

Product Evaluation

RC608 | 0724

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-608

Effective Date: July 1, 2024

Re-evaluation Date: July 2028

Product Name: 26-Gauge Steel Roof Panels Installed Over a Plywood Deck or Wood Purlins over an OSB Deck

Manufacturer: Hilco Metal Roofing Supply
12503 Highway 6
Navasota, TX 77868
(936) 825-0500

General Description:

The PBR metal roofing panels are minimum 26-gauge galvalume steel panels with an optional paint finish. The metal roofing panels have a maximum coverage of 36". The panel has 1-1/4" tall ribs located at 12" on center. The 26-gauge steel material complies with ASTM A 792 Grade 80, with a minimum 80 ksi yield point with optional paint finishes.

This product evaluation report is for residential metal roofing panels that are secured to nominal 1x4 wood purlins over a 7/16" OSB deck or to 15/32" plywood sheathing. 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/Deck: The metal roofing panels must be installed over a minimum 15/32" plywood deck or over nominal 1x4 wood purlins that are installed over a 7/16" OSB deck. The wood purlins

must be secured to the roof framing. The roof frame (rafters or trusses) must be spaced a maximum of 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 metal 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, 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 26-Gauge Steel PBR Roof Panels to Minimum 1x4 Wood Purlins over 7/16" OSB Deck

Design Wind Pressure (psf)	Panel Fastener Pattern	Panel Fastener Spacing	Wood Purlin Spacing	Wood Purlin Fasteners
-63.5	12"-12"-12"	36" on center	36" on center	(2) No. 9 x 3" deck screws
-123.5	12"-12"-12"	24" on center	24" on center	(2) No. 9 x 3" deck screws
-183.5	12"-12"-12"	12" on center	12" on center	(2) No. 9 x 3" deck screws

Table 2: Attachment of 26-Gauge Steel PBR Roof Panels to Minimum 15/32" Plywood

Design Wind Pressure (psf)	Panel Fastener Pattern	Panel Fastener Spacing
-41.7	12"-12"-12"	36" on center
-92.4	12"-12"-12"	24" on center
-143.1	12"-12"-12"	12" on center
-168.5	12"-12"-12"	6" 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 either minimum 15/32" plywood or minimum 7/16" OSB if wood purlins are installed over the existing roof covering and OSB deck. 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.

Panels: Install the roofing panels in accordance with the installation details in either Table 1 or Table 2.

Underlayment (for solid deck): Use a minimum of one layer of No. 30 (Type II) asphalt felt. Use underlayment that complies with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. Apply the underlayment with 4" laps. Apply the underlayment with corrosion resistant fasteners in accordance with the manufacturer's installation instructions and the IRC or the IBC. Fasteners must be applied along the overlaps not farther than 36" on center.

Anchorage to Roof Decking: The metal roof panels must be fastened in accordance with either Table 1 or Table 2 as follows:

Attachment of Metal Roof Panel: The panels must be secured to either the wood purlins or the plywood deck with minimum No. 12-8 x 1-1/2" Woodgrip XG screws with washers. The screws must penetrate a minimum of 1/4" below the plywood roof deck or 1-1/2" into the wood purlins. Note: If the metal roofing panels are installed over an existing roof covering, then the length of the fastener must be increased so that the fasteners are long enough to ensure a penetration of 1/4" below the plywood roof deck. The spacing of the fasteners along the length of the panels must be in accordance with either Table 1 or Table 2.

Wood Purlins: The 1x4 wood purlins must be minimum No. 2 Southern Yellow Pine lumber. The 1x4 wood purlins must be secured to the wood roof framing (rafters or trusses) through the OSB deck with two (2) No. 9 x 3" deck screws at each roof framing member. The fasteners must be long enough to ensure a minimum penetration of 1-1/2" into the wood framing. Roof framing (rafters or trusses) must not exceed 24" on center.

Panel Side Laps: The roofing panel side laps are fastened together with 1/4-14x7/8" Impax Sealer Lap screws with EPDM washers. The fasteners are spaced a maximum of 20" on center.

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.

Panel Ends and End Laps: As required by the manufacturer.

Panel Edges: 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.