



**NEMO|etc.**

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ENGINEER

EVALUATE

TEST

CONSULT

**EVALUATION REPORT BY FLORIDA P.E.**

**Petersen Aluminum Corp.**  
102 Northpoint Parkway, Building 106  
Acworth, GA 30102  
**(800) 272-4482**

**Evaluation Report 3m-CCW-22-FBCER.04.22**  
**FL41144**

**Date of Issuance: 04/18/2022**

**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 products described herein have evaluated for compliance with the **7<sup>th</sup> Edition (2020) Florida Building Code** sections noted herein.

**DESCRIPTION: PAC-CLAD Roof 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.

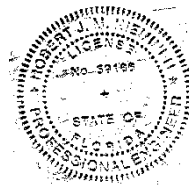
**ADVERTISEMENT:** The Florida Product Approval Number (FL#) preceded by the words "NEMO P.E. Evaluated" may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

**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 04/18/2022. 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

**Product Approval Method:** Method 1, Option D – Codified Material, Evaluation by Engineer

**Compliance Statement:** **PAC-CLAD Roof Underlayments**, as produced by **Petersen Aluminum Corp.**, have demonstrated compliance with the following sections of the **7<sup>th</sup> Edition (2020) Florida Building Code** through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

**2. STANDARDS:**

SECTION	PROPERTY	STANDARD	YEAR
1507.1.1, 1507.2.4, 1507.2.9.2 / R905.1.1, R905.2.8.2	Material standard	ASTM D1970	2015
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
Nieminen (ANE1983)	Evaluation Report	C39180.12.11-R6	08-13-2020
NEMO	Traceability	FBC Cross-Listing	04-06-2022
UL, LLC. (QUA9625)	Quality Control	TGDY.R14293 Listing	04-08-2022
UL, LLC. (QUA9625)	Quality Control	Service Confirmation	04-15-2022

**4. PRODUCT DESCRIPTION:**

PRODUCT	MATERIAL STANDARD	PLANT(S)	DESCRIPTION
PAC-CLAD HT	ASTM D1970 and FRSA/TRI (09-18)	Terrell, TX	self-adhering, coated-polyolefin-composite film surfaced, rubberized asphalt roof underlayment

**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 **PAC-CLAD 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 (AHJ) 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									
UNDERLAYMENT	ASPHALT SHINGLES (1507.2)	CLAY AND CONCRETE TILE (1507.3)		METAL		SLATE OR SLATE-TYPE SHINGLES (1507.7)	WOOD		PHOTOVOLTAIC SHINGLES (1507.17)
		MECHANICAL ATTACH	ADHESIVE-SET	PANELS (1507.4)	SHINGLES (1507.5)		SHINGLES (1507.8)	SHAKES (1507.9)	
PAC-CLAD HT	Yes	Yes	No	Yes	Yes	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.1 / R905.1.1.1)

5.7 Allowable Substrates:

TABLE 2: SUBSTRATE OPTIONS		
UNDERLAYMENT	PRIMER	SUBSTRATES
PAC-CLAD HT	(Optional) CCW-702 or CCW CAV-GRIP	plywood, OSB or ASTM D226 felt

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 – for mechanically attached base sheets - not less than:

- FRSA/TRI *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, Sixth Edition, Appendix A, Table 1 (for Two-Ply Asphalt Applied Hot Mop Underlayment) or
- Section 5.8.3 herein (for other underlayment systems).

5.8.3 Wind Resistance for Underlayment Systems 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 = **-45.0 psf**:

Deck: APA rated, min. 19/32 in. plywood sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.

Primer: (Optional) CCW 702 or CCW CAV-GRIP

Underlayment: PAC-CLAD HT, self-adhered with side- and end-laps in accordance with Petersen Aluminum Corp. published installation instructions.

5.9 Exposure Limitations:

TABLE 3: EXPOSURE LIMITATIONS	
UNDERLAYMENT	MAXIMUM EXPOSURE (DAYS)
PAC-CLAD HT	180

5.10 Tile Slippage Limitations:

When loading roof tiles on the underlayment in direct-deck tile assemblies, tile shall be staged atop a fastened batten or toe-board, regardless of slope.

## 6. INSTALLATION:

- 6.1 **PAC-CLAD Roof Underlayments** shall be installed in accordance with **Petersen Aluminum Corp.** 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, and prime the substrate (if applicable) with **CCW-702** or **CCW CAV-GRIP** Primer. Priming is required when temperatures are below 40°F.

## 6.3 PAC-CLAD HT:

### 6.3.1 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, FBC Approved ASTM D226 felt, the felt shall be fastened in accordance with **FBC 1507.1.1** or **R905.1.1**.

### 6.3.2 Mechanically Attached Tile Applications:

Shall be installed in compliance with requirements for a Self-Adhered Membrane in the **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, and the manufacturer's installation instructions.

Refer to Section 5.8.2 for attachment limitations.

Refer to Section 5.10 for tile staging limitations.

## 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 under **F.A.C. Rule 61G20-3 QA** requirements. Refer to Section 4 herein for products & 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)

- END OF EVALUATION REPORT -