

## Product Evaluation

RC637 | 1223

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-637

**Effective Date:** December 1, 2023

**Re-evaluation Date:** December 2027

**Product Name:** Alliance Lok 16 (ALok-16) 24-gauge Steel Standing Seam Roof Panels Installed Over Steel Purlins

**Manufacturer:** Alliance Steel  
3333 South Council Road  
Oklahoma City, OK 73719  
(405) 745-7500

### General Description:

This evaluation report is for Alliance Lok (ALok-16) standing seam roof panels installed over steel purlins. The steel panel is minimum 24-gauge coated steel. The roof panels have an actual coverage of 16" and a standing seam rib height of 2". The roof panels conform to ASTM A792, SS Grade 50 Class 1. The panels are supplied with an AZ 50 or AZ 55 aluminum zinc alloy. The panels can be supplied painted with silicone polyester products or with Fluropon paint systems.

### Limitations:

**Roof Framing:** The metal roof panels must be installed over minimum 16-gauge 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 in a manner to resist wind loads as required.

**Design Wind Pressures:** The design pressure uplift load resistance must be as specified in Tables 1, 2, 3, 4 and 5.

**Roof Slope:** The roof panels may be installed on roofs with a roof slope as low as 1/4:12 if sealant is used on the panel side laps. If sealant is not used on the panel side laps, then the minimum roof slope is 3:12.

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

**Table 1** Attachment of 24-gauge Alliance Lok 16 (ALok-16) Steel Roof Panels to Steel Purlins with MC-12XX Series Clips and TripleLok Seam System.

Design Wind Pressure (psf)	Purlins (Minimum 16-Gauge)
-48.3	5'-0" on center
-59.6	4'-6" on center
-70.9	4'-0" on center
-82.2	3'-6" on center
-93.5	3'-0" on center
-104.8	2'-6" on center
-116.2	2'-0" on center

**Table 2** Attachment of 24-gauge Alliance Lok 16 (ALok-16) Steel Roof Panels to Steel Purlins with MC-12XX Series Clips and QuadLok Seam System.

Design Wind Pressure (psf)	Purlins (Minimum 16-Gauge)
-67.4	5'-0" on center
-83.3	4'-6" on center
-99.3	4'-0" on center
-115.2	3'-6" on center
-131.2	3'-0" on center
-147.1	2'-6" on center
-163.1	2'-0" on center

**Table 3** Attachment of 24-gauge Alliance Lok 16 (ALok-16) Steel Roof Panels to Steel Purlins with MPW-12XX-12 Series Clips and TripleLok Seam System.

Design Wind Pressure (psf)	Purlins (Minimum 16-Gauge)
-69.9	5'-0" on center
-84.5	4'-6" on center
-99.1	4'-0" on center
-113.7	3'-6" on center
-128.3	3'-0" on center
-142.9	2'-6" on center
-157.5	2'-0" on center

**Table 4** Attachment of 24-gauge Alliance Lok 16 (ALok-16) Steel Roof Panels to Steel Purlins with MPS-12XX-12 Series Clips and TripleLok Seam System.

Design Wind Pressure (psf)	Purlins (Minimum 16-Gauge)
-78.4	5'-0" on center
-95.2	4'-6" on center
-112.0	4'-0" on center
-128.8	3'-6" on center
-145.6	3'-0" on center
-162.4	2'-6" on center
-179.2	2'-0" on center

**Table 5** Attachment of 24-gauge Alliance Lok 16 (ALok-16) Steel Roof Panels to Steel Purlins with MPS-12XX-12 Series Clips and QuadLok Seam System.

Design Wind Pressure (psf)	Purlins (Minimum 16-Gauge)
-83.7	5'-0" on center
-103.1	4'-6" on center
-122.5	4'-0" on center
-141.9	3'-6" on center
-161.2	3'-0" on center
-180.6	2'-6" on center
-200.0	2'-0" on center

**Installation:**

**General:** The metal roof 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, 4 and 5.

**Underlayment:** N/A.

**Attachment of Metal Panels to the Steel Purlins:** The roof panels must be secured to the steel purlins with MC-1203 or MC-1213 sliding clips (4-5/16" long, 22-gauge top; 2-1/4", 16-gauge base; G-90 galvanized) or MPW-1203-12 or MPW-1213-12 sliding clips (12" long, 22-gauge top; 3-3/8", 16-gauge base; G-90 galvanized) or MPS-1203 or MPS-1213 sliding clips (4-5/16" long, 20-gauge top; 3-3/8", 16-gauge base; G-90 galvanized). Each clip is secured to the steel purlins with two (2) 1/4"-14 HWH self-drilling fasteners. The fasteners must be long enough to ensure a minimum penetration of 3 pitches of thread below the purlins.

**Panel Seam:** In Tables 1, 3 and 4, adjacent panels are seamed together mechanically along the side laps with a TripleLok seam. In Tables 2 and 5, adjacent panels are seamed together mechanically along the side laps with a QuadLok 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.