

## Product Evaluation

RC119 | 1020

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-119

**Effective Date:** October 1, 2020

**Re-evaluation Date:** October 2024

**Product Name:** 5V Steel Roofing Panels Installed Over a Plywood Roof Deck

**Manufacturer:** Union Corrugating Company  
701 South King Street  
Fayetteville, NC 28301  
(502) 645-2480

### General Description:

The 5V metal roof panels are minimum 26-gauge steel roof panels. The metal roof panels are manufactured from steel with an aluminum, zinc, and silicon anti-corrosion coating (Galvalume®). The metal roof panels are available with a painted finish in a variety of colors. The metal roof panels are 26" in width. The metal roof panels have a 5 V-shaped rib, 1" wide and 1/2" in height.

### Limitations:

**Roof Decking Thickness:** The metal roof panels must be installed over a minimum 15/32" plywood roof deck.

**New Roof Deck Attachment:** The roof deck must be installed to meet or exceed the uplift requirements of the IRC or the IBC and must be installed in a manner to resist lateral wind loads as required.

**Installation Over an Existing Roof Covering:** Installation over an existing roof covering 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. The minimum thickness of the roof deck must be as required for a new metal roof installation. Note: Inspection of the 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. A layer of underlayment over the existing roof covering is not required.

**Roof Slope:** The metal roof panels must not be installed on roofs with a roof slope less than 3:12.

**Design Wind Pressures:** The design pressure uplift load resistance for the metal roof panels must be as specified in Table 1

**Table 1** Attachment of minimum 26-gauge 5V metal roof panels to roof decking

Panel Fastener Spacing Along Rib (Spacing of Line of Fasteners)	Minimum Plywood Thickness	Design Wind Pressure (psf)
24" on center	15/32"	-71.0
21" on center		-87.3
18" on center		-103.7
15" on center		-120.0
12" on center		-136.3
9" on center		-152.7
6" on center		-169.0

**Installation:**

**General:** The 5V metal roof panels must be installed in accordance with the manufacturer's recommended installation instructions and this evaluation report.

**Underlayment:** A minimum of one layer of No. 30 (Type II) asphalt felt must be used. The underlayment used must comply with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. The felt must be installed with 6" side laps and 3" end laps. The underlayment must be applied with corrosion resistant fasteners in accordance with the manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

**Attachment of Metal Roof Panels to Roof Deck:** The 5V metal roof panels must be secured to the roof deck as follows:

**Roof Panels:**

Minimum No. 10-15 x 2" long, Woodtite screws with washers. The fasteners must be long enough to ensure a minimum penetration of 1/4" below the roof deck. (Note: If the metal panels are installed over an existing roof covering, then the fastener length must be increased

so that the fasteners are long enough to ensure a minimum penetration of 1/4" below the existing plywood roof deck.) A line of fasteners is to be installed on the overlap ribs and the center rib across the width of the panel. The spacing of the line of fasteners along the length of the panel must be as specified in Table 1. Refer to Figure 1 of this evaluation report.

**Panel Ends:**

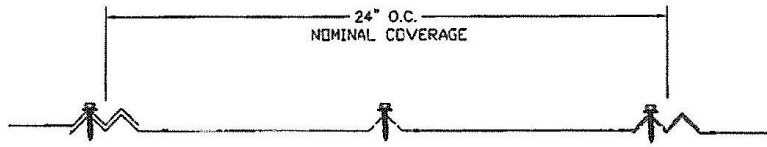
Refer to Figure 1 of this evaluation report for fasteners required along panel ends.

**Panel Edges:**

As required by the manufacturer.

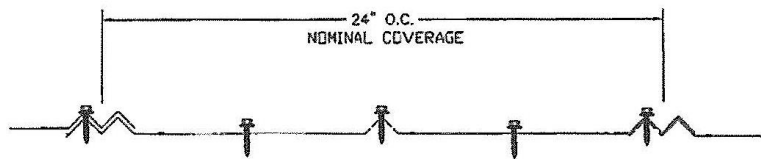
**Trims, Closures, and Accessories:** Component details, such as the vented ridge, high side peak, eave trim, endwall, sidewall, rake, transition, and valley must be installed as specified in the Trim Installation Details document by Union Corrugating Company and the installation instructions available from 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.



#10-15 X 2" LONG WOODSCREWS WITH WASHERS

**FASTENER LINE PATTERN AT PANEL INTERIOR**



#10-15 X 2" LONG WOODSCREWS WITH WASHERS

**FASTENER LINE PATTERN AT PANEL ENDS**

Figure 1. 5V Panel Detail – Fastener Pattern (Minimum 26-gauge)