

Product Evaluation

RC679 | 1121

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-679

Effective Date: November 1, 2021

Re-evaluation Date: November 2025

Product Name: Loc Seam, Roof-Lok 90, VR16 II-90 Steel Standing Seam Roofing Panels Installed Over Steel Purlins

Manufacturer: Nucor Building Group
600 Apache Trail
Terrell, TX 75160
(888) 669-8165

General Description:

The Loc Seam, Roof-Lok 90, and VR16 II-90 roofing panels are steel standing seam roofing panels. The steel roofing panels have a maximum 16" of coverage. The steel roofing panels have a 2" rib height. The steel roofing panels are manufactured from minimum 24-gauge G90 zinc coated (galvanized) steel or aluminum zinc alloy coated (AZ50 or AZ55) steel with a minimum yield strength of 50,000 psi.

Limitations:

Roof Framing: The steel roofing panels may be installed over a minimum 22-gauge, minimum 33 ksi yield strength, steel deck with a minimum depth of 1-1/2" or directly to steel purlins, depending on the installation method used.

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, Table 2, or Table 3 depending on the installation method.

Roof Slope: The steel roofing panels may be installed on roofs with a roof slope as low as 1/4:12.

Installation Over an Existing Roof Covering: Not permitted.

Installation Method 1

Table 1

Attachment of Loc Seam, Roof-Lok 90, VR16 II-90 Steel Standing Seam Roofing Panels to Steel Purlins

Design Wind Pressure	Purlins	Deck	Attachment of Panel to Purlins
-52.5 psf	16-Gauge Steel; 60" on center	Minimum 22-Gauge Steel Deck	Fasteners @ 16" o.c.

Installation:

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

Steel Purlins: The minimum thickness of the steel and the maximum spacing of the purlins must be as specified in Table 1.

Structural Steel Deck: Not required.

Insulation: Optional. Any compressible blanket insulation installed between the upper flange of the purlin and the steel roofing panel.

Underlayment: Not required.

Attachment of Steel Roof Panels to the Steel Purlins: The steel roofing panels are secured to the steel purlins with fasteners. The fasteners are minimum #12-14 self-drilling, self-tapping, hex head screws with a separate 9/16" outside diameter metal backed sealing washer. The fasteners are spaced 16" on center along the purlins with one fastener located 2" from the female side of each panel. Fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlins.

Installation Method 2

Table 2

Attachment of Loc Seam, Roof-Lok 90, VR16 II-90 Steel Standing Seam Roofing Panels to Steel Purlins

Design Wind Pressure	Purlins	Deck	Attachment of Panel to Purlins
-52.5 psf	16-Gauge Steel; 60" on center	Minimum 22-Gauge Steel Deck	Clips @ 60" o.c.

Installation:

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

Steel Purlins: The minimum thickness of the steel and the maximum spacing of the purlins must be as specified in Table 2.

Structural Steel Deck: Optional. Minimum 22-gauge, 33 ksi yield strength, steel B deck.

Insulation: Foamed plastic rigid insulation. Maximum thickness of 4". Minimum density to be 2.0 lbs per cu ft. Loose laid.

Underlayment: Not required.

Steel Clips: Two-piece clips. The tab portion is 2-3/8" or 3-1/8" in height, 3" in width, minimum 24-gauge steel. The base portion is minimum 18-gauge galvanized steel.

Panel Clip Bearing Plate: Used with rigid insulation. Located over the rigid insulation. Minimum 0.043" thick coated steel.

Attachment of Steel Roof Panels to the Steel Purlins: The steel roofing panels are secured to the steel purlins with steel clips. Each clip and clip bearing plate (if required) is secured to the steel purlins with one (1) #12-14 or one (1) #14-14 self-drilling, self-tapping, hex head screws. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlins. A clip is required at each purlin location.

Installation Method 3

Table 3

Attachment of Loc Seam, Roof-Lok 90, VR16 II-90 Steel Standing Seam Roofing Panels to Steel Purlins

Design Wind Pressure	Purlins	Deck	Attachment of Panel to Roof Deck
-52.5 psf	16-Gauge Steel; 60" on center	Minimum 22-Gauge Steel Deck	Clips @ 30" o.c.

Installation:

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

Steel Purlins: The minimum thickness of the steel and the maximum spacing of the purlins must be as specified in Table 3.

Structural Steel Deck: Minimum 22-gauge, 33 ksi yield strength, steel B deck.

Insulation: Foamed plastic rigid insulation. Minimum thickness of 1". Maximum thickness of 8" Minimum density to be 2.0 lbs per cu ft. Loose laid.

Underlayment: Not required.

Steel Clips: Two-piece clips. The tab portion is 2-3/8" or 3-1/8" in height, 3" in width, minimum 24-gauge steel. The base portion is minimum 18-gauge galvanized steel.

Panel Clip Bearing Plate: Used with rigid insulation. Located over the rigid insulation. Minimum 0.043" thick coated steel.

Attachment of Steel Roof Panels to the Steel Roof Deck: The steel roofing panels are secured to the steel roof deck with steel clips. Each clip and clip bearing plate (if required) is secured to the steel roof deck with either one (1) #11 x minimum 3-3/4" long or one (1) #14-13 minimum 3-3/4" long self-drilling, self-tapping, hex head or Phillips head screw. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the steel purlins.

Panel Seam: The panels are seamed together electronically and includes the tabs of the panel clips.

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.