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ENGINEER

EVALUATE

TEST

CONSULT

EVALUATION REPORT

Sentry Building Innovations

1209 Orange Street, Wilmington,
New Castle, DE 19801
(843) 735-1773

Evaluation Report 13925.02.17-1-R4

FL21895-R4

Date of Issuance: 02/16/2017

Revision 4: 12/17/2021

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 **7th Edition (2020) Florida Building Code** sections noted herein.

DESCRIPTION: Roofnado™ Synthetic Roofing Underlayments

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and FBC 1507.1.1.

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

ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words **“NEMO 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 6.

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 12/17/2021. 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.

ROOFING COMPONENT EVALUATION:
1. SCOPE:
Product Category: Roofing

Sub-Category: Underlayment

Compliance Statement: Roofnado™ Synthetic Roofing Underlayments, as produced by Sentry Building Innovations, have demonstrated compliance with the following sections of the 7th Edition (2020) 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
1504.3.1	Wind resistance	UL 1897	2015
1507.1.1, 1507.2.4, 1507.2.9.2 / R905.1.1, R905.2.8.2	Material standard	ASTM D1970	2015
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tear strength	ASTM D4533	2015
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tensile strength	ASTM D5035	2011
1507.1.1.1(5) / R905.1.1.1(5)	Liquid water transmission	ASTM D4869	2016
1507.3.3 / R905.3.3	Material standard	FRSA/TRI, Sixth Edition	2018
TAS 110	Accelerated Weathering	ASTM D4798	2011

3. REFERENCES:

Entity	Examination	Reference	Date
NEMO	Evaluation Report	1m-ACT-19-FBCER.08.19-2-R2	11/19/2020
NEMO (TST6049)	UL 1897	4L-ACT-18-002.07.18-2	07/05/2018
NEMO (TST6049)	AC152	4S-ACT-18-001.10.18-1B	10/08/2018
NEMO (TST6049)	FRSA/TRI Manual	4S-ACT-18-001.11.18-2B	11/12/2018
QAI (TST9808)	ASTM D1970	RJ5365P-3	04/26/2017
QAI (TST9808)	ASTM D1970 (adhesion)	RJ5365P-4	06/29/2017
QAI (TST9808)	ASTM D1970	RJ7717-3	06/11/2020
QAI (TST9808)	ASTM D1970 (adhesion)	RJ7717-4	06/11/2020
QAI (QUA7628)	Traceability/Inspections	Service Confirmation	08/12/2019
QAI (QUA7628)	Quality Assurance	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

	PRODUCT	MATERIAL STANDARD	PLANT(S)	DESCRIPTION
4.1	Roofnado™ AnchorDeck™	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	India	Synthetic polymer-based scrim-reinforced underlayment, consisting of woven polyolefin base with a layer of nonwoven polyolefin sheet and a polymer coating on the back side, with a nominal unit weight of 2.25 lbs/square.
4.2	Roofnado™ StormTread™	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	India	Synthetic polymer-based scrim-reinforced underlayment, consisting of woven polyolefin base with a layer of nonwoven polyolefin sheet and a polymer coating on the back side, with a nominal unit weight of 3.80 lbs/square.
4.3	Roofnado™ ShingleLock™	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	India	Synthetic polymer-based scrim-reinforced underlayment, consisting of woven polyolefin base with a layer of nonwoven polyolefin sheet and a polymer coating on the back side, with a nominal unit weight of 3.80 lbs/square.

	PRODUCT	MATERIAL STANDARD	PLANT(S)	DESCRIPTION
4.4	Roofnado™ LapLock™ PSU	ASTM D1970 (Table 1) ¹ & FRSA/TRI 09-18	United Arab Emirates	Self-adhering underlayment consisting of a synthetic top-facer, polymer modified bitumen and a release liner, available in rolls 36-inch x 67-ft with a nominal 60-mil thickness.
4.5	Roofnado™ AnchorDeck™ PSU	ASTM D1970 (Table 1) ¹	United Arab Emirates	Self-adhering underlayment consisting of a synthetic top-facer, rubberized adhesive and release liner, available in rolls 36-inch x 67-ft with a nominal 40-mil thickness.

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 High Velocity Hurricane Zone jurisdictions (i.e., Broward and Miami-Dade Counties).
- 5.3 This Evaluation Report pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- 5.4 This Evaluation Report does not include evaluation of fire classification. Refer to **FBC 1505** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.
- 5.5 **Roofnado™ Synthetic Roofing 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.

5.6 Allowable roof covers:

TABLE 1: ROOF COVER OPTIONS								
FBC NON-HVHZ:	1507.2	1507.3		1507.4 & 1507.5		1507.7	1507.8 & 1507.9	
Underlayment	Asphalt Shingles	Clay and Concrete Tile		Metal		Slate or Slate-Type Shingles	Wood	
		Mechanical Attach	Adhesive-Set	Panels	Shingles		Shingles	Shakes
Roofnado™ AnchorDeck™	Yes	No	No	Yes (residential)	Yes (residential)	Yes	No	
Roofnado™ StormTread™	Yes	No	No	Yes	Yes	Yes	No	
Roofnado™ ShingleLock™	Yes	No	No	Yes	Yes	Yes	No	
Roofnado™ LapLock™ PSU	Yes	Yes	Yes (See 5.6.1)	Yes	Yes	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	
Roofnado™ AnchorDeck™ PSU	Yes	No	No	Yes	Yes	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	

¹ Agreement between purchaser and seller, as set forth in Section 4.3, Note 1 of ASTM D1970-15, should be established as to slip resistance for Roofnado™ LapLock™ PSU and Roofnado™ AnchorDeck™ PSU.

5.6.1 Adhesive-set tile is limited to use of following underlayment / tile adhesive combinations.

TABLE 1A: ALLOWABLE UNDERLAYMENT / TILE ADHESIVE COMBINATIONS ²		
Underlayment	Adhesive	Florida Product Approval
Roofnado™ LapLock™ PSU	ICP Adhesives “Polyset® AH-160”	FL6332

5.7 Allowable Substrates:

TABLE 2: SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS				
Underlayment	Application	Substrates (designed to meet wind loads for project)		
		Type	Primer	Material(s)
Roofnado™ LapLock™ PSU	self-adhering	Deck / sheathing	(Optional) ASTM D41	plywood or OSB
		Base sheet	None	ASTM D226, Type II felt
Roofnado™ AnchorDeck™ PSU	self-adhering	Deck / sheathing	None	plywood or OSB

5.8 Attachment Limitations:

5.8.1 For use under mechanically attached NON-TILE prepared roof coverings, attachment shall be in accordance with the manufacturer’s installation instructions, but – for mechanically attached underlayments or base sheets - not less than **FBC 1507.1.1** or **R905.1.1**.

5.8.2 For use under tile roof systems, attachment shall be in accordance with the manufacturer’s installation instructions, but not less than Section 5.8.3 herein.

5.8.3 Wind Resistance for Underlayment Systems in Tile Roof Applications:

The following wind uplift limitations apply to underlayment systems that are not prescriptive in the **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition. The Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per **FBC 1504.9** has already been applied).

5.8.3.1 Direct-to-Deck:

The maximum design pressure for the selected assembly shall meet or exceed that required under **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, Appendix A, Table 1A or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**.

#1 Maximum Design Pressure = -97.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Primer: (Optional) ASTM D41

Underlayment: Roofnado™ LapLock™ PSU, self-adhered and back-nailed 12-inch o.c.

² Refer to Tile Manufacturer’s or Adhesive Manufacturer’s Florida Product Approval for Overturning Moment Resistance Performance.

5.9 Exposure Limitations:

TABLE 3: EXPOSURE LIMITATIONS		
Underlayment	Prepared Roof Cover Installation Type	Maximum Exposure (days)
Roofnado™ AnchorDeck™, Roofnado™ StormTread™, Roofnado™ ShingleLock™ or Roofnado™ AnchorDeck™ PSU	Mechanically attached	30
Roofnado™ LapLock™ PSU	Adhesive-set tile	90
	Mechanically attached	90

5.10 Tile Slippage Limitations: When loading roof tiles on the underlayment in direct-deck tile roof assemblies, the maximum roof slope shall be as follows. These slope limitations can only be exceeded by using battens during loading of the roof tiles.

TABLE 4: TILE SLIPPAGE LIMITATIONS FOR DIRECT-DECK TILE INSTALLATIONS			
Underlayment	Tile Profile	Staging Method	Maximum Slope
Roofnado™ LapLock™ PSU	Flat or Lugged	Max. 10-tile stack	4:12

6. INSTALLATION:

- 6.1 **Roofnado™ Synthetic Roofing Underlayments** shall be installed in accordance with the manufacturer’s 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 Roofnado™ AnchorDeck™, Roofnado™ StormTread™ or Roofnado™ ShingleLock™:

- 6.3.1 Shall be installed in compliance with requirements for a synthetic underlayment in **FBC 1507.1.1.1(2, Exception), 1507.1.1.1(3, Exception) or 1507.1.1.1(5)** or **FBC Residential R905.1.1.1(2, Exception), R905.1.1.1(3, Exception) or R905.1.1.1(5)** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.
- 6.3.2 **Fasteners:**
Minimum fasteners shall be corrosion resistant, ring-shank cap nails shall be as set forth in **FBC 1507.1.1.1 or 1507.1.1.3 or FBC Residential R905.1.1.1 or R905.1.1.3.**

6.4 Roofnado™ LapLock™ PSU:

- 6.4.1 **Non-Tile Applications:**
Shall be installed in compliance with requirements for an approved self-adhering underlayment (ASTM D1970) in **FBC 1507.1.1.1 or 1507.1.1.3 or FBC Residential R905.1.1.1 or R905.1.1.3** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions.
When installed over a mechanically attached base sheet of FBC Approved ASTM D226, Type II felt, the base sheet shall be fastened in accordance with **FBC 1507.1.1 or R905.1.1.**
- 6.4.2 **Tile Applications:**
Shall be installed in compliance with the requirements for Self-Adhered Membrane set forth in **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual, Sixth Edition** and the manufacturer’s installation instructions.
Refer to Section 5.8.3 herein for attachment limitations.
Refer to Table 4 herein for tile staging limitations.

6.5 Roofnado™ AnchorDeck™ PSU:**6.5.1 Non-Tile Applications:**

Shall be installed in compliance with requirements for an approved self-adhering underlayment (ASTM D1970) in **FBC 1507.1.1.1** or **1507.1.1.3** or **FBC Residential R905.1.1.1** or **R905.1.1.3** for the type of prepared roof covering to be installed, and the manufacturer's installation instructions.

7. BUILDING PERMIT REQUIREMENTS:

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

8. MANUFACTURING PLANTS:

Contact the named QA entity for manufacturing facilities covered by **F.A.C. Rule 61G20-3** QA requirements. Refer to Section 4 herein for products and production locations having met codified material standards.

8. QUALITY ASSURANCE ENTITY:

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

- END OF EVALUATION REPORT -