

Product Evaluation

RC397 | 0720

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-397

Effective Date: July 1, 2020

Re-evaluation Date: July 2024

Product Name: SMI 1.5 MS 24-Gauge Mechanical Standing Seam Steel Roof Panel Installed Over an Insulated Steel Deck (22-Gauge)

Manufacturer: Sheffield Metals International
5467 Evergreen Parkway
Sheffield Village, OH 44054
(800) 283-5262

General Description:

The SMI 1.5 MS is a mechanically seamed standing seam metal roof system. The panel is made of 24-gauge galvalume steel and is installed over a 22-Gauge steel deck with ISO. The vertical leg of the panel measures 1-1/2" in height and has a maximum panel width of 16". The panel can be formed in continuous lengths and interlocks to adjoining panels by field seaming the panels to a 180-degree seam.

Limitations:

Roof Framing: The metal roof panels must be installed over a 22-gauge steel B-deck. The steel deck is secured to 12-gauge, A36 structural steel frame members spaced a maximum of 5'-0" 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 in a manner to resist lateral loads if required.

Design Wind Pressures: For installations to 22-gauge steel decks, design wind pressure limitations are specified in Table 1.

Installation Over an Existing Roof Covering: Installation over an existing roof covering is not covered in this product evaluation report.

Roof Slope: The metal roof panels may be installed on roofs with a roof slope as low as 1:12 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 2:12.

Table 1. SMI 1.5 MS 24-Gauge Mechanical Standing Seam Steel Roof Panel Installed to Steel Deck

Design Wind Pressure (psf)	Panel Seam	Panel Clip	Clip Spacing	Clip Fastener
-129.25	180 degree	2-piece Galvanized Steel Clips Comprised of Butterfly Base 1.5", 22-gauge G-90 galvanized steel, (1" x 1.25" x 4.5" long); Clip Assembly Butterfly 1.5", 24-gauge G-90 galvanized steel, (5" x 0.910" with two return flaps 0.40" wide)	18" o.c. Max	(2) #12 Self-drilling PH Dekfast™ fasteners

Installation:

General Installation Requirements:

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

Roof Deck: 22-gauge steel B-deck attached to 12-gauge steel purlins spaced a maximum of 5'-0" on center.

Insulation: Minimum 1" thick and a maximum 4" thick, 20 psi compressive strength ISO insulation board. The insulation board is cut to size and secured to the B-deck using minimum No. 12 self-drilling PH Dekfast screws that are a sufficient length to ensure a minimum penetration of 3 pitches of thread below the steel deck. A 2-7/8" x 2-7/8" steel stress plate is used at each fastener. The fastener spacing must be as required by the manufacturer or a minimum of five (5) fasteners per 4'-0" x 4'-0" board.

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 4" laps. The 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.

Anchorage to Roof Decking: The metal roof panels must be secured to the roof deck in accordance with Table 1. The metal roofing panels must be secured to the roof deck with the clip specified in Table 1 and are spaced a maximum of 7" from each panel end and a maximum of 18" on center. The clips are secured with two (2) No. 12 PH Dekfast™ fasteners. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck. The legs are mechanically seamed 180 degrees after the clips are installed.

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.