

Product Evaluation

RC344 | 1220

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-344 **Draft Revision**

Effective Date:

Re-evaluation Date: December 2024

Product Name: Tite-Loc Plus 16" Wide, 22-Gauge Steel Standing Seam Roof Panels Installed over a Steel Deck

Manufacturer: Petersen Aluminum Corporation
1005 Tonne Road
Elk Grove Village, IL 60007
(800) 441-8661

General Description:

The Tite-Loc Plus standing seam roof panels are 22-Gauge steel roofing panels that have a mechanically-seamed double-lock side joint. The roof panel has an effective width of 16". The roof panel has a yield strength of 50,000 psi.

Limitations:

Roof Framing: The steel roofing panels must be installed over a minimum 20-gauge steel B-deck secured to structural steel supports spaced a maximum of 5' on center.

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.

Installation over an Existing Roof Covering: Not permitted.

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

Roof Slope: The steel roofing panels must be installed on roofs with a roof slope not less than 2:12 and not greater than 8:12.

Table 1:

Attachment of Minimum 22-Gauge Steel Tite-Loc Plus Standing Seam Roofing Panels to a Minimum 20-gauge Steel Deck

System	Design Pressure (psf)	Panel Seam	Panel Clip	Clip Spacing	Clip Fastener
1	-140.4	Tite-Loc Plus	18-gauge, 4.3" wide SFS Intec 2-piece Steel Clip	6"	Two (2) Dekfast No. 14-10 x 8" SFS Intec self-drilling fasteners with No. 3 drive slot or two (2) No. 14-13 x 8" Triangle Fastener Corporation DP1 Concealor pancake head with No. 3 square drive. The clips use a 5" x 4" x 16-gauge metal bearing plate.
2	-52.0	Tite-Loc Plus	18-gauge, 4.3" wide SFS Intec 2-piece Steel Clip	60"	Two (2) Dekfast No. 14-10 x 8" SFS Intec self-drilling fasteners with No. 3 drive slot or two (2) No. 14-13 x 8" Triangle Fastener Corporation DP1 Concealor pancake head with No. 3 square drive. The clips use a 5" x 4" x 16-gauge metal bearing plate.

Installation:

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

Panels: The steel roofing panels must be secured to the roof framing as specified in Table 1.

Deck: The roof deck must be minimum 20-gauge steel B-deck.

Insulation: Two layers of 2" H-Shield by Hunter Panels insulation over 5/8" DensDek. Secured to the steel deck with Dekfast No. 14 x 7" long insulation deck fasteners and Dekfast steel stress insulation plates. The insulation plates are 2-7/8" across the plate and can be hexagonal, square, or circular. Use a minimum of five (5) fasteners per 4x4 ft board or ten (10) fasteners per 4x8 ft board. The fasteners must have a minimum penetration of 5 threads through the bottom of the roof deck. Refer to Figure 1 for insulation fastening patterns.

Underlayment: A minimum of one layer of Carlisle WIP 300HT self-adhered underlayment complying with ASTM D1970 applied continuously over the two layers of 2" rigid insulation without interruptions.

Roofing Panels to Steel Deck: The metal roofing panels are secured to the steel deck in accordance with Table 1. The roofing panels are secured to the steel roof deck with an 18-gauge, two-piece, hook-style, steel clip, manufactured by SFS Intec, with dimensions of 4.3" wide x 2.155"

high. The clips are located at panel ends and are spaced as specified in Table 1. The clips are secured with either two (2) Dekfast No. 14-10 x 8" SFS Intec self-drilling fasteners with No. 3 drive slot or two (2) 14-13 x 8" Triangle Fastener Corporation DP1 Concealor pancake head fasteners with No. 3 square drive. The clips use a 5" x 4" x 16-gauge steel bearing plate. The fasteners must have a minimum penetration of 5 threads through the bottom of the deck. The female rib of the panel is engaged over the male rib and field seamed.

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.

Panel Ends, Panel Edges, and Panel End Laps: 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.

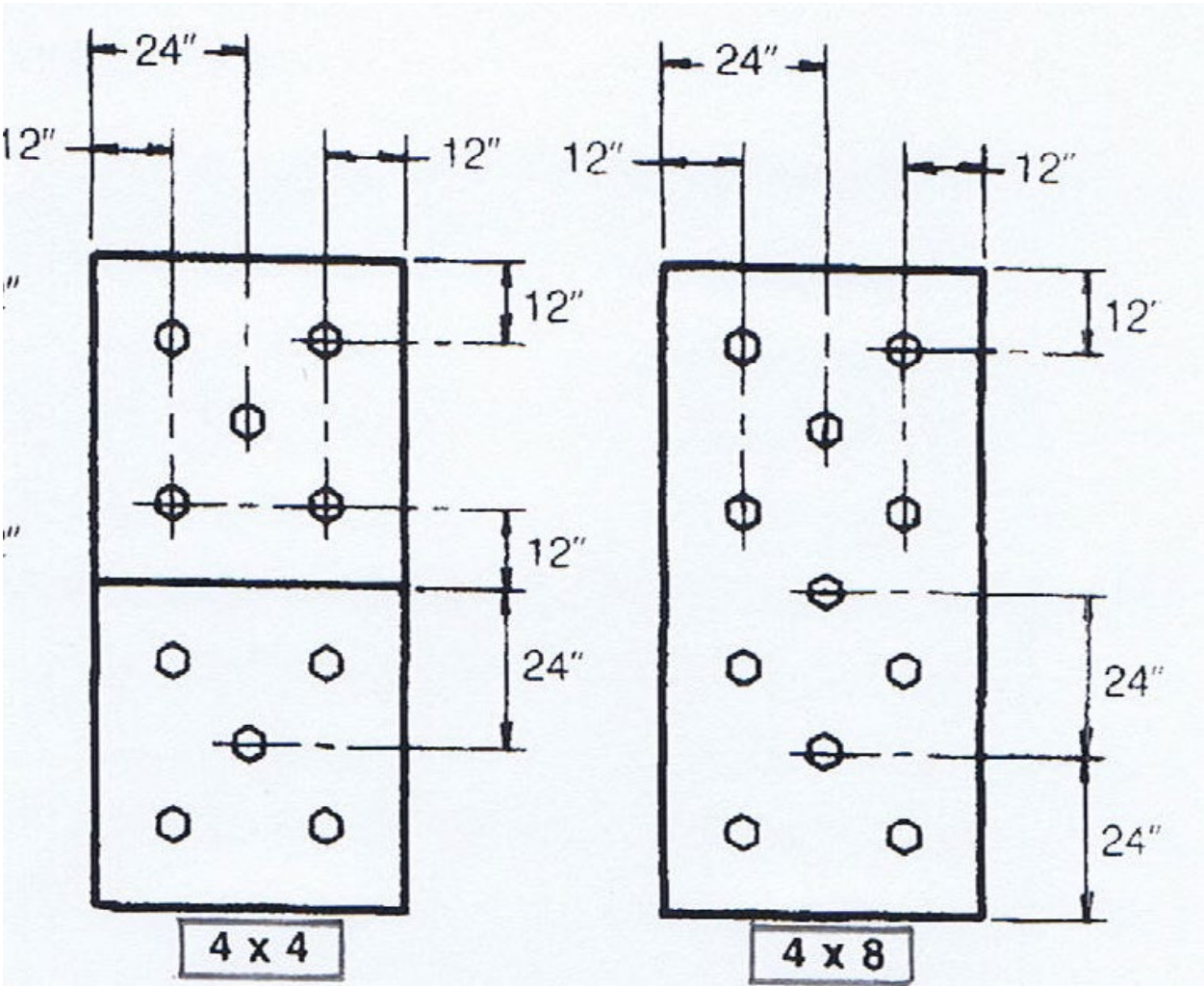


Figure 1. Insulation Fastening Patterns