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ENVIRONMENTAL STONEWORK'S MANUFACTURED STONE VENEER

CSI Sections:

- 04 71 00 Manufactured Brick Masonry
- 04 73 00 Manufactured Stone Masonry

1.0 RECOGNITION

Environmental Stoneworks Manufactured Stone Veneer has been evaluated for use as a wall covering in compliance with Section 1405.2 of the IBC and Section R703.7 of the IRC over exterior walls of wood studs, cold-formed steel framing or concrete masonry. The adhered manufactured stone masonry veneer (AMSMV) has been evaluated for composition, strength, durability, thermal resistance and installation. The Environmental Stoneworks Manufactured Stone Veneer evaluated in this report is a satisfactory alternative to the following codes and regulations:

- 2018, 2015, and 2012 International Building Code® (IBC)
- 2018, 2015, and 2012 International Residential Code® (IRC)
- 2017 Florida Building Code, Building - attached Supplement
- 2017 Florida Building Code, Residential - attached Supplement

2.0 LIMITATIONS

Use of Environmental Stoneworks Manufactured Stone Veneer recognized in this report is subject to the following limitations:

2.1 “Expansion or control joints used to limit the effect of differential movement of AMSMV supports must be specified by the architect, designer or veneer manufacturer, in that order. Consideration must be given to movement caused by temperature changes, shrinkage, creep and deflection.” [AC51]

2.2 “For installation in accordance with the IBC, supporting wall construction shall be designed to support the weight of

the veneer system. Horizontal framing members, such as lintels and headers, which support AMSMV, must be designed to limit deflection to $1/600$ of the span.” [AC51]

2.3 “In jurisdictions adopting the IRC, where the seismic provisions of Section R301.2.2 apply, the average weight of the wall supporting AMSMV, including the weight of the veneer system shall be determined. When this weight exceeds the applicable limits of IRC Section R301.2.2.2, an engineered design of the wall construction must be performed in accordance with IRC Section R301.1.3.” [AC51]

2.4 When installed on exterior stud walls, the veneer units shall be installed a minimum of 4 inches (102 mm) above the earth, or a minimum of 2 inches (51 mm) above paved areas, or a minimum of 1/2 inch (12 mm) above exterior walking surfaces which are supported by the same foundation that supports the exterior wall in accordance with 2018 IBC Section 1404, 2015 and 2012 IBC Section 1405.10.1.3 or 2018, 2015 and 2012 IRC Section R703.12.1, as applicable.

2.5 Environmental Stoneworks Manufactured Stone Veneer is manufactured in St. George UT, Selinsgrove PA, Orwigsburg PA, North Branch MN, Denver CO, Olathe KS, and Mableton GA.

3.0 PRODUCT USE

3.1 The backing for Environmental Stoneworks’ “adhered veneer shall be of concrete, masonry, steel framing or wood framing.” [Section 1403.4 of the 2018 IBC and Section 1404.4 of the 2015 and 2012 IBC]. The veneer units shall be adhered to cement plaster, concrete, or concrete masonry backings. Lath, lath accessories and fasteners shall be corrosion-resistant, as applicable.

3.2 Environmental Stoneworks Manufactured Stone Veneer shall be installed in accordance with Section 1404.10.1 of the 2018 IBC and Section 1405.10.1 of the 2015 and 2012 IBC, Section R703.12 of the IRC, as applicable, ASTM C1780 and the report holder’s published installation instructions. Where there is a conflict between the documents, the more restrictive shall govern. The manufacturer’s installation instructions shall be available at the jobsite during veneer application.

3.3 Environmental Stoneworks Manufactured Stone Veneer units may be applied over the assemblies described in Table 1 of this report when installed in accordance with the referenced code sections and this report.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This report shall only be reproduced in its entirety.





3.4 Interior Use: The veneer units have a Class A rating in accordance with Section 803.1.2 of the 2018 IBC and Section 803.1.1 of the 2015 and 2012 IBC. The veneer has a flame spread index and smoke-developed index that conforms to Section R302.9 of the IRC when tested in accordance with ASTM E84.

4.0 PRODUCT DESCRIPTION

4.1 Environmental Stoneworks Manufactured Stone Veneer units are manufactured concrete products formed to resemble natural stone or brick in both texture and color. The individual masonry veneer units shall be a minimum of 5/8 inch (15.9 mm) thick and a maximum of 2 5/8 inches (67 mm) thick with an average compressive strength of 2100 psi with no individual specimen having a compressive strength less than 1800 psi. The installed products “average saturated weight shall not exceed 15 pounds per square foot (73 kg/m²)” [AC51]. The recognized veneer styles are listed in Table 2 of this report.

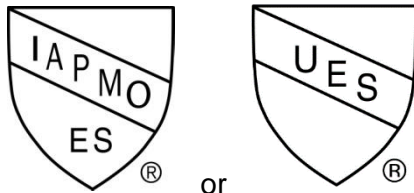
Table 2 – Recognized Veneer Style Names

Bayou Blend, Brick, Canyon Cobble, Chisel Rock, Cobble, Cobble Ledge, Country Squire, Cut Limestone, European Castle, Fieldstone, Flagstone, French Country, Hackett, Limestone, Linville River, Marquis Stone, Mountain Ledge, Mountain Ledge Panel, MW Castle Rock, MW Fieldstone, MW Ledgestone, MW Modular Brick, NE Hackett, Old Country Field, Panel Ledge, ProStack, ProStack Lite, Rancho Piedra, River Rock, Rocky Mountain River Rock, Rubble, Shadow Ledge, Shadow Stone, Southern Ledge, Splitface Fieldstone, Strip Stone, Teton, Tuscan Ledge, Tuscany, Villa, Weather Edge, Weatherface
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4.2 The veneer, has a thermal resistance (R-value) of 0.233 hr.ft²F/Btu per inch (0.0016 Km²/W per mm) when tested in accordance with ASTM C518.

5.0 IDENTIFICATION

Boxes of Environmental Stoneworks Manufactured Stone Veneer are identified with the manufacturer’s name, the pattern/style name, manufacturing date, manufacturing location, and evaluation report number (ER-386). Either Mark of Conformity may be used as shown below:



IAPMO UES ER-386

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with ASTM C1670, and the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), approved June 2018. Test results are from laboratories in compliance with ISO/IEC 17025.

6.2 Manufacturer’s descriptive literature and installation instructions.

6.3 Reports of Thermal Transmission Properties testing in accordance with ASTM C518.

6.4 Report of Impact Tests in accordance TAS 201.

6.5 Report of Cyclic Wind Pressure Loading tests in accordance with TAS 203.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Environmental Stoneworks Manufactured Stone Veneer to assess its conformance to the codes and standards shown in Section 1.0 of this report and serves as documentation of the product certification. The stone veneer is manufactured at the location noted in Section 2.5 of this report under a quality control program with periodic inspection under the surveillance of IAPMO UES.

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For additional information about this evaluation report please visit www.uniform-es.org or email at info@uniform-es.org



Table 1 – Application of Masonry Veneer Units		
Item	Code Section	Notes
1. Cement Plaster	2018 IBC Section 1404.10 (2015 and 2012 IBC Section 1405.10.1); 2018 and 2015 IRC Section R703.7.2 (2012 IRC Section 703.6.2)	½-inch to ¾-inch scratch coat of Type S mortar complying with ASTM C270, scored horizontally in accordance with IBC Section 2512.6.
2. Water Resistive Barrier	2018 IBC Section 1404.10.1.1 (2015 and 2012 IBC Section 1405.10.1.1); 2018 and 2015 IRC Section R703.7.3 (2012 IRC Section R703.6.3)	
3. Flashing	2018 IBC Section 14.04.4, (2015 and 2012 IBC Section 1405.4) and Section 1405.10.1.2; 2018 and 2015 IRC Section R703.4 (2012 IRC Section R703.8) and IRC Section R703.12.2	
4. Weep Screed	2018 IBC Section 14.04.10.1.2 (2015 and 2012 IBC Section 1405.10.1.2); IRC Section R703.12.1 ; and TMS 402-16 and TMS 402-13 Section 12.1.6.2 (TMS 402-11 Section 6.1.6.2, ACI 530-11 Section 6.1.5.2)	
5. Lath and Fasteners	IBC Section 2510.3 (ASTM C926 and ASTM C1063); (2015 IRC Section R703.7.1 and 2012 IRC Section R703.6.1)	For proprietary fasteners, shear and pull out capacities shall be justified to the satisfaction of the code official (authority having jurisdiction).
6. Over Wood Based or Gypsum Sheathing Supported by Steel or Wood Framing	As described in Items 1, 2, 3, 4 and 5 and Notes	Items 1, 2, 3, 4 and 5 with framing spaced at 16 inches on-center maximum, lath shall be 2.5 lb/yd ² self-furring diamond metal lath complying with ASTM C847 or 1.4 lb/yd ² galvanized woven wire mesh complying with ASTM C1032, fastened in accordance with the requirements of ASTM C1063, Section 7.10.2, and Section R703.6.1 of the IRC with fasteners spaced a maximum of 6 inches on-center.
7. Over concrete or concrete masonry	Surfaces shall be prepared in accordance with IBC Section 2510.7 and Section 5.2 of ASTM C926.	Items 1, 3, 4, 5 and 6 except with metal lath complying with ASTM C847; or 1.4 lb/yd ² woven wire plaster base complying with ASTM C1032. The veneer may also be adhered to backings of clean concrete masonry without lath, in accordance with Section 2510.7 of the IBC and Section 5.2 of the ASTM C926.
8. Mortar Application of Veneer Units	2018 and 2015 IBC Section 2103.2.4 (2012 IBC Section 2103.9)	Nominal ½-inch thick setting bed of Type S mortar applied to the back of the veneer units in accordance with Environmental Stonework’s installation instructions.
9. Florida High-Velocity Hurricane Zones (HVHZ)	FBC-Building Sections 1403.8, 2114.2 and 2603.8; FBC-Residential Section R318.4, as applicable. Where the masonry veneer extends below grade, a termite protective treatment shall be applied in accordance with FBC-Building Section 2114.2.	Stone Veneer shall be installed over minimum ¹⁵ / ₃₂ -inch-thick 4-ply Exterior Underlayment Plywood sheathing complying with DOC PS-1 or minimum ½-inch-thick 24/16 Rated Structural I OSB sheathing complying with DOC PS-2, over minimum nominally 2x4 SPF Stud Grade wood studs spaced 16 inches on center. Sheathing shall be fastened to studs with #8-10 x 1 ⁵ / ₈ -inch-long course thread bugle-head drywall screws spaced 6 inches apart at sheathing panel perimeters and 12 inches on center in the sheathing panels field. Lath shall be fastened to the sheathing with 0.120-inch by 1- ¹ / ₄ -inch-long roofing nails spaced 6 inches apart at sheathing panel perimeters and 12 inches on center in the sheathing panels field. Over CMU walls constructed in accordance with the provisions of FBC Chapter 21 for HVHZ the wood or masonry walls, as applicable, shall be designed in accordance with the provisions of the Florida Building code to withstand the design loads applicable to the building location.



FLORIDA SUPPLEMENT

ENVIRONMENTAL STONEWORKS MANUFACTURED STONE VENEER

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CSI Sections:

04 71 00 Manufactured Brick Masonry

04 73 00 Manufactured Stone Masonry

1.0 RECOGNITION

Environmental Stoneworks Manufactured Stone Veneer evaluated in IAPMO UES ER-386 is a satisfactory alternative exterior wall covering in accordance with the following codes and regulations:

- 2017 Florida Building Code, Building (FBC, Building)
- 2017 Florida Building Code, Residential (FBC, Residential)

The wall systems described in Section 2.2 of this supplement, clad with Environmental Stoneworks Manufactured Stone Veneer, comply with the TAS 201 and TAS 203 testing requirements for cyclic wind pressure loading resistance and impact resistance described in Sections 1625 and 1626 of the FBC, Building, for High-Velocity Hurricane Zones.

2.0 LIMITATIONS

Use of Environmental Stoneworks Manufactured Stone Veneer recognized in this report supplement is subject to the following limitations:

2.1 Installation of Environmental Stoneworks Manufactured Stone Veneer shall provide for a clear inspection space in accordance with FBC, Building Sections 1403.8, 2114.2 and 2603.8 or FBC, Residential Section R318.4, as applicable, except, where the masonry veneer extends below grade, a termite protective treatment shall be applied in accordance with FBC-Building Section 2114.2.

2.2 For use in Florida High-Velocity Hurricane Zones, the Manufactured Stone Veneer shall be installed over minimum ¹⁵/₃₂-inch-thick (11.9 mm) 4-ply Exterior Underlayment Plywood sheathing complying with DOC PS 1 or minimum 1/2-inch-thick (12.7 mm) 24/16 Rated Structural 1 OSB sheathing complying with DOC PS-2, over minimum nominally 2x4 SPF Stud Grade wood studs

spaced 16 inches (406 mm) on center and constructed in accordance with the provisions of FBC Chapter 23 for HVHZ. Sheathing shall be fastened to studs with #8-10 x 1⁵/₈-inch-long (41.3 mm) course thread bugle-head drywall screws spaced 6 inches (152 mm) apart at sheathing panel perimeters and 12 inches (305 mm) on center in the sheathing panels field. Lath shall be fastened to the sheathing with 0.120-inch by 1-1/4-inch-long (31.7 mm) roofing nails spaced 6 inches (152 mm) apart at sheathing panel perimeters and 12 inches (305 mm) on center in the sheathing panels field. Alternatively, the Manufactured Stone Veneer may be applied over CMU walls constructed in accordance with the provisions of FBC Chapter 21 for HVHZ, and the manufacturer's published installation instructions. The wood or masonry walls, as applicable, shall be designed in accordance with the provisions of the Florida Building code to withstand the design loads applicable to the building location.

2.3 Verification that the report holder's quality assurance program is audited by a quality assurance entity, approved by the Florida Building Commission (or the building official when the report holder does not possess an approval by the Commission), to provide oversight and determine that the products are being manufactured as described in this evaluation report to establish continual product performance shall be provided for products falling under Florida Rule 9N-3.008.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org