

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION

Effective Date: January 1, 2013

RC-224

*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 in **December 2016**.*

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.

DMC 200S 24 Gauge Steel Standing Seam Metal Roofing Panels Installed Over a Steel Deck,
manufactured by

Drexel Metals Inc
204 Railroad Drive
Ivyland, Pennsylvania 18974
Telephone: (888) 321-9630 X115

will be accepted for use in areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

PRODUCT DESCRIPTION

This evaluation report is for the DMC 200S 24 gauge steel standing seam metal roofing panels installed over a 22 gauge steel deck. 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 shall be installed over a 22 gauge steel deck. The steel deck is secured to steel purlins.

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 1-2.

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as $\frac{1}{4}$:12.

Installation Over an Existing Roof Covering: Not permitted.

Table 1

Attachment of DMC 200S minimum 24 gauge steel standing seam metal roofing panels to minimum 22 gauge steel deck using the DMC 200S butterfly clip

Design Wind Pressure	Purlins	Steel Deck	Attachment of Panel to Steel Deck
-91.75 psf	5'-0" on center; Nominal $\frac{5}{16}$ " flange	Minimum 22 gauge	Clips and fasteners @ 24 inches o.c.

Table 2

Attachment of DMC 200S minimum 24 gauge steel standing seam metal roofing panels to minimum 22 gauge steel deck using DMC 200S continuous butterfly clip

Design Wind Pressure	Purlins	Steel Deck	Attachment of Panel to Steel Deck
-151.75 psf	5'-0" on center; Nominal $\frac{5}{16}$ " flange	Minimum 22 gauge	Continuous clip and fasteners @ 12 inches o.c.

INSTALLATION INSTRUCTIONS

General: The metal roofing panels shall 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 shall 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 $1\frac{1}{2}$ " in height. The steel deck is secured to the steel purlins with No. 12 x $1\frac{1}{2}$ " long, Hex washer head self-drilling screws. The fasteners shall be located 6 inches on center (one in each valley). The steel deck side laps are stitched together with No. 12 x $1\frac{1}{2}$ " long, Hex washer head self-drilling screws spaced 6 inches on center.

Underlayment: 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 minimum 4 inch side laps and 6 inch end laps. The underlayment shall be applied with corrosion resistant tin caps and minimum 12 gauge $1\frac{1}{4}$ " annular ring shank nails. The fasteners shall be spaced 6 inches on center at all end laps and two staggered rows 12 inches 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 shall 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, $1\frac{3}{4}$ " high, and $4\frac{1}{2}$ " long. The base has a $\frac{1}{4}$ " wide by 3" long slot located $\frac{1}{2}$ " 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 shall be long enough to ensure a minimum penetration of 3 pitches of thread below the steel deck. The butterfly fly clips shall be located approximately 3 inches from each end and 24 inches 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 ¾” 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 ¼” wide by 3” long slots located ½” 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 inches from each end and 12 inches 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 inches from each end and 12 inches on center. The fasteners shall 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 shall be installed as required by the manufacturer.

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), the International Building Code (IBC), and the Texas Revisions.

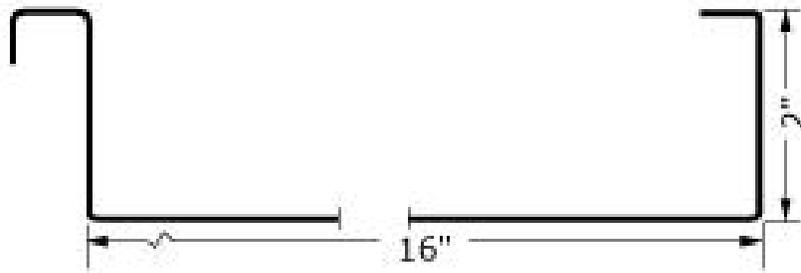


Figure 1. DMC 200S Standing Seam Panel Profile

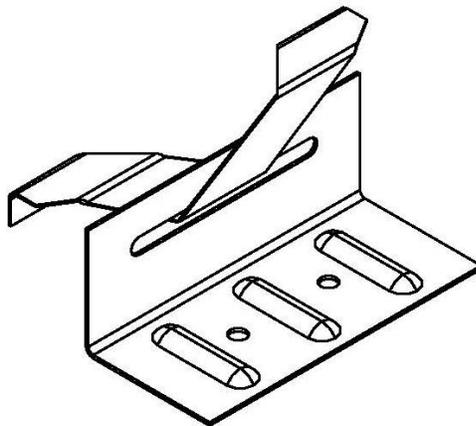


Figure 2. DMC 200S Butterfly Clip

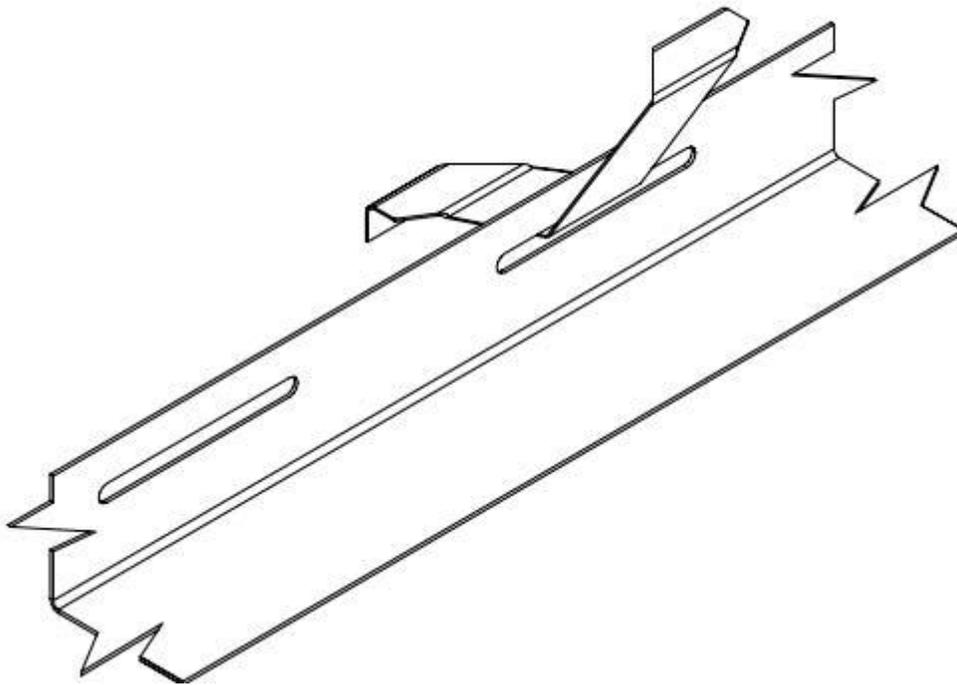


Figure 3. DMC 200S Continuous Butterfly Clip (10 ft Lengths)