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ICC-ES Report

ESR-3339

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Reissued 05/2015

This report is subject to renewal 05/2017

DIVISION: 04 00 00—MASONRY

SECTION: 04 73 00—MANUFACTURED STONE MASONRY

REPORT HOLDER:

STONE MASTER™, INC.

**15105-D JOHN J. DELANEY DRIVE, SUITE 26
CHARLOTTE, NORTH CAROLINA 28277**

EVALUATION SUBJECT:

STONEMASTER™ & BUILDERSCHOICE™ STONE



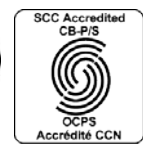
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DIVISION: 04 00 00—MASONRY
Section: 04 73 00—Manufactured Stone Masonry
REPORT HOLDER:

STONEMASTER™, INC.
15105-D JOHN J. DELANEY DRIVE, SUITE 26
CHARLOTTE, NORTH CAROLINA 28277
(704) 333-0353
www.builderschoicestone.com

EVALUATION SUBJECT:
STONEMASTER™ AND BUILDERSCHOICE™ STONE
1.0 EVALUATION SCOPE
Compliance with the following codes:

- 2012 *International Building Code*® (IBC)
- 2012 *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.

- Other Codes (see Section 8.0)

Properties evaluated:

- Veneer strength and durability
- Surface burning characteristics

2.0 USES

StoneMaster™ and BuildersChoice Stone™ are used as adhered, non-load-bearing exterior veneer and as 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 veneer is a precast concrete product made to resemble natural stone or adobe in color and in texture. The veneer is composed of cement, aggregate, water, admixtures and coloring. The veneer units are molded and cured at the plant. Recognized patterns are: Castle Rock, Cobble Stone, Cut Face, Fieldstone, Ledgestone, Limestone, Quickfit Stone, River Stone, Split Face, Stackstone, and Blends.

The veneer units are of various thicknesses, with the thickness averaging $\frac{3}{4}$ inch to 1.85 inches (19 to 47 mm). The average saturated weight of the veneer units does not exceed 15 pounds per square foot (73.2 kg/m²).

The precast 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 R302.9.

4.0 INSTALLATION
4.1 General:

Installation of the StoneMaster and BuildersChoice precast 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 may be applied over backings of cement plaster, concrete or concrete masonry.

4.2 Preparation of Backing:

4.2.1 Cement Plaster Backing: Cement plaster backings may be applied over plywood, OSB or gypsum sheathing supported by wood or steel studs; over open wood or steel studs; over concrete walls; and over concrete masonry walls, when installed as described in Sections 4.2.1.1 through 4.2.1.3.

4.2.1.1 Installation over Sheathing: For exterior installations, the cement plaster backing must be installed over a water-resistive barrier complying with IBC Sections 1404.2 and 2510.6 or IRC Sections R703.2 and R703.6.3, as applicable. Also, flashing must be installed as required by IBC Sections 1405.4 and 1405.10.1.2 or IRC Sections R703.8 and R703.12.2, 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, IBC Section 1405.10.1.2 or IRC Section R703.12.2, as applicable. In addition, the weep screeds must have holes with a minimum diameter of $\frac{3}{16}$ inch (4.8 mm) spaced at a maximum of 33 inches (838 mm) on center, as required by Section 6.1.6.2 of TMS 402/ACI 530/ASCE 5, which is referenced in IBC Section 1405.10. The veneer must be installed with the clearances required by IBC Section 1404.10.1.3 or IRC Section R703.12.1, as applicable.

Studs must be spaced no more than 16 inches (406 mm) on center. Lath must be corrosion-resistant, self-furred, 2.5 lb/yd² (1.4 kg/m²), diamond-pattern metal lath complying with ASTM C847, or 1.4 lb/yd² (0.760 kg/m²), corrosion-resistant, woven wire plaster base complying with ASTM C1032. The lath must be lapped in accordance with Section 7.8 of ASTM C1063. The lath must be fastened to the wall framing in accordance with the minimum requirements of Section 7.10 of ASTM C1063 or IRC Section R703.6.1, as applicable. In addition, fasteners must be spaced a maximum of 6 inches (152 mm) on center and must penetrate a minimum of 1 inch (25.4 mm) into wood framing. For steel studs, fasteners must be corrosion-resistant, self-tapping screws with a head diameter of $\frac{7}{16}$ inch (11.1 mm) and sufficient length to penetrate the studs a minimum of $\frac{3}{8}$ inch (9.5 mm).

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 scored horizontally in accordance with the manufacturer's published installation instructions, and 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 corrosion-resistant, 3.4 lb/yd^2 (1.8 kg/m^2), $\frac{3}{8}$ -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 and masonry backing without lath, provided the concrete and masonry surface is clean. Where lath is used, it must be corrosion-resistant metal lath complying with ASTM C847, or 1.4 lb/yd^2 (0.760 kg/m^2), corrosion-resistant, woven 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 R703.6.1, 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: Concrete masonry and poured concrete 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 4.2.1.3.

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 instructions. A $\frac{1}{2}$ -inch-thick (12.7 mm) setting bed of Type S mortar is applied to the back of the veneer units, and the veneer units are pressed firmly in place, with the mortar squeezed out around all veneer unit edges. Joints between veneer units must be grouted and tooled in accordance with the veneer manufacturer's published installation instructions.

5.0 CONDITIONS OF USE

The StoneMaster™ and BuildersChoice Stone™ adhered veneers 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 Use of the precast stone veneer is limited to installation on wood-framed, light-gage-steel-framed, concrete or concrete masonry walls.
- 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 February 2008 (editorially revised April 2012).
- 6.2 Report of testing in accordance with ASTM E84.

7.0 IDENTIFICATION

Packaging of StoneMaster™ and BuildersChoice Stone™ products is identified with the manufacturer's name (StoneMaster™, Inc.), the product name, the manufacturing location and the evaluation report number (ESR-3339).

8.0 OTHER CODES

8.1 Evaluation Scope:

In addition to the codes referenced in Section 1.0, the products described in this report were evaluated for 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)

The StoneMaster™ and BuildersChoice Stone™ 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 2.0 through 7.0 except as noted below.

Cement Plaster Backings: Revise the first paragraph of Section 4.2.1.1 as follows:

4.2.1.1 Installation over Sheathing: The cement plaster backing must be installed over a water-resistive barrier complying with 2009 and 2006 IBC Sections 1404.2 and 2510.6 or 2009 and 2006 IRC Sections R703.2 and R703.6.3, as applicable. Also, flashing must be installed as required by 2009 IBC Section 1405.4 (2006 IBC Section 1405.3) or 2009 and 2006 IRC Section 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, 2009 and 2006 IBC Section 2512.1.2 or 2009 and 2006 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 (4.8 mm) spaced at a maximum of 33 inches (838 mm) on center, as required by Section 6.1.5.2 of TMS 402/ACI 530/ASCE 5 (Section 6.1.5.2 of ACI 530/ASCE 5/TMS 402), which is referenced in 2009 IBC Section 1405.10 (2006 IBC Section 1405.9).