

TEXAS DEPARTMENT OF INSURANCE

Engineering Services Program / MC 103-3A 333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104
Phone No. (512) 322-2212 Fax No. (512) 463-6693

PRODUCT EVALUATION RC-412

Effective August 1, 2014

*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 shall be subject to reevaluation **July 2018**.*

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.

24 and 26 gauge Vertical Seam Metal Roof Panels over Wood Deck manufactured by:

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

is acceptable in designated catastrophe zones along the Texas Gulf Coast when installed in accordance with the distributor's installation instructions and this product evaluation.

PRODUCT DESCRIPTION

The Vertical Seam metal roof panels have 16 inch or 18 inch maximum coverage. The metal roof panels have ribs $1\frac{3}{4}$ inch high and spaced 16 inches or 18 inches on center. The steel roof panels are manufactured from minimum 26 gauge (0.0171" thick) or 24 ga (0.0223" thick) steel with minimum yield strength of 50 ksi and a Galvalume or Galvanized coating. The steel roof panels conform to ASTM A 792 or ASTM A 653 and may be prepainted.

LIMITATIONS

Roof Framing: The metal roofing panels shall be installed over a minimum $1\frac{5}{32}$ " thick plywood deck. Thicker wood sheathing may be used; however, the design pressure rating for the metal roof panels shall be as specified in this evaluation report.

New Roof Framing Attachment: The roof framing shall meet or exceed the uplift requirements of the International Residential Code or International Building Code and shall be installed as required for resistance to wind loads.

Design Wind Pressures: The design pressure uplift load resistance shall be as specified in Tables 1-3.

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as $\frac{1}{2}$: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 shall be in accordance with the manufacturer's installation instructions and the Metal Sales Vertical Seam Roof Panel Details.

Table 1

Attachment of 16", minimum 26 gauge Vertical Seam Metal Roof Panels to Wood Sheathing:

Design Wind Pressure (psf)	Attachment of Roof Panel to Wood Sheathing
-35.9	Clips @ 48 inches on center
-48.4	Clips @ 36 inches on center
-60.9	Clips @ 24 inches on center
-73.5	Clips @ 12 inches on center
-86.0	Clips @ 6 inches on center

Table 2

Attachment of 16", minimum 24 gauge Vertical Seam Metal Roof Panels to Wood Sheathing:

Design Wind Pressure (psf)	Attachment of Roof Panel to Wood Sheathing
-80.5	Clips @ 24 inches on center
-88.9	Clips @ 20 inches on center
-97.4	Clips @ 16 inches on center
-105.8	Clips @ 12 inches on center
-114.3	Clips @ 8 inches on center

Table 3

Attachment of 18", minimum 24 gauge Vertical Seam Metal Roof Panels to Wood Sheathing:

Design Wind Pressure (psf)	Attachment of Roof Panel to Wood Sheathing
-30.0	Clips @ 48 inches on center
-47.5	Clips @ 36 inches on center
-65.0	Clips @ 24 inches on center
-82.5	Clips @ 12 inches 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 applied over an existing, solid roof deck of minimum $\frac{15}{32}$ " thick plywood. Inspection of the existing roof deck must be made prior to the installation of the roof panels. The condition of the existing roof deck must be acceptable to receive the metal roofing panels before the metal roofing panel installation proceeds. Note: Underlayment is required to be installed.

INSTALLATION INSTRUCTIONS

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

Underlayment: For installations over a solid deck, use a minimum of one layer of No. 30 (Type II) asphalt felt shall be used. The underlayment used shall comply with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment shall be installed with 6-inch side laps and 3-inch end laps. The underlayment shall be applied with corrosion-resistant roofing nails spaced a maximum of 36 inches on center along the side laps.

Attachment of Metal Roof Panels to Wood Deck: The Vertical Seam metal roof panels shall be secured to the wood deck as follows:

Anchorage: (Exposed Fastened End) The panel clips shall be installed along the underlap edge of the panels, spaced in accordance with Tables 1-3. Each clip shall be attached with two #10-12 x 1 inch Pancake Head wood screws. The panel shall be fastened along the rake at 6 inches on center with #10-14 x 1 ½ inch wood screws. The panel shall be fastened along the ends with four #10-14 x 1 ½ inch wood screws. #10-14 wood screws shall be corrosion resistant, with a painted or plated finish and shall be properly driven so that the sealing material is slightly visible at the edge of the washer. #10-12 Pancake Head wood screws shall be corrosion resistant, with a plated finish and shall be properly driven.

Trims, Closures and Accessories: Components, such as eave trim, rake trim, ridge trim, hip trim and valley trim, shall be installed as required by the manufacturer and the Metal Sales Vertical Seam Metal Roof Panel Details.

Note: The manufacturer's installation instructions shall be available on the job site during the installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), International Building Code (IBC) and the Texas Revisions.