

Product Evaluation

RC478 | 0120

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-478

Effective Date: January 1, 2020

Re-evaluation Date: January 2024

Product Name: TS-324 24-Gauge and 22-Gauge Standing Seam Metal Roof Panels Installed Over Steel Purlins

Manufacturer: Horizon Structural Systems
3950 Hwy 46 W. Suite 400
New Braunfels, TX 78132
(830) 629-8000

General Description:

This evaluation report is for TS-324 standing seam metal roof panels installed over steel purlins. The metal panels are minimum 22-gauge and 24-gauge coated steel. The metal panels have 24" of coverage. The metal panels have a 3" rib height. The metal panels conform to ASTM A792, SS Grade 50 Class 1. The metal panels are supplied with an AZ 50 or AZ55 aluminum zinc alloy coating. The metal panels can be supplied painted with silicone polyester products or with Fluropon paint systems.

Limitations:

Framing: The metal panels must be installed over open 16-gauge steel purlins.

New Framing Attachment: The roof framing must meet or exceed the wind pressure requirements of the IRC or IBC and must be installed as required for resistance to wind loads.

Design Wind Pressures: The design pressure negative wind load resistance must be as specified in Tables 1, 2, 3, and 4.

Installation Over an Existing Roof Covering: Not permitted.

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as 1/4:12. Lap sealant must be applied in accordance with the manufacturer's approved installation details.

Table 1: Attachment of 24-gauge TS-324 Metal Roof Panels to Steel Purlins with a Triple Lok Seam System

Attachment of Panel to Steel Purlins (Minimum 16-gauge)	Design Wind Pressure (psf)
5'-0" on center	-36.0
4'-6" on center	-45.0
4'-0" on center	-54.0
3'-6" on center	-63.0
3'-0" on center	-72.0
2'-6" on center	-81.0
2'-0" on center	-90.0

Table 2: Attachment of 24-gauge TS-324 Metal Roof Panels to Steel Purlins with a Quad Lok Seam System

Attachment of Panel to Steel Girts (Minimum 16-gauge)	Design Wind Pressure (psf)
5'-0" on center	-45.0
4'-6" on center	-57.5
4'-0" on center	-70.0
3'-6" on center	-82.5
3'-0" on center	-95.0
2'-6" on center	-107.5
2'-0" on center	-120.0

Table 3: Attachment of 22-gauge TS-324 Metal Roof Panels to Steel Purlins with a Triple Lok Seam System

Attachment of Panel to Steel Purlins (Minimum 16-gauge)	Design Wind Pressure (psf)
5'-0" on center	-44.0
4'-6" on center	-57.0
4'-0" on center	-70.1
3'-6" on center	-83.2
3'-0" on center	-96.3
2'-6" on center	-109.4
2'-0" on center	-122.5

Table 4: Attachment of 22-gauge TS-324 Metal Roof Panels to Steel Purlins with a Quad Lok Seam System

Attachment of Panel to Steel Girts (Minimum 16-gauge)	Design Wind Pressure (psf)
5'-0" on center	-56.0
4'-6" on center	-72.9
4'-0" on center	-89.8
3'-6" on center	-106.7
3'-0" on center	-123.6
2'-6" on center	-140.5
2'-0" on center	-157.5

Installation:

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

Steel Purlins: The minimum thickness of steel and the maximum spacing of the purlins must be as specified in Tables 1, 2, 3, and 4.

Underlayment: N/A

Attachment of Metal Panels to the Steel Purlins: The metal roof panels must be secured to the steel purlins with MPS-602 standing seam roof clips (Clip tab: 0.031", 50 ksi steel, G-90 galvanized; Clip base: 0.060", 50 ksi steel, G-90 galvanized) using 1/4-14 x 1-1/2" HWH SD screws. Two (2) screws per clip are required for Tables 1, 2, and 3. Three (3) screws per clip are required for Table 4. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlin. Refer to Figure 1 in this evaluation report.

Panel Seam: In Table 1 and Table 3, adjacent panels are seamed together mechanically along the side laps with a Triple Lok seam. In Table 2 and Table 4, adjacent panels are seamed together mechanically along the side laps with a Quad Lok seam.

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.

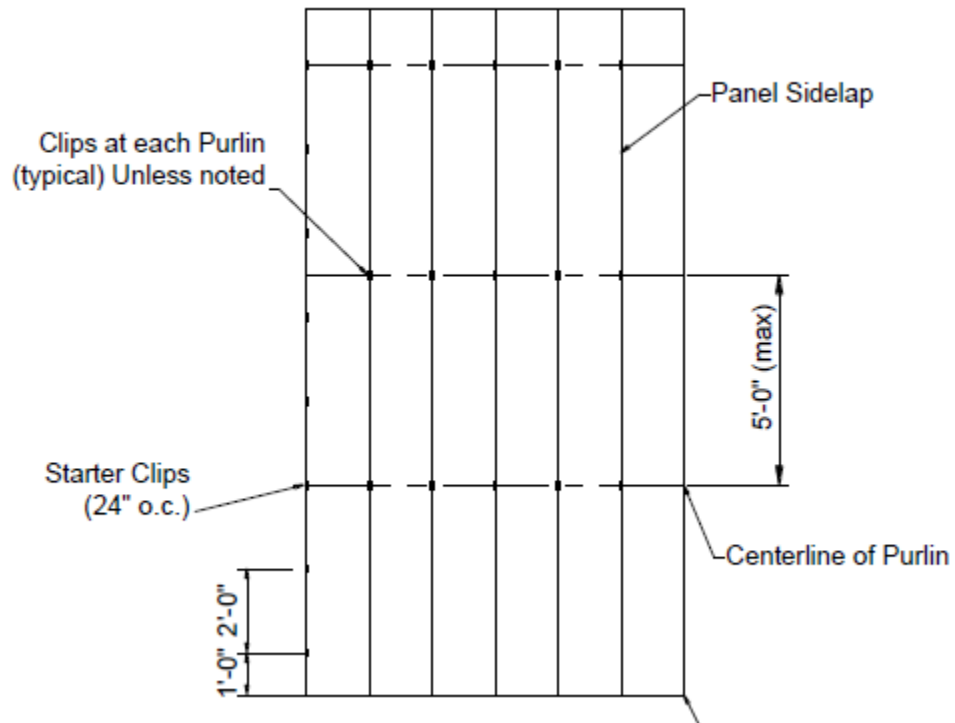


Figure 1. TS-324 Metal Roof Panel Fastener Pattern