

# ICC-ES Evaluation Report

**ESR-1364**

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**DIVISION: 04 00 00—MASONRY**  
**Section: 04 73 00—Manufactured Stone Masonry**

**REPORT HOLDER:**

**BORAL STONE PRODUCTS, LLC**  
 2256 CENTENNIAL ROAD  
 TOLEDO, OHIO 43617  
 (419) 318-5345  
[www.culturedstone.com](http://www.culturedstone.com)

**EVALUATION SUBJECT:**

**CULTURED STONE®, PROSTONE™ AND MODULO®  
 STONE**

**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)

**Properties evaluated:**

- Interior finish and trim classification
- Thermal resistance
- Exterior veneer characteristics

**2.0 USES**

Cultured Stone®, ProStone™ and Modulo® Stone are used as adhered, non-bearing exterior veneer or an interior finish and trim on wood or light gage steel stud framing, concrete or masonry walls.

**3.0 DESCRIPTION**

Cultured Stone®, ProStone™ and Modulo® Stone are manufactured, precast, artificial stone similar in color and texture to natural stone. The stone veneer is made from Portland cement, aggregate and mineral oxide colors. The stone veneer patterns have a maximum area of 720 square inches (0.464 m<sup>2</sup>) with a maximum dimension of 36 inches (914 mm). The maximum veneer weight is 15 pounds per square foot (73.2 kg/m<sup>2</sup>). See Table 1 for the average thickness of recognized patterns.

The stone veneer has a Class A (Class I) finish rating when tested in accordance with ASTM E 84. Additionally, the stone veneer has an R-value of 0.355 when tested in a thickness of 1.0 inch (25.4 mm) in accordance with ASTM C 177.

**4.0 INSTALLATION**
**4.1 General:**

The stone veneer is applied to new or existing wood-framed, light gage steel framed, concrete or masonry walls. The stone veneer must be adhered to the supporting walls with a 1/2-inch-thick to 3/4-inch-thick (12.7 to 19.1 mm) Type N or S mortar setting bed. The mortar must comply with 2009 IBC Section 2103.8 [2006 IBC Table 2103.8(1)] or IRC Table R607.1. The ambient temperature and temperature of the stone veneer must be 40°F (4°C) or higher at the time of application.

The stone veneer must be installed in accordance with this report, the manufacturer's published installation instructions, and IBC Section 1404.4 or IRC Section R703.7.

**4.2 Application to Stud Construction:**

The stone veneer must be applied to studs spaced a maximum of 16 inches on center (406 mm), or over existing exterior wall surfaces of plaster scratch coat, stucco, wood siding, or wood sheathing backed by studs spaced a maximum of 16 inches on center (406 mm).

Open studs must be covered with two layers of water-resistive barrier in accordance with IBC Section 1404.2 or IRC Section R703.2. For installations over wood siding or wood sheathing, two layers of water-resistive barrier, or weather-resistive barrier must be installed over the wood siding or sheathing in accordance with the applicable code. Installations over exterior plaster or exterior plaster scratch coat walls require two layers of water-resistive barrier, or a weather-resistive barrier in accordance with the applicable code behind the plaster or plaster scratch coat.

At exterior framed walls, weep screeds and code-complying flashing must be installed at the bottom of the wall and at all horizontal terminations of the stone veneer. The weep screed must comply with and be installed in accordance with IBC Section 2512.1.2 or IRC Section R703.6.2.1.

A 2.5-pound-per-square-yard (1.4 kg/m<sup>2</sup>), galvanized diamond mesh metal lath, or a 3.4-pound-per-square-yard (1.8 kg/m<sup>2</sup>), 3/8-inch-thick-rib (9.5 mm), paper-backed, galvanized expanded metal lath conforming to ASTM C 847, or a No. 18 gage [0.051-inch-thick (1.30 mm)] galvanized woven wire mesh conforming to ASTM C 1032 must be installed in accordance with the manufacturer's published installation instructions over the water-resistive barrier, or weather-resistive barrier. The lath or mesh must be fastened to each of the wall studs at 6 inches (152 mm) on center vertically, in accordance with the minimum

requirements of Section 7.10 of ASTM C 1063, or IRC Section R703.6.1, as applicable. For wood studs, fasteners must be minimum 0.120-inch-shank-diameter galvanized nails or galvanized staples of sufficient length to penetrate the studs a minimum of 1 inch (25.4 mm). For steel studs, fasteners must be minimum  $\frac{7}{16}$ -inch-head-diameter (11.1 mm), corrosion-resistant, self-drilling, self-tapping, pancake head screws of sufficient length to penetrate the studs a minimum of  $\frac{3}{8}$  inch (9.5 mm). Wood studs must have a minimum specific gravity of 0.42. Steel studs must be 20 gage [0.033-inch-thick (0.84 mm)], minimum.

Installations over wall surfaces of materials other than wood siding or wood sheathing require a  $\frac{1}{2}$ -inch-thick to  $\frac{3}{4}$ -inch-thick (12.7 to 19.1 mm) scratch coat of Type N or S mortar. The mortar must be applied over the lath or mesh and allowed to cure for at least 48 hours before the mortar setting bed is applied. The scratch coat must be moistened and the mortar setting bed is to be applied in areas of approximately 5 to 10 square feet (0.5 to 0.9 m<sup>2</sup>). The stone veneer must be lightly but firmly tapped into the mortar setting bed to ensure bond while the mortar is soft and pliable. Alternatively, the setting bed must be applied to the back of each stone veneer unit and the unit pressed into place. In either case, the mortar setting bed thickness and consistency must allow the mortar to be squeezed out around all edges of the stone veneer unit to assure full bond. All joints must be tooled.

#### 4.3 Application to Concrete and Masonry:

The stone veneer must be applied directly to unsealed and unpainted masonry backing with/without the use of lath or mesh, provided the surface is clean. Painted, sealed, or dirty masonry surfaces must be cleaned by sandblasting to provide a good bond surface. A  $\frac{1}{2}$ -inch-thick to  $\frac{3}{4}$ -inch-thick (12.7 to 19.1 mm), Type N or S mortar setting bed must be applied to the masonry backing in areas of approximately 5 to 10 square feet (0.5 to 0.9 m<sup>2</sup>). The stone veneer must be lightly but firmly tapped into the mortar setting bed to ensure bond while the mortar is soft and pliable. Alternatively, the setting bed must be applied to the back of each stone veneer unit and the unit pressed into place. In either case the mortar setting bed thickness and consistency must allow mortar to be squeezed out around all edges of the veneer unit to assure full bond. All joints must be tooled.

#### 5.0 CONDITIONS OF USE

The Cultured Stone<sup>®</sup>, ProStone<sup>™</sup> and Modulo<sup>®</sup> Stone 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 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.

5.2 The stone veneer is limited to installation on wood-frame, light gage steel framed, concrete or masonry walls.

5.3 Expansion or control joints used to limit the effect of differential movement of supports must be specified by the architect, designer or stone veneer manufacturer, in that order. Consideration must also be given to movement caused by temperature change, shrinkage, creep and deflection.

5.4 As an alternate, the scratch coat of mortar described in Section 4.2 of this report may be used with installations of stud framed walls faced with wood siding or wood sheathing, concrete or with masonry walls described in Section 4.3 of this report.

5.5 In jurisdictions adopting the IBC, the supporting wall framing must be designed to support the additional weight of the stone veneer and mortar setting bed. Additionally, when interior stone veneer is supported by wood construction, the supporting members must be designed to limit deflection to  $\frac{1}{600}$  of the span of the supporting members.

5.6 In jurisdictions adopting the IRC, installations of the stone veneer must comply with the seismic provisions of Section R301.2.2. When the weight of the wall supporting the precast stone veneer, including the veneer system exceeds the applicable limits of IRC Section R301.2.2.2.1, an engineered design of the wall construction must be performed in accordance with IRC Section R301.1.3 and submitted to the code official for approval. The design must be performed by a registered design professional when required by the statutes of jurisdiction in which the project is constructed.

#### 6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), dated February 2008.

6.2 Report of testing in accordance with ASTM C 177.

6.3 Reports of testing in accordance with ASTM E 84.

#### 7.0 IDENTIFICATION

The Cultured Stone<sup>®</sup> described in this report is identified by the initials "C.S.V." cast into the side of each piece of stone.

The packaging of the Cultured Stone<sup>®</sup>, ProStone<sup>™</sup> and Modulo<sup>®</sup> Stone products includes a stamp bearing the manufacturer's name, the product name, the manufacturing plant location, the product code and the evaluation report number (ESR-1364).

TABLE 1—RECOGNIZED PATTERNS

PRODUCT NAME	AVERAGE THICKNESS (inches)		
	CULTURED STONE®	PROSTONE™	MODULO® STONE
Stream Stone Skimmer	1.04	NA	NA
Pro-Fit® LedgeStone	1.12	NA	NA
Coral Stone	1.15	NA	NA
European Castle Stone	1.16	NA	NA
Drystack	1.31	NA	NA
Driftstone	1.32	NA	NA
Old Country Fieldstone	1.34	NA	NA
River Rock	1.36	---	---
River Rock	---	1.00	---
River Rock	---	---	1.00
Water Wash Wall Stone	1.37	NA	NA
Southern LedgeStone	1.42	NA	NA
Alpine Pro-Fit® LedgeStone	1.45	NA	NA
Cobblefield®	1.47	NA	NA
Fieldstone	1.47	---	---
Fieldstone	---	0.80	---
Fieldstone	---	---	0.80
Dressed Fieldstone	1.51	NA	NA
Country LedgeStone	1.53	NA	NA
Stream Stone	1.53	NA	NA
Limestone	1.57	NA	NA
Weather Edge LedgeStone	1.60	NA	NA
Rockface	1.62	NA	NA
Split Face	1.641	NA	NA
French Cobble	NA	NA	0.75
Tuscan Cobble	NA	0.75	NA
Weathered LedgeStone	NA	NA	1.25
Aged LedgeStone	NA	1.25	NA
Quarry LedgeStone	NA	NA	1.10
LedgeStone	NA	1.10	NA
Carolina LedgeStone	1.66 1	NA	NA
Aged Tumbled™	1.48	NA	NA
Ancient Villa™	1.50	NA	NA
Del Mare™	1.15	NA	NA
Large Coral	1.15	NA	NA
Easy Fit Savannah LedgeStone	NA	1.10	NA
Cast-Fit™	1.50	NA	NA

For SI: 1 inch = 25.4 mm.

NA = Not Applicable