

## Product Evaluation

RC393 | 0723

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-393

**Effective Date:** June 1, 2023

**Re-evaluation Date:** July 2027

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

**Manufacturer:** Metal Building Components, Inc. (MBCI), L.P., a division of NCI, L.P.  
14031 West Hardy  
Houston, TX 77060  
(281) 445-8555

### General Description:

The PBR metal roofing panel is minimum 26-gauge, coated steel. The 26-gauge panel has an actual coverage of 36". The metal roof panels have a 1-1/4" rib height. The panels conform to ASTM A 792 with a yield strength of 80,000 psi. The panels are galvanized and conform to ASTM A 653.

### Limitations:

**Roof Framing:** Install the metal 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:** If using sealant on the panel side laps, install the metal roof 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 Minimum 26-gauge PBR Metal Roofing Panels to Steel Purlins

System	Design Wind Pressure (psf)	Purlins	Attachment of Panels to Steel Purlins
1	-52.5	Minimum 16-gauge; 5'-0" on center	Fasteners at 12" on center
2	-80.0	Minimum 16-gauge; 4'-0" on center	Fasteners at 12" on center
	-100.4	Minimum 16-gauge; 3'-6" on center	Fasteners at 12" on center
	-120.7	Minimum 16-gauge; 3'-0" on center	Fasteners at 12" on center
	-141.0	Minimum 16-gauge; 2'-6" on center	Fasteners at 12" on center
	-161.3	Minimum 16-gauge; 2'-0" on center	Fasteners at 12" on center

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

**Installation:**

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

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

**Underlayment:** NA

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

**System 1:** Secure the PBR metal roofing panels to the steel purlins with No. 12-14 x 1" self-drilling, self-tapping, hex head, plated steel screws with a 5/8" outer diameter formed steel washer and a neoprene sealing washer. Locate a line of fasteners along each purlin. Table 1 specifies the fastener pattern and the spacing of the fasteners. The fastener pattern at end laps is 5"-7"-5"-7" pattern. The spacing for panel to panel connection shall be 20" on center with a fastener located at each purlin. Use fasteners long enough to ensure a minimum penetration of 3-pitches of thread below the steel purlin.

**System 2:** Secure the PBR metal roofing panels to the steel purlins with 1/4-14-14 x 1-1/4" HWH w/Ultimate Long-Life Head SD #3. Locate a line of fasteners along each purlin. Table 1 specifies the fastener pattern and the spacing of the fasteners. The fastener pattern at end laps is 5"-7"-5"-7" pattern. Use fasteners long enough to ensure a minimum penetration of 3-pitches of thread below the steel purlin.

**Panel Side Laps:** The panels are stitched together with minimum 1/4-14 x 7/8" lap screws. Space the fasteners 20" on center along the length of the side lap.

**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.