

Product Evaluation

RC432 | 0220

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-432

Effective Date: February 1, 2020

Re-evaluation Date: February 2024

Product Name: Horizon Structural Systems PBR Metal Panels installed over Steel Purlins/Girts, 26-Gauge and 24-Gauge

Manufacturer: Horizon Structural Systems
3950 Hwy 46 W. Ste. 400
New Braunfels, TX 78132
(830) 608-1935

General Description:

This evaluation report is for PBR metal panels installed over steel purlins/girts.

The metal panels are minimum 26-gauge or 24-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, and 3 for 26-gauge and ASTM SS Grade 50 Class 1 for 24-gauge.

The metal panels are supplied with AZ 50 or AZ 55 aluminum zinc alloy coating. The metal panels can be supplied painted with silicone polyester products or with Fluoropon paint systems.

Limitations:

Framing: Install the metal panels over open steel purlins/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: Install the metal roofing panels on roofs with a roof slope as low as 1/2:12 with sealant on the panel side laps. If not using sealant 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"

Design Wind Pressure (psf)	Attachment of Panel to Steel Girts (Minimum 16-gauge)
-42.1	5'-0" o.c.
-70.1	4'-6" o.c.
-98.2	4'-0" o.c.
-126.3	3'-6" o.c.
-154.3	3'-0" o.c.
-182.4	2'-6" o.c.
-210.5	2'-0" o.c.

Table 2. Attachment of 26-gauge PBR Metal Panels to Steel Purlins/Girts; Fastener Pattern 12"-12"-12"

Design Wind Pressure (psf)	Attachment of Panel to Steel Girts (Minimum 16-gauge)
-36.9	5'-0" o.c.
-52.5	4'-6" o.c.
-68.1	4'-0" o.c.
-83.7	3'-6" o.c.
-99.3	3'-0" o.c.
-114.9	2'-6" o.c.
-130.5	2'-0" o.c.

Table 3. Attachment of 24-gauge PBR Metal Panels to Steel Purlins/Girts; Fastener Pattern 5"-7"-5"

Design Wind Pressure (psf)	Attachment of Panel to Steel Girts (Minimum 16-gauge)
-52.6	5'-0" o.c.
-77.4	4'-6" o.c.
-102.3	4'-0" o.c.
-127.1	3'-6" o.c.
-152.0	3'-0" o.c.
-176.8	2'-6" o.c.
-201.7	2'-0" o.c.

Table 4. Attachment of 24-gauge PBR Metal Panels to Steel Purlins/Girts; Fasteners Pattern 12"-12"

Design Wind Pressure (psf)	Attachment of Panel to Steel Girts (Minimum 16-gauge)
-31.7	5'-0" o.c.
-48.1	4'-6" o.c.
-64.6	4'-0" o.c.
-81.1	3'-6" o.c.
-97.6	3'-0" o.c.
-114.1	2'-6" o.c.
-130.6	2'-0" o.c.

Installation:

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

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

Underlayment: N/A

Attachment of Metal Panels to the Steel Purlins/Girts: For panel-to-purlin/girt attachment secure to the steel purlins/girts with No. 12-14 x 1-1/4" long Hex Head w/ 9/16" steel washer. Locate a line of fasteners along each steel girts. Tables 1 through 4 specify the fastener pattern and spacing. Use fasteners long enough to ensure a minimum penetration of 3 pitches of thread below the steel girt. Refer to Figure 1 in this evaluation report.

Panel Side Laps: The panels are stitched together with minimum #14-14 x 7/8" Hex Head w/ 5/8" steel washer. Space the fasteners 20" on center along the length of the side lap.

Panel Ends and End Laps to Steel Purlins/Girts: Minimum No. 12-14 x 1-1/4" Hex Head with 9/16" steel 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 girt. Refer to figure 1 for an illustration of the fastener pattern.

Panel Edges to the Steel Purlins/Girts: Minimum No. 12-14 x 1-1/4" Hex Head w/ 9/16" steel 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 girt. Refer to Figure 1 for an illustration of the fastener pattern.

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.

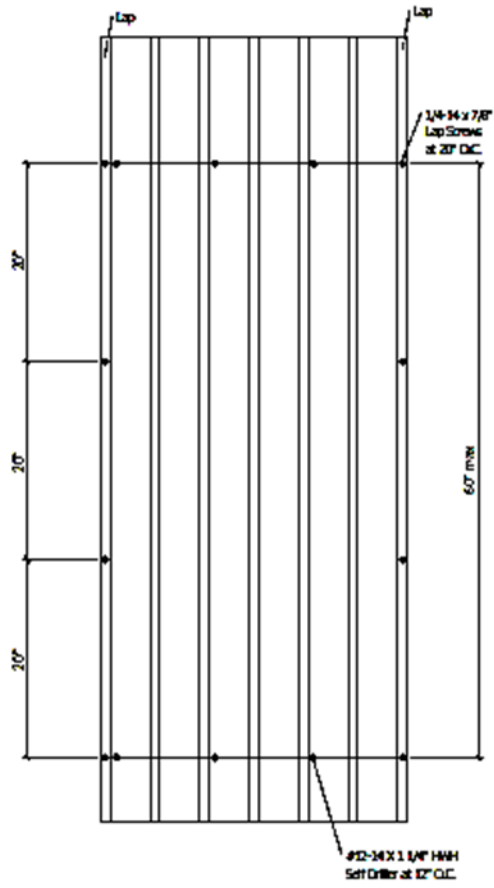


Figure 1. Minimum 26-Gauge PBR Panel Fastener Pattern