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Laboratory Test Report

Report for: Dermot Ennis
International Insulation Products
8695 Transport Dr
Orlando, FL 32882

Product Name(s): Sol-R-Skin SA

Project No.: 2644T0003

Date(s) Tested: December 2, 2024 – January 17, 2025

Test Methods: ASTM D1970

Results Summary: Compliant: ASTM D1970
Extended Exposure Limitation – 90 days per TAS 110 Table 10

Purpose: Evaluate product for compliance to the requirements of **ASTM D1970: *Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.***

Sol-R-Skin SA is a self-adhering roof underlayment comprised of reinforced aluminum bonded to a synthetic underlayment and coated with a modified bitumen adhesive compound.

Test Methods: Testing was completed as described in ASTM D1970-17a: *Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.* Test methods assigned or referenced include Test methods assigned or referenced include ASTM D228: *Standard Test Methods for Sampling, Testing, and Analysis of Asphalt Roll Roofing, Cap Sheets, and Shingles Used in Roofing and Waterproofing*; ASTM D903: *Standard Test Method for Peel or Stripping Strength of Adhesive Bonds*; ASTM D1204: *Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature*; ASTM D2523: *Standard Practice for Testing Load-Strain Properties of Roofing Membranes*; ASTM D4073: *Standard Test Method for Tensile-Tear Strength of Bituminous Roofing Membranes*; ASTM D5147: *Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material*; ASTM D7349: *Standard Test Method for Determining the Capability of Roofing and Waterproofing Materials to Seal around Fasteners*; and ASTM E96: *Standard Test Methods for Water Vapor Transmission of Materials.*

Testing was completed for 180d of Allowable Outdoor Exposure in accordance with *Testing Application Standard (TAS) No. 110-2000 Testing Requirements for Physical Properties of Roof Membranes, Insulation, Coatings and Other Roofing Components.* Test methods assigned or referenced include ASTM D4798 *Standard Practice for Accelerated Weathering Test Conditions for Procedures for Bituminous Materials (Xenon-Arc Method)* and ASTM D1970/D1970M-17a: *Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.*

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Sampling:

The following materials were received by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
Sol-R-Skin SA	Orlando, FL	Nov. 19, 2024	PRI

The location of manufacture of the tested sample has been verified as Orlando, FL.

Conditioning: All conditioning was completed in accordance with specification details.

Results:

Table 1: Results for ASTM D1970

Physical Properties	Test Method	Results							Requirement
Physical Requirements									
Thickness, (mils) 1 specimen; 27-1/2in x manufacture width; 5 measurement points	ASTM D5147	1	2	3	4	5	Avg.	St.Dev.	
		63	62	63	65	64	63	0.9	≥ 40
Maximum Load, (lbf/in-width) 5 specimens; 1in x 6in; Cond. 2h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min ±3%	ASTM D2523 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	76	77	80	77	77	77	1.7	≥ 25
	CMD	75	75	74	73	76	75	1.3	≥ 25
Elongation at Break (modified bitumen portion), (%) 5 specimens; 1in x 6in; Cond. 2h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min ±3%	ASTM D2523 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	1521	1636	1550	1368	1308	1477	135	≥ 10
	CMD	1523	178	1399	123	1471	939	721	≥ 10
Adhesion to plywood, (lbf/ft-width) 5 specimens; 3in x 8in (bonded 3in x 5in to plywood); Cond. 1h @ 39.2±3.6°F; Test @ 39.2±3.6°F; Rate = 2in/min ±3%	ASTM D903 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
		8	24	8	23	20	16	8	≥ 2.0
Adhesion to plywood, (lbf/ft-width) 5 specimens; 3in x 8in (bonded 3in x 5in to plywood); Cond. 1h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min ±3%	ASTM D903 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
		52	48	42	42	45	46	4	≥ 12.0
Thermal Stability, (in) 5 specimens; 4in x 4in (bonded to plywood); Cond. 14d @ 158±4°F; Equilibrate to 75±2°F & 50±5%RH for 4h	ASTM D1204 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
		0	0	0	0	0	0	0	≤ 0.1

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Physical Properties	Test Method	Results							Requirement
Low Temperature Flexibility, [Pass/Fail] 5 specimens; 1in x 6in; Cond. 2h @ -20.2±3.6°F; Test 180±5° over 1in±5% Ø in 2±1s @ -20.2±3.6°F; Visual Inspection in “flexed” position; Self-Sealability (head of water) on “flexed” specimen	ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	Pass	Pass	Pass	Pass	Pass	Pass	NA	No visible signs of cracking in the sheet -or- minor surface cracking and “pass” head of water test
	CMD	Pass	Pass	Pass	Pass	Pass	Pass	NA	
Tear Strength, (lbf) 5 specimens; 3in x 8in specimens with assigned notch; Cond. 4h @ 74±4°F & 50±5%RH; Test @ 74±4°F; Rate = 2.0in/min ±3%	ASTM D4073 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	85	85	75	94	75	83	8	≥ 20
	CMD	81	78	84	74	73	78	5	≥ 20
Moisture Vapor Permeance, (U.S. Perms) 3 specimens; 3.5in Ø; Weathering side to higher vapor pressure; Test @ 73.4±3.6°F & 50±5%RH	ASTM E96 Procedure BW	1	2	3			Avg.	St.Dev.	
		0.08	0.04	0.04			0.06	0.02	≤ 0.1
Self-Sealability around nail, [Pass/Fail] 2 specimens; 12in x 12in (bonded to plywood); ASTM D3462 single thickness intervening material; Two F1667 NLRFS-53Z nails with hammer; Cond. 24±0.25h @ 73.4±3.6°F; Test 5±0.25inw.c. @ 39.2±3.6°F for 72±0.25h; Visual Inspection for water infiltration	ASTM D1970 / ASTM D7349 Protocol 4 (mod)	1	2						
		Pass	Pass						No water in bottom can, on substrate underside, on fastener shank, or between product and substrate
Self-Sealability of side lap seam, [Pass/Fail] 2 specimens; 12in x 12in (prescribed configuration); Side Lap Seam placed near center of specimen; Cond. 24±0.25h @ 73.4±3.6°F; Test 5±0.25inw.c. @ 39.2±3.6°F for 72±0.25h; Visual Inspection for water infiltration	ASTM D1970	1	2						
		Pass	Pass						No water between plywood and unadhered piece

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Physical Properties	Test Method	Results							Requirement
Physical Requirement - Other									
Slip Resistance, <i>[Report]</i> 5 specimens; Test @ 73.4±3.6°F & 50±5%RH; Comparison to ASTM D226 Type II	ASTM E303 ¹	1	2	3	4	5	Avg.	St.Dev.	
	Dry	75	80	65	70	70	72	5.7	shall be designed to provide traction and slip resistance
	Wet	30	25	15	20	30	24	6.5	
Unrolling, <i>[Pass/Fail]</i> 4 specimens; 10±1/8in x 18±1/8in; Cond. 24h @ 73.4±3.6°F & 50±5%RH; Test Cond. 2h @ Temp±1°F; Test unroll in 4-6s; Visual Inspection in “unrolled” position	ASTM D5636 / ASTM D5147 / ASTM D1970	1	2	3	4				
	40°F	Pass	Pass	Pass	Pass				shall not crack nor stick to cause tearing or other damage

Note(s): None.

Table 2: Results for TAS 110 180d of Allowable Outdoor Exposure

Physical Properties	Test Method	Results							Requirement
Physical Requirements – Post Accelerated Weathering, 500h (ASTM D4798 Cycle 1)									
Maximum Load, (lbf/in-width) 5 specimens; 1in x 6in; Cond. 2h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min ±3%	ASTM D2523 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	78	77	78	79	78	78	0.7	≥ 25
	CMD	73	77	73	76	76	75	1.7	≥ 25
Elongation at Break (modified bitumen portion), (%) 5 specimens; 1in x 6in; Cond. 2h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min ±3%	ASTM D2523 / ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	1378	1442	143	1408	173	909	686	≥ 10
	CMD	97	89	127	87	91	98	17	≥ 10
Low Temperature Flexibility, [Pass/Fail] 5 specimens; 1in x 6in; Cond. 2h @ -20.2±3.6°F; Test 180±5° over 1in±5% Ø in 2±1s @ -20.2±3.6°F; Visual Inspection in “flexed” position;	ASTM D1970	1	2	3	4	5	Avg.	St.Dev.	
	MD	Pass	Pass	Pass	Pass	Pass	Pass	NA	No visible signs of cracking in the sheet -or- minor surface cracking and “pass” head of water test
	CMD	Pass	Pass	Pass	Pass	Pass	Pass	NA	

Note(s): None

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Statement of Compliance: The product evaluated complies with the requirements(refer to Table 1 herein) of **ASTM D1970-17a: Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection**. The laboratory test results presented in this report are representative of the material(s) tested.

Limitations: The product evaluated has demonstrated compliance with the 90 day Allowable Outdoor Exposure requirements (refer to Table 2 herein) prescribed in **Florida Test Protocols for High Velocity Hurricane Zones, 8th Edition (2023) TAS 110-2000: TESTING REQUIREMENTS FOR PHYSICAL PROPERTIES OF ROOF MEMBRANES, INSULATION, COATINGS AND OTHER ROOFING COMPONENTS**.

Signed:



Jason Simmons
Director

Date:

1/30/2025

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	1/30/2025	5	NA

END OF REPORT

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