

## Product Evaluation

RC599 | 0923

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-599

**Effective Date:** September 1, 2023

**Re-evaluation Date:** September 2027

**Product Name:** 26-Gauge Steel PBR Roof Panels Installed Over either Wood Purlins or a Plywood Deck

**Manufacturer:** Reed's Metals – Cornerstone BB  
19 E. Lincoln Road NE  
Brookhaven, MS 39601  
(601) 823-6516

### General Description:

The PBR metal roofing panel is a minimum 26-gauge galvalume steel panel. The PBR panel has a coverage of 36" with 1-1/4" tall major ribs at 12" on center. The panel conforms to ASTM A792, Grade 80, with a yield strength of 80,000 psi. The metal panels are available in optional painted finishes.

This evaluation report is for PBR metal roof panels that are secured to either nominal 1" x 4" wood purlins or to a minimum 15/32" plywood deck. Thicker wood purlins or plywood may be used; however, the design pressure rating for the metal panels will be as specified in this evaluation report.

### Limitations:

**Roof Framing:** The metal roofing panels must be installed over either nominal 1" x 4" Southern Yellow Pine wood purlins that are secured to minimum 15/32" plywood or directly to minimum 15/32" plywood. Roof framing must not exceed 24" on center.

**New Roof Decking 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.

**Roof Slope:** The PBR roof panels may be installed on roofs with a roof slope 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 roof slope is 3:12.

**Design Wind Pressures:** The design pressure uplift load resistance must be as specified in Table 1 or Table 2.

**Table 1:** Attachment of minimum 26-gauge steel PBR roofing panels to wood purlins

Design Wind Pressure (psf)	Panel Fastener Pattern	Panel Fastener Spacing	Wood Purlin Spacing	Wood Purlin Fastener Spacing
-56.0	12"-12"-12"	24" on center	24" on center	4" on center
-123.5	7"-5"-7"-5"-7"	12" on center	12" on center	4" on center

**Table 2:** Attachment of minimum 26-gauge steel PBR roofing panels to 15/32" plywood

Design Wind Pressure (psf)	Panel Fastener Pattern	Panel Fastener Spacing
-56.0	12"-12"-12"	24" on center
-146.0	7"-5"-7"-5"-7"	12" on center

**Installation Over an Existing Roof Covering:** 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. The existing roof deck must be minimum 15/32" plywood. Note: Inspection of the existing roof deck must be made before installing the roof panels. The condition of the existing roof deck must be acceptable to receive the roof panels before the roof panel installation can proceed.

#### **Installation:**

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

**Attachment of Wood Purlins to Roof Deck:** Wood purlins must be minimum Southern Yellow Pine. Secure the wood purlins to the minimum 15/32" plywood deck with minimum 8D x 2-1/2" ring shank nails. Space the fasteners as specified in Table 1. The fasteners must be long enough to penetrate a minimum of 1/4" below the plywood deck.

**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 felt must be installed with minimum 6" side laps and minimum 2" end laps. The underlayment must be applied with corrosion-resistant fasteners in accordance with manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

**Attachment of Metal Roofing Panels to the Wood Purlins:**

Secure the PBR metal roofing panels to the wood purlins with minimum No. 9-15 x 1-1/2" long Woodgrip HWH screws with a washer. Locate a line of fasteners along each purlin. Table 1 specifies the fastener pattern and the spacing of the fasteners. Use fasteners long enough to ensure a penetration completely into the wood purlins.

**Attachment of Metal Roofing Panels to the Plywood Deck:**

Secure the PBR metal roofing panels to the plywood deck with minimum No. 9-15 x 1-1/2" long Woodgrip HWH screws with a washer. Table 2 specifies the fastener pattern and the spacing of the fasteners. Use fasteners long enough to ensure a minimum penetration of 1/4" below the wood deck.

**Panel Side Laps:** The panel side laps are stitched together with 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 panel side lap.

**Panel Ends:** As required by the manufacturer.

**Panel Edges:** As required by the manufacturer.

**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.