

Product Evaluation

RC621 | 0320

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-621

Effective Date: March 1, 2020

Re-evaluation Date: March 2024

Product Name: Klein 450S 24-Gauge Snap Lock Steel Roofing Panels Installed Over a Plywood Deck

Manufacturer: Klein Roofing
17015 Seven Pines Drive, Bldg. #2
Spring, TX 77379
(281) 733-6060

General Description:

The Klein 450S metal roofing panel is constructed of 24-gauge galvalume steel. It has a maximum coverage of 16-5/8". The panel has a 1-1/2" tall snap lock rib. The 24-gauge steel material is ASTM A792 AZ55, Grade 50, with a minimum 50 ksi yield point with optional painted finishes. Panel Rollformer is New Tech Machiney, Corp, SS450SL panel profile.

Limitations:

Roof Slope: The metal roofing panels may be installed on roofs with a roof slope as low as 3:12. Consult the manufacturer for roof slopes less than 3:12.

Roof Deck: The roof deck must be minimum nominal 15/32" plywood wood panels. The plywood panels must be attached to wood rafters or trusses with a maximum spacing of 24" O.C.

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

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

Table 1. 450S 24-Gauge Snap Lock Steel Roofing Panels Installed Over a Plywood Deck

Design Wind Pressure (psf)	Clip Spacing for Steel Roof Panel to Plywood Roof Sheathing
-52.5	18" O.C.
-69.3	12" O.C.
-86.0	6" O.C.

Panel Clip: One-piece fixed clip, 1.75" long x 1.55" wide x 1.25" tall, 24-Ga. Galvanized steel, by Logan Stamping, Inc.

Installation Over an Existing Roof Covering: Installation over existing roof 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" thick plywood. Inspection of 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 roof panels before the roof panel installation proceeds.

Installation:

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

Underlayment: Minimum one layer of No. 30 (Type II) asphalt felt or equivalent must be used. The underlayment used must comply with one or more of the following: ASTM D226, ASTM D4869, or ASTM D1970. The felt must be installed with minimum 6" side laps and 3" end laps. The underlayment must be applied with corrosion resistant fasteners in accordance with manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

Attachment of Metal Roof Panels to Plywood Roof Deck: The panels must be fastened to the roof deck with a minimum of one (1) 1-3/4" long, 24-Ga. galvanized steel fixed clip. Use two (2) No. 10-12 X 1" Pancake Type A screws per clip. The spacing of the clips must be as specified in Table 1. The fasteners must be long enough to insure a minimum penetration of 1/4" below the wood deck.

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.