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ESR-2598

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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:

CORONADO STONE PRODUCTS

**11191 CALABASH AVENUE
FONTANA, CALIFORNIA 92337**

EVALUATION SUBJECT:

CORONADO STONE



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ICC-ES Evaluation Report**ESR-2598***

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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:

CORONADO STONE PRODUCTS
11191 CALABASH AVENUE
FONTANA, CALIFORNIA 92337
(909) 357-8295
www.coronado.com

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

- 2015 *International Building Code*® (IBC)
- 2015 *International Residential Code*® (IRC)
- Other codes (see Section 8.0)

Properties evaluated:

- Veneer strength and durability
- Surface burning characteristics

2.0 USES

Coronado Stone is used as an adhered, nonload-bearing exterior veneer or an interior finish and trim on walls of wood stud or light-gage-steel stud construction or masonry walls.

3.0 DESCRIPTION

The veneer is a precast concrete product made to resemble natural stone or brick 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). Recognized veneer styles are listed in Table 1.

The 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 Coronado Stone 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 painted exterior stucco, plywood or gypsum sheathing; open wood or steel studs; or masonry walls. For interior applications, the veneer may also be installed over plaster or gypsum wallboard.

4.2 Preparation of Backing:

4.2.1 Cement Plaster Backings: Cement plaster backings may be applied over painted exterior stucco, 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 and 4.2.1.2.

4.2.1.1 Installation Over Studs: For exterior installations, the 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 stone 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 $\frac{3}{16}$ 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. The veneer must be installed with the clearances required by IBC Section 1405.10.1.3 or IRC Section R703.12.1, as applicable.

Studs must be spaced no more than 16 inches (406 mm) on center, unless otherwise noted. Lath must be a 2.5 or 3.4 lb/yd² (1.4 or 1.8 kg/m²), self-furring diamond metal lath complying with ASTM C847 or a 1.4 lb/yd² (0.760 kg/m²) woven wire mesh complying with ASTM C1032. Lath may be self-furred or non-furred, provided furring or furring fasteners are used. When the cement plaster backing is installed over open studs, a paper back lath must be used. All lath and mesh must be installed over the water-resistive barriers by following lath manufacturer's installation guidelines and recommendations. Lath or mesh must be fastened to each of the wall studs as required by ASTM C1063 and IRC Section R703.7.1. Fasteners must be spaced a maximum of 6 inches (153 mm) on center. Steel studs may be spaced a maximum of 24 inches on center (610 mm) provided the lath is corrosion-resistant, $\frac{3}{8}$ -inch-high (9.5 mm), ribbed, expanded metal lath attached to the steel studs at a maximum of 5 inches (127 mm) on center.

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For attaching lath to wood studs, fasteners must be galvanized nails having a minimum shank diameter of 0.120 inch (3.06 mm), a minimum head diameter of $\frac{7}{16}$ inch (11.1 mm) and sufficient length to penetrate the studs a minimum of 1 inch (25.4 mm). Wood studs must have a minimum specific gravity of 0.42. For attaching lath to steel studs, fasteners must be a corrosion resistant pan head or pancake head #8 self-drilling, tapping screws having sufficient length to protrude a minimum of $\frac{3}{8}$ inch (9.5 mm) through the stud. Steel studs must be a minimum of 43 mils thick.

A $\frac{1}{2}$ -inch-thick (12.7 mm) scratch coat of Type S mortar (cement plaster) complying with ASTM C926 is applied over the metal lath or woven wire mesh, etched using a trowel in accordance with the manufacturer's published installation instructions, and allowed to cure 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 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/yd² (0.760 kg/m²), 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 R703.7.1, 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 Masonry Backing:

The veneer units may be applied directly to masonry backings, without the use of lath, provided the surface is clean. Painted, waterproofed or dirty masonry surfaces must be cleaned by sandblasting or other means to provide a good bond surface.

4.3 Application of Veneer Units:

Cement plaster backings must be moistened in accordance with the veneer manufacturer's published installation instructions. Veneer units must be installed in accordance with IBC Section 1405.10.1.4.3. Under the IRC, a coat of Type S mortar, $\frac{1}{2}$ inch to $\frac{3}{4}$ inch thick (12.7 to 19.1 mm), is applied to the moistened scratch coat in areas of approximately 10 square feet (0.929 m). The combined thickness of the scratch coat and mortar setting bed must be a minimum of $\frac{7}{8}$ inch (22 mm). As an alternate to applying the mortar setting bed to the scratch coat, the mortar setting bed may be applied to the back of each piece of veneer and the veneer gently worked in place over the scratch coat. The mortar bed consistency must be such as to allow mortar to be squeezed around all edges of the veneer unit to assure full bond. 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 manufactured Coronado 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 there is a conflict between the manufacturer's published installation instructions and this report, this report governs.

- 5.2** The use of the manufactured stone veneer has been evaluated for installation on walls with cement plaster or masonry backings.
- 5.3** Expansion or control joints used to limit the effect of differential movement of precast stone veneer supports must 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 construction must be designed to support the weight of the veneer system, including veneer, setting bed and cement plaster backing, as applicable. Additionally, horizontal framing members, at wall openings such as lintels and headers, that support the precast stone veneer 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. If the average weight exceeds the applicable limits of IRC Section R301.2.2.2.1, or for buildings in Seismic Design Category E, 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** Data in accordance with ASTM E84 as an interior finish.

7.0 IDENTIFICATION

Each package of veneer is labeled or stamped with the Coronado Stone Products name and address, the product name, the date of manufacture and the evaluation report number (ESR-2598).

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

The Coronado 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 8.2 through 8.7.

8.2 Uses:

See Section 2.0.

8.3 Description:

See the first two paragraphs of Section 3.0 and the following: The veneer has a Class A finish rating in accordance with 2012 and 2009 IBC Section 803.1.1 (2006 IBC Section 803.1) and complies with the flame-spread and smoke-development requirements of 2012 and 2009 IRC Section R302.9 (2006 IRC Section R315).

8.4 Installation:

8.4.1 General: See Section 4.1, and the following: Under the 2012 IBC and 2012 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 Studs: See Section 4.2.1.1, except 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 and 2006 IBC Sections 1404.2 and 2510.6; or 2012, 2009 and 2006 IRC Sections R703.2 and R703.6.3, as applicable. Also, flashing must be installed as required by 2012 Sections 1405.4 and 1405.10.1.2; 2009 IBC Section 1405.4; 2006 IBC Section 1405.3; or 2012, 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, 2012 IBC Section 1405.10.1.2; 2009 and 2006 IBC Section 2512.1.2; 2012 IRC Section R703.12.2; 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 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; Section 6.1.5.2 of TMS 402-08, which is referenced in 2009 IBC Section 1405.10; or Section 6.1.5.2 of ACI 530-05, which is referenced in 2006 IBC Section 1405.9, as applicable.

8.4.2.1.2 Installation over Masonry: See Section 4.2.1.2.

8.4.2.2 Masonry Backing: See Section 4.2.2.

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

TABLE 1—RECOGNIZED VENEER STYLES

3" Split Limestone	Eastern Mountain Ledge	Pro-Ledge
8" Classic Jerusalem	English Rubble	Quick Stack
Adobe Brick	Euro Villa	River Rock
Aegean Coral	Feathered Stone	Rocky Mountain Ledge
Appalachian Fieldstone	French Country Villa	Sand Canyon Flagstone
Belgian Brick	French Limestone	Santa Barbara
Belgian Castle	The Getty Stone	Sculptured Brick
Canyon Cobble	Idaho Drystack	Sierra Ledge
Canyon Ledge	Italian Villa	Smooth Limestone
Caribbean Coral	Lennox Stone	Split Fieldstone
Carolina Rubble	Minnesota Fieldstone	Tumbled Ledge
Chiseled Limestone	Montana Ledge	Tuscan Villa
Clinker Brick	Mountain Strip Stone	Valley Cobble
Colosseum Travertine	Mountain Villa	Venetian Villa
Coronado Honey Ledge	Old Country Ledge	Virginia Ledge
Coronado Strip Stone	Old World Ledge	Weathered Edge
Country Castle	Osage	Woodstone
Country Rubble	Pavilion Stone	Yukon Rubble
Creek Rock	Playa Vista Limestone	
Desert Ridge	Princeton Granite	