

Product Evaluation

RC180 | 0920

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-180

Effective Date: September 1, 2020

Re-evaluation Date: September 2024

Product Name: Weather Snap-16 Standing Seam Steel Roofing Panels Installed Over a Plywood Deck or Steel Purlins

Manufacturer: Whirlwind Building Components
8234 Hansen Road
Houston, Texas 77075
(713) 946-7140

General Description:

The Weather Snap-16 metal roofing panels have a 16" coverage. The metal roof panels have a 1-3/4" rib height and a snap lock seam. The metal roof panels are manufactured from 24-gauge Galvalume steel that conform to ASTM A792, Grade 50, with a minimum yield strength of 50 ksi. The metal roofing panels can be painted with Kynar 500 Fluoropolymer finish coating. Figure 1 illustrates a profile view of the metal roofing panel.

Limitations:

Roof Framing: The metal roofing panels must be installed over one of the following types of roof framing:

- Minimum 15/32" plywood roof deck,
- Minimum 16-gauge (0.056") steel purlins.

New Roof Framing Attachment: The roof framing must meet or exceed the uplift requirements of the IRC or IBC and must be installed in a manner to resist the wind loads as required.

Design Wind Pressures: The design pressure uplift load resistance must be as specified in Tables 1-2.

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as 3:12.

Table 1 Attachment of Minimum 24-gauge Weather Snap-16 Steel Roofing Panels to Minimum 15/32" plywood roof deck

Design Wind Pressure (psf)	Clip Fastener	Clip Spacing (Purlin Span)
-78.5	Two (2) No. 10-12 x 1"	24" UL 90 clip
-108.5		6" UL 90 clip

Table 2 Attachment of Minimum 24-gauge Weather Snap-16 Steel Roofing Panels to Minimum 16-gauge Steel Purlins

Design Wind Pressure (psf)	Clip Fastener	Clip Spacing (Purlin Span)
-39.0	One (1) No. 12 x 1" SDS	24" UL 90 clip
-44.2		12" UL 90 clip

Installation Over an Existing Roof Covering: Installation over an existing roof covering is limited to a maximum of one existing layer of composition shingles, wood shingles or shakes, built-up roofing, or roll roofing applied over an existing, solid roof deck of minimum 15/32" plywood. **Note:** Inspection of the existing roof deck must be made prior to the installation of the roof panels. The condition of the existing roof deck must be acceptable to receive the metal roofing panels before the metal roofing panel installation proceeds. Underlayment is not required to be installed.

Installation:

General: The metal roofing panels must be installed in accordance with the manufacturer's recommended installation instructions and this evaluation report.

Panels: The metal roofing panels must be secured to the roof framing as specified in Tables 1 and 2 and in accordance with this section.

Steel Purlins: The 16-gauge steel purlins must be designed and secured to the building framing to satisfy the loads as specified in the IBC.

Underlayment: For installations over a solid deck, a minimum of one layer of No. 30 (Type II) asphalt felt must be used. The underlayment used must comply with one or more of the following:

ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed with 6" side laps and 3" end laps. The underlayment must be applied with corrosion resistant fasteners in accordance with the manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

Attachment of Metal Roof Panels to the Roof Deck: The metal roofing panels must be secured to the roof framing in one of the following ways:

Roofing Panels to Plywood Deck: Minimum No. 10-12 x 1" long, Type A Pancake screws, manufactured by Buildex with 18-gauge Snap Lock two-hole UL 90 galvanized steel fixed clips by SFS. Figure 2 illustrates the panel installation clip. The fasteners must be long enough to ensure a minimum penetration of 1/4" below the roof deck. (Note: If the metal roofing panels are installed over an existing roof covering, then the fastener length must be increased so that the fasteners are long enough to ensure a minimum penetration of 1/4" below the existing plywood roof deck.) The required size and quantity of fasteners as well as the maximum allowable spacing of the clips is specified in Table 1.

Roofing Panels to the Steel Purlins: Minimum No. 10-16 x 1" long, Pancake #3PT screws manufactured by Buildex with 18-gauge Snap Lock two-hole UL 90 galvanized steel fixed clips by SFS. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlins. The required size and quantity of fasteners as well as the maximum allowable spacing of the clips (purlin spacing) is specified in Table 2.

Trims, Closures, and Accessories: Components, such as the eave trim, rake trim, ridge trim, hip trim, and valley trim must be installed as required by the manufacturer.

Alternative Fasteners: Substitution of equivalent fasteners must meet the following requirements:

No. 10-12 Type A Pancake screws, manufactured by Buildex

- Ultimate withdrawal (pullout) \geq 364 lbs. in minimum 15/32" plywood.

No. 10-16 Pancake #3PTscrews, manufactured by Buildex

- Ultimate withdrawal (pullout) \geq 583 lbs. in 16-gauge steel

No. 8 x 2-1/2" Dec-King screws, manufactured by Buildex

- Ultimate withdrawal (pullout) \geq 630 lbs. in Southern Yellow Pine (minimum 1-1/4" embedment)

No. 8 x 3" Dec-King screws, manufactured by Buildex

- Ultimate withdrawal (pullout) \geq 645 lbs. in Southern Yellow Pine (minimum 1-1/4" embedment)

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.

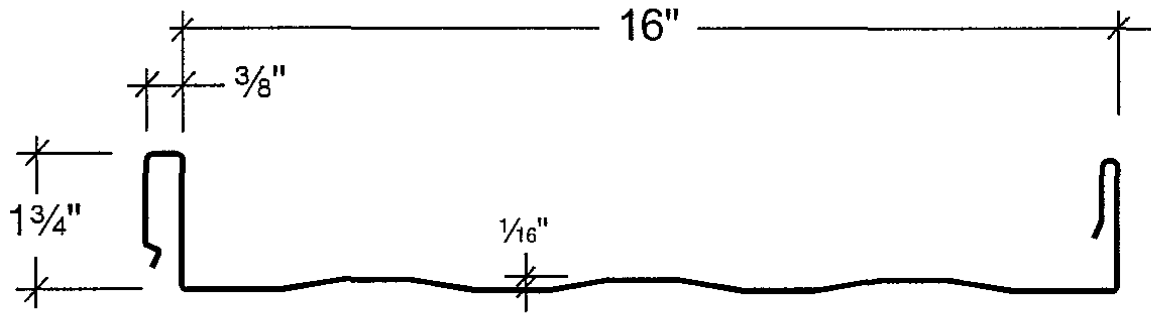


Figure 1. Weather Snap-16 Panel Detail

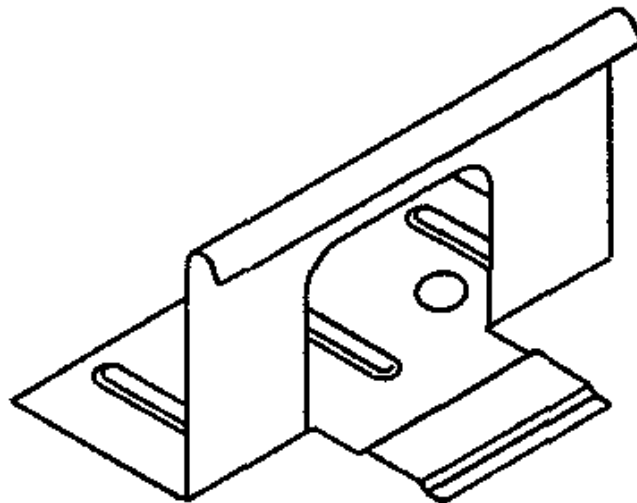


Figure 2. 18-Gauge Snap Lock Two-Hole UL 90 Galvanized Steel Fixed Clip