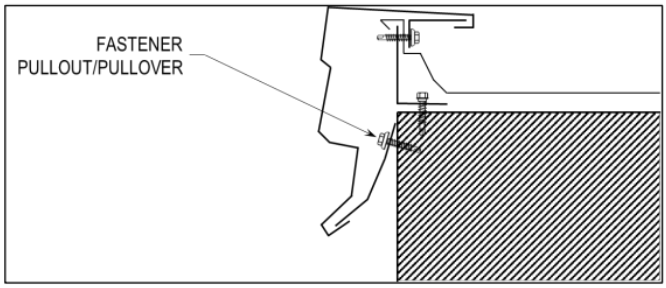

Figure 2b – Cleated Gable Edge Metal System – Fastener Failure

County to capture any lessons learned from the process as the damage assessment dashboard would be an effective tool to include in preparedness exercises and training. It would be highly beneficial to SLTTs to have access to street-level panoramic imagery and helicopter videography following an event like Hurricane Ian to support various response, recovery, mitigation, and preparedness efforts.

6.3. Wind-Related Building Codes, Standards, and Regulations Conclusions and Recommendations

Conclusion FL-10

Hip and ridge roof coverings for many residential buildings appeared to have inadequate resistance to wind loads. Failure of hip and ridge roof coverings on asphalt shingle and metal panel roof coverings was widespread and the most common roof covering failure observed by the MAT. While some asphalt shingle manufacturers test hip and ridge shingles to a modified version of ASTM D3161, the IBC, IRC, and FBC do not specifically require testing of hip and ridge asphalt shingles or metal panel roof coverings.

Recommendation FL-10a. **FEMA should consider submitting code change proposals or supporting code change proposals from other stakeholders—such as IBHS, Asphalt Roofing Manufacturers Association (ARMA), National Roofing Contractors Association (NRCA), and other aligned groups to the IBC, IRC, and the FBC—to require testing of hip and ridge roof coverings for asphalt shingle roof coverings.** The IBC, IRC, and the FBC require asphalt shingles to be tested for wind loads in accordance with ASTM D7158 or ASTM D3161. Underwriters Laboratories (UL) 2375, *Outline of Investigation for Hip and Ridge Shingles* (2016), provides a methodology to use a modified version of ASTM D3161 to test hip and ridge shingles for wind resistance. As an alternative to testing, a prescriptive solution that includes the use of an appropriate adhesive should be developed and included in the IBC, IRC, and FBC.

Recommendation FL-10b. **FEMA should consider submitting code change proposals or supporting code change proposals from other stakeholders—such as IBHS, Metal Construction Association (MCA), NRCA, and other aligned groups to the IBC, IRC, and the FBC—to require testing of hip and ridge roof coverings for metal panel roof coverings.** The ANSI/MCA FTS-1, *Test Method for Wind Load Resistance of Flashings Used with Metal Roof Systems* (2019), specifies wind load resistance testing of hip covers on metal panel roof systems in addition to other edge/flashing metal.

Recommendation FL-10c. **FEMA should consider submitting code change proposals or supporting code change proposals from other stakeholders—such as IBHS, ARMA, NRCA, and other aligned groups to the IBC, IRC, and the FBC—to require a minimum of 6 inches overlap of the roof underlayment to hip and ridges that do not have ventilation components.** Wrapping underlayment over hips and ridges that don't have ventilation components will

Figure 3 – Excerpt from FEMA P-2342

Metal Construction Association

This proposal is being brought forward by The Metal Construction Association. (MCA) Founded in 1983, the MCA is a 501(c)(6) organization promoting the use of metal in the building envelope by bringing together manufacturers and suppliers of metal products used in structures throughout the world to collaborate on marketing, education and advocacy. For more information, see the MCA website at www.metalconstruction.org.

Bibliography:

Federal Emergency Management Association (FEMA); Mitigation Assess Team Report Hurricane Ian in Florida; FEMA P-2342, December 2023; Page 6-9.

Roofing Industry Committee on Weather Issues (RICOWI); Wind Investigation Report: Hurricane Ian; September 2023; Pages 87-90.

R12073Impact Statement

Mod 12073 Cost Impact Statement Attachment

ANSI/MCA FTS-1 testing is estimated to be $1,500/test and most manufacturers carry 4-8 styles of edge metal systems different enough to test separately. Thus, total cost is estimated to be $36,000. Similarly, the TAS-125 testing required for wind resistance of the panel system is estimated as $2,500 per test over a product line of 8 profiles for $40,000. This is a total of $76,000 to carry both.

If this cost is accrued over the life of the product lines, assumed to be at least 2,000 buildings, it results in a nominal increase of at most $38 per building. A typical building of this construction is 2,500 square feet of roof area at $6/square foot and 300 lineal feet of edge/hip/ridge materials valued at $5/lineal foot, this represents a total cost of $16,500 installed. At a total cost of $20/square foot, the building would be $50,000, making the roof 33% of the total cost, which is consistent with industry estimation practices. The increase over the total building cost is 38/50,000, or 0.8%.

Note: Cost estimates are based on general experience of industry stakeholders and are not available publicly due to antitrust restrictions.

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Mod_12073_Impact_Cost Impact Statement 12073.pdf