



**EXTERIOR RESEARCH & DESIGN, LLC.**

*Certificate of Authorization #9503*

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**EVALUATION REPORT**

**SDP, Inc.**

410-130 Bridgeland Avenue

Toronto, Ontario M6A 1Z4

Canada

**Evaluation Report S19010.07.09-R2**

**FL5325-R6**

**Date of Issuance: 07/03/2009**

**Revision 2: 04/29/2015**

**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 5<sup>th</sup> Edition (2014) Florida Building Code sections noted herein.

**DESCRIPTION: PALISADE™ Roof Underlayments**

**LABELING:** Labeling shall be 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 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.

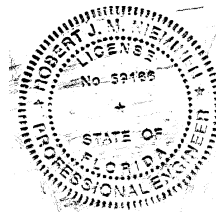
**INSPECTION:** Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 5.

**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 04/29/2015. 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:** Underlayment

**Compliance Statement:** PALISADE™ Roof Underlayments, as produced by SDP, Inc., have demonstrated compliance with the intent of the following sections of the Florida Building Code through testing in accordance with the applicable sections of the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

**2. STANDARDS:**

Section	Property	Standard	Year
1507.2.3, 1507.2.8, 1507.4.5.1, 1507.4.5.2, 1507.5.3, 1507.5.3.2, 1507.7.3, 1507.7.3.2, 1507.8.3, 1507.8.3.2, 1507.9.3, 1507.9.3.2, 1507.9.5, 1518.4	Unrolling, Breaking Strength, Pliability, Loss on Heating	ASTM D226	2006
1518.4	Unrolling, Pliability, Behavior on Heating, Breaking Strength, Water Vapor Permeance	ASTM D2626	2004
1507.2.4, 1507.5.3	Unrolling, Thickness, Max Load, Elongation at Break, Adhesion, Thermal Stability, Low Temp Flex, Tear Resistance, Moisture Vapor Permeance, Self-Sealability	ASTM D1970	2009
1507.3.3	Installation Practice	FRSA/TRI April 2012 (04-12)	2012
1523.6.5.2.1	Dimensional Stability, Tear Resistance, Breaking Strength, Water Absorption, Low Temp Flex, UV Exposure, Accelerated Aging, Cyclic Elongation, Water Vapor Transmission	TAS 104	1995
1523.6.5.2.9	Comparative Rupture	TAS 117, Appendix B	1995
TAS 110	Accelerated Weathering	TAS 110	2000

**3. REFERENCES:**

Entity	Examination	Reference	Date
ERD (TST6049)	Physical Properties	S4240.10.06	10/03/2006
ERD (TST6049)	Physical Properties & Rupture	S0404C.12.05-R2	02/23/2009
ERD (TST6049)	Accelerated Weathering	S37000.06.11	06/14/2011
ICC-ES (EVL2396)	IBC/IRC Compliance	ESR-1847	03/01/2015
Miami-Dade (CER1592)	HVHZ Compliance	11-0714.05	11/10/2011
ITS-ETL/WH (QUA1673)	Quality Control	Inspection Report	11/18/2014

**4. PRODUCT DESCRIPTION:**

**4.1 Mechanically Fastened Underlayments:**

4.1.1 PALISADE™ is a synthetic roofing underlayment comprised of a polyolefin-coated, woven construction with dual skid resistant surfaces. PALISADE™ is acceptable for use in non-HVHZ and HVHZ jurisdictions. Refer to Limits of Use herein.

**4.2 Self-Adhering Underlayments:**

4.2.1 PALISADE™ SA-HT is a self-adhering roofing underlayment comprised of a polyolefin-coated, woven construction with skid resistant upper surface and self-adhering bottom surface. PALISADE™ SA-HT is not for use in HVHZ. Refer to Limits of Use herein.

**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 Non-HVHZ Jurisdictions:**

5.2.1 Fire Classification is not part of this report; refer to current Approved Roofing Materials Directory for fire ratings of this product.

5.2.2 PALISADE™ 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 AHJ for approval based on this evaluation combined with supporting data for the prepared roof covering.

5.2.3 Allowable Roof Covers:

Table 1: Roof Cover Options						
Underlayment	Asphalt Shingles	Nail-On Tile	Foam-On Tile	Metal	Wood Shakes & Shingles	Slate
PALISADE™	Yes	Yes (as base layer only)	No	Yes	Yes	Yes
PALISADE™ SA-HT	Yes	No	No	Yes	Yes	Yes

5.2.4 Allowable Substrates:

PALISADE™ SA-HT adhered to plywood or to mechanically attached PALISADE™.

5.2.5 Exposure Limitations:

PALISADE™ shall not be left exposed for longer than 180-days after installation.

PALISADE™ SA-HT shall not be left exposed for longer than 30-days after installation

**5.3 HVHZ Jurisdictions:**

5.3.1 PALISADE™ SA-HT is not for use in HVHZ.

5.3.2 Fire Classification is not part of this Laboratory Report; refer to current Approved Roofing Materials Directory for fire ratings of this product.

5.3.3 This Evaluation is for prepared roofing applications. Minimum deck requirements shall be compliant with applicable FBC sections.

5.3.4 PALISADE™ shall not be applied in hot asphalt.

5.3.5 PALISADE™ shall be installed in strict compliance with the requirements for ASTM D226, Type II or ASTM D2626 underlayment in Section 1518 for the type of prepared roof covering to be installed.

5.3.6 PALISADE™ may be used with asphalt shingles, tile roofs (base layer only), non-structural metal roofing / metal shingles, quarry slate, slate-type shingles and wood shakes & shingles.

For tile roof applications, PALISADE™ shall be mechanically attached as an anchor sheet in accordance with Section 6.4 herein, followed by Tamko TW Metal and Tile Underlayment (NOA 12-0406.07), GAF UnderRoof 2 (NOA 13-1104.11) or CertainTeed Flintlastic SA Cap (NOA 14-0724.16).

5.3.7 If PALISADE™ is not specifically listed in the prepared roof covering NOA, this report may be submitted to the AHJ or Miami-Dade Product Control Dept., along with fire classification information, for their consideration.

5.3.8 PALISADE™ underlayment shall not be left exposed for longer than 180-days after installation.

5.4 All products listed herein shall have quality assurance audit in accordance with F.A.C. Rule 61G20-3 requirements.

## 6. INSTALLATION:

6.1 PALISADE™ Roof Underlayments shall be installed in accordance with SDP published installation requirements 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 with Elastocol Stick.

### **6.3 Non-HVHZ Jurisdictions:**

#### **6.3.1 PALISADE™:**

Shall be installed in compliance with the requirements for ASTM D226, Type I or II underlayment in FBC Sections 1507 for the type of prepared roof covering to be installed.

##### **6.3.1.1 Non-Tile Applications:**

PALISADE™ is installed horizontally with the printed side up, and with 3-inch horizontal laps and 6-inch vertical laps. Overlaps must run with the flow of the water in a shingle pattern. The underlayment is only attached to the roof deck with roofing nails (smooth or ring-shanked) having 1-inch minimum diameter plastic or steel caps compliant with FBC 1507.2.6. Cap nails are spaced at 6 inches on center at vertical laps, and at 11 inches on center at horizontal laps. In the field area, apply fasteners at 13 inches spaced vertically and 22 inches on center horizontally. All caps (including nails) must be fully flush with the underlayment surface. Do not install fasteners over unsupported areas/voids. Repair all tears, holes, or damage to the underlayment. For slopes less than 4:12, use a full 20" half lap over the underlying course. Apply underlayment up all abutments at least 6 inches.

In non-HVHZ high wind regions where  $V_{ult} > 181$  mph ( $V_{asd} > 140$  mph) or exposure beyond 30 days, increase the fastener density to cap nails spaced 3 inches on center at vertical laps, and at 5.5 inches on center at horizontal laps. In the field area, apply fasteners at 6.5 inches spaced vertically and 11 inches on center horizontally. In addition, secure laps by folding all laps over before nailing, or taping securely across lap seams using exterior grade sheathing tape, or sealants such as roofing cement (asbestos free meeting ASTM D4586), EPDM or butyl to seal laps.

##### **6.3.1.2 Nail-On Tile Applications, Base Layer in 2 Ply System:**

Reference is made to FRSA/TRI April 2012 (04-12) Installation Manual and Table 1 herein using PALISADE™ as the mechanically attached base ply in a 2 ply underlayment system, followed by Tamko TW Metal and Tile Underlayment (FL12328), GAF UnderRoof 2 Polyester-Surfaced Leak Barrier (FL10626) or CertainTeed Flintlastic SA Cap (FL11288) as the top layer.

For mechanically fastened tile roofing, refer to SDP published installation instructions, but not less than FRSA/TRI April 2012 (04-12), Table 1.

#### **6.3.2 PALISADE SA-HT™:**

Shall be installed in compliance with the requirements for ASTM D1970 underlayment in FBC Sections 1507 for the type of prepared roof covering to be installed.

The installer is responsible to determine whether priming is required to ensure PALISADE™ SA-HT will stay adhered to the substrate.

##### **6.3.2.1 Non-Tile Applications:**

PALISADE SA-HT™ is installed horizontally with the printed side up, and with 3-inch horizontal laps and 6-inch vertical laps. Starting at the low point, and with salvage edge at the high point, position horizontally a full roll or cut the membrane into 10–15 ft. (3–5m) lengths and re-roll loosely. Peel back 1–2 ft. (300–600mm) of release film, align the membrane, and continue to peel the release film from the membrane. Press the membrane in place with heavy hand pressure. Apply uniform pressure to the membrane roll side and end laps to insure water tightness and bonding to the substrate.

Always work from the low to the high point of the roof. Follow good roofing practice by orientating PALISADE-SA-HT™ so side laps shed water. Apply the membrane in valleys before the membrane is applied to the eaves. For valley and ridge application, peel the release film; center the sheet over the valley or ridge, drape, and press into in place. Work the center of the valley or ridge outward in each direction. Following placement along the eaves, continue application of the membrane up slope. If nailing of the membrane is necessary on steep slopes, especially during hot or cold weather, back nail and cover the nails by overlapping with the next sheet.

**6.4 HVHZ Jurisdictions:**

- 6.4.1 **System E(1):** Underlayment mechanically fastened to deck  
 Deck Type 1: Wood, Non-Insulated  
 Deck Description: Min. 19/32" plywood or wood plank  
 Underlayment: One or more plies of PALISADE™ with minimum 4" wide head laps and minimum 6" wide end laps, mechanically fastened to deck.  
 Fastening: HVHZ Approved nails and tin caps 6" o.c. at lap and three equally spaced staggered rows 12" o.c. in the field.  
 Surfacing: HVHZ Approved asphalt shingle, non-structural metal, wood shakes & shingles or slate.
- 6.4.2 **System E(2):** Base underlayment mechanically fastened to deck, top layer adhered  
 Deck Type 1: Wood, Non-Insulated  
 Deck Description: Min. 19/32" plywood or wood plank  
 Base Layer: One or more plies of PALISADE™ with minimum 4" wide head laps and minimum 6" wide end laps, mechanically fastened to deck.  
 Fastening: HVHZ Approved nails and tin caps 6" o.c. at lap and three equally spaced staggered rows 12" o.c. in the field.  
 Top Layer: Tamko TW Metal and Tile Underlayment (NOA 12-0406.07), GAF UnderRoof 2 (NOA 13-1104.11) or CertainTeed Flintlastic SA Cap (NOA 14-0724.16), self-adhered to the base layer. See current FBC HVHZ approval for installation guidelines and limits of use of top layer.  
 Surfacing: HVHZ Approved asphalt shingle, non-structural metal, wood shakes & shingles, slate or tile.  
 Note: For tile applications, AHJ shall verify that top layer underlayments listed herein hold current HVHZ Product Approval and/or Miami-Dade NOA for use as a tile underlayment.

**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 manufacturer or the named QA entity for information on plants covered under Rule 61G20-3 QA requirements.

**9. QUALITY ASSURANCE ENTITY:**

Intertek Testing Services NA Inc. – ETL/Warnock Hersey – QUA1673; (905) 678-4913

**- END OF EVALUATION REPORT -**