

Product Evaluation

RC279 | 0321

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-279

Effective Date: March 1, 2021

Re-evaluation Date: March 2025

Product Name: R-Panel and PBR-Panel Steel Roof Panels Installed over Wood Purlins

Manufacturer: Metal Sales Manufacturing Corporation
3838 North General Bruce Drive
Temple, TX 76501-6505
(254) 791-6550

General Description:

This evaluation report is for R-Panel and PBR-Panel steel roof panels that are secured to nominal 1x4 wood purlins. Thicker wood purlins may be used; however, the design pressure rating for the metal roofing panels must be as specified in this evaluation report.

The R-Panel and PBR-Panel roof panels have a 36" coverage. The roof panels have ribs 1-1/4" in height and are spaced 12" on center. The roof panels are manufactured from minimum 26-gauge (0.019") steel with a minimum yield strength of 80 ksi and a Galvalume or galvanized coating. The metal roofing panels conform to ASTM A653 or ASTM A792 and may be pre-painted.

Limitations:

Roof Framing: The roof panels must be installed over nominal 1x4 No. 2 Southern Yellow Pine wood purlins. The wood purlins must be secured to minimum Southern Yellow Pine roof framing

(rafters or trusses). The roof framing must not exceed 24" on center. A solid roof deck is not required.

New Roof Framing 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.

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

Table 1. Attachment of Minimum 26-Gauge R-Panel and PBR-Panel Roof Panels to Minimum 1x4 No. 2 Southern Yellow Pine Wood Purlins

Design Wind Pressure (psf)	Attachment of Roof Panel to Wood Purlins
-41.6	Fastening Pattern #1 @ 4'-0" on center
-57.7	Fastening Pattern #1 @ 3'-6" on center
-73.8	Fastening Pattern #1 @ 3'-0" on center
-90.0	Fastening Pattern #1 @ 2'-6" on center
-106.0	Fastening Pattern #1 @ 2'-0" on center
-122.0	Fastening Pattern #1 @ 1'-6" on center
-138.0	Fastening Pattern #1 @ 1'-0" on center

Roof Slope: The roof panels may be installed on roofs with a roof slope as low as 1/2:12 if sealant is used on the side laps. If sealant is not used on the panel side laps, the minimum roof slope is 3:12. Application of the sealant must be in accordance with the manufacturer's installation instructions.

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. The wood purlins must be secured to each wood rafter or truss through the existing roof covering using two (2) minimum No. 8 wood screws. The fasteners must be long enough to penetrate a minimum of 1-1/2" into the roof framing. The roof framing must be minimum Southern Yellow Pine dimension lumber. NOTE: Underlayment is not required to be installed.

Installation:

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

Underlayment: For installations over a solid deck. If used, then 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 roofing nails in accordance with the IRC and the IBC.

Wood Purlins: The wood purlins must be secured to each wood rafter or roof truss using two (2) minimum No. 8 x 2-1/2" long wood screws. The fasteners must be long enough to penetrate a minimum of 1-1/2" into the roof framing. Roof framing (rafters or trusses) must not exceed 24" on center.

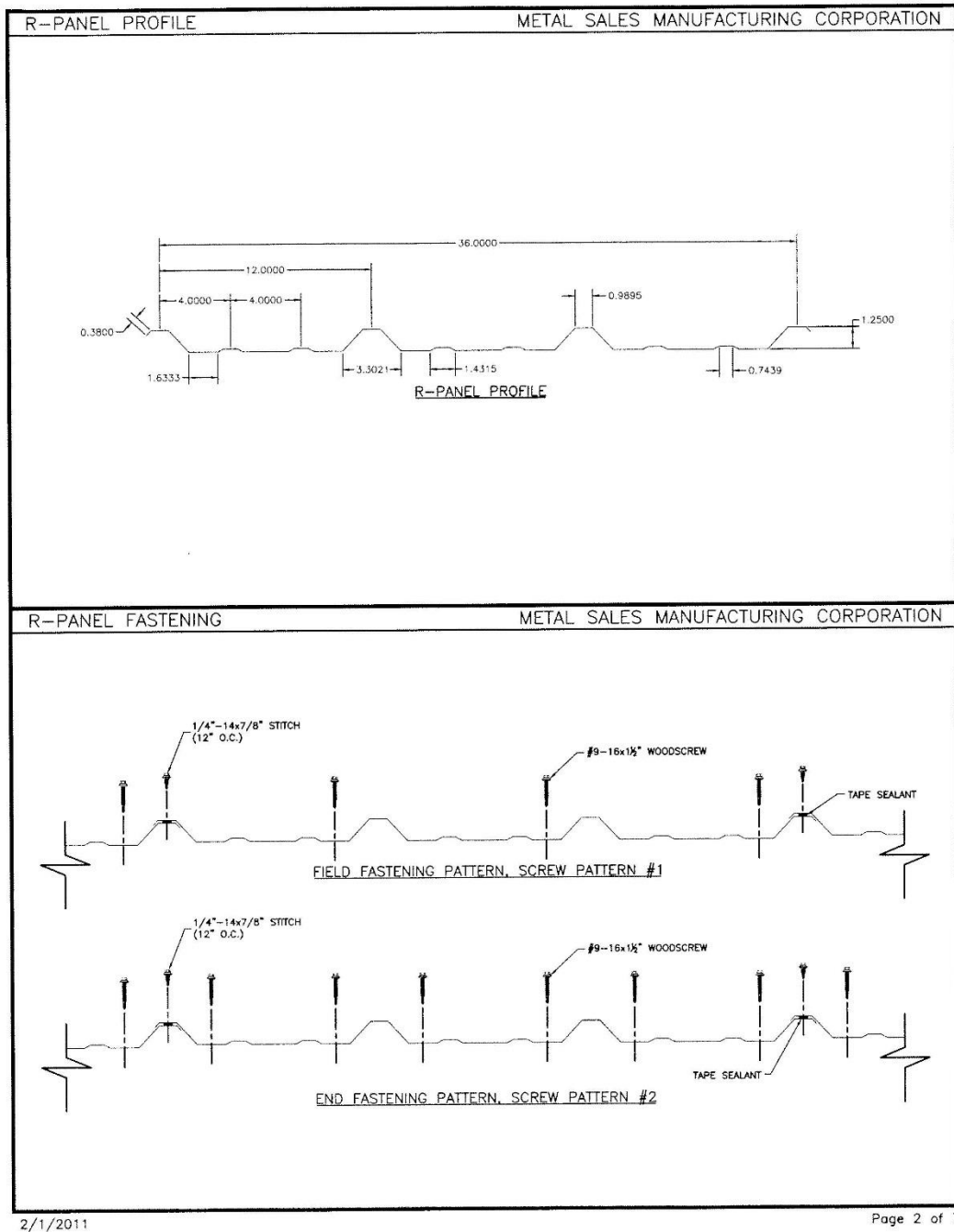
Attachment of Roofing Panels to the 1x4 Wood Purlins: The R-Panel and PBR-Panel roof panels must be secured to the wood purlins with minimum No. 9-16 x 1-1/2" long wood screws with a sealing washer, manufactured by Atlas. The required fastener pattern and spacing of the fasteners is specified in Table 1 and is shown in Figure 1.

Panel Ends and End Laps: Minimum No. 9-16 x 1-1/2" long wood screws with a sealing washer, manufactured by Atlas. The required fastener pattern is shown Screw Pattern #2 in Figure 1.

Panel Side Laps: Minimum 1/4"-14 x 7/8" Stitch screws with a sealing washer. The fasteners must be spaced at 12" on center along the length of the side lap.

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 installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.



2/1/2011

Page 2 of 7

Figure 1. Screw Patterns, R-Panel and PBR-Panel