

Product Evaluation

RC161 | 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-161

Effective Date: May 1, 2022

Re-evaluation Date: May 2026

Product Name: Classic Rib Steel Roofing Panels Installed Over a Plywood Roof Deck

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

General Description:

Classic Rib roof panels are minimum 29-gauge (0.014" thick) aluminum-zinc alloy-coated steel with a Galvalume or painted finish. The nominal panel width is 3'-0" and covers 36". Major ribs are 3/4" high and are spaced approximately 9" on center.

Limitations:

Roof Framing: The metal roofing panels must be installed over nominal 15/32" plywood or nominal 5/8" plywood. Roof framing (rafters or trusses) must not exceed 24 inches on center.

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: For installation to minimum nominal 15/32" plywood roof decks, design wind pressure limitations are specified in Table 1. For installation to minimum nominal 5/8" plywood roof decks, design wind pressure limitations are specified in Table 2.

Roof Slope: The metal roof panel must not be installed on roofs with a roof slope greater than 3:12, unless minimum No. 30 (Type II) asphalt felt underlayment is installed under the panels. The metal roof panel must not be installed on roofs with a roof slope less than 3:12 and greater than or equal to 1/2:12 unless Metal Sales Hi-Temp (MS-HT) underlayment is installed under the panels. The metal roof panel must not be installed on roofs with a roof slope less than 1/2:12. 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 Classic Rib Metal Roof Panel Details.

Installation Over an Existing Roof Covering: Not permitted

Table 1

Attachment of Minimum 29-gauge Classic Rib Roofing Panels to Minimum 15/32" Plywood Deck

Design Wind Pressure (psf)	Steel Purlin Spacing
-63.0	Screw Pattern #1 @ 2'-0" on center
-73.0	Screw Pattern #1 @ 1'-9" on center
-84.0	Screw Pattern #1 @ 1'-6" on center
-95.0	Screw Pattern #1 @ 1'-3" on center
-105.0	Screw Pattern #1 @ 1'-0" on center

Table 2

Attachment of Minimum 29-gauge Classic Rib Roofing Panels to Minimum 5/8" Plywood Deck

Design Wind Pressure (psf)	Steel Purlin Spacing
-63.0	Screw Pattern #1 @ 2'-0" on center
-94.0	Screw Pattern #1 @ 1'-9" on center
-101.0	Screw Pattern #1 @ 1'-6" on center
-108.0	Screw Pattern #1 @ 1'-3" on center
-115.0	Screw Pattern #1 @ 1'-0" on center

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 Classic Rib Roof Panel Details.

Underlayment: A minimum of one layer of No. 30 (Type II) asphalt felt underlayment must be used. The underlayment must comply with one or more of the following: ASTM D 226 or ASTM D 4869 if used over the field or perimeter of the roof, or ASTM D 1970 if Metal Sales Hi-Temp (MS-HT) underlayment is used. The felt must be installed with 6" side laps and 3" end laps. The nailable

felt must be fastened to the roof deck with corrosion resistant fasteners in accordance with the manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

Attachment of Metal Roofing Panels to Wood Deck: The metal roof panels must be secured to the wood deck as follows:

Table 1:

Anchorage: The panels must be fastened in accordance with Table 1 with No. 10-14 x 1-1/2" Woodgrip HWH sharp point hex washer head wood screws (No. 10-14 x 1-1/2" Woodgrip screws) to nominal (minimum) 15/32" plywood roof decking. Refer to Figure 1. The panels must be fastened at the panel ends in accordance with Screw Pattern No. 2 with the No. 10-14 x 1-1/2" Woodgrip screws as shown in Figure 1. The panels must be fastened along the rake at 6" on center with the No. 10-14 x 1-1/2" Woodgrip screws. The panel side laps must be fastened with 1/4"-14 x 7/8" Impax Lap 5/16" AF hex washer head stitch screws (1/4"-14 x 7/8" stitch screws) spaced 12" on center. The fasteners must be corrosion resistant, with a painted or plated finish, and must be properly driven, so that the sealing material is slightly visible at the edge of the washer.

Ridge Cap and Rake Trim: The ridge cap and the rake trim must be attached to the panels with 1/4"-14 x 7/8" stitch screws spaced 12" on center as shown in the Metal Sales Classic Rib Metal Roof Panel Details.

Table 2:

Anchorage: The panels must be fastened in accordance with Table 2 with No. 9-15 x 1-1/2" Woodgrip HWH sharp point 1/4" hex washer head wood screws (No. 9-15 x 1-1/2" Woodgrip screws) to nominal (minimum) 15/32" plywood roof decking. Refer to Figure 2. The panels must be fastened at the panel ends in accordance with Screw Pattern No. 2 with the No. 9-15 x 1-1/2" Woodgrip screws as shown in Figure 2. The panels must be fastened along the rake at 6" on center with the No. 9-15 x 1-1/2" Woodgrip screws. The panel side laps must be fastened with 1/4"-14 x 7/8" Impax Lap 5/16" AF hex washer head stitch screws (1/4"-14 x 7/8" stitch screws) spaced 12" on center. The fasteners must be corrosion resistant, with a painted or plated finish, and must be properly driven, so that the sealing material is slightly visible at the edge of the washer.

Ridge Cap and Rake Trim: The ridge cap and the rake trim must be attached to the panels with 1/4"-14 x 7/8" stitch screws spaced 12" on center as shown in the Metal Sales Classic Rib 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.