

Product Evaluation

RC228 | 0823

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-228

Effective Date: August 1, 2023

Re-evaluation Date: August 2027

Product Name: 26-Gauge R, RPN, and PBR Panel Steel Roofing Panels Installed Over Steel Purlins

Manufacturer: Mueller, Inc.
Metal Buildings, Roofing, and Components
1913 Hutchins Avenue
Ballinger, TX 76821
(800) 231-1034 ext. 8155

General Description:

The R, RPN, and PBR steel roofing panels are minimum 26-gauge galvalume steel with an optional paint finish. The steel roofing panels have 36" of coverage and have a 1-1/4" rib height. The steel roofing panels conform to ASTM A792, with a minimum yield strength of 80 ksi.

Limitations:

Roof Framing: Install the steel roofing panels over open 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.

Design Wind Pressures: Table 1 specifies the design pressure uplift load resistance.

Roof Slope: Install the steel roofing panels on roofs with a roof slope as low as 1/2:12 if sealant is used on the panel side laps. If not using sealant on the panel side laps, then the minimum roof slope is 3:12.

Installation Over an Existing Roof Covering: Not permitted.

Table 1. Attachment of Minimum 26-gauge R, RPN, and PBR Panel Steel Roofing Panels to Steel Purlins

Design Wind Pressure	Purlins	Attachment of Panel to Steel Purlins
-115.0 psf	Minimum 16-gauge; 2'-0" on center	Fasteners @ 12"-12"-12"; 2'-0" on center
-102.9 psf	Minimum 16-gauge; 2'-6" on center	Fasteners @ 12"-12"-12"; 2'-6" on center
-90.8 psf	Minimum 16-gauge; 3'-0" on center	Fasteners @ 12"-12"-12"; 3'-0" on center
-78.8 psf	Minimum 16-gauge; 3'-6" on center	Fasteners @ 12"-12"-12"; 3'-6" on center
-66.7 psf	Minimum 16-gauge; 4'-0" on center	Fasteners @ 12"-12"-12"; 4'-0" on center
-54.6 psf	Minimum 16-gauge; 4'-6" on center	Fasteners @ 12"-12"-12"; 4'-6" on center
-42.5 psf	Minimum 16-gauge; 5'-0" on center	Fasteners @ 12"-12"-12"; 5'-0" on center

Installation:

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

Steel Purlins: Table 1 specifies the minimum thickness of steel and the maximum spacing of the purlins.

Underlayment: N/A

Attachment of steel Roofing Panels to the Steel Purlins: Secure the steel roofing panels to the steel purlins with No. 12-14 x 1-1/4" long HWH self-driller screws with a sealing washer manufactured by Atlas or equivalent screws. Locate a line of fasteners along each steel purlin. Table 1 specifies the fastener pattern and the spacing of the fasteners. Use fasteners long enough to ensure a minimum penetration of three pitches of thread below the steel purlin. Refer to Figure 1 in this evaluation report.

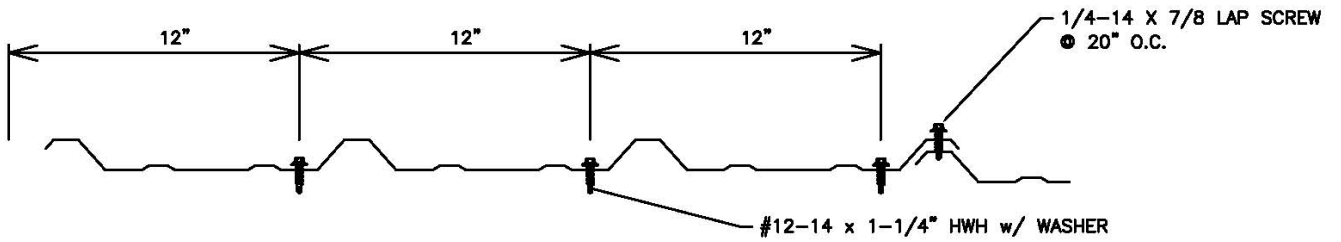
Panel Side Laps: Stitch the panels together with minimum 1/4-14 x 7/8" Lap Tek screws with a sealing. Space the fasteners 20" on center along the length of the side lap.

Panel Ends and End Laps to the Steel Purlins: Minimum No. 12-14 x 1-1/4" long HWH self-driller screws with a sealing washer manufactured by Atlas or equivalent screws. Locate a line of fasteners in a 5"-7"-5"-7"-5" pattern along the steel purlin. Use fasteners long enough to ensure a minimum penetration of three pitches of thread below the steel deck. Refer to Figure 1 for an illustration of the fastener pattern.

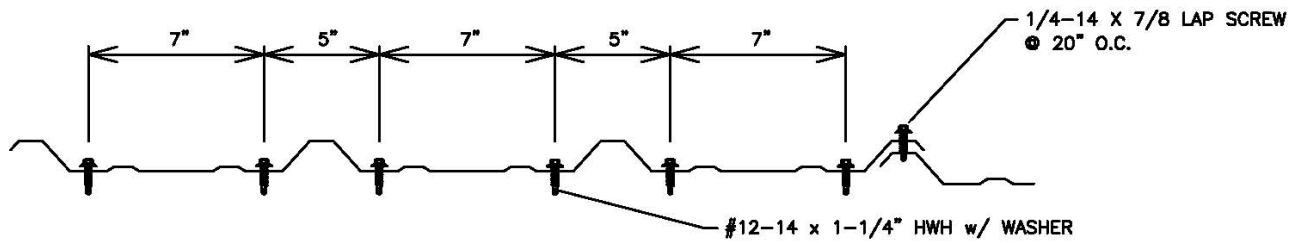
Panel Edges to the Steel Purlins: Minimum No. 12-14 x 1-1/4" long HWH self-driller screws with a sealing washer manufactured by Atlas or equivalent screws. Locate a line of fasteners in a 5"-7"-5"-7"-5" pattern along the steel purlin. Use fasteners long enough to ensure a minimum penetration of three pitches of thread below the steel deck. Refer to Figure 1 for an illustration of the fastener pattern.

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.



TYPICAL SCREW PATTERN FOR INTERIOR SUPPORTS



SCREW PATTERN FOR PANEL ENDS & ENDLAPS

Figure 1. Minimum 26-Gauge R, RPN, and PBR Panel Fastener Patterns