

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 32 13—Clay Roof Tiles

REPORT HOLDER:

CERAMICA LA ESCANDELLA, S.A.

EVALUATION SUBJECT:

LARGE S-TILE AND 50 MISSION CLAY ROOF TILES

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Durability
- Fire classification
- Wind uplift resistance

1.2 Evaluation to the following green code:

2019 California Green Building Standards Code (CALGreen), Title 24, Part 11

Attributes verified:

See Section 3.1

2.0 USES

Large S-Tile and 50 Mission clay roof tiles are used as Class A roof coverings when installed in accordance with Section 4.5.

3.0 DESCRIPTION

The Large S-Tile and 50 Mission tiles are clay roof tiles, classified as Type I, Grade 1, in accordance with ASTM C1167, and can be used anywhere as specified in Table 1 of ASTM C1167, (See the Annex to ASTM C1167 for map of weathering indexes in the United States.) See Figure 1 for tile profiles.

Accessory tiles such as hip, ridge and rake tiles, shown in Figure 2, are provided.

The attributes of the roof tiles have been verified as conforming to the requirements 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. The code may provide supplemental information as guidance.

3.1 Large S-Tile:

Large S-Tiles are interlocking tiles, 18.50 inches (470 mm) long, 11.26 inches (286 mm) wide, and 3.15 inches (80 mm) high, and have a nominal weight of 8.6 pounds (3.9 kg). Two nail holes are provided at the top portion of each tile. The tiles are installed with a head lap of 2.5 inches (64 mm) and a side lap of 2.5 inches (64 mm), with an installed weight of 9 psf (44 kg/m²). The tiles are available either in a natural or glazed finish.

3.2 50 Mission:

The 50 Mission tiles consist of a pan and cover unit measuring 19.69 inches (500 mm) long, 6.30 inches (160 mm) wide at the head, 8.27 inches (210 mm) wide at the nose, 2.13 inches (54 mm) high at the head, and 3.23 inches (82 mm) high at the nose. The tiles have a nominal weight of 6.17 pounds (2.8 kg). One nail hole is provided at the top portion of each tile. The tiles are installed with a minimum head lap of 3.25 inches (83 mm) and a minimum side lap of 4 inches (102 mm), with an installed weight of 13 psf (63 kg/m²).

4.0 INSTALLATION

4.1 General:

Except as otherwise noted in this report, the tiles must be installed in accordance with IBC Section 1507.3 or IRC Section R905.3, as applicable, and the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, dated March 2010, (hereinafter referred to as the TRI/WSRCA installation manual). In case of a conflict between the installation manual and this report, this report governs. This evaluation report and the TRI/WSRCA installation manual must be available at the jobsite at all times during installation.

Flashing must be in accordance with IBC Sections 1503.2 and 1507.3.9 or IRC Sections R903.2 and R905.3.8, as applicable.

4.2 Adhesively Attached Systems:

The Large S-Tile and 50 Mission clay roof tiles may be installed with roof tile adhesives that are recognized in a current ICC-ES evaluation report for use in clay roof tile

applications. Installation of tiles using these adhesively attached systems must be in accordance with the adhesive manufacturer's ICC-ES evaluation report.

4.3 Roof Slope Limitations:

Large S-Tiles must be installed at a minimum roof slope of 3:12 (25%). The 50 Mission tiles must be installed at a minimum roof slope in accordance with the applicable code.

4.4 Underlayment:

For mechanically fastened systems, underlayment must comply with, and be installed in accordance with, IBC Section 1507.3.3 or IRC Section R905.3.3, as applicable.

For adhesively attached systems, underlayment must be in accordance with the adhesive manufacturer's ICC-ES evaluation report.

4.5 Fire Classification:

The Large S-Tile and 50 Mission clay roof tiles are Class A roof coverings when installed in accordance with Exception 2 to Section 1505.2 of the 2015, 2012 and 2009 IBC, Exception 2 to Section R902.1 of the 2015, 2012 and 2009 IRC, the Exception to 2006 IBC Section 1505.2 and 2006 IRC Section R902.1. When roof tiles are installed with a roof tile adhesive, installation must be in accordance with ESR-1709.

4.6 Wind Uplift Resistance:

4.6.1 Mechanically Fastened Systems:

4.6.1.1 2015 IBC, 2015 IRC and 2012 IBC: For ultimate design wind speeds (V_{ult}) of 130 mph (209 km/h) or less and mean roof heights of 60 feet (18.3 m) or less for the IBC and 40 feet (12 192 mm) or less for the IRC, tiles must be installed in accordance with the prescriptive parameters of Table 1507.3.7 of the IBC.

4.6.1.2 2012 IRC: For basic wind speeds (3-second gust) of 100 mph (161 km/h) or less and mean roof heights of 40 feet (12 192 mm) or less, tiles must be installed in accordance with the prescriptive parameters of Section R905.3.7 of the IRC.

4.6.1.3 2009 IBC, 2006 IBC and 2006 IRC: For basic wind speeds (3-second gust) of 100 mph (161 km/h) or less and mean roof heights of 60 feet (18 288 mm) or less for the IBC or 40 feet (12 192 mm) or less for the IRC, tiles must be installed in accordance with the prescriptive parameters of Table 1507.3.7 of the IBC or Section R905.3.7 of the IRC, as applicable. For applications beyond these prescriptive parameters, the tiles and the fastening systems must be designed to withstand the aerodynamic uplift moment in accordance with the section on Design Considerations for High Wind Applications in Appendix B of the TRI/WSRCA installation manual. The generic required aerodynamic uplift moment, determined in accordance with Tables 5A through 6D of Appendix B of the TRI/WSRCA installation manual, must be multiplied by the tile factor ratio to obtain the required aerodynamic uplift moment for the specific roof tile being installed. The allowable aerodynamic uplift moment for the roof tile fastening system selected from Table 7A of Appendix B of the TRI/WSRCA installation manual, must be equal to or

greater than the required aerodynamic uplift moment for the specific roof tile being installed.

4.6.2 Adhesively Attached Systems: The Large S-Tile and 50 Mission clay roof tiles may be installed with a roof tile adhesive that is recognized in a current ICC-ES evaluation report. Installation of tiles using adhesively attached systems, including wind uplift resistance, must be in accordance with the adhesive manufacturer's ICC-ES evaluation report. See the adhesive manufacturer's ICC-ES evaluation report for additional details.

4.7 Reroofing Applications:

The existing roof coverings must be removed and the new roof installed in accordance with the requirements of 2015 IBC Section 1511, 2012, 2009 and 2006 IBC Section 1510 or 2015 IRC Section R908, 2012, 2009 and 2006 IRC Section R907, as applicable, are met. The roof classification is as noted in Section 4.5.

5.0 CONDITIONS OF USE

The Large S-Tile and 50 Mission clay roof 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 tiles must be manufactured, identified and installed in accordance with this report, the applicable code, and the TRI/WSRCA installation manual, dated March 2010. The instructions within this report govern if there are any conflicts between the installation manual and this report.
- 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

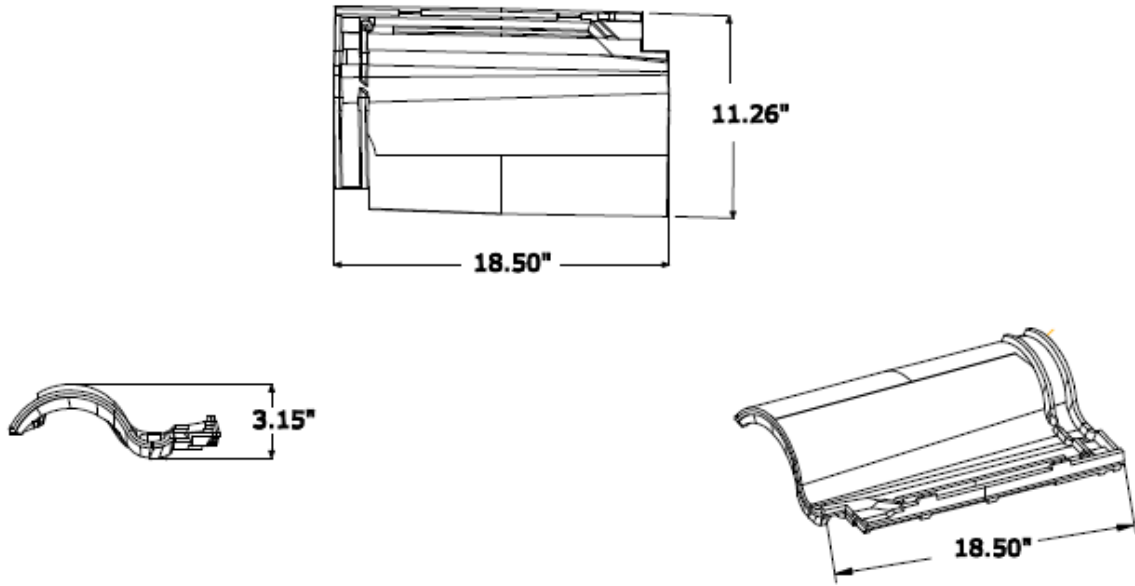
Data in accordance with the ICC-ES Acceptance Criteria for Clay and Concrete Roof Tiles (AC180), dated February 2012 (editorially revised April 2015).

7.0 IDENTIFICATION

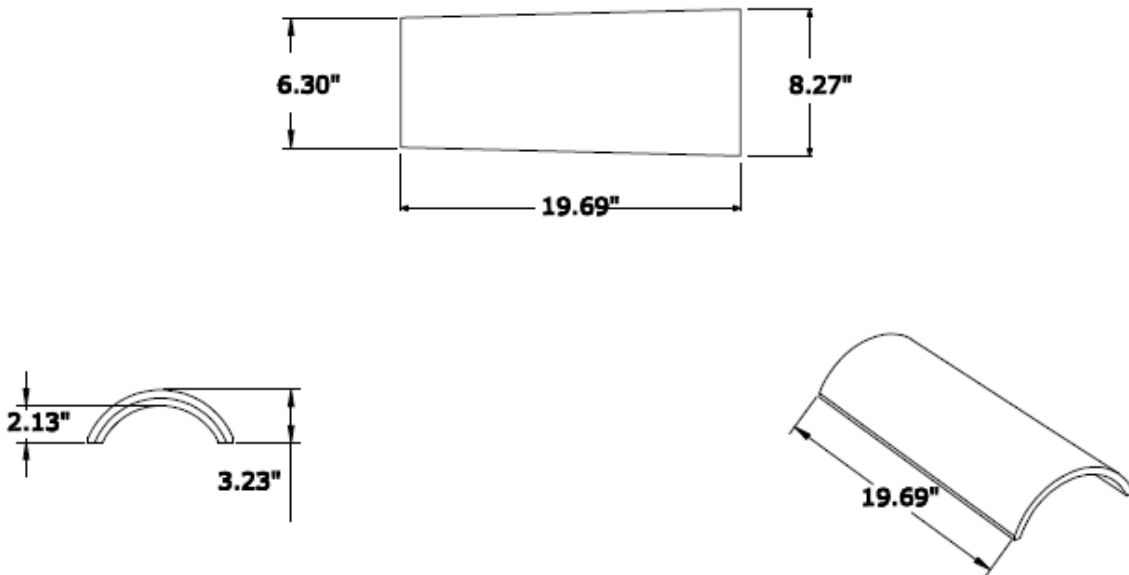
- 7.1 Each Large S-Tile is stamped on the underside with the words "LA ESCANDELLA Agost (Alicante) Made in Spain." Each 50 Mission tile is stamped on the underside with the words "LA ESCANDELLA / Spain," and with the manufacturing location, production shift and date of manufacture. Additionally, each shipping pallet is identified with the La Escandella name and address; the manufacturing location; the product name; the installed weight; the production date code; and the evaluation report number (ESR-2727).
- 7.2 The report holder's contact information is the following:

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LARGE S-TILE

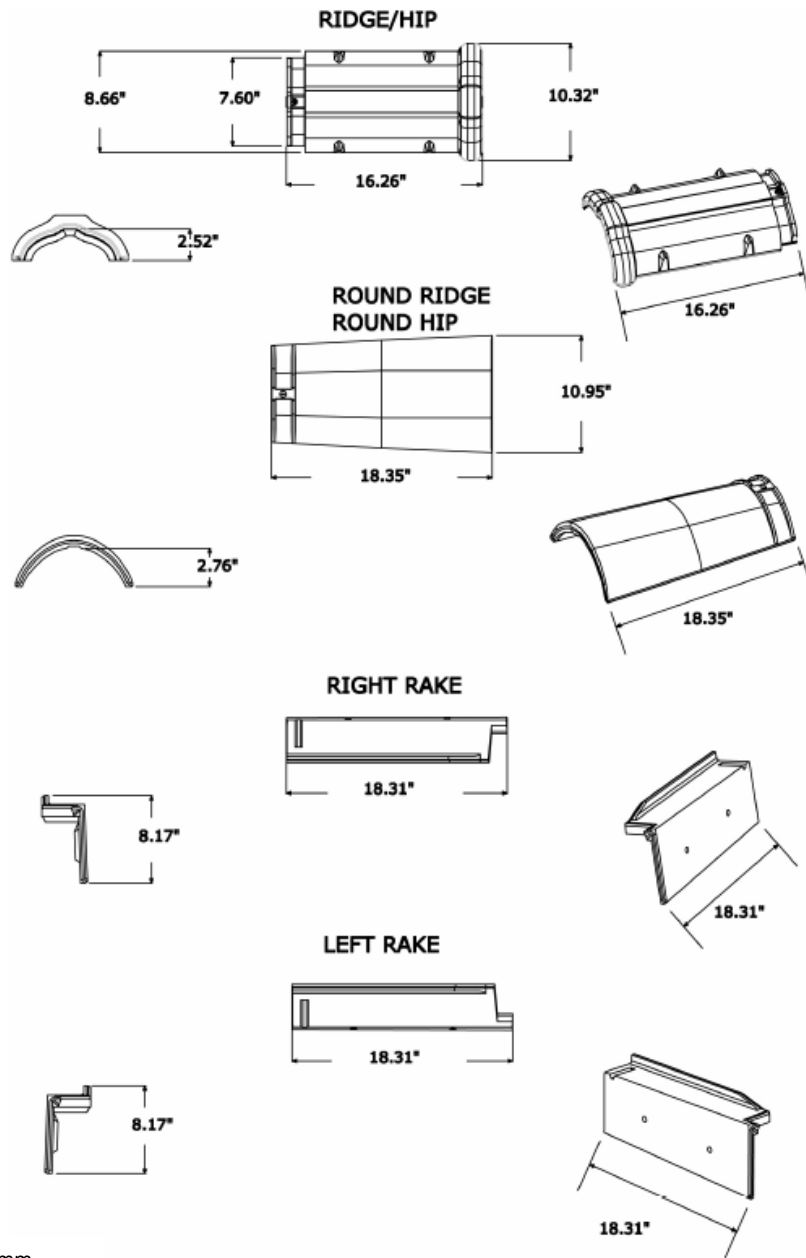


50 MISSION



For SI: 1 inch = 25.4 mm.

FIGURE 1—CLAY ROOF TILES



For SI: 1 inch = 25.4 mm.

FIGURE 2—HIP, RIDGE AND RAKE TILES