

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**

**Section: 07 32 16—Concrete Roof Tiles**

**REPORT HOLDER:**

**SANDSTONE INC., dba STONEWORTH BUILDING PRODUCTS**

**EVALUATION SUBJECT:**

**STONEWORTH BUILDING PRODUCTS FLAT AND VENETIAN CONCRETE ROOF TILES**

**1.0 EVALUATION SCOPE**

**1.1 Compliance with the following codes:**

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

**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**

The Flat and Venetian concrete roof tiles are used as Class A roof coverings in accordance with the exception to Section 1505.2 of the IBC and Section R902.1 of the IRC.

**3.0 DESCRIPTION**

The Flat and Venetian tiles are manufactured from portland cement, sand, water, coloring agents and admixture, and comply with ASTM C1492. Mineral coloring oxides are mixed with the portland cement to produce color through the entire tile. Both tiles are 16<sup>1</sup>/<sub>2</sub> inches (419 mm) long and 13 inches (330 mm) wide, and have longitudinal edges that form interlocking ribs and grooves designed to restrict lateral movement and provide a weather check.

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.

**3.1 Flat Tile:**

The Flat tiles are approximately 1<sup>1</sup>/<sub>2</sub> inches (38 mm) high, and are classified as Type II tiles in accordance with ASTM C1492. Two nail holes are provided at the top portion of each tile, with protruding head lugs on the underside to provide mechanical attachment over battens. The tiles are installed with a head lap of 3 inches (76 mm) and a side lap of 1.35 inches (34 mm), and have an installed weight of 10<sup>1</sup>/<sub>2</sub> psf (51 kg/m<sup>2</sup>). See Figure 1 for tile profile and dimensions with matching ridge, rake and hip units.

**3.2 Venetian Tile:**

The Venetian tiles are approximately 3 inches (76 mm) high, and are classified as Type I tiles in accordance with ASTM C1492. Two nail holes are provided at the top portion of each tile, with protruding head lugs on the underside to provide mechanical attachment over battens. The tiles are installed with a head lap of 3 inches (76 mm) and a side lap of 1.27 inches (32 mm), and have an installed weight of 9<sup>1</sup>/<sub>2</sub> psf (46 kg/m<sup>2</sup>). See Figure 2 for tile profile and dimensions with matching ridge, rake and hip units.

**4.0 INSTALLATION**

**4.1 General:**

Except as otherwise noted in this report, the tiles must be installed in accordance with the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, published by the Tile Roofing Institute, Inc., and the Western States Roofing Contractors Association (herein referred to as the TRI/WSRCA installation manual), dated March 2010. This report and the current TRI/WSRCA installation manual must be available at the jobsite at all times during installation.

**4.2 Adhesively Attached Systems:**

The Flat and Venetian concrete roof tiles may be installed with roof tile adhesives that are recognized in a current ICC-ES evaluation report for use in concrete 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:**

Tiles must be installed on roof slopes of between 2<sup>1</sup>/<sub>2</sub>:12 (21 percent) and 21:12 (175 percent).

**4.4 Underlayment:**

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

**4.5 Fire Classification:**

When installed in accordance with this report, the Flat and Venetian concrete roof tiles are Class A roof coverings in accordance with the exception to IBC Section 1505.2 and IRC Section R902.1.

**4.6 Wind Uplift Resistance:**

**4.6.1 Mechanically Fastened Systems:** For applications beyond the prescriptive parameters of IBC Table 1507.3.7 and IRC Section R905.3.7, documentation must be submitted to the code official showing that the fastening systems are capable of withstanding the aerodynamic uplift moment, in accordance with the Design Considerations for High Wind Applications in Appendix B of the TRI/WSRCA installation manual.

**4.6.2 Adhesively Attached Systems:** See the adhesive manufacturer’s ICC-ES evaluation report.

**4.7 Reroofing Applications:**

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 4.5.

**5.0 CONDITIONS OF USE**

The Flat and Venetian concrete 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**

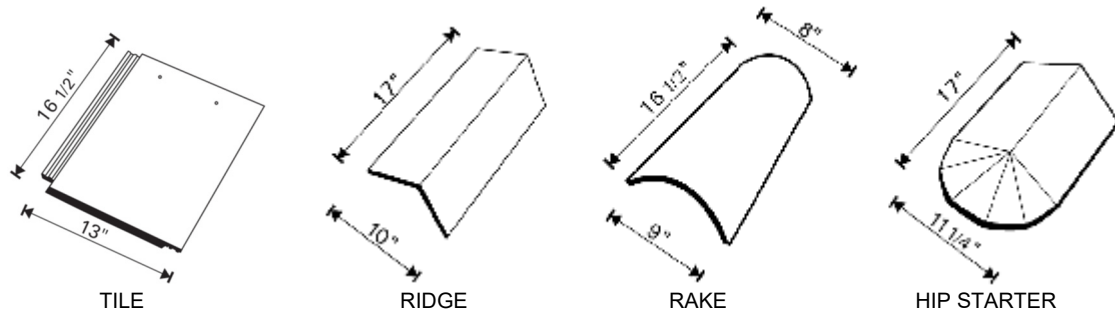
Data in accordance with the ICC-ES Acceptance Criteria for Clay and Concrete Roof Tiles (AC180), dated August 2007.

**7.0 IDENTIFICATION**

**7.1** Each Venetian tile is embossed with the words “Vortex Hydra Italy” or “CFL” or “ALLYNDEB TILE CFL.” Additionally, each Flat tile is identified with the embossments “Sandstone” and “Vortex Hydra Italy.” Each shipping pallet is identified with the Stoneworth Building Products name and address; the manufacturing location; the product name (Flat or Venetian); the installed weight; and the evaluation report number (ESR-2528).

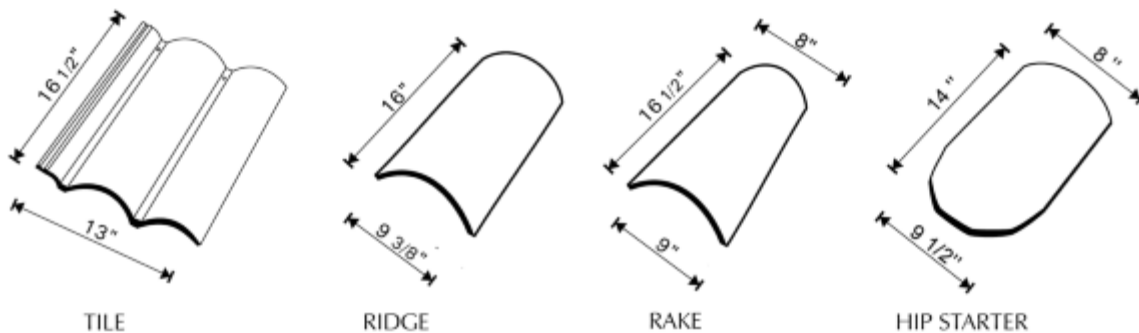
**7.2** The report holder’s contact information is the following:

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**4025 BONNER INDUSTRIAL DRIVE**  
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For SI: 1 inch = 25.4 mm.

FIGURE 1—FLAT TILE WITH RIDGE, RAKE AND HIP UNITS



For SI: 1 inch = 25.4 mm.

FIGURE 2—VENETIAN TILE WITH RIDGE, RAKE AND HIP UNITS