

Product Evaluation

RC515 | 0422

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-515

Effective Date:

April 1, 2022

Re-evaluation Date:

April 2026

Product Name: PBR Steel Panels installed over Steel Purlins or Steel Girts

Manufacturer: Alliance Steel
3333 South Council Rd.
Oklahoma City, OK 73719
(405) 745-7500

General Description:

This evaluation report is for PBR metal panels installed over steel purlins or steel girts. The metal panels are minimum 26-gauge Galvalume coated steel. The metal panels have 36" of coverage. The metal panels have a 1-1/4" rib height. The metal panels conform to ASTM A792, SS Grade 80 class 1, 2, or 3 for 26-gauge and ASTM SS Grade 50 Class 1 for 24-gauge. The metal panels are supplied with an AZ 50 or AZ55 aluminum zinc alloy coating. The metal panels can be supplied painted with silicone polyester products or with Fluropon paint systems.

Limitations:

Framing: Install the metal panels over open steel purlins or girts.

New Framing Attachment: The framing must meet or exceed the wind pressure requirements of the IRC or IBC. Install as required for resistance to wind loads.

Design Wind Pressures: Tables 1 through 4 specify the design pressure negative wind load resistance.

Installation over an Existing Roof Covering: Not permitted.

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

Table 1

Attachment of 26-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 5"-7"-5"

16-Gauge Steel Purlins/Girts (Spacing)	Design Wind Pressure (psf)
5'-0" on center	-47.3
4'-6" on center	-71.7
4'-0" on center	-96.1
3'-6" on center	-120.5
3'-0" on center	-144.9
2'-6" on center	-169.3
2'-0" on center	-193.8

Table 2

Attachment of 26-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 12"-12"-12"

16-Gauge Steel Purlins/Girts (Spacing)	Design Wind Pressure (psf)
8'-0" on center	-20.0
7'-6" on center	-22.8
7'-0" on center	-25.6
6'-6" on center	-28.5
6'-0" on center	-31.3
5'-6" on center	-34.1
5'-0" on center	-36.9
4'-6" on center	-52.5
4'-0" on center	-68.1
3'-6" on center	-83.8
3'-0" on center	-99.4
2'-6" on center	-115.0
2'-0" on center	-130.6

Table 3

Attachment of 24-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 5"-7"-5"

16-Gauge Steel Purlins/Girts (Spacing)	Design Wind Pressure (psf)
5'-0" on center	-42.2
4'6" on center	-69.0
4'0" on center	-95.9
3'6" on center	-122.7
3'0" on center	-149.6
2'6" on center	-176.4
2'-0" on center	-203.3

Table 4

Attachment of 24-gauge PBR Metal Panels to Steel Purlins/Girts Fastener Pattern 12"-12"-12"

16-Gauge Steel Purlins/Girts (Spacing)	Design Wind Pressure (psf)
5'-0" on center	-37.0
4'6" on center	-52.6
4'0" on center	-68.2
3'6" on center	-83.8
3'0" on center	-99.4
2'6" on center	-115.0
2'-0" on center	-130.6

Installation:

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

Steel Purlins or Girts: Tables 1 through 4 specify the minimum thickness of steel and the maximum spacing of the purlins or girts.

Underlayment: N/A

Attachment of Metal Panels to the Steel Purlins or Girts: Secure to the steel purlins/girts with No. 12-14 x 1-1/4" long hex head self-drilling screws a sealing washer. Locate a line of fasteners along each steel purlin/girt. Tables 1 through 4 specify the fastener pattern and the spacing. Use fasteners long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlin/girt.

Panel Side Laps: The panels are stitched together with minimum #14-14 x 7/8" hex head screws with a sealing washer. Space the fasteners 20" on center along the length of the side lap.

Panel Ends and End Laps to Steel Purlins or Girts: Minimum No. 12-14 x 1-1/4" hex head self-drilling screws with a sealing washer. Tables 1 through 4 specify the fasteners pattern. Use

fasteners long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlin/girt.

Panel Edges to the Steel Purlins or Girts: Minimum No. 12-14 x 1-1/4" hex head self-drilling screws with a sealing washer. Tables 1 through 4 specify the fasteners pattern. Use fasteners long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlin/girt.

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.