

## Product Evaluation

RC391 | 0321

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-391

**Effective Date:** March 1, 2021

**Re-evaluation Date:** March 2025

**Product Name:** Classic Rib 29-Gauge Steel Roof Panels Installed over 2x4 Wood Purlins

**Manufacturer:** Metal Sales Manufacturing Corporation  
3838 North General Bruce Drive  
Temple, TX 76501-6505  
(254) 791-6550

### General Description:

The Classic Rib steel roof panels are minimum 29-gauge (0.0134" thick) steel with a minimum yield strength of 80 ksi and a galvalume or galvanized coating. The roof panels have 3/4" high ribs that are spaced 9" on center. The roof panels conform to ASTM A 792 or ASTM A 653 and may be pre-painted.

### Limitations:

**Roof Framing:** The roof panels must be installed over nominal 2x4 No. 2 Southern Yellow Pine wood purlins. The wood purlins must be secured to minimum Southern Yellow Pine roof framing members (rafters or trusses). The roof framing must not exceed 24" on center. A solid roof deck is not required. Thicker wood purlins may be used; however, the design pressure rating for the roof panels must be as specified in this evaluation report.

**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 Table 1.

**Roof Slope:** The roof panels may be installed on roofs with a roof slope as low as 1/2:12 if sealant is used on the side laps. If sealant is not used on the panel side laps, then the minimum roof slope is 3:12. Application of the sealant must be in accordance with the manufacturer's installation instructions.

**Table 1.** Attachment of minimum 29-gauge Steel Classic Rib Roof Panels to Minimum 2x4 No. 2 Southern Yellow Pine Wood Purlins

| Design Wind Pressure (psf) | Attachment of Roof Panel to Wood Purlins |
|----------------------------|--|
| -128.3                     | Fastening Pattern #1 @ 2'-0" on center   |

**Installation Over an Existing Roof Covering:** Installation over an existing roof covering is limited to a maximum of one layer of composition shingles, wood shingles or shakes, built-up roofing or roll roofing applied over an existing solid roof deck. The wood purlins must be secured to the wood rafters or trusses using two (2) minimum No. 8 wood screws per roof framing member. The fasteners must be long enough to penetrate a minimum of 1-1/2" into the roof framing. The roof framing must be a minimum Southern Yellow Pine dimension lumber. NOTE: underlayment is not required to be installed.

**Installation:**

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

**Underlayment:** For installations over a solid deck. If used, then 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 installed as required by the IRC or the IBC.

**Wood Purlins:** The wood purlins must be secured to wood rafter or trusses using two (2) minimum No. 8 x 2-1/2" long wood screws per roof framing member. The fasteners must be long enough to penetrate a minimum of 1-1/2" into the roof framing. Roof framing (rafters or trusses) must not exceed 24" on center.

**Attachment of Roof Panels to Wood Purlins:** The Classic Rib roof panels must be secured to the wood purlins with minimum No. 10-14 x 1-1/2" long wood screws with a sealing washer, manufactured by Atlas. The required fastener pattern is shown as Pattern #1 in Figure 1. The required spacing of the line of fasteners is specified in Table 1.

**Panel Ends and End Laps:** Minimum No. 10-14 x 1-1/2" long wood screws with a sealing washer, manufactured by Atlas. The required fastener pattern is shown as Pattern #2 in Figure 1.

**Panel Side Laps:** Minimum 1/4"-14 x 7/8" long Stitch Screw with a sealing washer. The stitch screws must be spaced 12" on center along the length of the side lap.

**Trims, Closures and Accessories:** Components, such as 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.

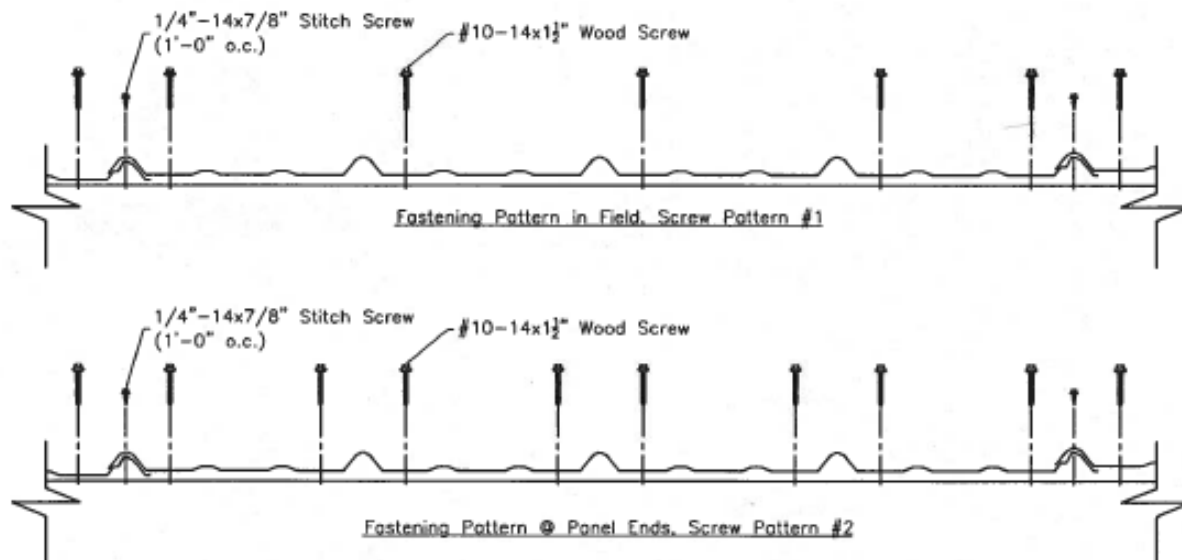


Figure 1. Fastener Patterns