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ESR-2826

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Reissued 10/2016
This report is subject to renewal 10/2018.

DIVISION: 04 00 00—MASONRY
SECTION: 04 71 00—MANUFACTURED BRICK MASONRY
SECTION: 04 73 00—MANUFACTURED STONE MASONRY

REPORT HOLDER:

STONECRAFT INDUSTRIES LLC

**8300 COUNTY ROAD 189
HOLMESVILLE, OHIO 44633**

EVALUATION SUBJECT:

STONE VENEER



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ICC-ES Evaluation Report**ESR-2826**

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DIVISION: 04 00 00—MASONRY
Section: 04 71 00—Manufactured Brick Masonry
Section: 04 73 00—Manufactured Stone Masonry

REPORT HOLDER:

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EVALUATION SUBJECT:**STONE VENEER****1.0 EVALUATION SCOPE****1.1 Compliance with the following codes:**

- 2015 *International Building Code*® (IBC)
- 2015 *International Residential Code*® (IRC)
- Other Codes (see Section 8)

Properties evaluated:

- Veneer strength and durability
- Surface burning characteristics
- Thermal resistance

1.2 Evaluation to the following green code(s) and/or standards:

- 2013 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2012 and ICC 700-2008)

Attributes verified:

- See Section 3.0

2.0 USES

The Stone Veneer described in this report is used as an adhered, non-load-bearing exterior veneer or interior finish on non-fire-resistance-rated wood-framed or light gage steel stud walls, concrete walls or concrete masonry walls.

3.0 DESCRIPTION

The Stone Veneer is a precast concrete product made to resemble brick or natural stone, in color and in texture. The concrete is composed of cement, aggregate, water, admixtures and coloring. The veneer units are molded and cured at the plant. The average saturated weight of the

installed veneer units does not exceed 15 pounds per square foot (73.2 kg/m²).

The precast stone veneer has a Class A finish rating, in accordance with IBC Section 803.1.1 and complies with the flame-spread and smoke-development requirements of IRC Section. The stone veneer units have an *R*-value of 0.39°F ft² h/Btu (0.069 m²K/W) when tested in accordance with ASTM C177 at an average thickness of 1.5 inches (38 mm). Recognized patterns of veneer are listed below:

- Cobble
- Fieldstone
- Heritage
- Lake Stone
- Ledgestone
- Monarch
- River Rock
- Top Rock
- Laurel Cavern Ledge
- Farnledge

The attributes of the stone veneer have been verified as conforming to the provisions of (i) CALGreen Section A4.405.1.3 for prefinished building materials and Section A5.406.1.2 for reduced maintenance; (ii) ICC 700-2012 Sections 602.1.6 and 11.602.1.6 for termite-resistant materials and Sections 601.7, 11.601.7, and 12.1(A).601.7 for site-applied finishing materials; and (iii) ICC 700-2008 Section 602.8 for termite-resistant materials and Section 601.7 for site-applied finishing materials. 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.

4.0 INSTALLATION**4.1 General:**

Installation of the precast brick and stone veneer must comply with this report, the manufacturer's published installation instructions, and the applicable code. The manufacturer's published installation instructions must be available at the jobsite at all times during installation. The veneer must be installed in accordance with the clearance requirements of the IBC Section 1405.10.1.3 or IRC Section R703.12.1, as applicable. The veneer may be applied over backings of cement plaster, concrete or

Studs must be spaced no more than 16 inches (406 mm) on center. Lath must be a corrosion-resistant, self-furred, 2.5 lb/yd² (1.4 kg/m²) diamond mesh metal lath complying with ASTM C847. The lath must be fastened to the wall framing in accordance with the minimum requirements of Section 7.10 of ASTM C1063, and IRC Section R703.6.1, as applicable. In addition, fasteners must be spaced a maximum of 6 inches (152 mm) on center, must penetrate a minimum of 1 inch (25.4 mm) into wood framing or must penetrate a minimum of $\frac{3}{8}$ inch (9.5 mm) through steel framing, as applicable. A scratch coat of Type S mortar (cement plaster) complying with ASTM C926 must be applied over the lath to a minimum thickness of $\frac{1}{2}$ inch (12.7 mm). The scratch coat must be allowed to cure in accordance with IBC Section 2512.6, prior to the application of the veneer units.

4.2.1.2 Installation over Open Studs: For exterior installations, the cement plaster backing must be installed over a water-resistive barrier, flashing and weep screeds as described in Section 4.2.1.1. Studs must be spaced no more than 16 inches (406 mm) on center. Lath must be a corrosion-resistant, 3.4 lb/yd² (1.8 kg/m²), $\frac{3}{8}$ -inch (9.5 mm) rib lath complying with ASTM C847. The lath must be fastened to wall framing and the scratch coat applied as described in Section 4.2.1.1.

4.2.1.3 Installation over Concrete and Masonry: The veneer units may be applied directly to concrete or masonry backings without lath provided the surfaces are clean and free of paints, repellents, contaminants and release agents (see Section 4.2.2). Where lath is used, apply one layer of water-resistive barrier over the wall, in accordance with the report holder's recommendations. The lath must be corrosion-resistant metal lath complying with ASTM C847, or 1.4 lb/yd² (0.760 kg/m²), corrosion-resistant, wovern wire plaster base complying with ASTM C1032. The lath must be fastened to the wall in accordance with Section 7.10 of ASTM C1063, and IRC Section R703.7.1, as applicable. The fasteners must be spaced a maximum of 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally. The gravity load (shear) capacity and negative wind load (pull-out) capacity of the proprietary fasteners must be justified to the satisfaction of the code official. The scratch coat must be applied as described in Section 4.2.1.1.

4.2.2 Concrete and Masonry Backing: Poured concrete, concrete masonry and brick masonry wall surfaces must be prepared in accordance with Section 5.2 of ASTM C926 and IBC Section 2510.7, as applicable. Alternatively, a cement plaster backing may be installed as described in Section 4.2.1.

4.3 Application of Veneer Units:

Prior to the application of the veneer units, the scratch coat or other backing and the back of the veneer units must be moistened in accordance with the manufacturer's installation guidelines. Veneer units must be installed in accordance with IBC Section 1405.10.1.4.3. Under the IRC, a minimum $\frac{1}{2}$ -inch-thick (12.7 mm) setting bed of Type S mortar must be applied to the back of the veneer units, and the veneer units must be pressed firmly in place, squeezing the mortar out around all veneer unit edges.

Alternately, under the 2015 IRC, a minimum $\frac{1}{2}$ " (12.7mm) setting bed of Type S mortar must be applied to the backing in sections of 5 to 10 square feet (0.5 to 0.9 m²). Immediately following the application of mortar to the backing, a thick skin of mortar is applied to the back of the stone and that stone is then firmly pressed into mortar setting bed to ensure complete bond while the mortar is pliable.

For grouted patterns, joints between veneer units must be grouted and tooled in accordance with the veneer manufacturer's published installation guidelines.

5.0 CONDITIONS OF USE

The precast stone veneer described in this report complies with, or is a suitable alternative 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 use of the precast stone veneer is limited to installation on walls with cement plaster or concrete masonry backings.
- 5.3 Expansion or control joints, used to limit the effect of differential movement of supports on the veneer system, are to be specified by the architect, designer or veneer manufacturer, in that order. Consideration must also be given to movement caused by temperature change, shrinkage, creep and deflection.
- 5.4 In jurisdictions adopting the IBC, the supporting wall must be designed to support the installed weight of the veneer system, including veneer, setting bed and cement plaster backing, as applicable. At wall openings, the supporting members must be designed to limit deflection to $\frac{1}{600}$ of the span of the supporting members.
- 5.5 In jurisdictions adopting the IRC, where the seismic provisions of IRC Section R301.2.2 apply, the average weight of the wall supporting the precast stone veneer, including the weight of the veneer system, must be determined. When this weight 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.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), dated June 2013 (editorially revised September 2014).
- 6.2 Justification of surface-burning characteristics from an accredited laboratory.
- 6.3 Test report on thermal resistance in accordance with ASTM C177.

7.0 IDENTIFICATION

Boxes of precast stone veneer units are identified with the manufacturer's name (StoneCraft Industries), the product name, the pattern name, the manufacturing date and location, and the evaluation report number (ESR-2826).

8.0 OTHER CODES

8.1 Scope:

In addition to the codes referenced in Section 1.0, the product described in this report was evaluated for compliance with the following codes:

2012 International Building Code (2012 IBC)

2012 International Residential Code (2012 IRC)

2009 International Building Code (2009 IBC)

2009 International Residential Code (2009 IRC)

The Stone Veneer products described in this report comply with, or are suitable alternatives to what is specified in, the codes listed above, subject to the provisions of Sections 8.2 through 8.7.

8.2 Uses:

See Section 2.0.

8.3 Description:

See Section 3.0.

The precast veneer has a Class A finish rating in accordance with 2012 and 2009 IBC Section 803.1.1 and complies with the flame-spread and smoke-development requirements of 2012 and 2009 IRC Section R302.9. The Stone veneer has an *R*-value of 0.39 when tested in accordance with ASTM C177 at an average thickness of 1.5 inches (38 mm).

8.4 Installation:

8.4.1 General: See Section 4.1. and the following: Under the 2012 IBC and 2009 IRC, the veneer must be installed in accordance with the clearance requirements of 2012 IBC Section 1405.10.1.3 and 2012 IRC Section R703.12.1, as applicable.

8.4.2 Preparation of Backing:

8.4.2.1 Cement Plaster Backings: See Section 4.2.1.

8.4.2.1.1 Installation Over Sheathing: Replace the first paragraph of Section 4.2.1.1 with the following: For exterior installations, the cement plaster backing must be installed over a water-resistive barrier complying with 2012 IBC Section 1405.10.1.1; 2009 IBC Sections 1404.2 and 2510.6; or 2012 and 2009 IRC Sections R703.2 and R706.3, as applicable. Also, flashing must be installed as

required by 2012 IBC Sections 1405.4 and 1405.10.1.2; 2009 IBC Section 1405.4; or 2012 and 2009 IRC Sections R703.8, as applicable, and weep screeds must be installed at the bottom of the stone veneer. The weep screeds must comply with, and be installed in accordance with, 2012 IBC Section 1405.10.1.2; 2009 IBC Section 2512.1.2; 2012 IRC Section R703.12.2; or 2009 IRC Section R703.6.2.1, as applicable. In addition, the weep screeds must have holes with a minimum diameter of $\frac{3}{16}$ inch (4.8mm) spaced at a maximum of 33 inches (838mm) on center, as required by Section 6.1.6.2 of TMS-11, which is referenced in 2012 IBC Section 1405.10; or Section 6.1.5.2 of TMS 402-08, which is referenced in 2009 IBC Section 1405.10, as applicable.

8.4.2.1.2 Installation Over Open Studs: See Section 4.2.1.2.

8.4.2.1.3 Installation Over Concrete and Masonry: See Section 4.2.1.3

8.4.3 Application of Veneer Units: See Section 4.3.

8.5 Conditions of Use:

See Section 5.0.

8.6 Evidence Submitted:

See Section 6.0.

8.7 Identification:

See Section 7.0.