



NEMO|etc.

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ENGINEER

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EVALUATION REPORT

Boral Stone Products, LLC
2256 Centennial Road
Toledo, OH 43617
(425) 903-5937

Evaluation Report 100378.07.05-R9
FL15047-R5
Date of Issuance: 07/18/2005
Revision 9: 08/13/2019

SCOPE:

This Evaluation Report is issued under **Rule 61G20-3** and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the **6th Edition (2017) Florida Building Code** sections noted herein.

DESCRIPTION: Boral Adhered Masonry Veneer

LABELING: Labeling shall be in accordance with the requirements the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC, LLC requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Evaluation Report number preceded by the words "NEMO|etc. Evaluated" may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 4.

Prepared by:

Robert J.M. Nieminen, P.E.
Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 08/13/2019. This does not serve as an electronically signed document.

CERTIFICATION OF INDEPENDENCE:

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

PANEL WALLS - SIDING EVALUATION:
1. SCOPE:

Product Category: Panel Walls

Sub-Category: Siding – Adhered Masonry Veneer

Compliance Statement: Adhered Masonry Veneer, as produced by Boral Stone Products, LLC, has demonstrated compliance with the following sections of the 6th Edition (2017) Florida Building Code through testing and analysis in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

<u>Section</u>	<u>Property</u>	<u>Standard</u>	<u>Year</u>
1405.10, 2122.1	Various	ACI 530	2013
1405.10	Various	ASCE 5	2013
1405.10	Various	TMS 402	2016
1609.1	Wind Resistance	ASTM E330	2002

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
CTL (TST3847)	ACI 530 / ASCE 5 / TMS 402	187531	04/11/2005
ERD (TST6049)	Wind Resistance	100379.01.06-R1	09/17/2012
ICC-ES (EVL2396)	2012 IBC Compliance	ESR-1364	10/01/2014
QAI (QUA7628)	Quality Control	Inspection Report	01/31/2019

4. PRODUCT DESCRIPTION:

- 4.1 **Cultured Stone[®], ProStone[™] and Modulo[®] Stone** are manufactured, precast, artificial stone veneers that are used as a non-bearing exterior veneer or an interior finish and trim on concrete or masonry walls, stud walls and metal buildings.
- 4.1.1 The veneer units are compliant with ACI 530 / ASCE 5 / TMS 402, have a maximum area of 5 ft² with a maximum dimension of 36 inches, a maximum thickness of 2-5/8 in. and maximum weight of 15 lbs/ft².

5. LIMITATIONS:

- 5.1 This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
- 5.2 This Evaluation Report is not for use in FBC HVHZ jurisdictions.
- 5.3 Unless otherwise noted below, this Evaluation Report is limited to maximum 30 ft height of installation above the noncombustible foundation. Designs in excess of 30 ft shall be established by the Designer of Record and approved by the Authority Having Jurisdiction.
- 5.3.1 A direct-bond application of “Coral Stone” in a Type S mortar setting bed atop concrete or masonry substrate has a maximum design pressure / allowable wind load of -102.2 psf, which includes a 2.5 to 1 margin of safety.
- 5.3.2 Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads.
- 5.4 Direct-application substrates are limited to unsealed, unpainted, clean masonry and concrete. Other substrates, including wood sheathing, exterior wallboard, metal or wood framing, shall include water-resistive barrier per **FBC 2510.6** and metal lath in accordance with **FBC 2510**.
- 5.5 Wall substrates shall comply with the applicable FBC Sections.

6. INSTALLATION:

6.1 **General**

- 6.1.1 Adhered masonry veneer shall be installed in accordance with Boral Stone Products' published installation instructions, subject to the Limitations noted in Section 5 and the detailed information noted herein.
- 6.1.2 The veneer is adhered to the supporting substrate with a ½-inch to ¾-inch thick Type N or S mortar setting bed per **FBC 2103.2.4**.
- 6.1.3 The ambient temperature and that of the veneer must be 40°F or higher at the time of application.

6.2 **Stud Construction Substrate:**

- 6.2.1 Substrates include open studs spaced maximum 16" o.c., wood sheathing backed by studs spaced maximum 16" o.c. or existing exterior wall surfaces of plaster scratch coat, stucco or wood siding backed by wood sheathing with studs spaced maximum 16" o.c.

Wood studs shall have a minimum specific gravity of 0.42.

Steel studs shall be minimum 20 gauge [0.033-inch (0.84 mm)].

- 6.2.2 Studs and/or wood sheathing shall be covered with a water-resistive barrier per **FBC 2510.6**.
- 6.2.3 Weep screeds (per **FBC 2512.1.2**) and code-compliant flashing shall be installed at the bottom of the wall and at all horizontal terminations of the veneer.
- 6.2.4 A 2.5 lb/yd² (1.4 kg/m²) galvanized, diamond mesh metal lath, or a 3.4 lb/yd² (1.8 kg/m²), 3/8-inch-thick rib, paper-backed, galvanized expanded metal lath (**ASTM C847**), or a 18 gauge [0.051-inch (1.3 mm)] galvanized woven wire mesh (**ASTM C1032**) shall be installed in accordance with Boral Stone published requirements atop the water-resistive barrier.

The lath or mesh shall be fastened to each of the wall studs maximum 6" o.c. vertically.

Fasteners for wood studs shall be minimum 0.120-inch diameter with a minimum 3/8" diameter head galvanized nails or galvanized staples of sufficient length for minimum 1-3/8" embedment into the studs.

Fasteners for steel studs shall be corrosion-resistant, self-drilling, self-tapping with a minimum 7/16-inch diameter pancake head of sufficient length for minimum 3/8" penetration through the studs.

- 6.2.5 A ½-inch to ¾-inch scratch coat of Type N or S mortar shall be applied over the lath or mesh and allowed to cure for not less than 48-hours prior to veneer application. The scratch coat shall be moistened prior to application of the mortar setting bed.
- 6.2.6 Apply the mortar setting bed to area not exceeding 10 ft². The veneer is then lightly but firmly tapped into the mortar setting bed to ensure bond while the mortar remains soft and pliable. Alternatively, the veneer may be 'back-buttered' with each unit pressed into place.
The mortar setting bed, whether applied to the scratch coat or in a 'back-butter' fashion, shall be of a thickness and consistency to allow mortar to be squeezed out around all edges of each veneer unit to assure a full bond.
All joints shall be tooled.

6.3 **Concrete and Masonry Substrate:**

- 6.3.1 For direct-bond applications, the substrate shall be unsealed and unpainted, free of dirt, debris or other bond-breaking material.
 - 6.3.1.1 Painted, sealed or dirty concrete or masonry substrates shall be cleaned by sandblasting.
- 6.3.2 A ½-inch to ¾-inch scratch coat of Type N or S mortar shall be applied and allowed to cure for not less than 48-hours prior to veneer application. The scratch coat shall be moistened prior to application of the mortar setting bed.
- 6.3.3 Apply the mortar setting bed to area not exceeding 10 ft². The veneer is then lightly but firmly tapped into the mortar setting bed to ensure bond while the mortar remains soft and pliable. Alternatively, the veneer may be 'back-buttered' with each unit pressed into place.

6.3.3.1 The mortar setting bed, whether applied to the scratch coat or in a 'back-butter' fashion, shall be of a thickness and consistency to allow mortar to be squeezed out around all edges of each veneer unit to assure a full bond.

6.3.4 All joints shall be tooled.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction in order to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Chester, SC

9. QUALITY ASSURANCE ENTITY:

QAI Laboratories (QUA7628); (604) 527-8378; mlansdowne@qai.org

- END OF EVALUATION REPORT -