NEMO|etc.
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ENGINEER **TEST** **CONSULT**

P.E. EVALUATION REPORT (PEER)

DuPont de Nemours, Inc.
200 Larkin Center
1605 Joseph Drive
Midland, MI 48674
(813) 597-6126

PEER-DDN-001.B.R2
FL37886-R3 (HVHZ)
Date of Issuance: 10/02/2023
Revision 2: 04/23/2024

SCOPE:
This P.E. Evaluation Report (henceforth 'PEER') 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 products described herein have been evaluated for compliance with the **8th Edition (2023) Florida Building Code, High Velocity Hurricane Zone** sections noted herein.

DESCRIPTION: Tyvek® Synthetic Roof Underlayments (HVHZ)

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and **FBC 1518.2**.

CONTINUED COMPLIANCE: This PEER 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 PEERs 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 PEER relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words "NEMO P.E. Evaluated" may be displayed in advertising literature. If any portion of the PEER is displayed, then it shall be done in its entirety.

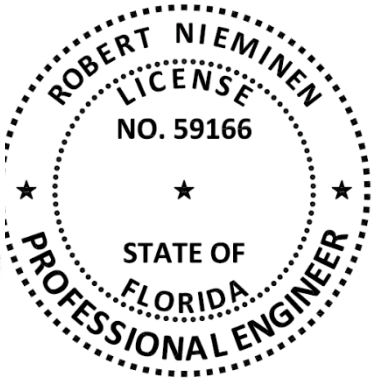
INSPECTION: Upon request, a copy of this entire PEER shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This PEER consists of pages 1 through 6.

Prepared by:

Digitally signed by Robert Nieminen
Date: 2024.04.23 '13:04:53 -04'00

This item has been digitally signed and sealed by Robert Nieminen, P.E.
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.
Robert Nieminen, Florida P.E. 59166, FBC ANE1983
NEMO ETC, LLC, Florida CA #32455



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 PEERs 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 PEER, 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
Product Approval Method: Method 1, Option D – Codified Material, Evaluation by Engineer
Compliance Statement: **Tyvek Synthetic Roof Underlayments**, as produced by **Dupont de Nemours**, have demonstrated compliance with the following sections of the **8th Edition (2023) Florida Building Code, High Velocity Hurricane Zone** through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations of Use set forth herein.

2. STANDARDS:

SECTION	PROPERTY	STANDARD
TAS 110, 1518.2	Material standard	ASTM D8257
TAS 110, 1518.2	Material standard	ASTM D1970
TAS 110	Accelerated Weathering	ASTM D4798

3. REFERENCES:

ENTITY	EXAMINATION	REFERENCE	DATE
NEMO	PEER	PEER-ACT-001.B.R4	04/22/2024
NEMO	Traceability	SPE	04/04/2024
ICC NTA (QUA3504)	Quality Assurance	Inspection Report (ML1)	05/25/2023
ICC NTA (QUA3504)	Quality Assurance	Inspection Report (ML2)	07/20/2023
ICC NTA (QUA3504)	Quality Assurance	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

TABLE 1: EVALUATED UNDERLAYMENTS

PRODUCT	MATERIAL STANDARD	PLANT(S)[1]	DESCRIPTION
Tyvek® Roof Protector™	ASTM D8257[2]	ML1	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.
Tyvek® Protec™ 120	ASTM D8257[2]	ML1	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.
Tyvek® Protec™ 200	ASTM D8257[2]	ML1	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.
Tyvek® Protec™ 160	ASTM D8257[2]	ML1	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 3.40 lbs/square.
Tyvek® Protec™ PSU	ASTM D1970[3]	ML2	Nominal 50-mil, self-adhering, multi-layered roof underlayment composed of a synthetic top facer bonded to a polymer modified bituminous layer and release film

[1] *Building officials, Designers of Record and other Authorities Having Jurisdiction may contact info@nemoetc.com to obtain manufacturing location information for products evaluated herein.*
[2] *Agreement between purchaser and seller, as set forth in Section 4.3, Note 1 of ASTM D8257-20, should be established as to slip resistance.*
[3] *Agreement between purchaser and seller, as set forth in Section 4.3, Note 1 of ASTM D1970-17, should be established as to slip resistance.*

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 PEER, or previous versions thereof, is/was used for permitting or design guidance. PEERs are not to be construed as representing any attributes not specifically listed, nor are PEERs to be construed as an endorsement of the subject, or a recommendation for its use. There is no warranty by NEMO ETC, LLC or Robert Nieminen, P.E., express or implied, as to any finding or other matter in this PEER, or as to any product covered by the PEER.

5.2 This PEER is exclusively for use in FBC High Velocity Hurricane Zone jurisdictions, as defined in FBC Chapter 2 (Broward and Miami-Dade Counties).

5.3 This PEER 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 PEER does not include evaluation of fire classification. Refer to **FBC HVHZ 1516** 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 **Tyvek Synthetic Roof 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 PEER combined with supporting data for the prepared roof covering.

5.6 **Allowable Roof Covers:**

TABLE 2: ROOF COVER OPTIONS

FBC HVHZ:	*RAS 115, 1518.2.1*	*RAS 118, 119 & 120*		*RAS 133, 1518.2.1*	*1518.2.1*	*RAS 130, 1518.10*
UNDERLAYMENT	ASPHALT SHINGLES	CLAY AND CONCRETE TILE		METAL PANELS OR SHINGLES	SLATE OR SLATE-TYPE SHINGLES	WOOD SHINGLES OR SHAKES
		MECH. ATTACH	ADHESIVE-SET			
Tyvek® Roof Protector™	Yes	No	No	Yes (residential)	Yes	Yes
Tyvek® Protec™ 120	Yes	No	No	Yes (residential)	Yes	Yes
Tyvek® Protec™ 200	Yes	No	No	Yes	Yes	Yes
Tyvek® Protec™ 160	Yes	No	No	Yes	Yes	Yes
Tyvek® Protec™ PSU	Yes	No	No	Yes	Yes	Yes (per RAS 130)

5.6.1 In addition to the codified roof cover options noted above, allowable roof covers include synthetic or composite shingles, slate or shakes holding current Florida HVHZ Product Approval or Miami-Dade NOA.

5.7 **Allowable Substrates:**

TABLE 3: ALLOWABLE SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS

UNDERLAYMENT	APPLICATION	SUBSTRATES (DESIGNED TO MEET CODE)		
		TYPE	PRIMER	MATERIAL(S)
Tyvek® Protec™ PSU	self-adhering	Deck / sheathing	(Optional) ASTM D41	Plywood
		Base Sheet	None	ASTM D226, Type II felt

5.8 **Attachment Limitations:**

5.8.1 Refer to Section 6 for codified prescriptive systems.

5.8.2 Refer to Tables 4A and 4B for underlayment systems which have documented compliance with Section 7 of TAS 103. 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 has already been applied).

TABLE 4A: ALLOWABLE DESIGN PRESSURES, ADHERED, DIRECT-TO-DECK UNDERLAYMENT SYSTEMS
***Nails shall be corrosion resistant and be of sufficient length to penetrate through the sheathing by min. 3/16-inch**

SYSTEM NO.	DECK	PRIMER	JOINT TREATMENT	BASE PLY	CAP PLY	MDP (PSF)
UDL-1.	**Plywood**, APA rated sheathing, 40/20, Exposure 1, PS1, 19/32 category	(Optional) ASTM D41	None	None	Tyvek® Protec™ PSU, self-adhered and back-nailed using 12 ga. x 3/8-inch head diameter annular ring shank roofing nails* and 1-5/8-inch diameter tin caps, max. 12-inch o.c.	-97.5

TABLE 4B: ALLOWABLE DESIGN PRESSURES, MECHANICALLY ATTACHED, MULTI-PLY UNDERLAYMENT SYSTEMS
***Nails shall be corrosion resistant and be of sufficient length to penetrate through the sheathing by min. 3/16-inch**

SYSTEM NO.	DECK	BASE SHEET		BASE PLY	CAP PLY	MDP (PSF)
		TYPE	ATTACH			
UDL-1.	**Plywood**, APA rated sheathing, 32/16, Exposure 1, PS1, 15/32 category	FBC HVHZ Approved ASTM D226, Type II felt	12 ga. x 3/8-inch head diameter annular ring shank roofing nails* and 1-5/8-inch diameter tin caps; 6-inch o.c. at the 4-inch wide side laps and 12-inch o.c. at two (2) equally spaced center rows.	None	Tyvek® Protec™ PSU, self-adhered and back-nailed using 12 ga. x 3/8-inch head diameter annular ring shank roofing nails* and 1-5/8-inch diameter tin caps, max. 12-inch o.c.	-45.0

5.9 **Exposure Limitations:**

TABLE 4: EXPOSURE LIMITATIONS

UNDERLAYMENT	PREPARED ROOF COVER INSTALLATION TYPE	MAXIMUM EXPOSURE (DAYS)
Tyvek® Roof Protector™ or Tyvek® Protec™ 120	Mechanically attached per Table 2	90
Tyvek® Protec™ 200 or Tyvek® Protec™ 160	Mechanically attached per Table 2	180
Tyvek® Protec™ PSU	Mechanically attached per Table 2	180

5.10 All components in the roof assembly shall have quality assurance audit in accordance with **F.A.C.** **Rule 61G20-3**. Refer to the Product Approval of the component manufacturer for components mentioned herein that are produced by a Product Manufacturer other than the report holder on Page 1 of this PEER.

6. INSTALLATION:

6.1 **Tyvek Synthetic Roof Underlayments** shall be installed in accordance with **Dupont de Nemours** installation instructions subject to the Limitations of Use herein and the specifics noted below.

6.1.1 Consult Dupont de Nemours requirements for back-nailing at pitch of 2:12 or greater.

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, and prime the substrate (if applicable).

6.3 Refer to Section 6.4 for underlayments having prescriptive codified minimum attachment or Tables 4A and 4B for underlayment systems having maximum design pressures established in accordance with Section 7 of TAS 103.

6.4 Underlayment Assemblies with Prescriptive Minimum Attachment for use in NON-TILE applications:

6.4.1

CODE REFERENCE:	**1518.2.1, Option 1:** Underlayment adhered to deck
DECK DESCRIPTION:	Code-minimum wood deck to the satisfaction of the Authority Having Jurisdiction
UNDERLAYMENT:	**Tyvek® Protec™ PSU** self-adhered in accordance with FBC Section 1518.2.1(1) and back-nailed max. 12-inch o.c. using FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5).
SURFACING:	FBC HVHZ Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles, subject to the allowable roof covers in Table 2 herein.

6.4.2

CODE REFERENCE:	**1518.2.1, Option 2:** Self-adhering strips to deck-joints followed by underlayment mechanically attached to deck
DECK DESCRIPTION:	Code-minimum wood deck to the satisfaction of the Authority Having Jurisdiction
SECONDARY WATER BARRIER:	Min. 3 ¾-inch wide strips of **Tyvek® Protec™ PSU** or other FBC HVHZ Approved joint-strip product self-adhered over joints of the roof deck prior to installation of subsequent layer(s) in accordance with FBC Section 1507.1.1.1(2) or R905.1.1.1(2). Do not overlap end-joints or T-joints. All end-joints and T-joints shall be butted firmly side by side, flush with each other but not overlapped.
UNDERLAYMENT:	**Tyvek® Roof Protector™, Tyvek® Protec™ 120, Tyvek® Protec™ 200 or Tyvek® Protec™ 160** in accordance with FBC HVHZ Table 1518.2.1, with a minimum 4-inch side lap and 6-inch end lap, mechanically fastened to deck
FASTENING:	FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5), grid pattern of 12-inches between the overlaps and 6-inch spacing at the overlaps, in accordance with FBC HVHZ Table 1518.2.1.
SURFACING:	FBC HVHZ Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles or wood shakes or shingles subject to the allowable roof covers in Table 2 herein.

6.4.3

CODE REFERENCE:	**1518.2.1, Option 3:** Two-layer underlayment mechanically fastened to deck
DECK DESCRIPTION:	Code-minimum wood deck to the satisfaction of the Authority Having Jurisdiction
UNDERLAYMENT:	Two (2) layers of **Tyvek® Roof Protector™, Tyvek® Protec™ 120, Tyvek® Protec™ 200 or Tyvek® Protec™ 160** in accordance with FBC HVHZ 1518.2.1(3).
FASTENING:	FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5) in accordance with FBC HVHZ 1518.2.1(3).
SURFACING:	FBC HVHZ Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles, subject to the allowable roof covers in Table 2 herein.

6.4.4	**CODE REFERENCE:**	**1518.2.1, Option 1 combined with Option 2 or 3:** Optional self-adhering strips to deck-joints followed by base sheet mechanically fastened to deck followed by underlayment adhered to base sheet
	DECK DESCRIPTION:	Code-minimum wood deck to the satisfaction of the Authority Having Jurisdiction
	SECONDARY WATER BARRIER:	(Optional) Min. 3 ¾-inch wide strips of **Tyvek® Protec™ PSU** or other FBC HVHZ Approved joint-strip product self-adhered over joints of the plywood roof deck prior to installation of subsequent layer(s) in accordance with FBC HVHZ 1518.2.1(2). Do not overlap end-joints or T-joints. All end-joints and T-joints shall be butted firmly side by side, flush with each other but not overlapped.
	BASE SHEET:	One (1) or two (2) layer(s) of **Tyvek® Roof Protector™, Tyvek® Protec™ 120, Tyvek® Protec™ 200 or Tyvek® Protec™ 160** or FBC HVHZ Approved ASTM D226, Type II felt, in accordance with FBC HVHZ Table 1518.2.1, with a minimum 4-inch side lap and 6-inch end lap, mechanically fastened to deck.
	FASTENING:	FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5), grid pattern of 12-inches between the overlaps and 6-inch spacing at the overlaps, in accordance with FBC HVHZ Table 1518.2.1.
	UNDERLAYMENT:	**Tyvek® Protec™ PSU** self-adhered in accordance with FBC Section 1518.2.1(1) and back-nailed max. 12-inch o.c. using FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5).
	SURFACING:	FBC HVHZ Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles, subject to the allowable roof covers in Table 2 herein.

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:

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.

9. QUALITY ASSURANCE ENTITY:

ICC-NTA (QUA3504), (574) 773-7975, vbrown@icc-nta.org

- END OF PEER -