



PRI Construction Materials Technologies LLC

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Laboratory Test Report

Report for: Steven Crew
Warrior Roofing Manufacturing
3050 Warrior Rd.
Tuscaloosa, AL

Product Name: Elephant Skin

Project No.: 976T0003

Dates Tested: August 4 – August 5, 2020

Test Methods: ASTM D226 – Table 1 Physical Properties
ASTM D4533
ASTM D5035

Results Summary: Compliant: 2020 FBC Section 1507.1.1.1 for synthetic, alternative underlayment permitted to be applied in accordance with paragraph 2, paragraph 3, and paragraph 5.

Purpose: Evaluate the identified synthetic roof underlayment for a synthetic underlayment approved as an alternative to underlayment complying with ASTM D 226 Type II and having the minimum tear strength, tensile strength, and resistance to liquid water transmission as prescribed in 2020 Florida Building Code - Building, 7th Edition, Section 1507.1.1.1 – paragraphs 2, 3, and 5

Test Methods: Testing was completed as prescribed in 2020 Florida Building Code - Building, 7th Edition, Section 1507.1.1.1 – paragraphs 2, 3, and 5. Testing completed from ASTM D 226-09, -06, -05, and -97a: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing* includes: *Breaking Strength*, and *Pliability* in accordance with ASTM D 146: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*.

Testing for tear strength was conducted in accordance with ASTM D 4533-15: *Standard Test Method for Trapezoid Tear Strength of Geotextiles*.

Testing for tensile strength was conducted in accordance with ASTM D 5035-11(2019): *Standard Test Method for Breaking Force and Elongation of Textile Fabrics*.

Sampling: The following materials were received by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
Elephant Skin	Tuscaloosa, AL	August 3, 2020	Warrior Roofing Manufacturing

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Results: 2020 FBC Section 1507.1.1.1 for synthetic, alternative underlayment

Physical Properties	Test Method	Results							Requirement ¹		
Physical Requirements – ASTM D226									Type I	Type II	
Breaking Strength, (lbf/in-width) 10 specimens; 1in x 6in; Cond. 2h @ 73.4±3.6°F & 50±5%RH; Test @ 73.4±3.6°F; Rate = 2in/min	ASTM D146	1	2	3	4	5	Avg.	St.Dev.			
	MD	63	73	71	68	51					
		6	7	8	9	10					
		68	71	70	64	59	66	7	≥ 30	≥ 40	
		1	2	3	4	5	Avg.	St.Dev.			
	CMD	57	58	58	45	56					
		6	7	8	9	10					
		61	59	59	48	52	55	5	≥ 15	≥ 20	
	Pliability, [Pass/Fail] 5 specimens; 1in x 8in; Cond. 10-15min @ 77.0±1.8°F in water; Test 90° around ##in radius in 2s; Visual Inspection in “flexed” position	ASTM D146	1	2	3	4	5	Avg.	St.Dev.	1/2in radius	3/4in radius
MD		Pass	Pass	Pass	Pass	Pass	Pass	NA	No Failures	No Failures	
CMD		Pass	Pass	Pass	Pass	Pass	Pass	NA	No Failures	No Failures	
Unrolling, [Pass/Fail] 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 D226	1	2	3	4		Avg.	St.Dev.	No Damage		
	50°F	Pass	Pass	Pass	Pass		Pass	NA			
	140°F	Pass	Pass	Pass	Pass		Pass	NA			
Physical Requirements – Other											
Tear Strength, (lbf) 5 specimens; 3in x 8in; Test @ 73.4±3.6°F & 50±5%RH; Rate = 12.0±0.5in/min	ASTM D4533	1	2	3	4	5	Avg.	St.Dev.			
	MD	71	68	62	76	72	70	5			≥ 15
	CMD	63	72	71	74	64	69	5			≥ 15
Tensile Strength (lbf/in) 5 specimens; Type IC-E; 1in x 6in; Cond. 2h @ 73.4±3.6°F; Cut Strip Method; Test @ 73.4±3.6°F & 50±5%RH; Gage length = 3in Rate = 12in/min	ASTM D5035	1	2	3	4	5	Avg.	St.Dev.			
	MD	73	72	67	70	73	71	2			≥ 20
	CMD	54	55	65	64	65	61	5			≥ 20
Liquid Water Transmission [Pass/Fail] 2 specimens; 15in x 30in; Cond. 24h @ 70-80°F & 30-55%RH; Test 4h water impingement @ 40-42gal/h	ASTM D 4869	1	2								
	Visual Inspection	Pass	Pass								No sign of wetness or visible deterioration

Note(s) 1- Requirement from Section 1507.1.1.1 of the Florida Building Code, 6th Edition (2017)

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Statement of Compliance: The product tested is compliant with the requirements for synthetic, alternate underlayments as required by 2020 Florida Building Code- Building, 7th Edition, Section 1507.1.1.1, para. 2, 3, and 5. The laboratory test results presented in this report are representative of the material supplied.

Signed:



Jason Simmons
Director

Date:

08/07/2020

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	8/7/2020	3	NA

END OF REPORT

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