



**NEMO|etc.**

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ENGINEER

EVALUATE

TEST

CONSULT

**P.E. EVALUATION REPORT (PEER)**

**APOC, sub of Gardner Asphalt Corp.**

4161 E. 7<sup>th</sup> Avenue  
Tampa, FL 33605  
**(813) 248-2101**

**PEER-GG-001.B.R4**

**FL26482-R8 (HVHZ)**

Date of Issuance: 06/19/2019

**Revision 4: 10/11/2023**

**SCOPE:**

This P.E. Evaluation Report (henceforth 'PEER') is issued under **F.A.C. 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 **8<sup>th</sup> Edition (2023) Florida Building Code, High Velocity Hurricane Zone [sections noted herein](#).**

**DESCRIPTION: Gardner® Roof Underlayments (HVHZ)**

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

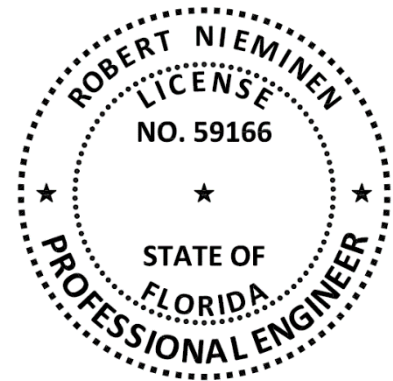
**CONTINUED COMPLIANCE:** This PEER is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our PEERs by the named client constitutes agreement to notify 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 5.

**Prepared by:**



**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:** Gardner® Roof Underlayments, as produced by Gardner Asphalt Corp., have demonstrated compliance with the following sections of the 8<sup>th</sup> 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	Material standard	TAS 103

**3. REFERENCES:**

ENTITY	EXAMINATION	REFERENCE	DATE
Miami-Dade (CER1592)	HVHZ Certification	22-1221.05	03/09/2023
NEMO	Traceability	FBC Cross-Listing	12/10/2020
PRI (TST5878)	TAS 103	GGI-196-02-01	07/26/2017
PRI (TST5878)	ASTM D1623, TAS 103	GGI-201-02-01	01/26/2018
PRI (TST5878)	ASTM D903, D1970	GGI-211-02-01	06/06/2018
PRI (TST5878)	ASTM D1623, TAS 103	GGI-202-02-01	08/09/2018
PRI (TST5878)	ASTM D1623, D4798	397T0018	10/16/2020
PRI (TST5878)	ASTM D1623, D4798	397T0018.R1	05/28/2021
UL, LLC. (QUA9625)	Quality Assurance	Service Confirmation	02/12/2020
UL, LLC. (QUA9625)	Quality Assurance	Florida BCIS	Current

**4. PRODUCT DESCRIPTION:**

TABLE 1: EVALUATED UNDERLAYMENTS			
PRODUCT	MATERIAL STANDARD	PLANT(S)	DESCRIPTION
Weather-Armor® FT <sup>3</sup> Tile Underlayment	TAS 103	Springville, AL	nominal 60-mil thick, self-adhering membrane of elastic polymers, bitumen and polyester and glass reinforcement
Eagle-Armor by Apoc	TAS 103	Springville, AL	nominal 60-mil thick, self-adhering membrane of elastic polymers, bitumen and polyester and glass reinforcement
TriBuilt Fleece Tile Underlayment	TAS 103	Springville, AL	nominal 60-mil thick, self-adhering membrane of elastic polymers, bitumen and polyester and glass reinforcement

**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 only, 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 **Gardner® 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 evaluation combined with supporting data for the prepared roof covering.
- 5.6 Allowable Roof Covers:

TABLE 2: ROOF COVER OPTIONS						
<u>FBC HVHZ:</u>	<i>RAS 115, 1518.2.1</i>	<i>RAS 118, 119 &amp; 120</i>		<i>RAS 133, 1518.2.1</i>	<i>1518.2.1</i>	<i>RAS 130, 1518.10</i>
UNDERLAYMENT	ASPHALT SHINGLES	CLAY AND CONCRETE TILE		METAL	SLATE OR SLATE-TYPE SHINGLES	WOOD SHINGLES OR SHAKES
		MECHANICAL ATTACH	ADHESIVE-SET			
Weather-Armor® FT <sup>3</sup> Tile Underlayment	Yes	Yes	Yes <a href="#">(Table 2A)</a>	Yes	Yes	Yes (per RAS 130)
Eagle-Armor by Apoc	Yes	Yes	Yes <a href="#">(Table 2A)</a>	Yes	Yes	Yes (per RAS 130)
TriBuilt Fleece Tile Underlayment	Yes	Yes	Yes <a href="#">(Table 2A)</a>	Yes	Yes	Yes (per RAS 130)

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

TABLE 2A: ALLOWABLE UNDERLAYMENT / TILE-ADHESIVE COMBINATIONS <sup>1</sup>		
UNDERLAYMENT	ADHESIVE	<a href="#">HVHZ PRODUCT APPROVAL</a>
Weather-Armor® FT3 Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment	DAP “Touch ‘n Seal StormBond Roof Tile Adhesive”	NOA 21-0928.04
	Dupont “Tile Bond™ Roof Tile Adhesive”	FL22525 and NOA 22-0614.05
	ICP Adhesives “Polyset® AH-160”	NOA 22-0614.10

- 5.7 Allowable Substrates:

TABLE 3: SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS	
UNDERLAYMENT	SUBSTRATES
Weather-Armor® FT3 Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment	ASTM D226 felt
	plywood
	Structural concrete*

\*Note: minimum 73°F ambient application temperature for structural concrete

<sup>1</sup> Refer to Tile Manufacturer’s Florida HVHZ Product Approval or NOA for Attachment Resistance Expressed as a Moment Performance.

5.8 Attachment Limitations:

5.8.1 Refer to [Section 6](#) for codified prescriptive systems.

5.8.2 Refer to Table 4 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). No extrapolation or rational analysis is permitted for assemblies marked with an asterisk\*.

TABLE 4: ALLOWABLE DESIGN PRESSURES, DIRECT-TO-DECK UNDERLAYMENT						
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	None	None	None	Weather-Armor® FT³ Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment, self-adhered and back-nailed with FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5) max. 12-inch o.c.	-127.5*

5.9 Exposure Limitations:

TABLE 5: EXPOSURE LIMITATIONS		
UNDERLAYMENT	PREPARED ROOF COVER INSTALLATION TYPE	MAXIMUM EXPOSURE (DAYS)
Weather-Armor® FT3 Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment	Adhesive-set tile roof system	180
	Mechanically attached	180

5.10 Tile Slippage Limitations: When loading roof tiles on the underlayment, the maximum roof pitch shall be as follows. These pitch limitations can only be exceeded by using battens or loading boards during loading of the roof tiles.

TABLE 6: TILE SLIPPAGE LIMITATIONS FOR DIRECT-DECK TILE INSTALLATIONS			
UNDERLAYMENT	TILE PROFILE	STAGING METHOD	MAXIMUM PITCH
Weather-Armor® FT3 Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment	Flat or Lugged	Max. 10-tile stack	6:12

**6. INSTALLATION:**

6.1 **Gardner® Roof Underlayments** shall be installed in accordance with **APOC, sub of Gardner Asphalt Corp.** published installation requirements subject to the [Limitations of Use](#) herein and the specifics noted below.

6.1.1 Consult Gardner® Asphalt Corp. 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 attachment or [Table 4](#) for underlayment systems having maximum design pressures, determined in accordance with Section 7 of [TAS 103](#).

6.4 **Assemblies with Prescriptive Minimum Attachment:**

6.4.1	DECK TYPE 1:	Wood, Non-insulated
	DECK DESCRIPTION:	Min. 19/32-inch plywood or wood plank
	SYSTEM TYPE E-2:	Optional self-adhering strips to plywood joints; base sheet mechanically fastened to deck; underlayment adhered to base sheet
	SECONDARY WATER BARRIER:	(Optional) Min. 3¾-inch wide strips of <b>Weather-Armor® FT³ Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment</b> 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:	FBC HVHZ Approved, ASTM D226, Type II felt or ASTM D4869, Type III or IV felt in accordance with FBC HVHZ Table 1518.2.1.
	FASTENERS:	FBC HVHZ Approved nails and tin caps (FBC HVHZ 1517.5)
	FASTENING:	Grid pattern of 12-inches between the overlaps, with 6-inch spacing at the overlaps, in accordance with FBC HVHZ Table 1518.2.1.
	CAP PLY:	<b>Weather-Armor® FT³ Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment</b> , self-adhered in accordance with published instructions and back-nailed (if applicable) in accordance with applicable Roofing Application Standard.
	SURFACING:	Refer to <a href="#">Table 2</a> . Refer to <a href="#">Table 6</a> for tile staggering limitations.

6.4.2	DECK TYPE 1:	Wood, Non-Insulated
	DECK DESCRIPTION:	Min. 19/32-inch plywood
	SYSTEM TYPE F:	Underlayment adhered to deck
	UNDERLAYMENT:	<b>Weather-Armor® FT³ Tile Underlayment, Eagle-Armor by Apoc or TriBuilt Fleece Tile Underlayment</b> , self-adhered in accordance with FBC HVHZ 1518.2.1(1).
	SURFACING:	FBC HVHZ Approved asphalt shingles, metal roof panels or metal shingles, slate or slate type shingles.

**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.

**9. QUALITY ASSURANCE ENTITY:**

[UL, LLC – QUA9625](#): (360) 817-5512; [bsai.inspections@ul.com](mailto:bsai.inspections@ul.com)

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