

Product Evaluation

RC405 | 0522

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-405

Effective Date: May 1, 2022

Re-evaluation Date: May 2026

Product Name: 29-gauge Steel Strongpanel Roofing Panels Installed Over Wood Purlins

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

General Description:

The Strongpanel metal roof panels have a 36" coverage. The metal roof panels have ribs 5/8" high and spaced 9" on center. The metal roof panels are manufactured from minimum 29-gauge (0.0134" thick) steel with minimum yield strength of 80 ksi and a Galvalume or galvanized coating. The metal roof panels conform to ASTM A 792 or ASTM A 653 and may be pre-painted.

Limitations:

Roof Framing: The metal 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 members (rafters or trusses). The roof framing must not exceed 24" on center. A solid roof deck is not required. Thicker wood purlins may be used; however, the design pressure rating for the metal roof panels must be specified in this evaluation report.

New Roof Framing Attachment: The roof framing must meet or exceed the uplift requirements of the IRC and IBC and must be installed as required for resistance to wind loads.

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

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 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 and the Strongpanel Metal Roof Panel Details.

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 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.

Table 1

Attachment of Minimum 29-gauge Steel Strongpanel Roofing Panels to Minimum 1x4 No. 2 SYP Wood Purlins

Design Wind Pressure (psf)	Attachment of Roof Panel to Wood Purlins
-90.0	No. 10-14 x 1-1/2" HWH screws with 1/2" bonding washer @ 1'-6" on center in the center of each panel

Installation:

General: The metal roofing panels must be installed in accordance with the manufacturer's recommended installation instructions, this evaluation report, and the Metal Sales Strongpanel Metal Roof Panel Details.

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 spaced a maximum of 36" on center along the side laps.

Wood Purlins: The wood purlins must be secured to each wood rafter or roof truss using two minimum No. 9 x 3" long wood screws. The fasteners must be long enough to penetrate a minimum of 2" into the roof framing. Roof framing (rafters or trusses) must not exceed 24" on center.

Attachment of Metal Roofing Panels to the 1x4 Wood Purlins: The R-Panel metal roofing panels must be secured to the wood purlins with minimum No. 10-14 x 1-1/2" long HWH screws with a sealing washer, manufactured by Atlas. The fasteners are spaced as specified in Table 1.

Panel Ends and End Laps: Minimum No. 10-14 x 1-1/2" long HWH screws with a sealing washer, manufactured by Atlas. The fasteners are spaced as specified in Table 1.

Panel Side Laps: Minimum 1/4"-14 x 7/8" long HWH 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 and as shown in the Metal Sales Strongpanel Metal Roof Panel Details.

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.