



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(s): #15

Project No.: 976T0006

Date(s) Tested: October 20, 2023 – November 10, 2023

Test Methods: ASTM D226/D226M-17

Results Summary: Meets Type I requirements

Purpose: Evaluate the identified product for compliance to the requirements of **ASTM D226/D226M: Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing, Type I.**

Test Methods: Testing was completed as described in ASTM D226/D226M-17: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing*. Test methods assigned or referenced include ASTM D95: *Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation*; ASTM D146/D 146M: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*; and ASTM D5636: *Standard Test Method for Low Temperature Unrolling of Felt or Sheet Roofing and Waterproofing Materials*.

Sampling: The following materials were received by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
#15	Tuscaloosa, AL	Oct. 12, 2023	Warrior Roofing

The location of manufacture for the sample tested has been verified as Tuscaloosa, AL.

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The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Results:

Physical Properties	Test Method	Results													Requirement		
Physical Requirements																	
Breaking Strength, (lbf/in-width) 1in x 6in specimens; Cond. 2h @ 73°F & 50±5%RH; Test @ 73.4±3.6°F; Rate = 2in/min	ASTM D146	1	2	3	4	5	6	7	8	9	10	Avg.	St.Dev.				
	Longitudinal	56	66	50	54	57	50	56	59	57	62	57	5	≥ 30	≥ 40		
	Transverse	18	18	18	18	18	21	24	18	21	21	19	2	≥ 15	≥ 20		
Pliability, [Pass/Fail] 1in x 8in specimens; Cond. 10-15min @ 77±2°F in water; Test 90°bend in 2s;	ASTM D146	1	2	3	4	5									No Cracking		
	Longitudinal	Pass	Pass	Pass	Pass	Pass							1/2in radius	3/4in radius			
	Transverse	Pass	Pass	Pass	Pass	Pass							Pass	Pass			
Loss on Heating, (mass%) 12in x 6in specimens; Test Cond. 5h±3min @ 221±5°F	ASTM D146	1	2	Avg.													
		-1.7	-1.5	-1.6									≤ 4	≤ 4			
Unrolling, [Pass/Fail] 10in x 18in specimens; Cond. 24h @ 73±4°F & 50±5%RH; Test Cond. 2h @ Temp±1°F; Test unroll in 4-6s	ASTM D 5636/ ASTM D 226	1	2	3	4									The product shall not crack nor be sticky as to cause tearing or other damage			
	Temp = 50°F	Pass	Pass	Pass	Pass									Pass	Pass		
	Temp = 140°F	Pass	Pass	Pass	Pass									Pass	Pass		
Dimensions and Masses																	
Width of the roll, (in)	ASTM D146	36												36±0.7% ¹	36±0.7% ¹		
Area of the roll, (ft²)	ASTM D146	431.97												≥ 216 ¹	≥ 216 ¹		
² Moisture, (% by wt.)	ASTM D95	1	2	3	4	5	Avg.										
		3.0	3.3	2.5	3.1	3.1	3.0									≤ 4.3	≤ 4.1
Net mass of saturated felt, (lb/100ft²)	ASTM D146	12.6												≥ 11.2	≥ 26		
Mass of saturant, (lb/100ft²)	ASTM D146	6.9												≥ 6.2	≥ 15.0		
Ratio of saturant to desat. Felt	ASTM D226	1.2												≥ 1.2	≥ 1.5		
Saturation efficiency, (%)	ASTM D226	NA												≥ 70	N/A		
Mass of desaturated felt, (lb/100ft²)	ASTM D146	5.7												≥ 5.2	≥ 10.0		
Ash, (%)	ASTM D146	6.6												≤ 10.0	≤ 10.0		
Perforated Felt, (in²)	ASTM D226	NA												≤ 0.05	N/A		
Average Venting Area, (%)	ASTM D226	NA												≥ 0.1	N/A		

Note(s): 1- Or as agreed upon by purchaser and seller
2- Moisture "as received" was utilized in lieu of "at the point of manufacture"
NA- Not Applicable

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Statement of Compliance:

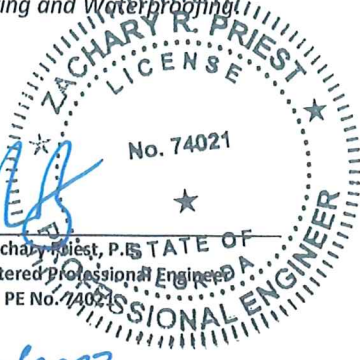
The product was tested has demonstrated compliance to the requirements of Type I prescribed in ASTM D226/D226M-17: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing*.

Signed:


Jason Simmons
Director

Signed:


Zachary R. Priest, P.E.
Florida Registered Professional Engineer
PE No. 74021



Date:


12/8/2023

Date:


12/11/2023

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	11/17/2023	3	NA
Revision	12/8/2023	3	Added seal of FL Registered PE

END OF REPORT

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