

Product Evaluation

RC20 | 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-20

Effective Date: April 1, 2022

Re-evaluation Date: February 2025

Product Name: Newpoint Concrete Roofing Tiles

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

General Description:

This evaluation report covers extruded concrete roofing tiles that are interlocking. The interlocking tiles have interlocking ribs on the longitudinal edges of the tiles. The interlocking ribs restrict lateral movement and provide a water stop. The tiles are available in a variety of colors.

Mechanical Attachment: The concrete roofing tiles specified in this evaluation report are to be installed mechanically with fasteners. The roofing tiles may be secured either directly to the roof deck or over battens.

Adhesive Set Systems: The Westlake Royal Roofing, LLC roof tiles may be installed with roof tile adhesives that are either recognized in a current ICC-ES evaluation report for use in concrete roof tile applications or are specified in a Texas Department of Insurance evaluation report. Installation of tiles using these adhesive set systems must be in accordance with the adhesive manufacturers'

ICC-ES evaluation reports and must comply with the building specifications adopted by the Texas Department of Insurance or must be in accordance with a Texas Department of Insurance evaluation report. Adhesive set tile installations are outside the scope of this evaluation report.

General: The roofing tiles must be installed in accordance with this product evaluation report and the *"Florida High Wind Concrete and Clay Tile Installation Manual,"* 6th Edition (FRSA-TRI Installation Manual).

Roofing Tile Profile Classifications: Roofing tile profiles must be classified as one of the following:

- **Flat/Low profile:** Flat/Low profile tiles are defined as tiles having a rise equal to or less than 1/2 inch.
- **Medium profile:** Medium profile tiles are defined as tiles having a rise greater than 1/2 inch and a rise to width ratio of less than or equal to 1.5.
- **High/Barrel profile:** High profile tiles are defined as those tiles having a rise to width ratio greater than 1.5.

Tile Weight: This evaluation report covers standard weight tiles. Lightweight tiles are outside of the scope of this evaluation report.

Roofing Tile Designations, Profile Classifications, and Dimensions: The roofing tile designations, profile classifications, and dimensions for the roofing tiles that apply to this product evaluation report are specified in Table 1. A picture of each roofing tile is shown in Figures 1 through 5 at the end of this evaluation report.

Table 1: Roofing Tile Designations, Profile Classifications, and Dimensions

Tile Designation	Profile Classification	Tile Length (in.)	Tile Width (in.)
Saxony Shake and Slate	Flat/Low	16-1/2	13
Saxony Country Slate-Impact	Flat/Low	16-1/2	13
Madera	Flat/Low	13-1/2	13
Villa	Medium	16-1/2	13
Tejas Espana	High	16-1/2	13
Barcelona - Impact	High	16-1/2	13

Installation Instructions and Limitations:

Roof Framing and Roof Deck: Roof framing members must be in accordance with either the International Residential Code or the International Building Code. The roof framing members must not be spaced greater than 24 inches on center. The roof deck must be solidly sheathed with minimum 15/32" plywood. OSB is permitted as specified in this evaluation report. The roof deck must be fastened to the roof framing members in accordance with either the International Residential Code or the International Building Code to resist the required wind loads.

If the existing roof deck is a spaced board roof deck, then the spaced boards must either be removed or covered with sheathing. The sheathing must be installed over the spaced boards in accordance with either the International Residential Code or the International Building Code to resist the required wind loads.

Metal Drip Edge: A metal drip edge must be installed as specified in the manufacturer's installation instructions as referenced in the FRSA-TRI Installation Manual.

Roof Underlayment:

2-1/2:12 Roof Slope to Under 4:12 Roof Slope: Single-ply or multi-ply sealed underlayment system with sealed head laps and side laps. The underlayment must be installed as specified in either the IRC or the IBC and in the manufacturer's installation instructions as referenced in the FRSA-TRI Installation Manual

4:12 Roof Slope and Greater: Minimum one layer of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. The underlayment must be lapped a minimum of 2 inches at the head laps and a minimum of 6 inches at the side laps. The underlayment must be installed as specified in either the IRC or the IBC and in the manufacturer's installation instructions as referenced in the FRSA-TRI Installation Manual.

Battens: The roofing tiles may be installed over battens. For roof slopes greater than 7:12, battens are required. The roof deck must be solidly sheathed with minimum 7/16" OSB or 15/32" plywood when battens are used. As a minimum, the battens must be nominal 1x2 wood members. NOTE: For the Madera roofing tiles, nominal 1x3 wood members are required. The battens must be spaced to allow for a minimum 3" headlap. The battens must be fastened to the roof deck with minimum 8d corrosion resistant common wire or box nails or equivalent size nail. The nails must be spaced a maximum of 24 inches on center. As an alternative, battens may be fastened to the roof deck with No. 16 gauge by 7/16" crown by 1-1/2" long staples. The staples must be spaced a maximum of 12 inches on center. Batten ends must be separated a minimum of 1/2" every 4 feet to allow for drainage. Refer to Tables 4, 6, 8 and 10 for roofing tiles installed over battens.

Roofing Tile Installation: The roofing tiles must be in accordance with the following guidelines:

Roof Slope Limitations: The roofing tiles must only be installed on buildings with a roof slope of 2-1/2:12 or greater. Note: Battens are required when the roof slope exceeds 7:12. At a roof slope greater than 24:12 from the horizontal, the nose end of all tiles must be fastened to the roof deck with a nose clip.

Moment of Resistance: The overturning resistance (moment of resistance) due to wind of the roof tiles based on the installation method for the roof tiles is shown in Table 2.

Table 2: Moment of Resistance Based on Roof Tile Installation Method

Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck without Battens
Saxony Slate & Shake, Madera	1 No. 8 screw	39.1 ft-lbs
	2 No. 8 screws	50.2 ft-lbs
	2 10d ring shank nails	39.1 ft-lbs
	1 10d smooth shank nail with clip	25.2 ft-lbs
	2 10d smooth shank nails with clip	38.1 ft-lbs
Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck with Battens
Saxony Slate & Shake, Madera	1 No. 8 screw	25.6 ft-lbs
	2 No. 8 screws	36.1 ft-lbs
	2 10d ring shank nails	24.6 ft-lbs
	1 10d smooth shank nail with clip	27.5 ft-lbs
	2 10d smooth shank nails with clip	37.6 ft-lbs
Tile Designation	Fastener Type	Minimum 19/32" Plywood Deck without Battens
Saxony Slate & Shake, Madera	2 10d ring shank nails	46.4 ft-lbs

Table 2: Moment of Resistance Based on Roof Tile Installation Method

Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck without Battens
Barcelona-Impact	2 10d ring shank nails	17.2 ft-lbs
	1 No. 9 x 3" screws	40.7 ft-lbs

Table 2: Moment of Resistance Based on Roof Tile Installation Method

Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck without Battens
Villa	1 No. 8 screw	33.2 ft-lbs
	2 No. 8 screws	55.5 ft-lbs
	2 10d ring shank nails	36.1 ft-lbs
	1 10d smooth shank nail with clip	25.2 ft-lbs
	2 10d smooth shank nails with clip	38.1 ft-lbs
Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck with Battens
Villa	1 No. 8 screw	30.1 ft-lbs
	2 No. 8 screws	41.9 ft-lbs
	2 10d ring shank nails	36.4 ft-lbs
	1 10d smooth shank nail with clip	27.5 ft-lbs
	2 10d smooth shank nails with clip	37.6 ft-lbs
Tile Designation	Fastener Type	Minimum 19/32" Plywood Deck without Battens
Villa	2 10d ring shank nails	45.5 ft-lbs

Table 2: Moment of Resistance Based on Roof Tile Installation Method

Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck without Battens
Saxony Country Slate-Impact	1 No. 8 screw	25.6 ft-lbs
	2 No. 8 screws	36.6 ft-lbs
	2 10d ring shank nails	25.6 ft-lbs
Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck with Battens
Saxony Country Slate-Impact	1 No. 8 screw	14.8 ft-lbs
	2 No. 8 screws	20.2 ft-lbs
	2 10d ring shank nails	10.7 ft-lbs

Table 2: Moment of Resistance Based on Roof Tile Installation Method

Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck without Battens
Tejas Espana	1 No. 8 screw	28.7 ft-lbs
	2 No. 8 screws	51.3 ft-lbs
	2 10d ring shank nails	28.6 ft-lbs
	1 10d smooth shank nail with clip	35.5 ft-lbs
	2 10d smooth shank nails with clip	44.3 ft-lbs
Tile Designation	Fastener Type	Minimum 15/32" Plywood Deck with Battens
Tejas Espana	1 No. 8 screw	24.7 ft-lbs
	2 No. 8 screws	42.3 ft-lbs
	2 10d ring shank nails	26.8 ft-lbs
	1 10d smooth shank nail with clip	38.5 ft-lbs
	2 10d smooth shank nails with clip	44.4 ft-lbs
Tile Designation	Fastener Type	Minimum 7/16" OSB Deck with Battens
Tejas Espana	1 No. 8 screw	20.7 ft-lbs
	2 No. 8 screws	35.8 ft-lbs
	2 10d ring shank nails	N/A
	1 10d smooth shank nail with clip	27.0 ft-lbs
	2 10d smooth shank nails with clip	38.5 ft-lbs
Tile Designation	Fastener Type	Minimum 5/8" OSB Deck with Battens
Tejas Espana	1 No. 8 screw	22.5 ft-lbs
	2 No. 8 screws	39.7 ft-lbs
	2 10d ring shank nails	N/A
	1 10d smooth shank nail with clip	44.0 ft-lbs
	2 10d smooth shank nails with clip	46.8 ft-lbs
Tile Designation	Fastener Type	Minimum 19/32" Plywood Deck without Battens
Tejas Espana	2 10d ring shank nails	41.2 ft-lbs

Aerodynamic Uplift Moment: The aerodynamic uplift moment for the roof tile is calculated using Equation 16-34 from the 2018 IBC. The aerodynamic uplift moment is calculated based on the mean roof height for the installation and the required wind speed and Exposure condition for the installation location using ASCE 7-16.

Permissible Tile Installation: The roof tiles may be installed if the Moment of Resistance for the roof tile specified in this evaluation report is greater than the Aerodynamic Uplift Moment for the roof tile calculated for the structure location.

General: The roofing tiles and the underlayment system must be clean and dry at the time of their application.

The roofing tiles must be installed in accordance with this product evaluation report and the manufacturer's installation instructions as referenced in the FRSA-TRI Installation Manual.

The roofing tiles must be laid out from the right to the left, starting at the right rake. The roofing tiles must be installed with a minimum 3" headlap.

NOTE: When battens are used, the batten fasteners must be long enough to penetrate a minimum of 3/4" into and through the roof deck.

Roofing Tile Fasteners: The roofing tiles must be mechanically fastened to the roof deck. The follow fasteners are acceptable:

- **Minimum No. 8 course-threaded screw(s).** The screws must be minimum 2-1/2" long, bugle head screws conforming to ANSI/ASME 8.18.6.1, having a nominal diameter of 0.335", a shank diameter of 0.131", and a screw thread diameter of 0.175". The fasteners must be long enough to penetrate a minimum of 3/4" into or through the roof deck.
- **Minimum 10d ring shank nails.** The 10d ring shank nails must be minimum 3" long, 0.283" flat head diameter, having a 0.121" shank diameter and a 0.131" ring shank diameter. The fasteners must be long enough to penetrate a minimum of 3/4" into or through the roof deck.
- **Minimum 10d smooth shank nails.** The 10d smooth shank nails must be minimum 3" long, 0.28" flat head diameter, having a 0.121" shank diameter. The fasteners must be long enough to penetrate a minimum of 3/4" into or through the roof deck.
- **Clips.** Minimum 0.060 inch thick. Clips may be either aluminum alloy, galvanized steel, or stainless steel.

Roofing Tile Fastener Locations: Fastener hole locations are shown for each roofing tile in Figures 1 through 5. The holes marked "A" and "B" in Figures 1 through 5 must be used when two fasteners are required. When one fastener is required, the hole marked "B" in Figures 1, 2, 3 and 5 must be used and the hole marked "C" in Figure 4 (Madera roofing tile) must be used.

Rake Tiles: Rake tiles must be secured to minimum Spruce-Pine-Fir lumber framing with either two minimum No. 8 screws or two minimum 10d ring shank nails. The corrosion resistant fasteners must be long enough to penetrate the wood framing a minimum 3/4 inch.

Hip and Ridge Tiles: The hip and ridge tiles must be fastened to hip and ridge boards (Dimension lumber of sufficient height to support the hip and ridge tiles) in accordance with one of the following options:

- Drill a 3/16" hole in the lower 1/3 of the starter tile. Use a fastener as specified in Table 3 and secure the starter tile at both the drilled hole in the lower 1/3 and at the head of the tile. Seal the head of the fastener with a UV resistant sealant.
- Prior to installing the starter tile, apply a roof tile adhesive along the entire length of the starter tile. Secure the head of the starter tile with a fastener as specified in Table 3.

The remaining hip and ridge tiles are to be installed with a minimum 2-inch headlap. Place the nose of the tile into a 4" to 5" bead of roof tile adhesive along the head of the lower tile to insure proper contact with the two tiles. The head of the hip or ridge tile is to be secured using a fastener as specified in Table 3.

Table 3: Hip and Ridge Tile Fastener Requirements

Dimension Lumber	Fasteners per Tile
Spruce-Pine-Fir	One No. 8 screw
Southern Yellow Pine	One No. 8 screw

Note: Keep the manufacturer's installation instructions and the "*Florida High Wind Concrete and Clay Tile Installation Manual*," 6th Edition (FRSA-TRI Installation Manual) available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.

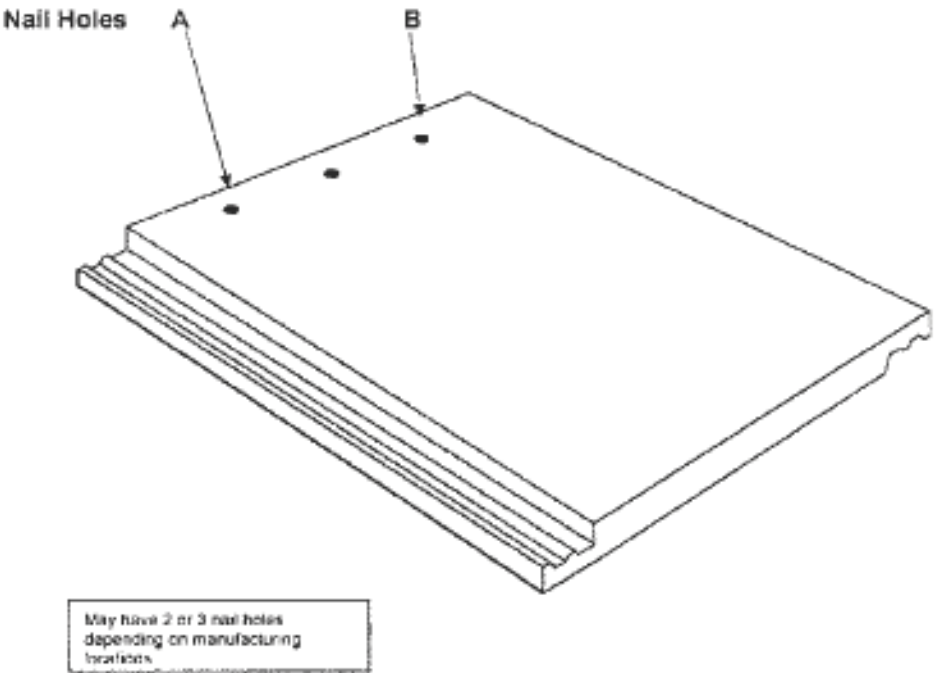


Figure 1: Representative Saxony Tile

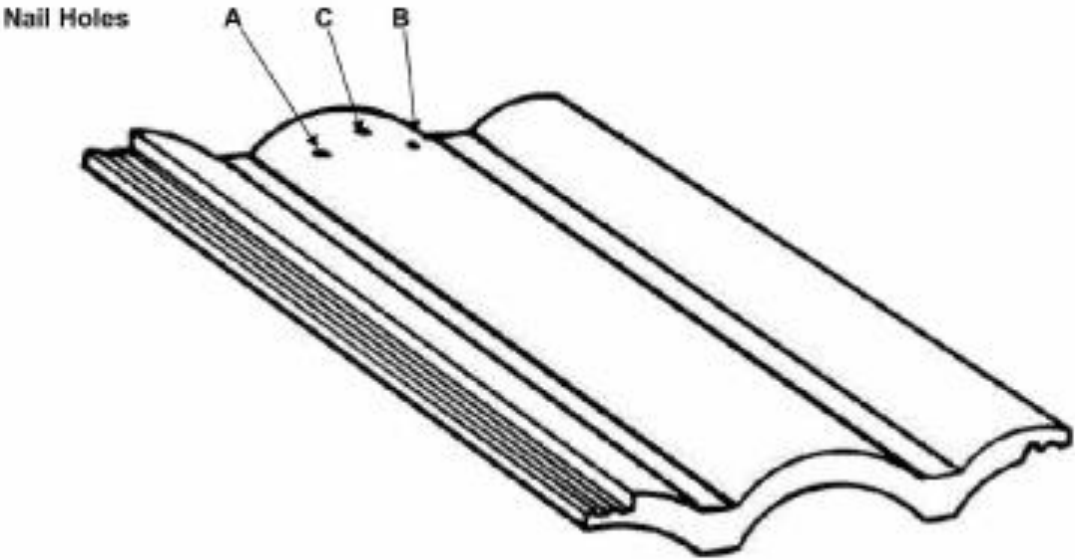


Figure 2: Representative Villa Tile

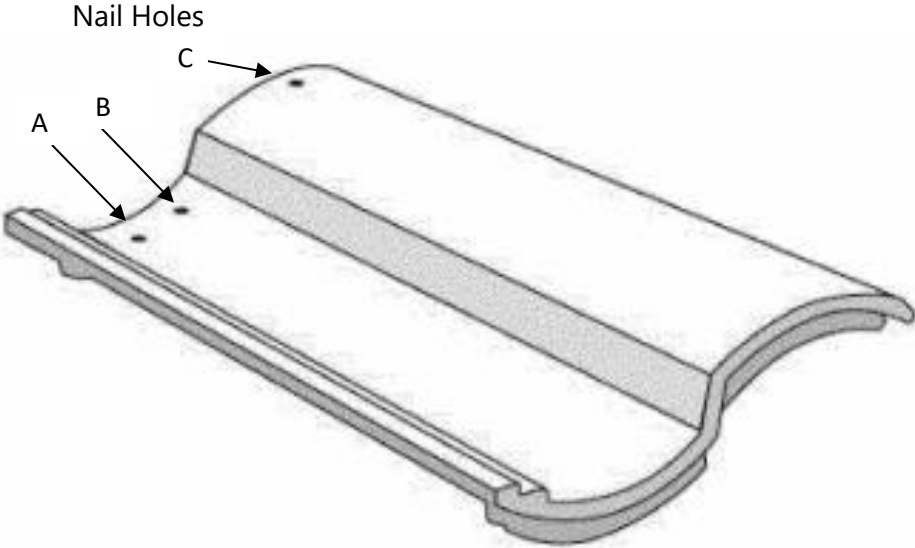


Figure 3: Representative Tejas Espana and Barcelona – Impact Tile

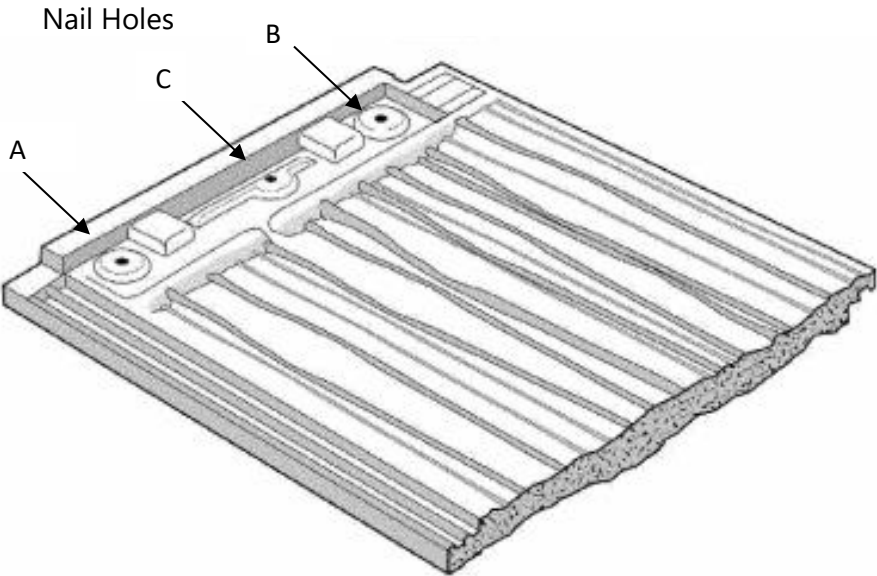


Figure 4: Representative Madera Tile

Nail Holes

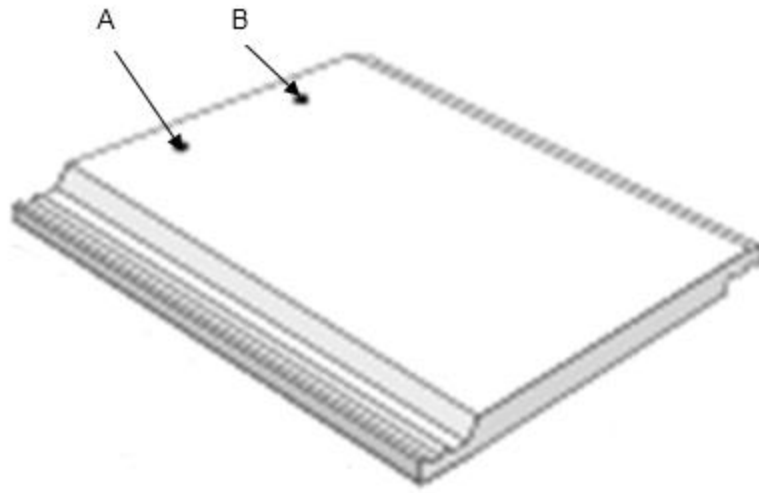


Figure 5 – Representative Saxony Country Slate-Impact