NEMO|etc.
Certificate of Authorization #32455
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ENGINEER | EVALUATE | TEST | CONSULT | CERTIFY

EVALUATION REPORT

Owens Corning Roofing and Asphalt, LLC
One Owens Corning Parkway
Toledo, OH 43659
(740) 321-6345

Evaluation Report I40510.02.12-R4
FL15216-R4
Date of Issuance: 02/17/2012
Revision 4: 04/19/2018

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 and Florida Building Code, Residential Volume. The products described herein have been evaluated for compliance with the **6th Edition (2017) Florida Building Code** sections noted herein.

DESCRIPTION: RhinoRoof Underlayments

LABELING: Labeling shall be in accordance with the requirements of 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. 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 3.

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 04/19/2018. 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. 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.

ROOFING COMPONENT EVALUATION:

1. SCOPE:

Product Category: Roofing
Sub-Category: Underlayment
Compliance Statement: **RhinoRoof Underlayments**, as produced by **Owens Corning Roofing and Asphalt, LLC**, has demonstrated compliance with the following sections of the **6th Edition (2017) Florida Building Code** through testing in accordance with applicable sections of the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Properties	Standard	Year
1507.1.1, R905.1.1 Exception	Unrolling, Breaking Strength, Pliability	ASTM D226	2009
1507.1.1, R905.1.1 Exception	Tear Strength	ASTM D1970	2015
TAS 110	Pull-through resistance	TAS 117(B)	1995

3. REFERENCES:

Entity	Examination	Reference	Date
ITS (TST1509)	Physical Properties	100539395COQ-006	10/27/2011
ITS (TST1509)	Physical Properties	100539395COQ-002	10/27/2011
ITS (TST1509)	Physical Properties	100539395COQ-006	03/14/2014
PRI (TST5878)	ASTM D1970; Tear strength	OCF-330-02-02	10/03/2017
PRI (TST5878)	TAS 117(B); Pull-through	OCF-422-02-01	04/03/2018
ITS (QUA1673)	Quality Control	Service Confirmation	09/30/2017

4. PRODUCT DESCRIPTION:

4.1 **RhinoRoof U20** is a multilayered polymer woven coated synthetic roof underlayment available in 42-inch wide rolls, and can be produced in various other sizes; meets FBC 1507.1.1 & R905.1.1 (Exception).

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 Fire Classification is not part of this Evaluation Report; refer to current Approved Roofing Materials Directory or test report from accredited testing agency for fire ratings of this product.

5.4 **RhinoRoof Underlayments** may be used with any prepared roof cover where the product is specifically referenced within FBC approval documents. If not listed, a request may be made to the Authority Having Jurisdiction for approval based on this evaluation combined with supporting data for the prepared roof covering.

5.5 **Allowable Roof Covers**:

TABLE 1: ROOF COVER OPTIONS

Underlayment	Asphalt Shingles	Nail-On Tile	Foam-On Tile	Metal	Wood Shakes & Shingles	Slate or Simulated Slate
RhinoRoof U20	Yes	No	No	Yes	Yes	No

5.6 **Exposure Limitations:**

RhinoRoof U20 shall not be left exposed for longer than **30-days** after installation.

6. INSTALLATION:

6.1 **RhinoRoof Underlayments** shall be installed in accordance with **Owens Corning Roofing and Asphalt, LLC** published installation instructions subject to the Limitations set forth in Section 5 herein and the specifics noted below.

6.2 Re-fasten any loose decking panels, and check for protruding nail heads. Sweep the substrate thoroughly to remove any dust and debris prior to application.

6.3 RhinoRoof U20:

6.3.1 Shall be installed in compliance with the requirements for **ASTM D226, Type I or II** underlayment in **FBC Table 1507.1.1 or R905.1.1** for the type of prepared roof covering to be installed, taking into account the wider sheet-width.

6.3.2 Fasteners:

For exposure ≤ 24 hours, corrosion resistant fasteners may be 1-inch roofing nails with a 3/8-inch diameter head, minimum 1-inch diameter plastic or metal cap nails or FBC HVHZ nails & 1-5/8" diameter tin caps (with the rough edge facing up). The use of staples is prohibited.

For exposure > 24 hours up to maximum 30 days, corrosion resistant fasteners shall be minimum 1-inch diameter plastic or metal cap nails or FBC HVHZ nails & 1-5/8" diameter tin caps (with the rough edge facing up). The use of staples is prohibited.

6.3.2.1 Code Reference: The Exception statement in FBC 1507.1.1 and FBC R905.1.1 states: *"…except metal cap nails shall be required where the ultimate design wind speed, V_{ult}, equals or exceeds 150 mph."*

Owens Corning Roofing and Asphalt, LLC has furnished data to permit the use of 1-inch diameter plastic cap nails in lieu of metal cap nails for these applications, when the **RhinoRoof U20** underlayment is installed beneath mechanically fastened prepared roof covers referenced in FBC Table 1507.1.1 or R905.1.1.

6.3.3 Single Layer; Roof Slope > 4:12:

End (vertical) laps shall be minimum 6-inches and side (horizontal) laps shall be minimum 4-inches. Refer to Owens Corning Roofing and Asphalt, LLC recommendations for alternate lap configurations and/or the use of sealant under certain conditions.

For exposure ≤ 24 hours, use of every-other fastening location printed on the surface is acceptable. For exposure > 24 hours up to maximum 30-days, use of every fastening location printed on the surface is required.

When batten systems are to be installed atop the underlayment, the underlayment need only be preliminarily attached pending attachment of the battens on the same day. Battens shall not be positioned over cap nails. If this occurs, remove the cap nail and patch the hole in accordance with Owens Corning Roofing and Asphalt, LLC published instructions.

6.3.4 Double Layer; 2:12 < Roof Slope < 4:12:

End (vertical) laps shall be minimum 12-inches and side (horizontal) laps shall be minimum half-sheet-width plus 1-inch.

Double layer application; begin by fastening a half-width plus 1-inch starter strip along the eaves. Place a full-width sheet over the starter, completely overlapping the starter course. Continue as noted in 6.3.3, but maintaining minimum half-width plus 1-inch side (horizontal) laps, resulting in a double-layer application.

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:

Qingdao, China

9. QUALITY ASSURANCE ENTITY:

Intertek Testing Services NA Inc. – QUA1673; (608) 836-4400

- END OF EVALUATION REPORT -