

Product Evaluation

RC224 | 0220

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-224

Effective Date: February 1, 2020

Re-evaluation Date: February 2024

Product Name: DMC 200S 24 Gauge Steel Standing Seam Roofing Panels Installed Over a Steel Deck

Manufacturer: Drexel Metals, Inc.
1234 Gardener Lane
Louisville KY 40213
(888) 321-9630

General description:

The steel standing seam roofing panels have 16 inches of coverage. The standing seam metal roof panels have a 2" rib height and a 180 degree mechanically seamed side lap. The metal roofing panels are manufactured from 24-gauge galvalume steel. Refer to Figure 1 for an illustration of the DMC 200S standing seam panel.

Limitations:

Roof Framing: The metal roofing panels must be installed over a 22-gauge steel deck. The steel deck is secured to steel purlins.

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: The design pressure uplift load resistance must be as specified in Tables 1-2.

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as 1/4:12.

Installation Over an Existing Roof Covering: Not permitted.

Table 1: Using the DMC 200S butterfly clip

Design Wind Pressure	Purlins	Steel Deck	Attachment of Panels to Steel Deck
-91.75 psf	5'-0" o.c.; Nominal 5/16" flange	Minimum 22-gauge	Clips and fasteners @ 24" o.c.

Table 2: Using the DMC 200S continuous butterfly clip

Design Wind Pressure	Purlins	Steel Deck	Attachment of Panels to Steel Deck
-151.75 psf	5'-0" o.c.; Nominal 5/16" flange	Minimum 22-gauge	Continuous clip and fasteners @ 12" o.c.

Installation:

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

Steel Purlins: The minimum thickness of the steel and the maximum spacing of the purlins must be as specified in Table 1-2.

Structural Steel Deck: Minimum 22-gauge ASTM A653 steel "B" deck with a G90 galvanized coating. Each steel deck panel is 36" wide and has 6 ribs that are 1-1/2" height. The steel deck is secured to the steel purlins with No. 12 x 1-1/2" long, Hex washer head self-drilling screws. The fasteners must be located 6" on center (one in each valley). The steel deck side laps are stitched together with No. 12 x 1-1/2" long, Hex washer head self-drilling screws spaced 6" on center.

Underlayment: 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 minimum 4-inch side laps and 6-inch end laps. The underlayment must be applied with corrosion resistant tin caps and minimum 12 gauge 1-1/4" annular ring shank nails. The fasteners must be spaced 6" on center at all end laps and two staggered rows 12" on center in the field.

Alternative Underlayment: Either a synthetic underlayment or a peel and stick ice and water shield that complies with the requirements for underlayment as specified in the IRC and the IBC. The underlayment must be installed per the manufacturer's installation instructions.

Attachment of Metal Roof Panels to the Roof Deck:

DMC 200S Butterfly Clip (Table 1): The panels are secured to the deck with DMC 200S butterfly clips. The butterfly clips consist of a "base" and a "butterfly." Refer to Figure 2 for an illustration of the butterfly clip. The "base" is 18-gauge L-shaped galvanized steel that is 2" wide, 1-3/4" high, and 4-1/2" long. The base has a 1/4" wide by 3" long slot located 1/2" from the top for the "butterfly." The "butterfly" is 22-gauge galvanized steel that is 5.045" long by 0.929" tall with two return flaps. The "butterfly" is used to secure the metal roofing panel to the "base." Each DMC 200S butterfly clip is secured to the roof deck with two (2) minimum No. 10 x 1" long pancake head screws. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck. The butterfly fly clips must be located approximately 3" from each end and 24" on center as indicated in Table 1. The female rib of the panel is placed over the male/clip assembly and seamed 180 degrees.

DMC 200S Continuous Butterfly Clip (Table 2): The panels are secured to the deck with DMC 200S continuous butterfly clips. Refer to Figure 3 for an illustration of the continuous butterfly clip. The butterfly clips consist of a "base" and a "butterfly." The "base" is 18-gauge L-shaped galvanized steel that is 2" wide, 1-3/4" high and comes in 10 ft long sections. (Note: The base shall be installed continuously along the length of the panel only in those areas where the design pressures in Table 2 are required. In other locations, the panel clip method required for Table 1 design pressures may be used.). The base has a 1/4" wide by 3" long slots located 1/2" from the top for the "butterfly." The "butterfly" is 22-gauge galvanized steel that is 5.045" long by 0.929" tall with two return flaps. The "butterfly" is used to secure the metal roofing panel to the "base." The "butterfly" is secured to the panels and to the continuous base at 3" from each end and 12" on center. The DMC 200S continuous butterfly clip is secured to the roof deck with two (2) minimum No. 10 x 1" long Hex head self-drilling screws located 3" from each end and 12" on center. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck. The female rib of the panel is placed over the male/clip assembly and seamed 180 degrees.

Panel Ends and End Laps: As required by the manufacturer.

Panel Edges: As required by the manufacturer.

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.

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.

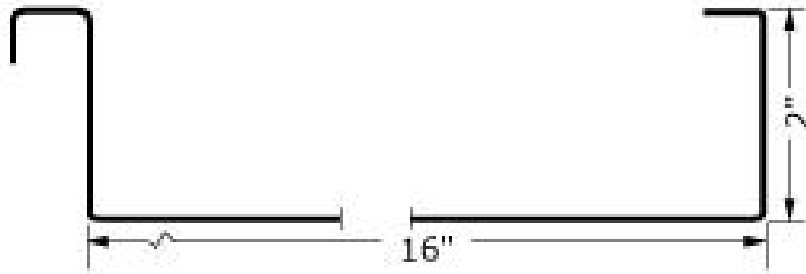


Figure 1. DMC 200S Standing Seam Panel Profile

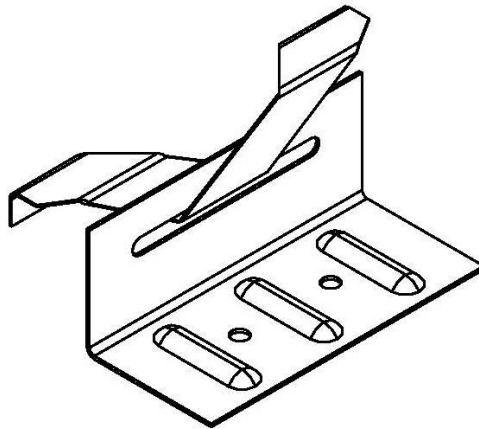


Figure 2. DMC 200S Butterfly Clip

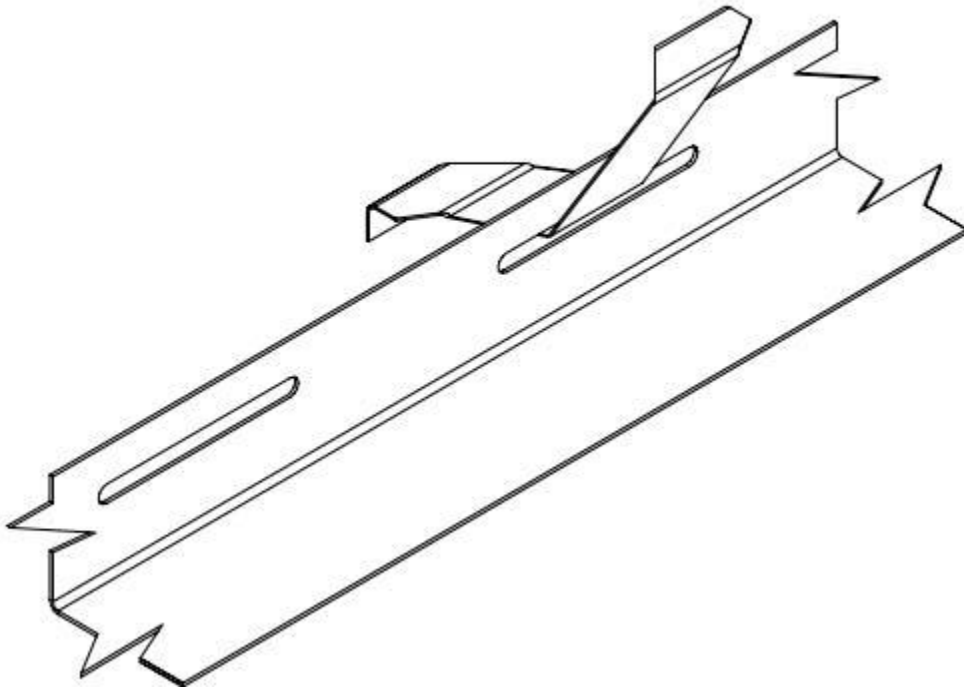


Figure 3. DMC 200S Continuous Butterfly Clip (10 ft Lengths)