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BEONSTONE PANELS

CSI Sections:

04 20 00 Unit Masonry
04 73 00 Manufactured Stone Masonry

1.0 RECOGNITION

BeonStone Panels recognized in this report have been evaluated for use as a nonstructural mechanically fastened exterior wall covering. The strength, durability, and transverse wind load resistance properties of the BeonStone Panels comply with the intent of the provisions of the following codes and regulations:

- 2021, 2018, and 2015 International Building Code® (IBC)
- 2021, 2018, and 2015 International Residential Code® (IRC)
- 2020 Florida Building Code, Building (FBC, Building) – Supplement attached
- 2020 Florida Building Code, Residential (FBC, Residential) – Supplement attached

2.0 LIMITATIONS

Use of the BeonStone Panels recognized in this report is subject to the following limitations:

2.1 The veneer shall be installed in accordance with this evaluation report, the applicable code, and the manufacturer's published installation instructions. If there are any conflicts between the manufacturer's published installation instructions and this report, the most restrictive governs.

2.2 For installations without foam plastic, Beonstone panels are permitted on either the interior or the exterior side of walls in buildings of Type V-B construction in accordance with the

IBC and to any construction permitted by the IRC, as applicable.

2.3 For installations with foam plastic, Beonstone panels are permitted on the exterior side of exterior walls of buildings of Type V-B construction in accordance with the IBC, and to any construction permitted by the IRC, as applicable, provided the foam plastic is separated from the interior of the building with a thermal barrier complying with IBC Section 2603.4 or IRC Section R316.4.

2.4. Installation is limited to walls with wood framing and solid wood-based structural panel sheathing capable of supporting the imposed loads. Sheathing shall be covered with a water-resistive barrier, as required by the applicable code.

2.5 The supporting wall shall be designed to support the installed weight of the veneer system. In jurisdictions adopting the IBC, the supporting horizontal members shall be designed to limit deflection to $1/240$ of the span of the supporting members at wall openings.

2.6 Where the seismic provisions of IRC Section R301.2.2 apply, the average weight of the wall supporting the veneer system shall be determined. An engineered design of the wall construction shall be performed in accordance with IRC Sections R301.1.3 when the weight exceeds the applicable limits of IRC Section R301.2.2.2.1.

2.7 The BeonStone Panels recognized in this report are produced in Bromont Quebec, Canada, by Deconat, Inc.

3.0 PRODUCT USE

3.1 General: BeonStone Panels are used as a nonstructural, mechanically fastened, exterior wall covering on non-fire-resistance-rated wood-framed walls. The veneer is an alternative to anchored masonry veneer described in IBC Section 1405.6 and IRC Section R703.7.

3.2 Design: BeonStone Panels are limited to installations where the maximum allowable transverse wind load, positive or negative, does not exceed 40 psf (1.92 kPa). The maximum allowable load is increased to 58 psf (2.78 kPa) when 1-inch or 2-inch XPS Extruded Polystyrene Insulation panels are added over OSB sheathing.

3.3 Installation: The BeonStone Panels shall be installed over solid wood-based sheathing (plywood or OSB) attached to wood stud framing. The wood members shall have a minimum specific gravity of 0.42. Sheathing shall be a minimum $7/16$ -inch-thick (11.1 mm) Exposure 1 OSB complying with DOC PS-2 or $15/32$ -inch-thick (12 mm) exterior-grade plywood complying with DOC PS-1.



Sheathing shall be covered with a water-resistive barrier as required by IBC Section 1404.2 or IRC Section R703.2, as applicable. The manufacturer's published installation instructions shall be available on the job site and strictly adhered to at all times during installation.

BeonStone Panels shall be installed using wood screws per Table 1. Screws are installed through the holes at the mounting element. The bottom of each mounting element is installed, 'tucked', behind the veneer unit below. The topmost row of stones shall be secured into sheathing with wood screws after predrilling a $\frac{3}{8}$ -inch hole in the face of the BeonStone.

3.4 Use of XPS: A single layer of 1-inch-thick to 2-inch-thick (25.4 mm to 50.8 mm) Type IV [minimum density 1.45 pcf (23 kg/m³)] Extruded Polystyrene Insulation (XPS) optionally may then be placed over the sheathing. Each BeonStone panel shall then be fastened to the sheathing through the XPS with screws per Table 1. The stones are installed staggered in $\frac{1}{2}$ running bond pattern. Fasteners shall penetrate the OSB sheathing. The fastener size of hex wood screws shall be per Table 1. The starter strip shall be secured to the bottom of the wall using the same screws spaced at 12 inches (305 mm) on center maximum, into the sheathing. The top row of stone shall be secured into sheathing per Table 1 after predrilling a $\frac{3}{16}$ -inch-diameter (4.76 mm) hole in the face of the BeonStone.

4.0 PRODUCT DESCRIPTION

4.1 General: The BeonStone Panels are precast concrete products manufactured to resemble natural stone in both texture and color. Each veneer unit has a plastic and metal mounting element embedded into the stone. The composition of the product includes cement, aggregate, water, admixtures, and color, placed in molds and cured at the plant. The installed product's average weight when saturated shall not exceed 15 pounds per square foot (73.2 kg/m²). The veneer unit thicknesses range from 1.5 inches (38.12 mm) to 2 inches (50.8 mm). Individual veneer pieces are 24 inches (609.6 mm) long and 12 inches (304.8 mm) high. The plastic complies as CC1 approved plastic in accordance with IBC Section 2606.4. The metal is No. 26 gauge galvanized steel. Use of the veneer units is limited to Type V-B non-fire-resistance-rated building construction under the IBC and construction in accordance with the IRC.

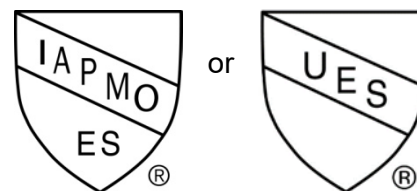
4.2 Extruded Polystyrene (XPS) Foam Plastic Insulation Board: Extruded polystyrene foam plastic insulation board shall be 1 inch (25.4mm) thick or 2 inches (50.8 mm) thick Type IV XPS described as ASTM C578, with a minimum nominal density of 1.45 pcf (23 kg/m³). Labeling and surface burning characteristics shall comply with IRC R316.2 and R316.3 respectively. Surface burning characteristics shall be in accordance with IBC Section 2603.3.

4.3 Interior Use: When tested in accordance with ASTM E84, the BeonStone products produced a flame spread index of Zero and a smoke-developed rating of Zero to qualify as Class A interior finish in accordance with IBC Section 803.1.1.

5.0 IDENTIFICATION

Boxes of BeonStone Panels units are identified with the manufacturer's name (Deconat Inc, Stone) and address, the product name, and the evaluation report number (ER-654).

Either IAPMO UES Mark of Conformity may also be used as shown below:



IAPMO UES ER-654

6.0 SUBSTANTIATING DATA

Data and test reports submitted for this report are from laboratories recognized as complying with ISO/IEC 17025 and the following:

Data in accordance with the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), approved June 2018, Editorially Revised January 2021; manufacturer's descriptive literature and installation instructions; reports of Transverse Load tests in accordance with ASTM E330; reports of Concentrated Load tests in accordance with ASTM E72 Section 13; reports of Mechanical Fasteners in Wood tests in accordance with ASTM D1761; report of surface burning characteristics in accordance with ASTM E84; and reports of Dimensional Tolerance, Thickness, Compressive Strength, and Freeze-Thaw tests based on ASTM C1670, C140, C666, and C39.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on BeonStone Panels to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification. The products are manufactured at the location noted in Section 2.7 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

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

**TABLE 1 - Fastener Size and Configurations**

Configuration	No XPS	1-inch XPS	2-inch XPS
BeOn Stone Fastening to 7/16" OSB Sheathing	#10 x 1.5" hex head wood screw	#10 x 3" hex head wood screw	#10 x 3" hex head wood screw
Starter Strip Attachment	#10 x 1.5" hex head wood screw	#10 x 3" hex head wood screw	#10 x 3" hex head wood screw
Last Row Face Screwed	#10 x 3" hex head wood screw	#10 x 5" hex head wood screw	#10 x 5" hex head wood screw



FLORIDA SUPPLEMENT

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- 2020 Florida Building Code, Building (FBC, Building)
- 2020 Florida Building Code, Residential (FBC, Residential)

2.0 LIMITATIONS

Use of the BeonStone Panels recognized in this report is subject to the following limitations:

2.1 FBC, Building: All provisions of IAPMO UES ER-654 referencing the 2018 IBC shall apply to use under the FBC, Building.

2.2 FBC, Residential: All provisions of IAPMO UES ER-654 referencing the 2018 IRC shall apply to use under the FBC, Residential, along with Section R302 of the FBC, Residential, as applicable.

2.3 This supplement expires concurrently with IAPMO UES ER-654.

3.0 ADDITIONAL REQUIREMENTS

3.1 Evaluation to the high-velocity hurricane zone provisions in Section 1409 of the FBC, Building and Chapter 44 of the FBC, Residential is outside the scope of this report.

3.2 Verification shall be provided that a quality assurance agency audits the manufacturer's quality assurance program and audits the production quality of products, in accordance with Section (5)(d) of Florida Rule 61G20-3.008. The quality assurance agency shall be approved by the Commission (or the building official when the report holder does not possess an approval by the Commission).

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Data in accordance with the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), approved June 2018, Editorially Revised January 2021; manufacturer's descriptive literature and installation instructions; reports of Transverse Load tests in accordance with ASTM E330; reports of Concentrated Load tests in accordance with ASTM E72 Section 13; reports of Mechanical Fasteners in Wood tests in accordance with ASTM D1761; report of surface burning characteristics in accordance with ASTM E84; and reports of Dimensional Tolerance, Thickness, Compressive Strength, and Freeze-Thaw tests based on ASTM C1670, C140, C666, and C39.

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