

Product Evaluation

RC170| 0221

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-170

Effective Date: February 1, 2021

Re-evaluation Date: February 2025

Product Name: 30-Gauge ArrowLine Steel Shingle Shakes Installed over a Plywood Roof Deck

Manufacturer: Edco Products, Inc.
8700 Excelsior Blvd.
Hopkins, MN 55343
(800) 333-2580

General Description:

The ArrowLine Shingle Shakes are minimum 30-gauge G-90 galvanized steel coated with a Kynar 500 or Hylar 500 coating. The steel conforms to ASTM A653 Type B. The steel shingle shakes have a 50,000-psi average yield strength. The steel shingle shakes have a 50" x 12" exposure. The steel shingle shakes have a 4-way interlocking system and are secured to the wood roof deck with shingle clips and fasteners. The shingle shakes are available in a variety of colors.

Limitations:

Roof Deck: The shingle shakes must be installed over a minimum 15/32" plywood deck.

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

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

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 of minimum 15/32" plywood. Note: Inspection of the existing roof deck must be made prior to the installation of the shingle shakes. The condition of the existing roof deck must be acceptable to receive the roof shingle shakes before the roof covering installation proceeds. NOTE: Underlayment is not required to be installed except for placement over wood shingles or shakes.

Roof Slope: The shingle shakes may be installed on roofs with a roof slope as low as 4:12.

Table 1. Attachment of 30-Gauge Steel Shingle Shakes to Minimum 15/32" Plywood Deck

Design Wind Pressure	Clip Fastener	Clip Spacing
-52.5 psf	One (1) No. 10-12 x 1"	5"-10"-10"-10"-10"

Installation:

General: The shingle shakes must be installed in accordance with the ArrowLine Installation Guide and this product evaluation report.

Panels: The shingle shake roof panels must be secured to the roof deck as specified in Table 1 and in accordance with this section. Refer to the ArrowLine Installation Guide for illustrations of the clip locations on the panels.

Underlayment: W.R. Grace & Co. Grace® Ultra self-adhering membrane must be used. The underlayment must be installed in accordance with manufacturer installation instructions with 3-1/2" side laps and 6" end laps.

Alternative Underlayment: Tarco LeakBarrier PS200 self-adhering membrane, Tarco LeakBarrier MS300 self-adhering membrane, TAMKO Moisture Guard Plus® self-adhering membrane, or TAMKO TW Underlayment self-adhering membrane. The underlayment must be installed as required by the manufacturer.

Attachment of Roof Panels to Roof Deck: The shingle shake roof panels must be secured to the roof deck as follows:

Minimum No. 10-12" x 1" slotted self-tapping screws with 1-1/2" wide, 0.029" thick galvanized steel clips. The fasteners must be long enough to ensure a minimum penetration of 1/4" below the roof deck. (Note: If the roof 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). Five (5) clips are required per panel, spaced as specified in Table 1.

Trims, Closures, and Accessories: Components, such as the eave starter, the rake starter, the valley assembly, the end wall assembly, and the hip/ridge assembly must be installed as required by the manufacturer in the ArrowLine Installation Guide.

Alternative Fasteners: Substitution of equivalent fasteners must meet the following requirements:

No. 10-12 x 1" slotted self-tapping screw

- Ultimate withdrawal (pullout) \geq 289 lbs. in minimum 15/32" plywood.

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.