ICC-ES Evaluation Report

ESR-2593

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

REPORT HOLDER:

HERITAGE STONE, LLC
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EVALUATION SUBJECT:

HERITAGE STONE, LLC, SIMULATED STONE

1.0 EVALUATION SCOPE

Compliance with the following codes:

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

Property evaluated:

Veneer strength and durability

2.0 USES

The Heritage Stone, LLC, Simulated Stone is used as an adhered, nonload-bearing exterior veneer on nonfire-resistance-rated walls of wood stud or light-gage steel stud construction, and concrete or masonry walls.

3.0 DESCRIPTION

The veneer is a precast concrete product made to resemble natural stone in color and texture. The veneer is composed of portland cement complying with ASTM C 150, lightweight aggregates, iron oxide coloring pigments, admixtures, and water. The veneer units are molded and cured at the plant.

The veneer units are $^{3}/_{4}$ inch to $2^{1}/_{2}$ inches (19 to 63.5 mm) thick, and average $1^{3}/_{4}$ inches (42 mm) thick. The maximum saturated weight of the installed veneer units is 15 pounds per square foot (73.2 kg/m^2).

Recognized veneer patterns are as follows:

- Limestone
- Fieldstone
- River Rock
- Ledge Stone
- Dry Stack

4.0 INSTALLATION

4.1 General:

Installation of the veneer units must comply with this report, the manufacturer's published installation instructions, and IBC Section 1404.4 or IRC Section R703.7, as applicable. The manufacturer's published installation instructions must be available at the jobsite at all times during installation. The veneer is applied over an exterior plaster backing, concrete or masonry walls.

4.2 Preparation of Backing:

4.2.1 General: The cement plaster backing may be applied over structurally sound wall surfaces of exterior plaster; exterior sheathing on wood framed or light-gage steel framed walls; or concrete or masonry walls.

4.2.1.1 Installation over Sheathing or Exterior Plaster: A 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 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 ACI 530/ASCE 5/TMS 402, referenced in IBC Section 1405.9.

Studs must be spaced no more that 16 inches (406 mm) on center. A self-furring, 2.5-pound-per-square-yard (1.4 kg/m^2), galvanized, expanded diamond mesh metal lath complying with ASTM C 847 must be installed in accordance with the applicable code over the water-resistive barrier. Lath must be installed with a minimum 2-inch (50.8 mm) overlap on horizontal seams and a 6-inch (152 mm) overlap on vertical joints. Inside and outside corners of the lath must be wrapped a minimum of 16 inches (406 mm). The lath 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 are to be minimum 0.120-inch-shank-diameter galvanized nails, complying with ASTM F 1667, of sufficient length to penetrate the studs a minimum of 1 inch (25.4 mm). For steel studs, fasteners must be minimum No. 8 gage, Type S, galvanized self-tapping screws complying with ASTM C 1002, of sufficient length to penetrate the studs a minimum of $^{1}/_{2}$ inch (12.7 mm). Fasteners must not penetrate exterior sheathing between the studs.

A coat of Type M or S mortar is applied to the metal lath as a scratch coat. The coat of mortar must be a minimum of $^3/_8$ inch (9.5 mm) thick and a maximum of $^5/_8$ inch (15.9 mm) thick. The mortar must comply with IBC Section 2103.8 or IRC Section R607.1, as applicable, and must be cured in accordance with IBC Section 2512.6 prior to application of the veneer units.

4.2.1.2 Installation over Concrete and Masonry: The veneer units may be applied to clean; untreated concrete or masonry surfaces without the use of metal lath provided the concrete or masonry surface is clean. Concrete masonry and poured concrete wall surfaces must be prepared in accordance with Section 5.2 of ASTM C 926 and IBC Section 2510.7, as applicable.

4.3 Application of Veneer Units:

A minimum $^1/_2$-inch thick (12.7 mm) brush coat of Type S or N mortar is applied to the back of each veneer unit, which is then pressed firmly in place to assure full bond. The mortar must comply with IBC Section 2103.8 or IRC Section R607.1, as applicable. Veneer units must be installed at least 4 inches (105 mm) above earth. Joints between veneer units must be grouted and tooled in accordance with the veneer manufacturer's published installation instructions. The ambient temperature and veneer unit temperature must be 40°F (4°C) or higher at the time of veneer application.

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 exterior plaster, wood framed or light-gage steel framed walls with exterior sheathing, and concrete or 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.

7.0 IDENTIFICATION

Boxes of precast stone veneer units are identified with the manufacturer's name (Heritage Stone), the pattern name, the manufacturing date, and the evaluation report number (ESR-2593).