

## Product Evaluation

RC513 | 0421

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-513

**Effective Date:** April 1, 2021

**Re-evaluation Date:** April 2025

**Product Name:** NFS-16 Steel Roof Panels Installed Over Steel Purlins

**Manufacturer:** Alliance Steel  
3333 South Council Road  
Oklahoma City, OK 73179  
(405) 745-7500

### General Description:

The NFS-16 roof panels are steel roof panels. The roof panels have a maximum 16" of coverage. The roof panels have a 1-3/4" rib height. Refer to Figure 2 in this evaluation report. The roof panels are manufactured from either 24-gauge or 22-gauge Galvalume coated steel that conform to ASTM A792, SS Grade 50 Class 1 with a minimum yield strength of 50 ksi. The panels can be supplied painted with an AZ 55 hot dipped aluminum zinc alloy coating or an acrylic-coated Galvalume steel with an AZ 55 hot dipped aluminum zinc coating. The panels can be painted with silicone polyester products or with Kynar paint systems.

### Limitations:

**Roof Framing:** The metal roofing panels must be installed over open steel purlins.

**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 for 24-gauge steel panels and as specified in Table 2 for 22-gauge steel panels.

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

**Table 1**

Attachment of NFS-16, 16" Wide, Minimum 24-Gauge Steel Roof Panels to Steel Purlins

Design Wind Pressure	Purlins	Attachment of Panel to Steel Purlins
-55.0 psf	Minimum 16-gauge; 1'-0" on center	Clips with Two Fasteners
-52.5 psf	Minimum 16-gauge; 1'-6" on center	Clips with Two Fasteners
-50.0 psf	Minimum 16-gauge; 2'-0" on center	Clips with Two Fasteners
-47.5 psf	Minimum 16-gauge; 2'-6" on center	Clips with Two Fasteners
-45.0 psf	Minimum 16-gauge; 3'-0" on center	Clips with Two Fasteners
-42.5 psf	Minimum 16-gauge; 3'-6" on center	Clips with Two Fasteners
-40.0 psf	Minimum 16-gauge; 4'-0" on center	Clips with Two Fasteners

**Table 2**

Attachment of NFS-16, 16" Wide, Minimum 22-Gauge Roof Panels to Steel Purlins

Design Wind Pressure	Purlins	Attachment of Panel to Steel Purlins
-72.5 psf	Minimum 16-gauge; 1'-0" on center	Clips with Two Fasteners
-70.8 psf	Minimum 16-gauge; 1'-6" on center	Clips with Two Fasteners
-69.2 psf	Minimum 16-gauge; 2'-0" on center	Clips with Two Fasteners
-67.5 psf	Minimum 16-gauge; 2'-6" on center	Clips with Two Fasteners
-65.8 psf	Minimum 16-gauge; 3'-0" on center	Clips with Two Fasteners
-64.2 psf	Minimum 16-gauge; 3'-6" on center	Clips with Two Fasteners
-62.5 psf	Minimum 16-gauge; 4'-0" on center	Clips with Two Fasteners

**Installation Over an Existing Roof Covering:** Not permitted.

**Installation:**

**General:** The roof 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 and Table 2.

**Attachment of Roof Panels to the Steel Purlins:** The roof panels must be secured to the steel purlins with one-piece panel clips (3-1/2" long, 1-7/8" high, 18-gauge, galvanized steel). Each clip is secured to the steel purlins with two (2) No. 10-16 x 1" pancake self-driller screws manufactured by SFS. Refer to Figure 1 in this evaluation report. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the purlins. The fasteners must be located at each steel purlin.

**Panel Side Laps:** Ribs are snapped together into place over each clip location.

**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 installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.

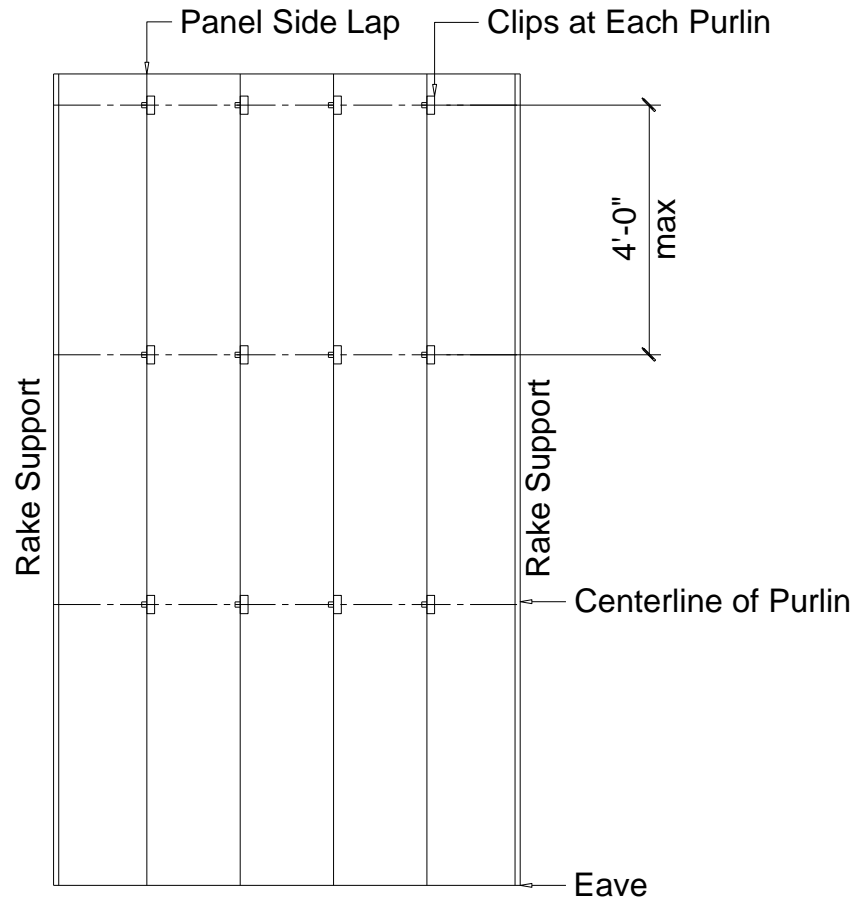


Figure 1. Clip Spacing for NFS-16 Roof Panel

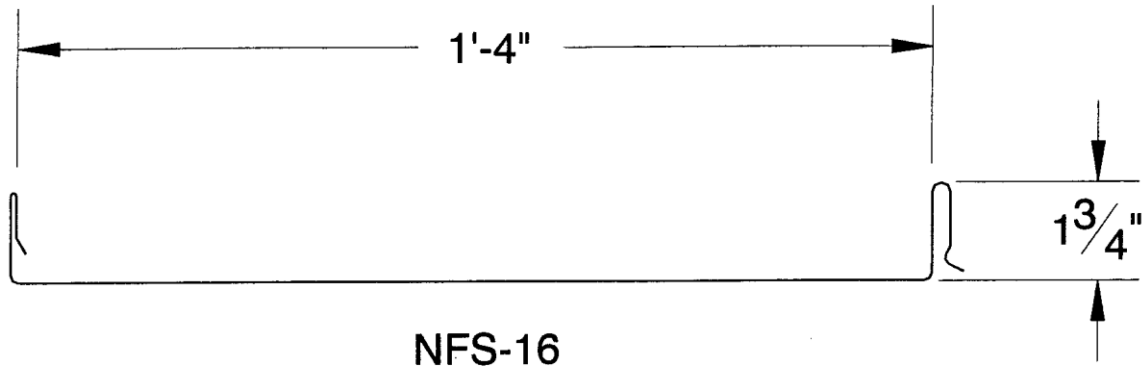


Figure 2. NFS-16 Roof Panel Profile