

## Product Evaluation

RC177 | 1221

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-177

**Effective Date:** December 1, 2021

**Re-evaluation Date:** December 2025

**Product Name:** Minimum 26-Gauge PBR Steel Roofing Panels Installed Over Wood Purlins

**Manufacturer:** Triple S Steel  
6000 Jensen Drive  
Houston, TX 77026  
(713) 697-7105

### General Description:

The PBR steel roofing panels are minimum 26-gauge galvalume steel with an optional paint finish. The 26-gauge panel has an actual coverage of 36". The steel roofing panels have a 1-1/4" rib height. The steel roofing panels conform to ASTM A792, with an 80,000 psi yield point. The steel roofing panels can be painted with CERAM-A-STAR 950 by Akzo Nobel.

### Limitations:

**Roof Framing:** The PBR steel roofing panels are installed over minimum 1x4 No. 2 Southern Yellow Pine wood purlins that are secured to a minimum 15/32" plywood deck.

**New Roof Framing Attachment:** The roof framing and roof deck must meet or exceed the uplift requirements of the IRC or IBC and be installed as required for resistance to wind loads.

**Roof Slope:** The panels may be installed on roofs with slopes as low as 1/2:12 if sealant is used on the panel side laps. If sealant is not used on the panel side laps, then the minimum slope is 3:12.

**Installation Over an Existing Roof Covering:** Not permitted.

**Design Wind Pressures:** The design pressure uplift load resistance is specified in Table 1.

**Table 1.** Attachment of Minimum 26-gauge PBR Steel Roofing Panels to Wood Purlins

Design Wind Pressure (psf)	Fastener Pattern	Fastener Spacing	1x4 Wood Purlin Spacing	1x4 Screw Spacing Into Plywood Deck
-86.0	12"-12"-12"	24"	24"	12"
-131.0	7"-5"-7"-5"-7"	18"	18"	6"

**Installation:**

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

**Wood Purlins:** The wood purlins are secured to the plywood deck using minimum No. 8 x 2-1/2" wood screws spaced as specified in Table 1. If installation is over an existing roof covering, then the fasteners must be long enough to ensure a minimum penetration of 1/4" below the existing plywood roof decking.

**Panels:** The PBR steel roofing panels are secured to the wood purlins as specified in Table 1 and in accordance with this section. Refer to Figure 1 and Figure 2 for an illustration of the required fastener patterns.

**Underlayment:** 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 and the IRC and IBC. Fasteners must be located as required by the IRC and the IBC. The underlayment must be installed prior to the installation of the 1x4 purlins.

**Attachment of Steel Roof Panels to the Wood Purlins:** The PBR steel roofing panels are secured to the wood purlins with minimum No. 9-15 x 1-1/2" long, HWH Woodgrip screws with a sealing washer. A line of fasteners is installed as specified in Table 1. The spacing of the line of fasteners along the length of the panel (wood purlin spacing) must be as specified in Table 1. Refer to Figure 1 and Figure 2 of this evaluation report for illustrations of the fastener patterns.

**Panel Side Laps:** Minimum 1/4-14 x 7/8" Lap Tek screws with a sealing washer. The fasteners are spaced 20" on center along the length of the side lap.

**Panel Ends and End Laps to the Wood Purlins:** Minimum No. 9-15 x 1-1/2" long HWH Woodgrip screws with a sealing washer. A line of fasteners in a 7"-5"-7"-5"-7" pattern is installed. Refer to Figure 1 of this evaluation report for an illustration of the fastener pattern.

**Panel Edges to the Wood Purlins:** Minimum No. 9-15 x 1-1/2" long HWH Woodgrip screws with a sealing washer. Along the edge of a panel, the spacing of the fasteners is the same as for the line of fasteners in Table 1.

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

**Alternative Fasteners:** Substitution of equivalent fasteners shall meet the following requirements:

No. 9-15 Woodgrip screws with a sealing washer, manufactured by SFS

- Ultimate withdrawal (pullout)  $\geq$  542 lbs. in nominal 1" Spruce Pine Fir

**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.

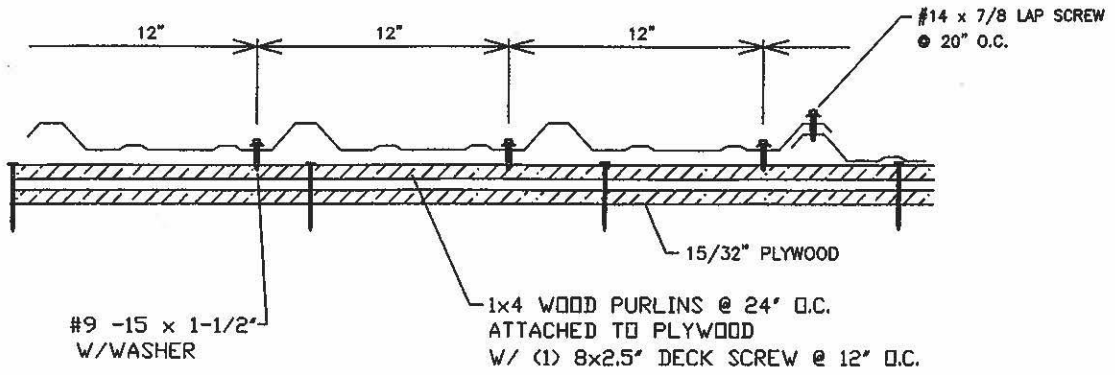


Figure 1. PBR Panel Detail (12-12-12 Fastener Pattern)

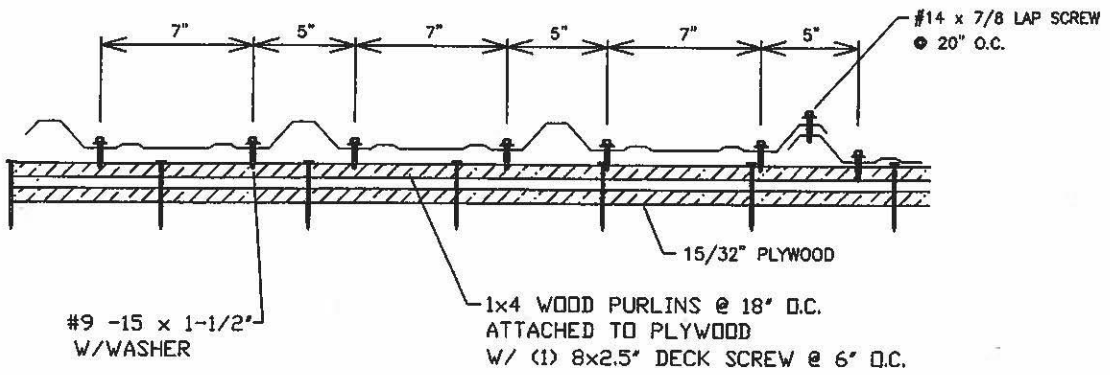


Figure 2. PBR Panel Detail (7-5-7-5-7 Fastener Pattern)