



NEMO | etc.

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ENGINEER

EVALUATE

TEST

CONSULT

P.E. EVALUATION REPORT (PEER)

Malarkey Roofing Products, Inc.

3131 N. Columbia Blvd.
Portland, OR 97217
(503) 283-1191

PEER-MLK-002.A.R1

FL36890-R1 (NON-HVHZ)

Date of Issuance: 12/19/2020

Revision 1: 12/06/2023

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 intent of the 8th Edition (2023) Florida Building Code [sections noted herein](#).

DESCRIPTION: Highlander® and Ecoasis® Asphalt Roof Shingles (NON-HVHZ)

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and **FBC 1507.2.7.1 / R905.2.6.1**

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.

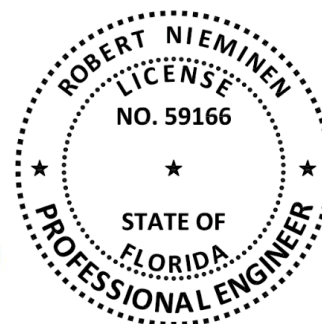
Prepared by:

Digitally signed by
Robert Nieminen
Date: 2023.12.15
'08:36:10 -05'00

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.

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ROOFING SYSTEMS EVALUATION:
1. SCOPE:

Product Category: Roofing
Sub-Category: Asphalt Shingles
Product Approval Method: Method 2, Option B – Non-Codified Material, Evaluation by Engineer
Compliance Statement: Highlander® and Ecoasis® Asphalt Roof Shingles, as produced by Malarkey Roofing Products, Inc., have demonstrated compliance with the intent of the following sections of the 8th Edition (2023) Florida Building Code. Compliance is subject to the [Installation Requirements](#) and [Limitations of Use](#) set forth herein.

2. STANDARDS:

<u>SECTION</u>	<u>PROPERTY</u>
104.11	Alternative materials
1504.6	Accelerated Weathering
1507.2.7.1, R905.2.6.1	Wind Resistance
1523.6.5.1	Wind Driven Rain

3. REFERENCES:

<u>ENTITY</u>	<u>EXAMINATION</u>	<u>REFERENCE</u>	<u>DATE</u>
ITS (TST1509)	ASTM G155, ASTM D7158 (CA)	103519806COQ-001C	03/06/2019
ITS (TST1509)	ASTM G155, ASTM D7158 (OK)	103773129COQ-001E	07/16/2019
ITS (TST1509)	ASTM G155, ASTM D7158 (OR)	103773129COQ-001F	07/16/2019
PRI (TST5878)	TAS 100 (CA)	MRP-142-02-01	02/04/2019
PRI (TST5878)	ASTM D3161 (OR)	MRP-143-02-01	05/09/2019
PRI (TST5878)	TAS 100 (OR)	MRP-145-02-01	05/09/2019
PRI (TST5878)	TAS 100 (OK)	MRP-153-02-01	05/09/2019
PRI (TST5878)	ASTM D3161 (OK)	MRP-154-02-01	05/09/2019
ITS (QUA1673)	Quality Control	Audit Manual	11/27/2019
ITS (QUA1673)	Quality Control	ITS Listing	Current
ITS (QUA1673)	Quality Control	Florida BCIS	Current

4. PRODUCT DESCRIPTION:
TABLE 1: EVALUATED ASPHALT SHINGLES

TYPE	PRODUCT	DESCRIPTION	MATERIAL STANDARD*			PLANT(s)
			PROPERTY	METHOD	RESULT	
Asphalt Shingles	Highlander® or Ecoasis®	Laminated, polymer modified asphalt roof shingle surfaced with mineral or ceramic granules	Loss on heating	ASTM D228	max. 1.5%	South Gate, CA
			Sliding on heating		max. 1/16-inch	
			Tear strength	ASTM D1922/D228	min. 3.75 lbs	
			Penetration, asphalt	ASTM D5	min. 15	
			Softening point, asphalt	ASTM D36	190 ≤ °F ≤ 320	
			Fastener pull-through resistance	ASTM D3462	@73°F: min. 30 lbf @32°F: min. 40 lbf	
			Pliability at 73°F	ASTM D3462	4 of 5 pass	
			Granule embedment	ASTM D4977	max. 1 g	
			Weather resistance	ASTM G155, Cycle 1, 2,000 hrs	no cracks, erosion or exposed felt	
			Breaking strength, after weathering	ASTM D146, Section 13	min. 80% retained strength	
			Wind driven rain	TAS 100	pass	

*Test options per FBC 104.11.2

TABLE 1 (CONTINUED): EVALUATED ASPHALT SHINGLES

Type	Product	Description	Material Standard*			Plant(s)
			Property	Method	Result	
Asphalt Shingles	Highlander® AR	Laminated, polymer modified asphalt roof shingle surfaced with mineral and copper granules	Loss on heating	ASTM D228	max. 1.5%	Oklahoma City, OK Portland, OR
			Sliding on heating		max. 1/16-inch	
			Tear strength	ASTM D1922/D228	min. 3.75 lbs	
			Penetration, asphalt	ASTM D5	min. 15	
			Softening point, asphalt	ASTM D36	190 ≤ °F ≤ 320	
			Fastener pull-through resistance	ASTM D3462	@73°F: min. 30 lbf @32°F: min. 40 lbf	
			Pliability at 73°F	ASTM D3462	4 of 5 pass	
			Granule embedment	ASTM D4977	max. 1 g	
			Weather resistance	ASTM G155, Cycle 1, 2,000 hrs	no cracks, erosion or exposed felt	
			Breaking strength, after weathering	ASTM D146, Section 13	min. 80% retained strength	
			Wind driven rain	TAS 100	pass	

*Test options per FBC 104.11.2

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 not 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 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 **Wind Classification:** Refer to [Section 6](#) for installation requirements to meet wind classifications.

TABLE 2: WIND CLASSIFICATIONS, ASPHALT SHINGLES	
PRODUCT	FBC TABLE 1507.2.7.1 OR R905.2.6.1
Highlander®, Highlander® AR or Ecoasis®	ASTM D3161(F) & ASTM D7158(H)

- 5.5.1 **Classification by ASTM D7158:**
ASTM D7158, Class H applies only to exposure category B or C and a building height of 60 feet or less. Calculations by a qualified design professional are required for conditions outside these limitations. Contact the shingle manufacturer for data specific to each shingle.
- 5.6 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 that are produced by a Product Manufacturer other than the report holder on [Page 1](#) of this PEER.

6. INSTALLATION:

6.1 GENERAL:

- 6.1.1 Roof deck, slope, underlayment and fasteners shall comply with FBC 1507.2 / R905.2 and the shingle manufacturer's minimum requirements.
- 6.1.2 Underlayment shall be acceptable to **Malarkey Roofing Products, Inc.** and shall hold current Florida Statewide Product Approval, or be Locally Approved per [Rule 61G20-3](#), per FBC Sections 1507.2.3 or R905.2.3.

6.2 ASPHALT SHINGLES:

- 6.2.1 Installation of **Highlander®** and **Ecoasis®** Asphalt Roof Shingles shall comply with the Malarkey Roofing Products, Inc. current published instructions, using minimum four (4) nails per shingle in accordance with FBC 1507.2.7 or R905.2.6.

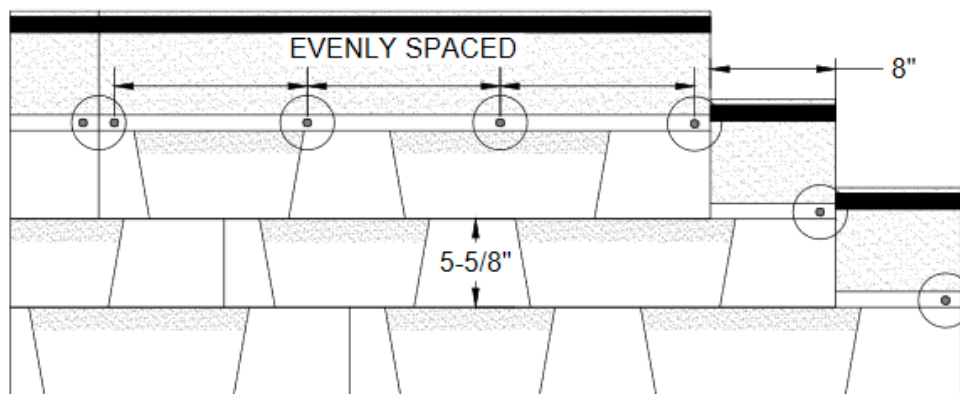


Figure 1: Four (4) Nail Pattern (minimum)

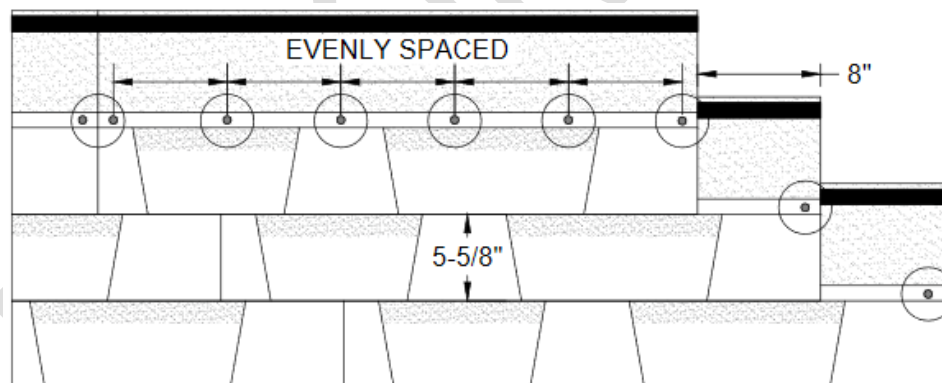


Figure 2: Six (6) Nail Pattern (slope > 21:12)

- 6.2.2 Fasteners shall be in accordance with manufacturer's published requirements, but not less than FBC 1507.2.6 or R905.2.5. Staples are not permitted.
- 6.2.3 Certain conditions (slope or wind warranty) may require fastening in excess of the minimum requirements herein and/or hand-sealing of the shingles. Contact **Malarkey Roofing Products, Inc.** for details.

7. LABELING:

- 7.1 Labeling shall be in accordance with the requirements the Accredited Quality Assurance Agency noted herein.
- 7.2 Asphalt shingle wrappers shall indicate compliance with one of the required classifications detailed in **FBC Table 1507.2.7.1 / R905.2.6.1**.
- 7.3 The **Highlander® and Ecoasis® Asphalt Roof Shingles** evaluated herein are defined on the packaging as follows:
✓ Florida Statewide Product Approval **FL36890**

8. BUILDING PERMIT REQUIREMENTS:

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

9. 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.

10. QUALITY ASSURANCE ENTITY:

[Intertek Testing Services NA, Inc.](#) – QUA1673; (312) 906-7779; maura.norlander@intertek.com

- END OF PEER -