

## Product Evaluation

RC470 | 0820

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-470

**Effective Date:** August 1, 2020

**Re-evaluation Date:** August 2024

**Product Name:** Scottish Clay Roofing Tiles

**Manufacturer:** Ladrillera Mecanizada S. A. de C. V.  
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### General Description:

The Scottish Clay roofing tiles are extruded tiles that are made from natural clay. The clay roofing tiles are available in a variety of colors. Two nail holes are located at the top of the tile.

**Mechanical Attachment Only:** The Scottish clay roofing tiles are to be installed mechanically with fasteners.

**Roof Tile Dimensions:** The dimensions of the Scottish Clay roofing tile that apply to this product evaluation report are specified in Table 1.

**Table 1: Roof Tile Dimensions**

Tile Designation	Width	Length	Thickness
Scottish Tile	7"	16"	5/8"

**Limitations:**

**Roof Slope Limitations:** Only install the roof tiles on buildings with a roof slope greater than or equal to 5:12, but not exceeding 12:12.

**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 7/16" OSB Roof Deck
Scottish Tile	2-No. 8 x 2-1/2" Philips Bugle Head Screws	43.6 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.

**Roof Framing and Roof Deck:** The roof framing materials and connections must comply with the wind load provisions of either the IRC or the IBC. The roof framing member spacing must not exceed 24" on center.

Solidly sheath the roof deck with minimum 7/16" thick OSB or plywood (the manufacturer recommends a minimum 3/4" thick deck). Fasten the roof deck to the roof-framing members in accordance with the wind uplift requirements as stipulated by the IRC or the IBC.

If the existing roof framing consists of spaced boards, then a solid deck must be constructed using one of the following two options: (1) remove and replace the spaced boards with a solid OSB or plywood deck (7/16" minimum thickness); or (2) cover the spaced boards with an OSB or plywood deck (7/16" minimum thickness). Fasten the wood structural panel deck over the spaced boards in accordance with the wind uplift requirements as stipulated by the IRC or the IBC.

**Metal drip edge:** Fasten a metal drip edge to the roof deck with either 11-gauge or 12-gauge roofing nails spaced a maximum of 10" on center. Fasten the underlayment and the drip edge with the same fastener. Use the more stringent fastener pattern.

At the eaves, fasten the drip edge directly to the deck and apply the underlayment over the drip edge. At the gable ends, apply the drip over the underlayment.

**Roof Underlayment:**

**Roof Slope  $\geq$  3:12 and  $<$  4:12:** Use two layers of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. Install the underlayment as specified in either the 2018 IRC or the 2018 IBC and the manufacturer's installation instructions.

**Roof Slope  $\geq$  4:12:** Use one layer of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. Lap the underlayment a minimum of 2" at the head laps and a minimum of 6" at the side laps. Install the underlayment as specified in either the 2018 IRC or the 2018 IBC and the manufacturer's installation instructions.

**Battens (Optional):** The roofing tiles may be installed over battens. Install the battens over the underlayment. The battens must, at a minimum, consist of nominal 1x2 Southern Yellow Pine wood members. Fasten the battens to the roof deck with minimum No. 8 x 2-1/2" corrosion resistant screws. The fasteners must be located at each end and a maximum of 18" on center. Use fasteners long enough to penetrate a minimum of 3/4" into (or through) the roof deck. Batten ends must be separated a minimum of 1-1/2" every 4'.

**Roof Tile Installation Instructions****General:**

- The roofing tiles and the underlayment system must be clean and dry at the time of application.
- Secure the Scottish clay roofing tiles to the roof deck. If battens are used, then the fasteners must penetrate through the battens and into the roof deck.
- Install the roofing tiles in accordance with this product evaluation report and the manufacturer's installation instructions.

**Roof Tile Fasteners:** Mechanically fasten the roofing tiles to the roof deck. At a minimum, use No. 8 x 2-1/2" Philips bugle head corrosion resistant screws (the manufacturer recommends stainless steel screws). Fasteners must be of sufficient length to penetrate at least 3/4" into (or through) the roof deck.

**Application:** Lay out the roof tiles from the right to the left, starting at the right rake/hip edge. Install the roof tiles allowing a 7" x 7" exposed area following the instructions of the TRI/WSRCA Installation Manual for double lap tiles (non-interlocking).

**Rake Tiles, Hip Tiles, and Ridge Tiles:** Refer to the roofing tile manufacturer's installation instructions for the installation of the rake, hip, and ridge tiles.

**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.