

## Product Evaluation

RC421 | 1223

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-421

**Effective Date:** December 1, 2023

**Re-evaluation Date:** December 2027

**Product Name:** Minimum 26-Gauge PBR Steel Roofing Panels Installed over 1 x 4 Wood 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 galvalume steel with an optional paint finish. The 26-gauge panel has an actual coverage of 36". The metal roof panels have a 1-1/4" rib height. The metal roof panels conform to ASTM A792 with minimum yield strength of 80,000 psi.

### Limitations:

**Roof Framing:** Install the metal roofing panels over open wood 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:** The metal roofing 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.

**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 applied over an existing, solid roof deck. Secure the wood purlins to the wood rafters or trusses using two minimum No. 8 wood screws. Use fasteners long enough to penetrate a minimum of 1-3/4" into the roof framing. The roof framing shall be minimum No. 2 Southern Yellow Pine dimension lumber.

**Table 1.** Attachment of Minimum 26-Gauge PBR Metal Roofing Panels to 1x4 Wood Purlins

Design Wind Pressure	Purlins	Attachment of Panels to Wood Purlins
-93.5 psf	Min. No. 2 Southern Pine 2'-0" on center	Fasteners at 12"-12"-12"; 2'-0" on center
-183.5 psf	Min. No. 2 Southern Pine 1'-0" on center	Fasteners at 7"-5"-7"-5"-7"; 1'-0" on center

**Installation Instructions:**

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

**Wood Purlins:** Minimum nominal 1" x 4" No. 2 Southern Pine wood purlins. Table 1 specifies the maximum spacing of the purlins.

**Underlayment:** Underlayment is not required.

**Attachment of Metal Roofing Panels to the Wood Purlins:** Secure the PBR metal roofing panels to the wood purlins with No. 10-14 x 1-1/2" Ultimate LocFast w/sealing washers by Atlas. Fasteners offset from rib 1/2". Locate a line of fasteners along each purlin. Table 1 specifies the fastener pattern and the spacing of the fasteners.

**Panel Side Laps:** Stitch the panels together with minimum 1/4"-14 x 7/8" Lap Tek screws with a sealing washer. Space the fasteners at 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.