

## Product Evaluation

RC182 | 0922

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-182

**Effective Date:** September 1, 2022

**Re-evaluation Date:** September 2026

**Product Name:** Weather Lok 16 Standing Seam Steel Roofing Panels (24-Gauge) Installed over either Steel Purlins or a Plywood Roof Deck

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

### General Description:

The Weather Lok 16 standing seam steel roofing panels have 16" of coverage. The steel roofing panels have a 2" rib height and a mechanically seamed side lap. The steel roofing panels are manufactured from 24-gauge Galvalume coated steel that conform to ASTM A792, Grade 50, with a minimum yield strength of 50,000 psi. The steel roofing panels can be painted with Kynar 500 Fluoropolymer finish coating.

### Limitations:

**Roof Framing:** The steel 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 as required for resistance to wind loads.

**Design Wind Pressures:** The design pressure uplift load resistance must be as specified in Tables 1-3.

**Roof Slope:** The steel roofing panels may be installed on roofs with a roof slope as low as 3:12. If applied lap sealant is used, then the minimum roof slope is 1/2:12.

**Table 1**

Attachment of Minimum 24-Gauge Weather Lok Steel Roofing Panels to Minimum 15/32" Plywood Roof Deck

Design Wind Pressure (psf)	Panel Seam	Maximum Allowable Clip Spacing	Number and Type of Screws per Clip
-71.0 psf	Triple Lock	36" on center	Two No. 12-11 x 1"
-84.5 psf	Triple Lock	30" on center	Two No. 12-11 x 1"
-98.0 psf	Triple Lock	24" on center	Two No. 12-11 x 1"
-111.5 psf	Triple Lock	18" on center	Two No. 12-11 x 1"
-125.0 psf	Triple Lock	12" on center	Two No. 12-11 x 1"
-138.5 psf	Triple Lock	6" on center	Two No. 12-11 x 1"

**Table 2**

Attachment of Minimum 24-Gauge Weather Lok Steel Roofing Panels (Triple Lock Seam) to 16-Gauge Steel Purlins

Design Wind Pressure (psf)	Panel Seam	Maximum Allowable Purlin and Clip Spacing	Number and Type of Screws per Clip
-46.9 psf	Triple Lock	60" on center	Two 1/4 - 14 x 1-1/4 HWH
-55.1 psf	Triple Lock	54" on center	Two 1/4 - 14 x 1-1/4 HWH
-63.4 psf	Triple Lock	48" on center	Two 1/4 - 14 x 1-1/4 HWH
-71.6 psf	Triple Lock	42" on center	Two 1/4 - 14 x 1-1/4 HWH
-79.8 psf	Triple Lock	36" on center	Two 1/4 - 14 x 1-1/4 HWH
-88.1 psf	Triple Lock	30" on center	Two 1/4 - 14 x 1-1/4 HWH
-96.3 psf	Triple Lock	24" on center	Two 1/4 - 14 x 1-1/4 HWH

**Table 3**

Attachment of Minimum 24-Gauge Weather Lok Steel Roofing Panels (Double Lock Seam) to 16-Gauge Steel Purlins

Design Wind Pressure (psf)	Panel Seam	Maximum Allowable Purlin and Clip Spacing	Number and Type of Screws per Clip
-57.3 psf	Quad Lock	60" on center	Two 1/4 - 14 x 1-1/4 HWH
-66.0 psf	Quad Lock	54" on center	Two 1/4 - 14 x 1-1/4 HWH
-74.6 psf	Quad Lock	48" on center	Two 1/4 - 14 x 1-1/4 HWH
-83.3 psf	Quad Lock	42" on center	Two 1/4 - 14 x 1-1/4 HWH
-92.0 psf	Quad Lock	36" on center	Two 1/4 - 14 x 1-1/4 HWH
-100.6 psf	Quad Lock	30" on center	Two 1/4 - 14 x 1-1/4 HWH
-109.3 psf	Quad Lock	24" on center	Two 1/4 - 14 x 1-1/4 HWH

**Installation Over an Existing Roof Covering:** For installations over a solid roof deck, 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 roofing panels. The condition of the existing roof deck must be acceptable to receive the steel roofing panels before the steel roofing panel installation proceeds. NOTE: Underlayment is not required to be installed.

**Installation:**

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

**Panels:** The steel roofing panels must be secured to the roof framing as specified in Tables 1-3 and in accordance with this section.

**Steel Purlins:** The steel purlin roof framing must meet or exceed the uplift requirements of the IRC or IBC and must be installed as required for resistance to wind loads.

**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 roofing nails in accordance with the manufacturer's installation instructions, the IRC and IBC.

**Attachment of Steel Roofing Panels to the Roof Deck:** The steel roofing panels must be secured to the roof framing in one of the following ways:

**Roofing Panels to Plywood Deck:** Minimum No. 12-11 x 1" long, Type A Pancake screws, manufactured by Buildex (or approved equal) with FC10200 galvanized steel fixed clips (2-1/16"

high; 3-1/4" long; 0.031" thick). Figure 1 illustrates the panel secured to the plywood roof deck. The fasteners must be long enough to ensure a minimum penetration of 1/4" below the roof deck. (Note: If the steel 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 1/4-14 TCP3 self-drilling screws manufactured by Atlas (or approved equal) with MPS 1203 Slider Clips (4-1/4" long, 20-gauge galvanized steel top; 3-3/8" long; 16-gauge galvanized steel base). Figure 2 illustrates the panel secured to the 16-gauge steel purlins. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel hat purlins. The required size and quantity of fasteners as well as the maximum allowable spacing of the clips (purlin spacing) is specified in Tables 2 and 3.

**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.

**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.

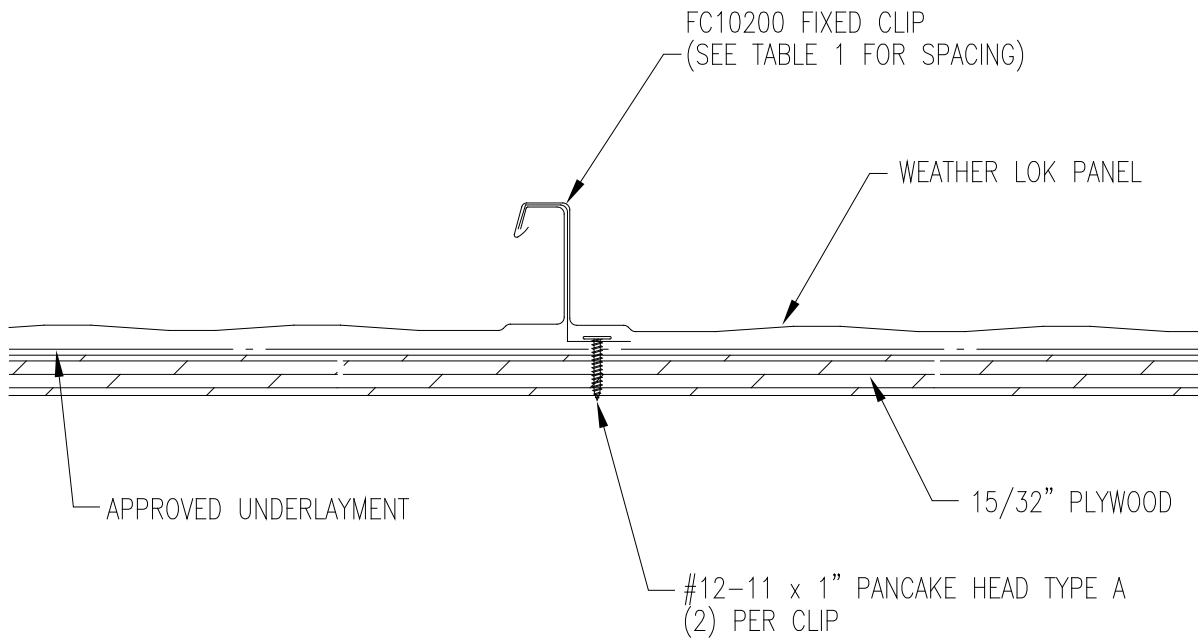
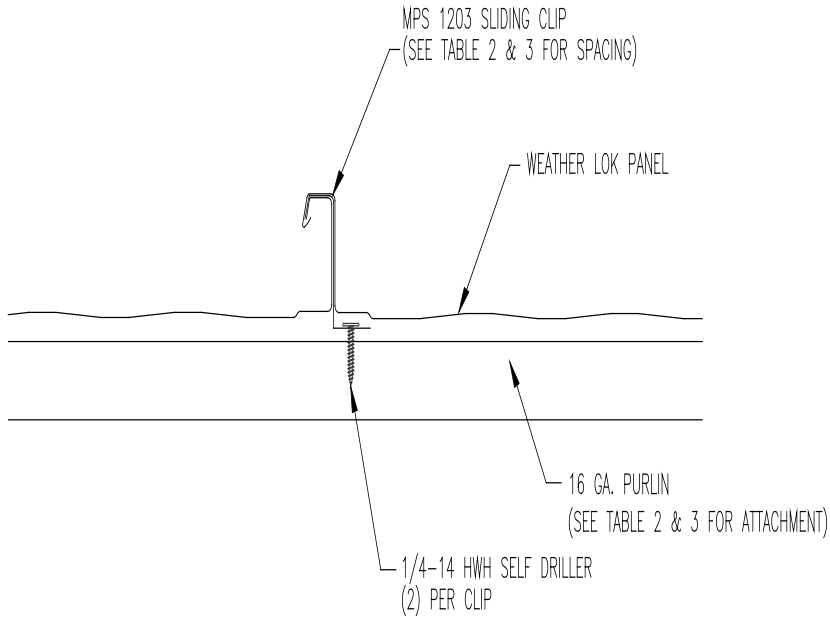


Figure 1: Weather Lok 16 Steel Roofing Panel Secured to a Plywood Deck



**Figure 2:** Weather Lok 16 Steel Roofing Panel Secured to 16-gauge Steel Purlins