

Product Evaluation

RC600 | 0923

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-600

Effective Date: September 1, 2023

Re-evaluation Date: September 2027

Product Name: 29-Gauge Steel Residential Roof Panels Installed Over either Wood Purlins or an OSB Deck

Manufacturer: Reed's Metals – Cornerstone BB
19 E. Lincoln Road NE
Brookhaven, MS 39601
(601) 823-6516

General Description:

The Residential metal roofing panel is a minimum 29-gauge galvalume steel panel. The Residential panel has a coverage of 36" with 3/4" tall major ribs at 9" on center. The panel conforms to ASTM A792, Grade 80, with a yield strength of 80,000 psi. The metal panels are available in optional painted finishes.

This evaluation report is for Residential metal roof panels that are secured to either nominal 1" x 4" wood purlins or to a minimum 7/16" OSB deck. Thicker wood purlins or OSB (or thicker plywood) may be used; however, the design pressure rating for the metal panels will be as specified in this evaluation report.

Limitations:

Roof Framing: The metal roofing panels must be installed over either nominal 1" x 4" Southern Yellow Pine wood purlins that are installed over a minimum 7/16" OSB deck or directly to minimum 7/16" OSB. Roof framing must not exceed 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 Residential 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, then 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 minimum 29-gauge steel Residential roofing panels to wood purlins

Design Wind Pressure (psf)	Panel Fastener Pattern	Panel Fastener Spacing	Wood Purlin Spacing
-86.0	9"-9"-9"-6.5"	24" on center	24" on center
-176.0	9"-9"-9"-6.5"	12" on center	12" on center

Table 2: Attachment of minimum 29-gauge steel Residential roofing panels to 7/16" OSB

Design Wind Pressure (psf)	Panel Fastener Pattern	Panel Fastener Spacing
-20.9	9"-9"-9"-6.5"	24" on center
-50.1	9"-9"-9"-6.5"	18" on center
-79.3	9"-9"-9"-6.5"	12" on center
-108.5	9"-9"-9"-6.5"	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 minimum 7/16" OSB. 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.

Attachment of Wood Purlins to Roof Framing: Wood purlins must be minimum Southern Yellow Pine. Secure the wood purlins to the roof framing with two, minimum No. 9 x 2-1/2" deck screws per roof framing member. The fasteners must be long enough to penetrate a minimum of 1" into the framing member.

Underlayment: 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 felt must be installed with minimum 6" side laps and minimum 2" end laps. The underlayment must be applied with corrosion-resistant fasteners in accordance with manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

Attachment of Metal Roofing Panels to the Wood Purlins:

Secure the Residential metal roofing panels to the wood purlins with minimum No. 9-15 x 1-1/2" long Woodgrip HWH screws with a washer. Locate a line of fasteners along each purlin. Table 1 specifies the fastener pattern and the spacing of the fasteners. Use fasteners long enough to ensure a penetration completely into the wood purlins.

Attachment of Metal Roofing Panels to the OSB Deck:

Secure the Residential metal roofing panels to the OSB deck with minimum No. 9-15 x 1-1/2" long Woodgrip HWH screws with a washer. Table 2 specifies the fastener pattern and the spacing of the fasteners. Use fasteners long enough to ensure a minimum penetration of 1/4" below the wood deck.

Panel Ends: As required by the manufacturer.

Panel Edges: As required by the manufacturer.

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.