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# ICC-ES Evaluation Report

# ESR-1215

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Reissued 11/2018  
This report is subject to renewal 11/2020.

**DIVISION: 04 00 00—MASONRY**

**SECTION: 04 71 00—MANUFACTURED BRICK MASONRY**

**SECTION: 04 73 00—MANUFACTURED STONE MASONRY**

**REPORT HOLDER:**

**ELDORADO STONE, LLC**

**EVALUATION SUBJECT:**

**ELDORADO STONE®, ELDORADO BRICK® AND ELDORADO ADOBE® VENEERS**



*“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”*



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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:

ELDORADO STONE, LLC

## EVALUATION SUBJECT:

ELDORADO STONE®, ELDORADO BRICK® AND  
 ELDORADO ADOBE® VENEERS

## 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)

### Properties evaluated:

- Veneer strength and durability
- Surface burning characteristics
- Thermal Resistance

### 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

Eldorado Stone, Eldorado Brick and Eldorado Adobe Veneers are used as adhered, non-load-bearing exterior veneers or interior finishes on wood or light gage steel stud walls, concrete walls or concrete masonry walls.

## 3.0 DESCRIPTION

Eldorado Stone®, Eldorado Brick® and Eldorado Adobe® veneers are precast concrete products made to resemble natural stone, brick or adobe, respectively, 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/m<sup>2</sup>). Recognized patterns of veneer are listed in Table 1.

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. The stone veneer has an *R*-value of 0.43 when tested in accordance with ASTM C177 at an average thickness of 1.5 inches (38 mm).

The attributes of the precast veneers 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 INSTALLATION

### 4.1 General:

Installation of Eldorado 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 must be installed in accordance with the clearance requirements of IBC Section 1405.10.1.3 or IRC Section R703.12.1, as applicable. The veneer has been evaluated for application over backings of cement plaster, concrete 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 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.

Studs must be spaced no more than 16 inches (406 mm) on center. Lath must be a 2.5 lb/yd<sup>2</sup> (1.4 kg/m<sup>2</sup>) diamond mesh metal lath conforming to ASTM C847; a 3.4 lb/yd<sup>2</sup> (1.8 kg/m<sup>2</sup>),  $\frac{3}{8}$ -inch thick ribbed lath conforming to ASTM C847; a 1.4 lb/yd<sup>2</sup> (0.760 kg/m<sup>2</sup>) galvanized woven wire mesh conforming to ASTM C1032; a welded wire lath complying with ASTM C933; or lath recognized in an ICC-ES evaluation report as a substitute for lath complying with ASTM C847. 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 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.

For attaching lath to wood studs, fasteners must be galvanized nails having a minimum shank diameter of 0.120-inch, a minimum head diameter of  $\frac{7}{16}$ -inch (11.1 mm) and sufficient length to penetrate the studs a minimum of  $\frac{3}{4}$ -inch (19.1 mm); wood screws of sufficient length to penetrate a minimum of  $\frac{5}{8}$  inch (15.9 mm) into the studs; or minimum 16 gage staples with a crown width of  $\frac{3}{4}$  inch (19.1 mm) and sufficient length to penetrate the studs a minimum of  $\frac{3}{4}$  inch (19.1 mm). Wood studs must have a minimum specific gravity of 0.42. For attaching lath to steel studs, fasteners must be a minimum of #12 corrosion resistant pan head or pancake head 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 33 mils thick.

A scratch coat of Type N or S mortar (cement plaster) complying with ASTM C926 must be applied over the lath to a thickness of  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch (12.7 to 19.1 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 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 and free of paints, repellents, contaminants and release agents (see Section 4.2.2). Where lath is used, apply one layer of water-resistive barrier over the wall, in accordance with the report holder's recommendations. The lath must be corrosion-resistant metal lath complying with ASTM C847, or 1.4 lb/yd<sup>2</sup> (0.760 kg/m<sup>2</sup>), 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.

#### 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. Veneer units must be installed in accordance with IBC Section 1405.10.1.4.3. Under the IRC, a minimum  $\frac{1}{2}$ -inch-thick (12.7 mm) setting bed of Type N or 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. For grouted patterns, 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 has been evaluated for installation on walls with cement plaster, concrete 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  $\frac{1}{600}$  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 June 2013 (editorially revised September 2014).
- 6.2** Report of testing of surface-burning characteristics in accordance with ASTM E84.
- 6.3** Report of testing on thermal resistance in accordance with ASTM C177.

**7.0 IDENTIFICATION**

- 7.1 Boxes of precast stone veneer units are identified with the manufacturer’s name (Eldorado Stone), the pattern name, the manufacturing date and location, and the evaluation report number (ESR-1215).
- 7.2 The report holder’s contact information is the following:

**ELDORADO STONE, LLC**  
**1200 INDUSTRY STREET**  
**EVERETT, WASHINGTON 98203**  
**(425) 407-0107**  
[www.eldoradostone.com](http://www.eldoradostone.com)

**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)
- 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.

The Eldorado 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 paragraph of Section 3.0 and the following: The precast 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). The stone veneer has an R-value of 0.43 when tested in accordance with ASTM C177 at an average thickness of 1.5 inches (38 mm).

**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:** 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 IBC 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.

For additional requirements, see the remaining paragraphs of Section 4.2.1.1.

**8.4.2.1.2 Installation over Concrete and Masonry:** See Section 4.2.1.2.

**8.4.2.2 Concrete and 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 PATTERNS**

PRODUCT	PATTERNS
Eldorado Stone®	Ashlar, Bluffstone, Broken Top, Castlestone, Cliffstone, Coarsed Stone, Coastal Ledge, Coastal Reef, Cobblestone, Country Rubble, Cut Coarse Stone, Cypress Ridge, European Ledge, Fieldledge, Hillstone, Ledgecut <sub>33</sub> , Limestone, Mountain Ledge, Mountain Ledge Panel, River Rock, Roughcut, Rustic Ledge, Shadow Rock, Stacked Stone, Top Rock, Weather Edge,
Eldorado Brick®	Modena Brick, Roma Brick, Tundra Brick, Via Brick,
Eldorado Adobe®	Camino Adobe, Capistrano Adobe

## ICC-ES Evaluation Report

## ESR-1215 CBC and CRC Supplement

Reissued November 2018

This report is subject to renewal November 2020.

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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:

**ELDORADO STONE, LLC**

### EVALUATION SUBJECT:

**ELDORADO STONE®, ELDORADO BRICK® AND ELDORADO ADOBE® VENEERS**

## 1.0 REPORT PURPOSE AND SCOPE

### Purpose:

The purpose of this evaluation report supplement is to indicate that Eldorado Stone®, Eldorado Brick® and Eldorado Adobe® Veneers, recognized in ICC-ES master evaluation report ESR-1215, have also been evaluated for compliance with CBC Chapters 8, 14, 21, 21A and 25 and CRC Chapters 3 and 7.

### Applicable code editions:

- 2013 *California Building Code*® (CBC)
- 2013 *California Residential Code*® (CRC)

## 2.0 CONCLUSIONS

### 2.1 CBC:

The Eldorado Stone®, Eldorado Brick® and Eldorado Adobe® Veneers, described in Sections 2.0 through 7.0 of the master evaluation report ESR-1215, comply with CBC Sections 803.1.1, 1404.4, 2101.2.6, and 2101A.2.6, provided the design and installation are in accordance with the *International Building Code*® (IBC) provisions noted in the master report and the additional requirements of CBC Sections 1405.1.1, 1405.3 and 1410, as applicable.

The products recognized in this supplement have not been evaluated under CBC Chapter 7A for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

### 2.2 CRC:

The Eldorado Stone®, Eldorado Brick® and Eldorado Adobe® Veneers, described in Sections 2.0 through 7.0 of the master evaluation report ESR-1215, comply with the flame spread and smoke developed requirements of CRC Section R302.9 and with CRC Section R703, provided the design and installation are in accordance with the *International Residential Code*® (IRC) provisions noted in the master report and the additional requirements of CRC Sections R301.1.3 and R702.7.

The products recognized in this supplement have not been evaluated under CRC Section R327 for use in the exterior design and construction of new buildings located within any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

The products recognized in this supplement have not been evaluated for compliance with the *International Wildland–Urban Interface Code*®.

This supplement expires concurrently with the master report, reissued November 2018.



## ICC-ES Evaluation Report

## ESR-1215 FBC Supplement

Reissued November 2018

This report is subject to renewal November 2020.

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### 1.0 REPORT PURPOSE AND SCOPE

#### Purpose:

The purpose of this evaluation report supplement is to indicate that Eldorado Stone, Eldorado Brick and Eldorado Adobe Veneers, recognized in ICC-ES master report ESR-1215, have also been evaluated for compliance with the codes noted below.

#### Applicable code editions:

- 2014 *Florida Building Code—Building*
- 2010 *Florida Building Code—Building*
- 2014 *Florida Building Code—Residential*
- 2010 *Florida Building Code—Residential*

### 2.0 CONCLUSIONS

The Eldorado Stone, Eldorado Brick and Eldorado Adobe Veneers, described in Sections 2.0 through 7.0 of the master evaluation report ESR-1215, comply with the 2014 and 2010 *Florida Building Code—Building* and the 2014 and 2010 *Florida Building Code—Residential*, provided the design and installation are in accordance with the *International Building Code*® (IBC) provisions noted in the master report, provided that the veneer has a clearance to the final earth grade on the exterior of the building as required by Section 1403.7 of the 2014 or 2010 *Florida Building Code— Building* or Section R704 of the 2010 *Florida Building Code—Residential* or Section R318.7 of the 2014 *Florida Building Code—Residential*, as applicable.

Use of the Eldorado Stone, Eldorado Brick and Eldorado Adobe Veneers for compliance with the High-Velocity Hurricane Zone provisions of the 2014 and 2010 *Florida Building Code—Building* and the 2014 and 2010 *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this evaluation report.

For products falling under Florida Rule 9N-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the master report, reissued November 2018.