

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION RC-170

Effective November 1, 2012

*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 shall be subject to reevaluation **October 2016**.*

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.

30 Gauge ArrowLine Metal Shingle Shakes manufactured by

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will be accepted for use in areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

PRODUCT 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 metal roofing panels have a 50,000 psi average yield strength. The metal shingle shakes have a 50" x 12" exposure. The metal 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 Decking: The shingle shakes metal roofing panels shall be installed over minimum $\frac{15}{32}$ " plywood decking.

New Roof Deck Attachment: The roof decking shall meet or exceed the uplift requirements of the International Residential Code or International Building Code and shall be installed as required for resistance to lateral wind loads.

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

Table 1

Attachment of minimum 30 gauge shingle shake metal roofing panels to minimum $\frac{15}{32}$ " plywood decking

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

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 $1\frac{5}{32}$ inch plywood. 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 metal roofing panels before the metal roofing panel installation proceeds. NOTE: Underlayment is not required to be installed except for placement over wood shingles or shakes.

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

INSTALLATION INSTRUCTIONS

General: The shingle shake metal roofing panels shall be installed in accordance with the ArrowLine Installation Guide and this product evaluation report.

Panels: The shingle shake metal roofing panels shall 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 shall be used. The underlayment shall be installed in accordance with manufacturer installation instructions with $3\frac{1}{2}$ inch side laps and 6 inch 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 Underlayments self-adhering membrane. The underlayment shall be installed as required by the manufacturer.

Attachment of Metal Roofing Panels to Roof Deck: The shingle shake metal roofing panels shall be secured to the roof deck as follows:

Roofing Panels: Minimum No. 10-12" x 1" slotted self tapping screws with $1\frac{1}{2}$ " wide 0.029" galvanized steel clips. The fasteners shall be long enough to ensure a minimum penetration of $\frac{1}{4}$ " below the roof deck. (Note: If the metal roofing panels are installed over an existing roof covering, then the fastener length shall be increased so that the fasteners are long enough to ensure a minimum penetration of $\frac{1}{4}$ " below the existing plywood roof decking.) 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 shall be installed as required by the manufacturer in the ArrowLine Installation Guide.

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

- No. 10-12 x 1" slotted self tapping screw
 - Ultimate withdrawal (pullout) \geq 289 lbs. in minimum $1\frac{5}{32}$ " plywood.

Note: The ArrowLine Installation Guide shall be available on the job site during the installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.