

Product Evaluation

RC158 | 1120

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-158

Effective Date: November 1, 2020

Re-evaluation Date: November 2024

Product Name: Multi-Cor Steel Roof Panels Installed Over a Plywood Deck

Manufacturer: McElroy Metal, Inc.
P.O. Box 1148
Shreveport, LA 71163
(318) 747-8000

Distributed By: McElroy Metal, Inc.
Metal Mart

General Description:

The Multi-Cor metal roofing panels are a minimum 26-gauge galvalume steel with an optional paint finish. The 26-gauge steel roof panels are 0.019" thick. The steel roof panels are 33.52" in width with an actual coverage of 32". Each steel roof panel has major sinusoidal ribs spaced 2.67" on center across the panel. The ribs are 0.875" deep. The steel roof panels conform to ASTM A792, with an 80,000 psi yield point for 26-gauge steel panels and a 50,000 psi yield point for 24-gauge or heavier steel panels. The steel roof panels have an AZ 55 hot-dip aluminum zinc alloy coating. The steel roof panels are available in lengths up to 40'.

Limitations:

Roof Decking: The Multi-Cor steel roof panels must be installed over minimum 15/32" plywood decking.

New Roof Deck Attachment: The roof deck must meet or exceed the uplift requirements of the IRC or IBC and must be installed as required for resistance to lateral wind loads.

Design Wind Pressures: The design pressure uplift load resistance must be as specified in Table 1.

Table 1. Attachment of Minimum 26-gauge Multi-Cor Steel Roof Panels to Minimum 15/32" Plywood Deck

Design Wind Pressure	Fastener Pattern	Fastener Spacing
-146.0 psf	8"-8"-8"-8"	12" 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 15/32" plywood. Note: 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 not required to be installed.

Roof Slope: The steel roof panels may be installed on roofs with a roof slope as low as 1/2:12 if sealant is used on the panel side laps. McElroy Metal recommends that sealant be used on the panel side laps for roof slopes less than 3:12. If sealant is not used on the panel side laps, then the minimum roof slope is 3:12.

Installation:

General: The Multi-Cor steel roof panels must be installed in accordance with the manufacturer's recommended installation instructions and this evaluation report.

Panels: The Multi-Cor steel roof panels must be secured to the roof deck as specified in Table 1 and in accordance with this section. Refer to Figure 1 for an illustration of the required fastener pattern.

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 underlayment must be installed with 6" side laps and 3" end laps. The underlayment must be applied 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 Roof Deck: The Multi-Cor steel roof panels must be secured to the roof deck as follows:

Roofing Panels: Minimum 9-15 x 1-1/2" long, Woodgrip screws or WoodZAC screws, with a sealing washer. The fasteners must be long enough to ensure a minimum penetration of 1/4"

below the roof deck. (Note: If the metal roofing panels are installed over an existing roof covering, then the fastener length must be increased so that the fasteners are long enough to ensure a minimum penetration of 1/4" below the existing plywood roof decking.) A line of fasteners are to be installed beginning 2" from the center line of the first major side lap in an 8"-8"-8"-8" pattern as specified in Table 1. The spacing of the line of fasteners along the length of the panel must be 12" on center as specified in Table 1. Refer to Figure 1 of this evaluation report.

Panel Side Laps: Minimum 1/4"-14 x 7/8" long, hex head screws with a sealing washer. The fasteners must be spaced 24" on center along the length of the side lap.

Panel Ends: Minimum 9-15 x 1-1/2" long, Woodgrip screws or WoodZAC screws, with a sealing washer. The fasteners must be long enough to ensure a minimum penetration of 1/4" below the roof deck. (Note: If the metal roofing panels are installed over an existing roof covering, then the fastener length must be increased so that the fasteners are long enough to ensure a minimum penetration of 1/4" below the existing plywood roof decking.) The fasteners are to be spaced 12" on center next to each peak across the width of the panel.

Panel Edges: Minimum 9-15 x 1-1/2" long, Woodgrip screws or WoodZAC screws, with a sealing washer. The fasteners must be long enough to ensure a minimum penetration of 1/4" below the roof deck. (Note: If the metal roofing panels are installed over an existing roof covering, then the fastener length must be increased so that the fasteners are long enough to ensure a minimum penetration of 1/4" below the existing plywood roof decking.) Along the edge of a panel, the fasteners must be spaced 12" on center and next to each peak across the width of the panel.

Trims, Closures, and Accessories: Components, such as the eave trim, rake start trim, rake end, rake tie-in, ridge trim, hi-side tie-in trim, high eave trim, hip trim, and valley trim must be installed as required by the manufacturer.

Note: Keep the manufacturer's installation instructions on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.

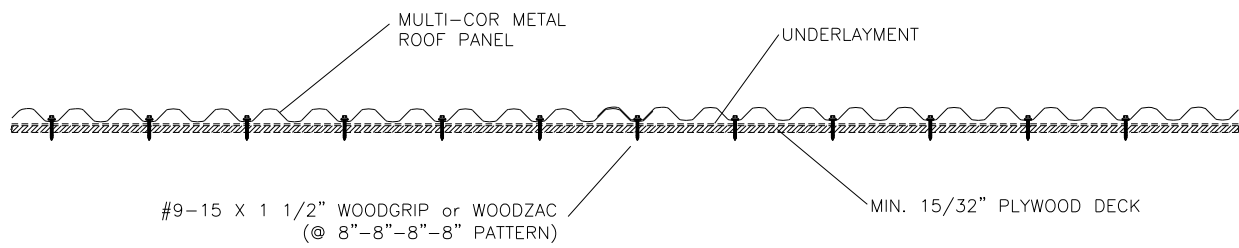


Figure 1. Multi-Cor Panel Detail (Minimum 26 Gauge