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EVALUATION REPORT

Applied Solar, Inc.
 514 Via Del La Valle, Ste 200
 Solana Beach, CA 92075

Evaluation Report O12900.05.09-R1
FL11970
Date of Issuance: 06/22/2009

SCOPE:

This Evaluation Report is issued under Rule 9B-72 and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Jeremy DeWitt, P.E. for use of the product under the Florida Building Code. The product described herein has been designed to comply with the 2007 Florida Building Code.

DESCRIPTION: Solar Roofing Tiles

LABELING: Each unit shall bear labeling in accordance with the requirements the Accredited Quality Assurance Agency noted herein.

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 Jeremy DeWitt, P.E. if the product changes or the referenced Quality Assurance documentation changes.

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:



The facsimile seal appearing was authorized by Jeremy T. DeWitt, P.E. on 06/22/2009. 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.

Jeremy T. DeWitt, P.E.
 Florida Registration No. 68032, Florida DCA ANE7539

CERTIFICATION OF INDEPENDENCE:

1. Exterior Research & Design, LLC. d/b/a 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. Exterior Research & Design, LLC. d/b/a Trinity|ERD is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Jeremy T. DeWitt, 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. Jeremy T. DeWitt, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

ROOFING COMPONENT EVALUATION:

1. SCOPE:

Product Category: Roofing
Sub-Category: Products Introduced as a Result of New Technology
Compliance Statement: Solar Roofing Tiles, as produced by Applied Solar, have demonstrated compliance with the following sections of the 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:

<u>Section</u>	<u>Property</u>	<u>Standard</u>	<u>Year</u>
1523.6.5.2.2	Overturning Moment	TAS 101	1995
1523.6.5.2	Attachment Requirements	RAS 127	1995
2612.2	Self-Ignition Temperature (HVHZ)	ASTM D1929	2000
2612.2	Smoke Density (HVHZ)	ASTM D2843	2004
2612.2	Rate of Burning (HVHZ)	ASTM D635	2003
2612.2	Xenon Exposure (HVHZ)	ASTM G155	2004
2612.2	Xenon Exposure (HVHZ)	ASTM D2565	2000
2612.2	Tensile Strength (HVHZ)	ASTM D638	2003
2612.2	Impact (HVHZ)	ASTM D256	2003
1516.1	Fire Testing of Roof Coverings	ASTM E108	2004

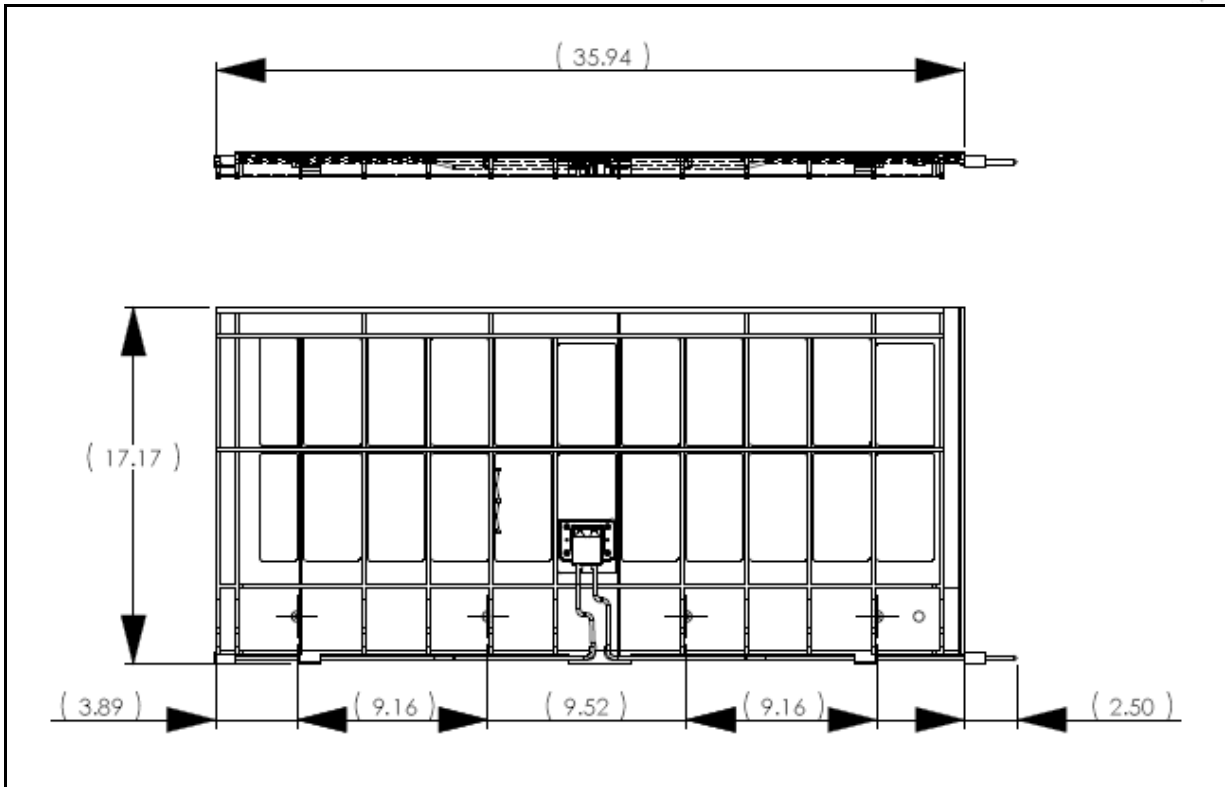
3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
PRI (TST 5878)	TAS 101	OEC-001-02-01	10/21/2008
Trinity (TST 1633)	Xenon Exposure / Tensile / Impact	O11920.05.09	05/01/2009
TEL (TST 4317)	Rate of Burning	TEL 01560077	01/12/2009
TEL (TST 4317)	Self-Ignition Temperature	TEL 01560076	01/19/2009
TEL (TST 4317)	Smoke Density	TEL 01560077	01/13/2009
CSA Intl (CER 3718)	UL 1703	1920446	11/13/2007
CSA Intl (CER 3718)	Quality Control	Client Directive	01/02/2009
Intertek (TST 1585)	Fire Testing of Roof Coverings	3138498-02	02/07/2008

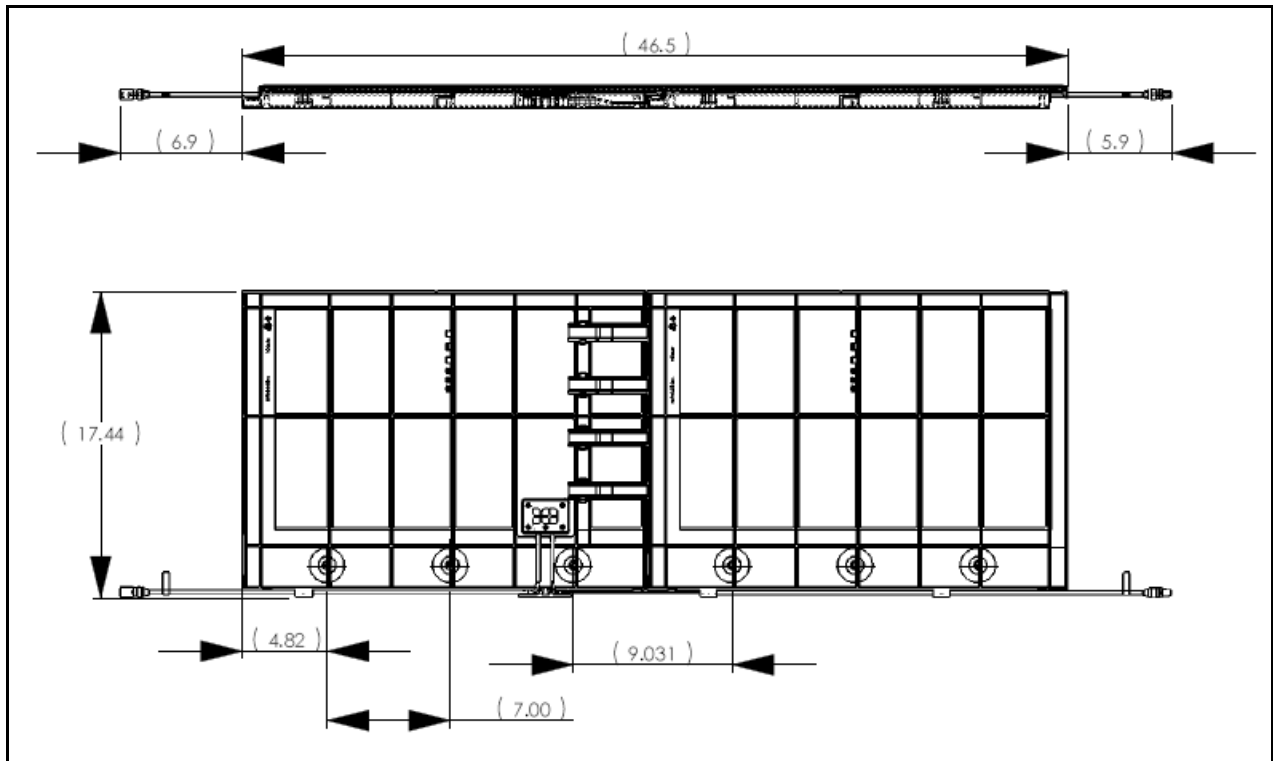
4. PRODUCT DESCRIPTION:

4.1 Applied Solar Roofing Tiles are high efficiency crystalline photovoltaic cells encapsulated in multi-layered lamination of glass, EVA, and Tedlar with polycarbonate frame.

Property	Rating @ Standard Test Conditions (STC)		
	OE-34	OE-48	OE-50
Maximum System Voltage	600 Vdc	600 Vdc	600 Vdc
Operating Voltage	6.07 Vdc	6.55 Vdc	6.55 Vdc
Open Circuit Voltage	6.07 Vdc	8.61Vdc	8.61Vdc
Short Circuit Amps	7.76 A	7.95 A	7.94 A
Current at Rated Operating Amps	7.09 A	7.33 A	7.4 A
Nominal Power (Watts)	34 W	48 W	50 W



Drawing 1: OE-34 (dimensions in inches)



Drawing 2: OE-48 / OE-50 (dimensions in inches)

5. LIMITATIONS:

- 5.1 This Evaluation Report does not purport to address the electrical wiring and/or electrical performance of the tile.
- 5.2 Refer to FBC Section 1505.2 or current Approved Roofing Materials Directory for fire rating of this product.
- 5.3 The minimum roof slope shall be 3:12.
- 5.4 Installation shall comply with manufacturer’s current published installation instructions, the requirements of Polyfoam Products for this particular roof tile and RAS 120 for HVHZ.
- 5.5 Tile may only be set using Polyfoam Polypro AH160 adhesive. Attachment for wind load resistance shall be in accordance with RAS 127 using the data outlined in tables 2 & 3.
- 5.5.1 RAS 127 is the required method of analysis in all jurisdictions. Solar Tiles are to be evaluated as an Uplift Based System in accordance with RAS 127.
- 5.5.2 Field tiles using Polypro® AH160 are limited to projects having a Characteristic Resistance Load (F') not greater than the following Maximum values reported in Table 2.

Table 2: Solar Tiles in Polypro® AH160 – Minimum Characteristic Resistance Load (F')		
Model	Adhesive Patty Placement	Characteristic Resistance Load (lbf)
OE-34	Four 11" long x 6" wide patties weighing 41 grams each. See Section 6 herein.	184
OE-48 / OE-50		184

Table 3: Solar Tile Data			
Model	Weight (lbs)	Length (ft)	Width (ft)
OE-34	11.2	1.4	2.9
OE-48 / OE-50	13.2	1.4	3.8

- 5.6 Data in Table 2 relates to installation over a '30/90' underlayment system, as detailed in the FRSA/TRI 07320 and RAS 120. Alternate underlayment systems include those having met the requirements of the ICC-ES AC152, and meeting the requirements for the local jurisdiction (HVHZ).
- 5.7 All products in the roof assembly shall have quality assurance audit in accordance with the Florida Building Code and F.A.C. Rule 9B-72.

6. INSTALLATION:

6.1 Solar Roofing Tiles may be adhesive-set only. Installation shall comply with manufacturer's current published instructions and those of Polyfoam Products for this specific roof tile.

SLOPE RANGE:	3:12 or greater
DECK:	Non-HVHZ: Min. 15/32" plywood or wood plank HVHZ: Min. 19/32" plywood or wood plank
DECK ATTACHMENT:	In accordance with applicable Code.
UNDERLAYMENT:	'30/90' underlayment system, as detailed in the FRSA/TRI 07320 and RAS 120. Alternate underlayment systems include those having met the requirements of the ICC-ES AC152, and meeting the requirements for the local jurisdiction (HVHZ).
OE-34 / OE-48 / OE-50 SOLAR TILES:	Each OE-34 / OE48 / OE-50 Solar Tile shall be adhered with four 11" long x 6" wide paddies weighing 41 grams each; Paddies are to be spaced 6 inches from either edge of tile and two paddies equally spaced between with a distance of 4 inches from the leading edge. Subsequent rows are to be installed with a minimum 3" head lap.
STANDARD TILES:	Adjacent non-Solar tiles shall be installed in accordance with the tile manufacturer's Product Approval documentation.

6.2 All electrical wiring must be performed in accordance with the manufacturer's published installation instructions by a licensed contractor or electrician.

7. LABELING:

Each shipping pallet shall bear a permanent label with the manufacturer's name, logo, city, state and name and/or logo of the Accredited Quality Assurance Entity noted herein.

8. BUILDING PERMIT REQUIREMENTS:

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

9. MANUFACTURING PLANTS:

Wuxi, China
Grass Valley, CA

10. QUALITY ASSURANCE ENTITY:

CSA International (CER 3718)

- END OF EVALUATION REPORT -