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ESR-2836

Reissued 08/2017
This report is subject to renewal 08/2018.

DIVISION: 04 00 00—MASONRY

SECTION: 04 73 00—MANUFACTURED STONE MASONRY

REPORT HOLDER:

SUNSET STONE, INC.

702 PRAIRIE HAWK DRIVE
CASTLE ROCK, COLORADO 80109

EVALUATION SUBJECT:

SUNSET MANUFACTURED PRECAST STONE VENEER

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

REPORT HOLDER:

SUNSET STONE, INC.
702 PRAIRIE HAWK DRIVE
CASTLE ROCK, COLORADO 80109
(303) 791-1233
www.sunsetstone.net

EVALUATION SUBJECT:

SUNSET MANUFACTURED PRECAST 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 8.0)

Property evaluated:

Veneer strength and durability

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

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.0

2.0 USES

Sunset Manufactured Precast Stone Veneer is used as an adhered, nonload-bearing exterior veneer on nonfire-resistance-rated exterior walls of wood stud or light-gage steel stud construction, or 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 C150, aggregates, coloring pigments, admixtures, and water. The veneer units are molded and cured at the manufacturing facility.

The veneer units are of various thicknesses from 1 inch to 2 inches (25.4 to 50.8 mm). The maximum saturated weight of the installed veneer units is less than 15 pounds per square foot (73.2 kg/m^2).

Recognized veneer types and patterns are as follows:

- Cobble Stone
- Field Stone
- Limestone
- Castle Stone
- Moss Rock
- River Rock
- Ledge Stone
- Stacked Stone
- Regal Stone

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 700-2015 and 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 DESIGN AND INSTALLATION

4.1 General:

Installation of the veneer units 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 masonry.

4.2 Preparation of Backing:

4.2.1 Cement Plaster Backing: The cement plaster backing (scratch coat) may be applied over structurally sound wall surfaces of exterior plaster; exterior sheathing on wood framed or light-gage steel framed walls; open wood or steel studs; or concrete or masonry walls.

4.2.1.1 Installation over Sheathing: A cement plaster backing must be installed over a water-resistive barrier complying with IBC Section 1405.10.1.1 or IRC Section R703.12.3, as applicable. Also, flashing must be installed as required by IBC Section 1405.10.1.2 or IRC Sections R703.4 and R703.12.2, as applicable, and weep screeds

must be installed at the bottom of the veneer. The weep screeds must comply with, and be installed in accordance with, IBC Section 1405.10.1.2.1 or IRC Section R703.12.2, 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 12.1.6.2 of TMS 402/ACI 530/ASCE 5, which is referenced in IBC Section 1405.10.

Studs must be spaced no more than 16 inches (406 mm) on center. A self-furring, corrosion-resistant, 2.5-pound-per-square-yard (1.4 kg/m^2), galvanized, expanded diamond mesh metal lath, or 3.4 lb/yd^2 (1.8 kg.m^2), $^3/_8$-inch (9.5 mm) rib lath complying with ASTM C847, must be installed in accordance with the applicable code over the water-resistive barrier. Lath must be installed with a minimum 1-inch (25 mm) overlap on horizontal seams and vertical joints. 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 C1063, or IRC Section R703.7.1, as applicable. Lath shall be wrapped around inside and outside corners with attachment every six inches at the next stud allowing up to 16 inch overlap. For wood studs, fasteners must be minimum 0.120-inch-shank-diameter galvanized nails, complying with ASTM F1667, with a minimum head diameter of $^7/_{16}$ inch (11.1 mm) and 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 C1002, of sufficient length to penetrate the studs a minimum of $^3/_8$ inch (9.5 mm). Fasteners must not penetrate exterior sheathing between the studs.

A coat of Type S or N mortar (cement plaster) complying with ASTM C926 must be applied to the metal lath as a scratch coat. The coat of mortar must be a minimum of $^1/_2$ inch (12.7 mm) and a maximum of $^3/_4$ inch (19 mm) thick. and the scratch coat must be allowed to cure in accordance with IBC Section 2512.6 prior to application of the veneer units.

4.2.1.2 Installation over Open Studs: 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-pound-per-square-yard (1.8 kg.m^2), $^3/_8$-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 to clean, untreated masonry surfaces without the use of metal lath, provided the masonry surface is clean. Where lath is used, it must be corrosion-resistant, 2.5-pound-per-square-yard (1.4 kg/m^2), galvanized, expanded diamond mesh metal lath complying with ASTM C847. 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 scratch coat must be applied as described in Section 4.2.1.1. 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.

4.2.2 Concrete and Masonry Backing: 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:

Veneer units must be installed in accordance with IBC Section 1405.10.1.4.3. Under the IRC, a nominally $^1/_2$-inch-thick (12.7 mm) layer 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. Veneer units must be installed in accordance with the clearance requirements of IBC Section 1405.10.1.3 and IRC Section R703.12.1. 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 wood framed or light-gage steel framed walls 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 June 2013, editorially revised September 2014.

7.0 IDENTIFICATION

Boxes of the precast stone veneer units are identified with the manufacturer's name (Sunset Stone, Inc.), product name, pattern name, and the evaluation report number (ESR-2836).

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:

- 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 Sunset Manufactured Precast Stone Veneer described in this report complies with, or is a suitable alternative 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.

8.4 Installation:

8.4.1 General: See Section 4.1.

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: A 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; 2012 and 2009 IRC Section R703.2 and R703.6.3, 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 Section R703.8, as applicable, and weep screeds must be installed at the bottom of the 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 $^{3}/_{16}$ 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 402-11, 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.

See the remainder of Section 4.2.1.1 for additional requirements.

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.

8.4.2.2 Concrete and Masonry Backing: See Section 4.2.2.

8.4.3 Application of Veneer Units: A nominally $^{1}/_{2}$-inch-thick (12.7 mm) layer 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. Under the 2012 IBC and 2012 IRC, veneer units must be installed in accordance with the clearance requirements of 2012 IBC Section 1405.10.1.3 and 2012 IRC Section R703.12.1. 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.

8.5 Conditions of Use:

See Section 5.0.

8.6 Evidence Submitted:

See Section 6.0.

8.7 Identification:

See Section 7.0.