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ICC-ES Evaluation Report

ESR-1759

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Reissued 06/2018
This report is subject to renewal 06/2019.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 32 16— CONCRETE ROOF TILES

REPORT HOLDER:

VANDE HEY RALEIGH ROOF TILE MFG LLC

1665 BOHM DRIVE
LITTLE CHUTE, WISCONSIN 54140-2529

EVALUATION SUBJECT:

SPANISH, RIVIERA AND FLAT CONCRETE ROOF TILES



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EVALUATION SUBJECT:

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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

Properties evaluated:

- Roof covering
- Fire classification
- Wind resistance

1.2 Evaluation to the following green code:

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11

Attributes verified:

- See Section 3.1

2.0 USES

The concrete tiles, when installed in accordance with this report, are used as a Class A roof covering.

3.0 DESCRIPTION

3.1 General:

The Spanish concrete tile, classified as Type I (high profile), Grade 1, and the Riviera and Flat concrete tiles, classified as Type III (low profile), are in compliance with ASTM C1492. All tiles have interlocking sides, lugs at the top to support tiles from battens, and a nail hole at the center of the upper end.

The attributes of the roof tiles have been verified as conforming to the provisions of CALGreen Section A5.406.1.2 for reduced maintenance. Note that decisions on compliance for those areas rest with the user of this

report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Spanish:

The Spanish concrete tile is a barrel shape tile measuring 17¹/₄ inches long (438 mm) and 13 inches wide (330 mm), with a nominal thickness of ⁷/₈ inch at the nose and a nominal weight of 11.2 pounds each. The tiles have an installed weight of 9.75 pounds per square foot (47.6 kg/m²) when installed with a 3-inch (76 mm) headlap. See Figure 1 for additional details.

3.3 Riviera:

The Riviera concrete tile is a fluted shape tile measuring 15³/₈ inches long (390 mm) and 10¹/₄ inches wide (260 mm), with a nominal thickness of ¹³/₁₆ inch at the nose and a nominal weight of 7.1 pounds each. The tiles have an installed weight of 9.0 pounds per square foot (43.9 kg/m²) when installed with a 3-inch (76 mm) headlap. See Figure 1 for additional details.

3.4 Flat:

The Flat concrete tile measures 15³/₈ inches long (390 mm) and 10¹/₄ inches wide (260 mm), with a nominal thickness of ¹⁵/₁₆ inch at the nose and a nominal weight of 8.1 pounds each. The tiles have an installed weight of 9.9 pounds per square foot (48.3 kg/m²) when installed with a 3-inch (76 mm) headlap. Flat tiles are available in four styles: slate, shake, custom brushed and Cotswold stone. The slate tile is smooth-surfaced; the shake tile surface simulates wood shakes; the custom-brushed tile has a hand-brushed finish; and the Cotswold stone tile has a surface made to look like an antique roof. See Figure 1 for additional details.

3.5 Trim:

The Trim tiles for the Spanish, Riviera, and Flat concrete tiles include starter, hip, ridge, rake, and end cap. See Figure 2 for additional details.

4.0 INSTALLATION

4.1 General:

Installation of the roof tiles must be in accordance with the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, dated March 2010, published by the Tile Roofing Institute Inc. and the Western States Roofing Contractors Association (hereinafter referred to as the TRI/WSRCA installation manual), except as noted in this report. This report and the TRI/WSRCA installation

manual must be available at the jobsite at all times during installation.

4.2 Roof Slope Limitations:

Spanish, Riviera, and Flat concrete tiles, with a minimum headlap of 3 inches (76.2 mm), must be installed on roofs having a minimum roof slope of 2¹/₂ to 12 (20.83%) or greater in accordance with IBC Section 1507.3.2 and IRC Section R905.3.2.

4.3 Underlayment:

Underlayment must comply with, and be installed in accordance with, IBC Section 1507.3.3 or IRC Section R905.3.3.

4.4 Fire Classification:

4.4.1 New Construction: The concrete roof tiles, when installed in accordance with this report, are Class A roof coverings in accordance with the exception to IBC Section 1505.2 and IRC Section R902.1.

4.4.2 Reroofing: The tiles may be installed over existing roofs, provided the requirements of IBC Section 1510 or IRC Section R907, as applicable, are met. The roof classification is as noted in Section 4.4.1.

4.5 Tile Replacement:

Damaged tile must be completely removed. Existing fasteners must be removed and the resulting hole must be cleaned and patched with a sealant specified by the manufacturer. The replacement tile must be set into place maintaining the required head and side lap. The new tile must be secured using a roof tile adhesive recognized in a current ICC-ES evaluation report, applied to the bottom half of the replacement tile.

4.6 Wind Uplift Resistance:

4.6.1 IBC: On buildings having a maximum mean roof height of 60 feet (18.3 m), exposed to a maximum basic wind speed (3-second gust) of 100 mph (161 km/h), installation must comply with IBC Table 1507.3.7.

4.6.2 IRC: On buildings having a maximum mean roof height of 40 feet (12.2 m), exposed to a maximum basic wind speed (3-second gust) of 100 mph (161 km/h), installation must comply with IRC Section R905.3.7.

4.6.3 High Wind Applications: For applications beyond the prescriptive parameters of IBC Table 1507.3.7 and IRC Section R905.3.7, the aerodynamic uplift moment must be determined as follows:

4.6.3.1 Riviera, and Flat: In accordance with the Design Considerations for High Wind Applications in Appendix B of the TRI/WSRCA installation manual.

4.6.3.2 Spanish: In accordance with the Design Considerations for High Wind Applications in Appendix B of the TRI/WSRCA installation manual with a tile factor (adjusted to account for tile size; see Footnote 2 of the tables in Appendix B) of 1.415 for the Spanish concrete tile.

5.0 CONDITIONS OF USE

The Vande Hey Raleigh Spanish, Riviera and Flat concrete tiles described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The roof tiles must be manufactured, identified and installed in accordance with this report, the TRI/WSRCA installation manual, dated March 2010, and the applicable code. If there is a conflict between this report and the installation manual, this report governs.

5.2 The roof sheathing and roof framing system must be designed for the appropriate loads determined in accordance with the applicable code, subject to the approval of the code official.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Clay and Concrete Tiles (AC180), dated August 2007.

7.0 IDENTIFICATION

Each flat concrete tile is embossed with the letters "VHR". Each Spanish concrete tile is embossed with the letters "LA CASA." The Riviera concrete tiles are not individually identified. In addition, each pallet contains one to eight cardboard sleeves of roof tiles. The sleeves are identified with the manufacturer's name (Vande Hey Raleigh Roof Tile MFG LLC) and address, the product name (Spanish, Riviera, or Flat), the installed weight, and the evaluation report number (ESR-1759).

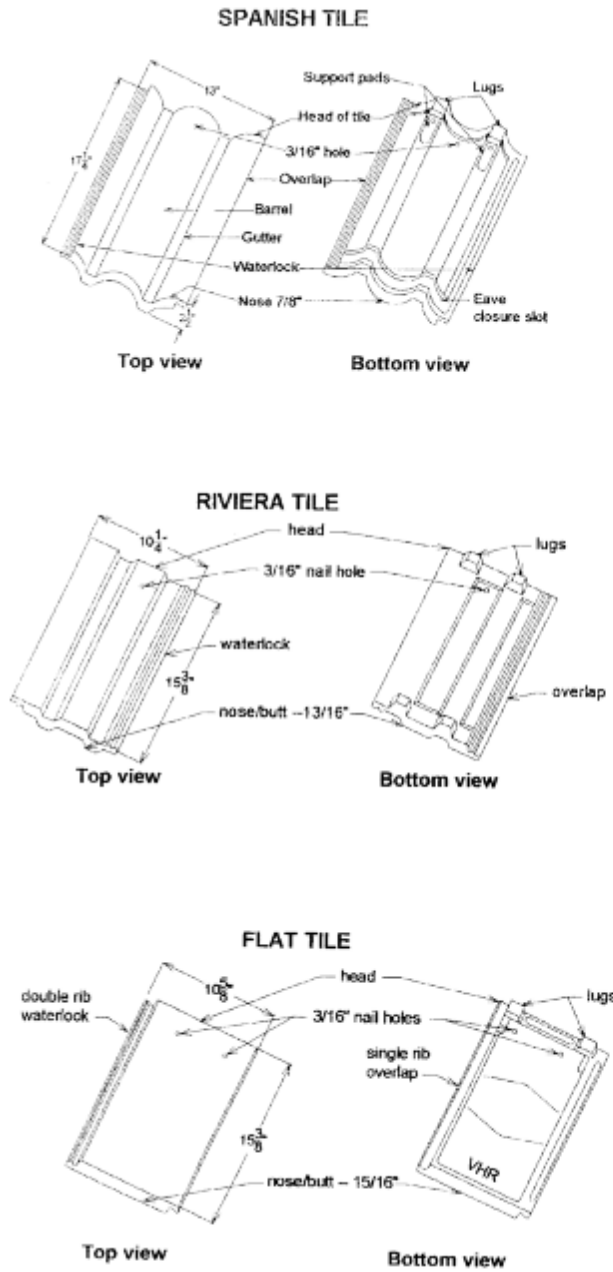


FIGURE 1—TILE PROFILES

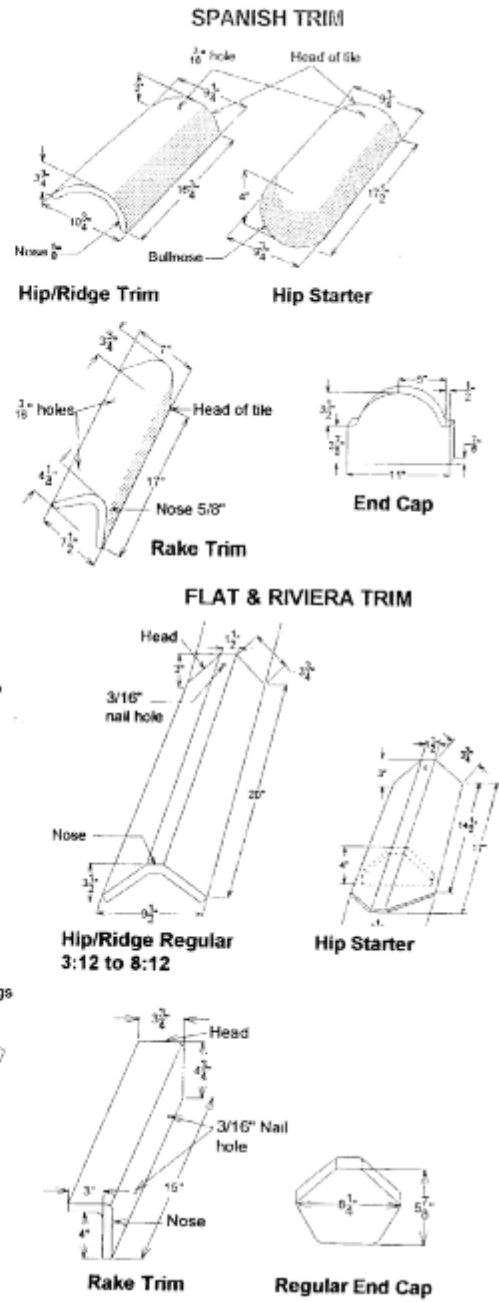


FIGURE 2—TRIM TILE PROFILES

ICC-ES Evaluation Report

ESR-1759 FBC Supplement

Reissued June 2018

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Spanish, Riviera and Flat Concrete Roof Tiles, recognized in ICC-ES master evaluation report ESR-1759, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2007 *Florida Building Code—Building*
- 2007 *Florida Building Code—Residential*

Property evaluated:

Wind resistance

2.0 CONCLUSIONS

The Spanish, Riviera and Flat concrete roof tiles, described in Sections 2.0 through 7.0 of the master report ESR-1759, comply with the 2007 *Florida Building Code—Building* and the 2007 *Florida Building Code—Residential*, when designed and installed in accordance with the master evaluation report and when the extruded concrete roof tiles are installed in accordance with the recommendations of the FRSA/TRI 07320 installation manual.

Use of the Spanish, Riviera and Flat concrete roof tiles for compliance with the High-Velocity Hurricane Zone provisions of the 2007 *Florida Building Code—Building* and the 2007 *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplement.

For products falling under Florida Rule 9B-72, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the master report, reissued June 2018.