

Product Evaluation

RC99 | 0422

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-99

Effective Date: April 1, 2022

Re-evaluation Date: April 2026

Product Name: Unified Steel Stone Coated Roofing

Manufacturer: Westlake Royal Roofing LLC
2801 Post Oak
Suite 600
Houston, TX 77056
(800) 669-8453

General Description:

Westlake Royal Roofing LLC manufactured metal roofing shakes and tiles are pressure formed from structural-quality sheet metal complying with ASTM A 792-94, Grade 33, with an AZ-50 aluminum-zinc alloy coating. The base metal thickness is 0.015". The metal roofing products are coated with a baked-on primer on both sides. On the exposed surface, crushed stone chips are embedded in an acrylic resin adhesive on the products. The stone surface is finished with a clear acrylic over-glaze. The metal roof products may be installed directly to the roof deck or on a batten system. The metal roof product profiles, dimensions, and installed coverage are specified in Table 1.

Table 1. Profiles, Product Dimensions, Installed Coverage

Profile	Overall Product Length	Install Coverage
PINE-CREST Shake	52"	49-1/2" x 14-1/2"
PACIFIC Tile	52"	49-1/2" x 14-1/2"
COTTAGE Shingle	51-1/8"	49-1/2" x 14-1/2"
BARREL-VAULT Tile	45-1/8"	43" x 13-1/2"

Limitations:

Roof Decking Thickness: The metal roof products must be installed over either minimum 15/32" plywood or minimum 19/32" plywood decking. Refer to the assemblies in the Installation section of this evaluation report for specific deck thickness requirements.

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 as required for resistance to lateral wind loads.

Installation Over an Existing Roof Covering: Installation over an existing roof covering is limited to a maximum of one existing layer of composition shingles, 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 shall not be installed on roofs with a roof slope less than 2-1/2:12.

Underlayment: A minimum of one layer of No. 30 (Type II) asphalt felt or two layers of No. 15 (Type 1) 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.

Design Wind Pressures: The design pressure uplift load resistance for the metal roof products must be as specified in the assemblies in the Installation section of this evaluation report

Installation:

General: The metal roof products specified in this evaluation report must be installed in accordance with the manufacturer's installation instructions and this evaluation report.

PINE-CREST Shake, COTTAGE Shingle and PACIFIC Tile Assemblies

Assembly No. 1

Design Pressure Rating: -47.5 psf

Roof Deck: Minimum nominal 15/32" plywood.

Underlayment: As specified in the Limitations section.

Battens: N/A

Panels: PINE-CREST Shake, COTTAGE Shingle, PACIFIC Tile

Anchorage: The panels are fastened to the roof deck with minimum five (5) 8d x 1-3/4" galvanized ring shank nails across the back shelf of the panel and minimum five (5) 8d x 1-3/4" galvanized ring shank nails through the front nose of the panel.

Assembly No. 2

Design Pressure Rating: -153.5 psf

Roof Deck: Minimum nominal 19/32" plywood.

Underlayment: As specified in the Limitations section.

Panels: PINE-CREST Shake, COTTAGE Shingle, PACIFIC Tile

Anchorage: The panels are fastened to the roof deck with minimum six (6) No. 10 x 2" hex head screws across the back shelf of the panel and minimum six (6) No. 10 x 2" hex head screws through the front nose of the panel.

Assembly No. 3

Design Pressure Rating: -50 psf

Roof Deck: Minimum nominal 15/32" plywood.

Underlayment: As specified in the Limitations section.

Battens: 1" x 4" Douglas Fir-Larch lumber spaced a maximum of 14-1/2" on center laid perpendicular to the roof framing members. The battens must be fastened through the roof sheathing into each roof framing member with two (2) 3-1/4" x 0.131" diameter ring shank nails and one No. 10-16 x 3" screw. The roof framing members must be spaced a maximum of 24" on center.

Panels: PINE-CREST Shake, PACIFIC Tile

Anchorage: The panels are fastened to the battens with minimum six (6) 0.113" shank diameter x 2" long ring shank nails evenly spaced through the front nose of each panel.

Assembly No. 4

Design Pressure Rating: -145 psf

Roof Deck: Minimum nominal 19/32" plywood.

Underlayment (Optional): As specified in the Limitations section.

Battens: 1" x 4" Douglas Fir-Larch lumber spaced a maximum of 14-1/2" on center laid perpendicular to the roof framing members. The battens must be fastened through the roof sheathing into each roof framing member with two (2) 3-1/4" x 0.131" diameter ring shank nails and one (1) No. 10-16 x 3" screw. The roof framing members must be spaced a maximum of 24" on center.

Panels: PINE-CREST Shake, PACIFIC Tile

Anchorage: The panels are fastened to the battens with minimum ten (10) No. 10-16 x 2" long hex head screws through the front nose of each panel.

BARREL-VAULT Tile Assemblies**Assembly No. 1:**

Design Wind Pressure: -45 psf

Roof Deck: Minimum nominal 15/32" plywood.

Battens: The battens are 2" x 2" lumber spaced a maximum of 13-1/2" on center laid perpendicular to the roof framing members. The battens must be installed over the underlayment and spaced as noted above. The battens are fastened to each rafter with one (1) 0.131" smooth shank diameter x 3-1/2" long nail.

Panels: BARREL-VAULT Tile

Anchorage: Each metal panel is fastened to the 2x2 wood batten with either four (4) 8d x 2-3/8" long corrosion resistant ring shank nails or four (4) No. 10 x 2" long corrosion resistant screws.

Assembly No. 2:

Design Wind Pressure: -75 psf

Roof Deck: Minimum nominal 15/32" plywood.

Battens: The battens are 2" x 2" lumber spaced a maximum of 13-1/2" on center laid perpendicular to the roof framing members. The battens must be installed over the underlayment and spaced as noted above. The battens are fastened to each rafter with one (1) No. 8 x 3" long screws.

Panels: BARREL-VAULT Tile

Anchorage: Each metal panel is fastened to the 2x2 wood batten with either four (4) 8d x 2-3/8" long ring shank nails or four (4) No. 10 x 2" long screws.

Assembly No. 3:

Roof Deck: Minimum nominal 15/32" plywood.

Design Wind Pressure: -150 psf

Panels: BARREL-VAULT Tile

Battens: The battens are 2" x 2" lumber spaced a maximum of 13-1/2" on center laid perpendicular to the roof framing members. The battens must be installed over the underlayment and spaced as noted above. The battens are fastened to each rafter with two (2) No. 8 x 3" long screws.

Anchorage: Each metal panel is fastened to the 2x2 wood batten with either seven (7) 8d x 2-3/8" long corrosion resistant ring shank nails or seven (7) No. 10 x 2" long corrosion resistant screws.

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.