ICC-ES Evaluation Report

ESR-3246

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This report is subject to renewal in one year

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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:

NATIVE CUSTOM STONE

1.0 EVALUATION SCOPE

Compliance with the following codes:

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

Properties evaluated:

Veneer strength and durability

2.0 USES

Native Custom Stone is used as an adhered, non-load-bearing exterior veneer on non-fire-resistance-rated wood-framed or light gage steel stud walls, or concrete masonry walls.

3.0 DESCRIPTION

Native Custom Stone is a precast concrete product made to resemble natural stone in color and in texture. The concrete is comprised of cement, aggregate, water, admixtures and coloring. The veneer units are molded and cured at the plant. The veneer units are of various thicknesses from $^3/_4$ inch to 1.9 inches (19.1 to 48.3 mm). The average saturated weight of the installed veneer units does not exceed 15 pounds per square foot (73.2 kg/m^2). Recognized patterns of veneer and accents are:

- Castle Rock
- Rubble
- Ledge
- Stack
- Fieldstone
- River Rock

4.0 INSTALLATION

4.1 General:

Installation of Native Custom Stone 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 or concrete masonry.

4.2 Preparation of Backing:

4.2.1 Cement Plaster Backings: 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 2009 IBC Section 1405.4 (2006 IBC Section IBC Section 1405.3) or 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, IBC Section 2512.1.2 or IRC Section R703.6.2.1, as applicable. In addition, the weep screeds must have holes with a minimum diameter of $^3/_{16}$ 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).

Studs must be spaced no more than 16 inches (406 mm) on center. Lath must be a corrosion-resistant, self-furred, 2.5 lb/yd^2 (1.4 kg/m^2), diamond mesh metal lath complying with ASTM C 847, or a 1.4 lb/yd^2 (0.760 kg/m^2), corrosion-resistant, woven wire plaster base complying with ASTM C 1032. The lath must be fastened to the wall framing in accordance with the minimum requirements of Section 7.10 of ASTM C 1063, 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 and must penetrate a minimum of $^3/_8$ inch (9.5 mm) through steel framing. A scratch coat of Type S mortar (cement plaster) complying with ASTM C 926 must be applied over the lath to a minimum thickness of $^1/_2$ 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 a corrosion-resistant, 3.4 lb/yd^2 (1.8 kg/m^2), $^3/_8$-inch (9.5 mm) rib lath complying with ASTM C 847. 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 Masonry: The veneer units may be applied directly to concrete masonry backing without lath, provided the masonry surface is clean. Where lath is used, it must be corrosion-resistant metal lath complying with ASTM C 847, or 1.4 lb/yd^2 (0.760 kg/m^2), corrosion-resistant, woven wire plaster base complying with ASTM C 1032. The lath must be fastened to the wall in accordance with Section 7.10 of ASTM C 1063, 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 Masonry Backing: Concrete masonry wall surfaces must be prepared in accordance with Section 5.2 of ASTM C 926, 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 instructions. A minimum $^1/_2$-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. 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 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 $^1/_{600}$ 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

Data in accordance with the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), dated February 2008, (editorially revised September 2010).

7.0 IDENTIFICATION

Boxes of precast stone veneer units are identified with the manufacturer's name (Native Custom Stone), the pattern name, the manufacturing date and location, and the evaluation report number (ESR-3246).