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EVALUATION REPORT

CertainTeed Corporation
20 Moores Road
Malvern, PA 19355

Evaluation Report 8690.04.15-R1
FL17670-R1
Date of Issuance: 04/23/2015
Revision 1: 12/07/2016

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 and Florida Building Code, Residential Volume. The products described herein have been evaluated for compliance with the **5th Edition (2014) Florida Building Code, non-HVHZ and HVHZ** sections noted herein.

DESCRIPTION: CertainTeed Apollo II™ and Apollo Tile II™

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and **FBC 1507.17** and **FBC HVHZ 1518.11.3**.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. if the product changes or the referenced Quality Assurance documentation changes. Trinity|ERD requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

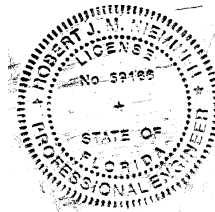
ADVERTISEMENT: The Evaluation Report number preceded by the words "Trinity|ERD Evaluated" may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

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 12/07/2016. This does not serve as an electronically signed document. Signed, sealed hardcopies have been transmitted to the Product Approval Administrator and to the named client

CERTIFICATION OF INDEPENDENCE:

1. Trinity|ERD 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. Trinity|ERD 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 Trinity|ERD 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: Roofing Accessories that are an Integral Part of the Roofing System

Compliance Statement: **Apollo II** and **Apollo Tile II**, as produced by **CertainTeed Corporation**, have demonstrated compliance with the following sections of the **Florida Building Code** and **Florida Building Code, Residential Volume** 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:

| <u>Section</u> | <u>Property</u> | <u>Standard</u> | <u>Year</u> |
|---------------------------------|------------------------|-----------------|-------------|
| 1504.6, 2614.2 | Accelerated Weathering | ASTM G155 | 2005 |
| 1507.17.1, 1518.11.1, R905.16.1 | Physical Properties | UL 1703 | 2002 |
| 1507.17.3, R905.16.3 | Wind Resistance | ASTM D3161 | 2009 |
| 1518.11.3, R905.16.3 | Wind Resistance | TAS 107 | 1995 |
| 1523.6.5 | Wind Driven Rain | TAS 100 | 1995 |
| 2606.4 | Physical Properties | ASTM D635 | 2006 |
| 2606.4 | Physical Properties | ASTM D1929 | 2001 |

3. REFERENCES:

| <u>Entity</u> | <u>Examination</u> | <u>Reference</u> | <u>Date</u> |
|-----------------------------|----------------------|----------------------|-------------|
| CSA International (CER3718) | UL 1703 | Certificate 2593410 | 10/27/2014 |
| ITS (TST1509) | ASTM D3161 | 100964492COQ-002B | 02/12/2013 |
| PRI (TST5878) | ASTM G155 | CTC-151-02-01 | 08/01/2013 |
| PRI (TST5878) | ASTM D1929 | CTC-170-02-01 | 08/01/2013 |
| PRI (TST5878) | ASTM D635 | CTC-171-02-01 | 08/01/2013 |
| PRI (TST5878) | TAS 100 | CTC-172-02-01 | 08/01/2013 |
| PRI (TST5878) | TAS 100 | CTC-185-02-01 | 08/01/2013 |
| PRI (TST5878) | ASTM D3161 / TAS 107 | CTC-184-02-01 | 10/17/2013 |
| PRI (TST5878) | ASTM D3161 / TAS 107 | CTC-219-02-01 | 06/13/2014 |
| ITS/WH (QUA1673) | Quality Control | Service Confirmation | 11/15/2016 |

4. PRODUCT DESCRIPTION:

4.1 **Apollo II™** is a roof-integrated solar module using monocrystalline silicon technology designed for integration into asphalt shingle roof systems. Each panel measures 46-3/4 inch long x 17-5/8 inch wide x 1-1/8 inch thick.

4.2 **Apollo Tile II™** is a roof-integrated solar module using monocrystalline silicon technology designed for integration into tile roofing systems. Each panel measures 47 inch long x 17-1/4 inch wide x 1-1/4 inch thick.

5. LIMITATIONS:

5.1 This is a building code evaluation. Neither Trinity|ERD 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 Fire Classification is not part of this Evaluation Report; refer to current Approved Roofing Materials Directory for fire ratings of this product.

5.3 Electrical and solar performance is not part of this Evaluation Report; consult **CertainTeed Corporation** for electrical and solar performance information.

5.4 **Wind Classification:**

5.4.1 **Apollo II™** and **Apollo Tile II™** are tested in accordance with **FBC Tables 1507.2.7.1** and **R905.2.6.1** to **ASTM D3161, Class F** and **FBC 1518.11.3** to **TAS 107**, indicating acceptable use in all wind zones up to $V_{asd} = 150$ mph ($V_{ult} = 194$ mph) at **maximum 33 ft mean roof height**. Refer to Section 6 for installation requirements to meet this wind rating.

5.5 All products in the roof assembly shall have quality assurance audits in accordance with the Florida Building Code and F.A.C. Rule 61G20-3.

5.5.1 This evaluation does not include other roof system components or their installation (e.g., underlayment, asphalt shingles, tile, etc.). Consult the asphalt-shingle or tile roofing manufacturer's Statewide or Local Product Approval.

6. INSTALLATION:

6.1 **Apollo II™** and **Apollo Tile II™** shall be installed by a **CertainTeed Credentialed Solar Installer** in accordance with **CertainTeed Corporation** published installation instructions subject to the specifics herein.

6.2 Roof decks shall be attached in accordance with the applicable Building Code. In HVHZ, the minimum attachment shall be 8d annular ring shank nails spaced 6-inch o.c.

6.3 Underlayment shall be approved by CertainTeed Corporation for use with **Apollo II™** and **Apollo Tile II™**, and shall be installed in accordance with the underlayment manufacturer's Florida Statewide or Local Product Approval.

6.4 **Apollo II™ Attachment:**

- ✓ The deck shall be minimum 15/32-inch plywood (non-HVHZ or re-roofing) or minimum 19/32-inch plywood (HVHZ) or equivalent acceptable to the Authority Having Jurisdiction.
- ✓ A polymer starter strip is fastened with #6 x min. 2" wood screws spaced 6-inch o.c..
- ✓ The downslope edge of the first-course panel is fitted into the starter strip.
- ✓ The upslope edge of the first-course panel is fitted with three (3) wind clips, equally spaced across the panel length, and fastened with #6 x min. 2" wood screws.
- ✓ Subsequent courses are positioned upslope and slid downward until the downslope edge lip engages the wind clips from the previous course.
- ✓ The upslope edge of the final-course panel is fitted with five (5) wind clips, equally spaced across the panel length, and fastened with #6 x min. 2" wood screws.

6.5 **Apollo Tile II™ Attachment (direct-deck or over battens):**

- ✓ The deck shall be minimum 15/32-inch plywood (non-HVHZ or re-roofing) or minimum 19/32-inch plywood (HVHZ) or equivalent acceptable to the Authority Having Jurisdiction.
- ✓ The bottom flange of an aluminum Z-channel starter strip is held in place by the head of the lower-course tile and its fastenings.
- ✓ The underside of the first-course panel is fitted into the top flange of the starter strip.
- ✓ The head of the first-course panel is fastened with five (5) #9 x min. 2½" wood screws located at molded holes.
- ✓ Subsequent courses are positioned upslope and slid downward until the underside engages the head of the previous course.
- ✓ The head of the final-course panel is fastened with five (5) #9 x min. 2½" wood screws located at molded holes.
- ✓ Sidelaps are interlocked with the tile.
- ✓ Minimum 4-inch headlap.



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:

San Jose, CA

9. QUALITY ASSURANCE ENTITY:

Intertek Testing Services NA Inc. – ETL/Warnock Hersey – QUA1673; (604) 520-3321

- END OF EVALUATION REPORT -