

## Product Evaluation

RC492 | 0522

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

**Evaluation ID:** RC-492

**Effective Date:** May 1, 2022

**Re-evaluation Date:** May 2026

**Product Name:** U-4 Standing Seam Steel or Aluminum Roofing Panels Installed Over an Insulated Steel Roof Deck

**Manufacturer:** Firestone Building Products, LLC  
250 West 96<sup>th</sup> Street  
Indianapolis, IN 46260  
(800) 428-4442

### General Description:

UC-4 standing seam metal roof panels installed over an insulated steel deck. Panels are either 24-gauge steel or 0.032" aluminum. The panels have a maximum width of 18". The panels have a 1-1/2" tall double lock standing seam rib. The 24-gauge steel material is ASTM A 792 AZ-50 hot dipped Galvalume or ASTM A 653 G-90 galvanized steel with an optional Kynar 500/Hylar 5000 painted finish. The aluminum is ASTM B 209 minimum 0.032" thick.

### Limitations:

**Roof Framing:** Install the standing seam metal roofing panels over an insulated minimum 22-gauge steel deck that is secured to steel purlins.

**New Roof Framing Attachment:** The roof framing must meet or exceed the uplift requirements of the IRC or IBC. Install as required for resistance to wind loads. The maximum allowable spacing of the roof framing must be as specified in each assembly listed in this evaluation report.

**Design Wind Pressures:** The design pressure uplift load resistance requirements are specified in the assemblies listed in this evaluation report.

**Roof Slope:** Do not install the roofing panels on roofs with a slope less than 3:12.

**Installation Over an Existing Roof Covering:** Not permitted.

**Installation:**

**General:** Install the metal roofing panels in accordance with the manufacturer's recommended installation instructions and this evaluation report.

**Installation:** Installation must be in accordance with the following assemblies:

**Assembly No. 1**

Design Pressure: -52.5 psf

Deck: Minimum 22-gauge steel.

Attachment: Attached to minimum 1/4" steel purlins spaced a maximum of 72" on center. Secured with ITW Buildex TRAXX/5 fastener spaced a maximum of 6" on center. Deck side laps are secured with ITW Buildex TRAXX/1 fasteners spaced a maximum of 24" on center.

Insulation: Minimum 1" thick and maximum 4" thick polyisocyanurate foamed plastic. Minimum density of 2 pcf.

Wood Structural Panels: Minimum 7/16" APA rated OSB.

Attachment: Secured to the deck with Firestone All-purpose fasteners and Insulation Fastening Plates. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck. The fasteners are applied at a rate of 16 fasteners for each 4' x 8' wood structural panel.

Panel: Minimum 24-gauge UC-4 steel. Maximum 9-3/4" width.

Attachment: Two UNA-CLAD No. 10 pancake head screws with nylon washers placed in adjacent slots. 12" on center. Use fasteners long enough to ensure a minimum penetration of 1/4" below the wood structural panel.

Panel Seams: Panel seams are snap locked.

**Assembly No. 2**

Design Pressure:	-52.5 psf
Deck:	Minimum 22-gauge steel. <u>Attachment:</u> Attached to minimum 1/4" steel purlins spaced a maximum of 24" on center. Secured with ITW Buildex TRAXX/5 fastener spaced a maximum of 6" on center. Deck side laps are secured with ITW Buildex TRAXX/1 fasteners spaced a maximum of 24" on center.
Insulation:	Minimum 1" thick and maximum 4" thick polyisocyanurate foamed plastic. Minimum density of 2 pcf.
Cover Board:	Minimum 7/16" APA rated OSB.
Panel:	Minimum 24-gauge UC-4 steel. Maximum 18" width. <u>Attachment:</u> Two No. 12-15 No. 3 Philips Drive Truss Head screws with nylon washers placed in adjacent slots. 18" on center. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck.
Panel Seams:	Panel seams are snap locked.

**Assembly No. 3**

Design Pressure:	-82.5 psf
Deck:	Minimum 22-gauge steel. <u>Attachment:</u> Attached to minimum 1/4" steel purlins spaced a maximum of 72" on center. Secured with ITW Buildex Traxx/5 fasteners spaced a maximum of 6 inches on center. Deck side laps are secured with ITW Buildex Traxx/1 fasteners spaced a maximum of 24" on center.
Insulation:	Minimum 1" thick and maximum 4" thick polyisocyanurate foamed plastic. Minimum density of 2 pcf.
Cover Board:	Minimum 15/32" APA rated plywood or 7/16" APA rated OSB.
Panel:	Minimum 22-gauge UC-4 steel. Maximum 9-3/4" width. <u>Attachment:</u> Two UNA-CLAD No. 12 Drill Point fasteners with nylon washers placed in adjacent slots. 12" on center. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck.
Panel Seams:	Panel seams are snap locked.

**Assembly No. 4**

Design Pressure:	-52.5 psf
Deck:	Minimum 22-gauge steel. <u>Attachment:</u> Attached to minimum 1/4" steel purlins spaced a maximum of 24" on center. Secured with ITW Buildex TRAXX/5 fastener spaced a maximum of 6" on center. Deck side laps are secured with ITW Buildex TRAXX/1 fasteners spaced a maximum of 24" on center.
Insulation:	Minimum 1" thick and maximum 4" thick polyisocyanurate foamed plastic. Minimum density of 2 pcf.
Cover Board:	Minimum 15/32" APA rated plywood or 7/16" APA rated OSB.

- Panel: Minimum 24-gauge UC-4 steel. Maximum 17-3/4" width.  
Attachment: Two No. 12-15 No. 3 Philips Drive Truss Head screws with nylon washers placed in adjacent slots. 12" on center. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck.
- Panel Seams: Panel seams are snap locked.

### **Assembly No. 5**

- Design Pressure: -60.0 psf
- Deck: Minimum 22-gauge steel.  
Attachment: Attached to minimum 1/4" steel purlins spaced a maximum of 60" on center. Secured with No. 12-24 HWH, DP5 screws at each flute. Deck side laps are secured with 1/4" x 7/8" HWH screws spaced a maximum of 24" on center.
- Insulation: Minimum 1-1/2" thick HailGard Composite Board.  
Attachment: Secured with eight Heavy Duty HailGard fasteners per 4' x 8' board (1 per 4 sf).
- Panel: Minimum 0.032" UC-4 aluminum. Maximum 18" width.  
Attachment: Two No. 10-12 x 1-1/2" Pancake head screws with nylon washers spaced 1" apart, fastened 18" on center along each nail strip. The fasteners must be long enough to ensure a full penetration into the HailGard Composite Board.
- Panel Seams: Panel seams are snap locked.

**Underlayment:** Minimum of one layer of No. 30 (Type II) asphalt felt. Use underlayment that complies with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. Install the underlayment with minimum 4" side laps and 6" end laps. Apply the underlayment with corrosion resistant fasteners in accordance with the manufacturer's installation instructions. Space the fasteners in accordance with the high wind underlayment installation requirements in the IRC or IBC. Optional Underlayment: Firestone Building Products CLAD-GARD SA-FR Underlayment complying with ASTM D 1970 installed in accordance with the manufacturer's installation instructions.

**Panel Ends and End Laps:** As required by the manufacturer.

**Panel Edges:** As required by the manufacturer.

**Trims, Closures, and Accessories:** Install components, such as the eave trim, rake trim, ridge trim, hip trim, and valley trim as required by the manufacturer.

**Note:** Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.