

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION RC-191

Effective April 1, 2013

*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 **June 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.

Corrugated Metal Roofing Panels Over Wood Structural Panel Decks (Plywood or OSB)
manufactured by

Mueller, Inc.
Metal Buildings, Roofing, and Components
1913 Hutchins Avenue
Ballinger, Texas 76821
Telephone: (800) 527-1087
www.muellerinc.com

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 corrugated metal roofing panels that are secured to wood structural panels (either nominal $\frac{15}{32}$ " plywood or nominal $\frac{7}{16}$ " OSB. Thicker plywood or thicker OSB may be used; however, the design pressure rating for the metal roofing panels shall be as specified in this evaluation report.

The corrugated metal roofing panels are 34" in width and have a $29\frac{1}{2}$ " coverage. The metal roof panels have a $\frac{7}{8}$ " rib height. The metal roof panels are manufactured from minimum 26 gauge coated steel that conform to ASTM A446, Grade E, with a minimum yield strength of 80,000 psi. The metal roofing panels have either an AZ 55 hot-dipped aluminum zinc alloy coating or a hot-dipped galvanized coating conforming to ASTM A525.

LIMITATIONS

Roof Framing: The metal roofing panels shall be installed over nominal $\frac{15}{32}$ " plywood or nominal $\frac{7}{16}$ " OSB. Roof framing (rafters or trusses) shall not exceed 24 inches on center.

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: For installations over nominal $\frac{7}{16}$ " OSB wood structural panel decks, the design pressure uplift load resistance shall be as specified in Table 1. For installations over nominal $\frac{15}{32}$ " plywood wood structural panel decks, the design pressure uplift load resistance shall be as specified in Table 2.

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as 3:12. If the laps are sealed with a lap sealant, then the minimum roof slope shall be $\frac{1}{2}$:12.

Table 1

Attachment of minimum 26 gauge corrugated metal roofing panels to nominal $\frac{7}{16}$ " OSB wood structural panel decks

Design Wind Pressure	Fastener Pattern	Fastener Spacing
-41.7 psf	8"-8"-8"-5.5"	30" o.c.
-69.3 psf	8"-8"-8"-5.5"	15" o.c.

Table 2

Attachment of minimum 26 gauge corrugated metal roofing panels to nominal $\frac{15}{32}$ " OSB wood structural panel decks

Design Wind Pressure	Fastener Pattern	Fastener Spacing
-59.3 psf	8"-8"-8"-5.5"	42" o.c.
-64.3 psf	8"-8"-8"-5.5"	36" o.c.
-144.3 psf	8"-8"-8"-5.5"	12" o.c.

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. The existing roof deck shall be nominal $\frac{7}{16}$ " OSB for installations in accordance with Table 1. The existing roof deck shall be nominal $\frac{15}{32}$ " plywood for installations in accordance with Table 2. 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.

INSTALLATION INSTRUCTIONS

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

Underlayment: Titanium-UDL synthetic roofing underlayment or equivalent. 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 2-inch side laps and with 6-inch end laps. The underlayment shall be applied as required by the manufacturer with corrosion-resistant roofing nails spaced a maximum of 36 inches on center along the side laps.

Alternative Underlayment: 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 the Roof Deck: Minimum No. 12-11 x 1" long, SDT Type A screws with sealing washer, manufactured by Atlas. The fasteners shall be long enough to ensure a minimum penetration of $\frac{1}{4}$ " below the roof deck. (Note: If the metal roofing panels are installed over an existing roof covering, then minimum No. 12-11 x 2" long, SDT Type A screws with sealing washer, manufactured by Atlas, shall be used. The fasteners shall be long enough to ensure a minimum penetration of $\frac{1}{4}$ " below the existing plywood roof decking.) The required fastener pattern as well as the maximum allowable spacing is specified in Table 1 and in Table 2. Figure 1 shows the required fastener patterns.

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.

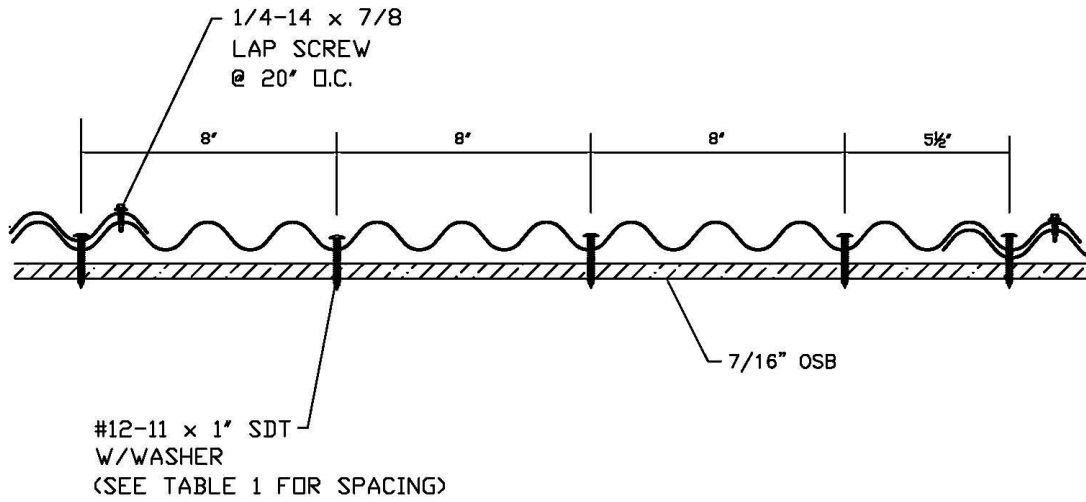
Alternative Fasteners: Substitution of equivalent fasteners shall meet the following requirements:

No. 12-11 SDT Type A screws with sealing washer, manufactured by Atlas

- Ultimate withdrawal (pullout) \geq 243 lbs. in $\frac{7}{16}$ " OSB
- Ultimate withdrawal (pullout) \geq 435 lbs. in $\frac{1}{2}$ " plywood

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.

FASTENER PATTERN OVER OSB



FASTENER PATTERN OVER PLYWOOD

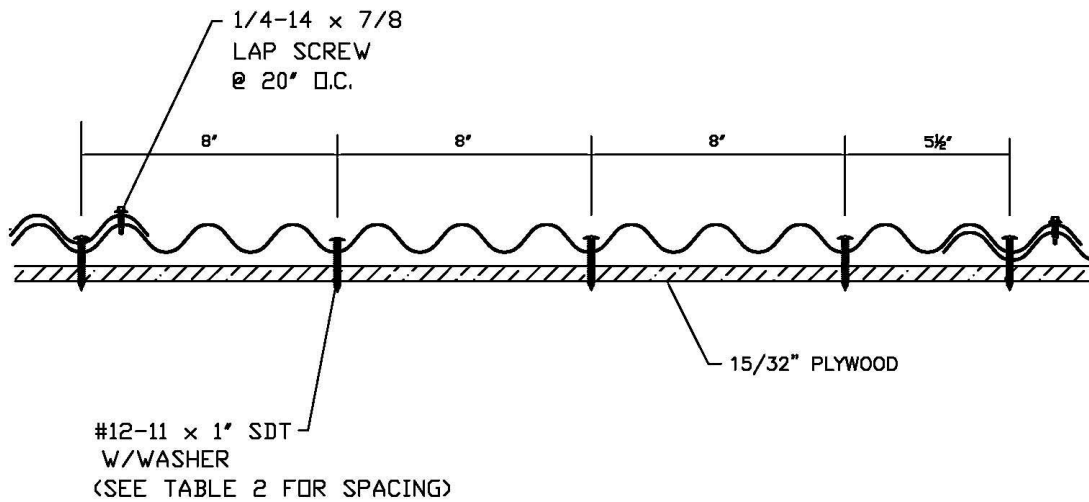


Figure 1. Fastener Patterns over Plywood and OSB