



CONSTRUCTION MATERIALS

TECHNOLOGIES

LABORATORY TEST REPORT

Report for: Deksmart Vinyl Products Ltd.
364 Cherry Ave
Penticton, BC V2A 3L7
Canada

Product(s):	Deksmart Ultra 60mil Smoothback Decking Membrane	Manufacturer:	O'Sullivan Films, Inc.
Date Received:	Aug. 7, 2017	Sampling:	<i>Client provided samples</i>
PRI-CMT Project No.:	DKSM-002-02-02	Test Dates:	Aug. 9, 2017 – Apr. 12, 2018

Purpose: Evaluate for compliance with **ASTM D 4434-06, -12 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing**, Type III.

Test Methods: Testing was conducted as described in ASTM D 4434-06, -12 *Standard Specification for Poly (Vinyl Chloride) Sheet Roofing*. Testing methods included within these specifications are as follows: ASTM D 570 *Standard Test Method For Water Absorption of Plastics*; ASTM D 751 *Standard Test Methods for Coated Fabrics*; ASTM D 1204 *Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature*; ASTM D 2136 *Standard Test Method for Coated Fabrics Low Temperature Bend Test*; ASTM D 3045 *Standard Practice for Heat Aging of Plastics Without Load*; ASTM D 5602 *Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens*; ASTM D 5635 *Standard Test Method Dynamic Puncture Resistance of Roofing Membrane*; ASTM G 154 *Standard Practice for Operating Fluorescent Ultraviolet (UA) Lamp Apparatus for Exposure of Nonmetallic Materials*.

Sampling: A roll of PVC decking membrane was provided in the color Driftwood Plank for testing by the O'Sullivan Films, Inc. from Winchester, VA on August 7, 2017.

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Results:

Property	Test Method	Results							Requirement Type III
Physical Properties – As Received									
Overall Thickness of PVC Sheet, (in.) Sheet-overall; Across the width of the sheet; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH;	ASTM D 751	1	2	3	4	5	Avg.	St.Dev.	
		0.065	0.064	0.063	0.063	0.061	0.063	0.001	≥ 0.045
Thickness over Scrim, (in.) Coating over fabric or scrim, weather side; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH;	ASTM D 4434 Annex	1	2	3	Avg.	St.Dev.			
		0.026	0.024	0.025	0.025	0.001			≥ 0.016
Thickness over Scrim, (in.) Coating over fabric or scrim, weather side; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH;	ASTM D 7635	MD-1	MD-2	MD-3	CMD-1	CMD-2	CMD-3	Avg.	
		0.027	0.025	0.024	0.026	0.024	0.024	0.025	≥ 0.016
Breaking Strength, (lbf) 4" x 6" specimens; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 12±0.5 in./min;	ASTM D 751 Procedure A	1	2	3	4	5	Avg.	St. Dev.	
	MD	370	380	344	343	349	357	17	≥ 200
	CMD	314	297	301	306	298	304	7	≥ 200
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Property	Test Method	Results							Requirement Type III
		1	2	3	4	5	Avg.	St. Dev.	
Elongation at Break, (%) 4" x 6" specimens; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 12±0.5 in./min;	ASTM D 751 Procedure A	1	2	3	4	5	Avg.	St. Dev.	
	MD	33	34	39	36	36	36	2	≥ 15
	CMD	37	37	37	38	36	37	1	≥ 15
Seam Strength, (% of breaking strength) 4" x 6" specimens; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 12±0.5 in./min;	ASTM D 751 Procedure A	1	2	3	4	5	Avg.	St. Dev.	
		105	112	110	111	101	108	5	≥ 75
Tearing Strength, (lbf) 8" x 8" specimens; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 12±0.5 in./min;	ASTM D 751 Procedure B	1	2	3	4	5	Avg.	St. Dev.	
	MD	91	120	89	92	80	94	15	≥ 45
	CMD	64	52	51	59	47	54	6	≥ 45
Low Temperature Bend, [Pass/Fail] Cond.: 4h @ -40±1°F Test: -40±1°F; Bend 180° over 3.2mm Ø rod	ASTM D 2136	1	2	3					
	MD	Pass	Pass	Pass					Pass
	CMD	Pass	Pass	Pass					Pass
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Property	Test Method	Results					Requirement Type III
		Center	Edge	Avg.			
Linear Dimensional Change, (%) 10" x 10" specimens; Cond.: 6h @ 176±2°F	ASTM D 1204						
	MD	-0.3	0.0	-0.2			≤ 0.5
	CMD	0.0	0.0	0.0			≤ 0.5
Change in Weight After Immersion in Water, (%) 3"x 1" specimens; Cond.: 40h @ 122±5.4°F; Test: Water immersion - 168±1h @ 158±2°F	ASTM D 570	1	2	3	Avg.	St. Dev.	
		2.7	2.9	2.8	2.8	0.1	±3.0
Static Puncture Resistance, [Pass/Fail] 7.9" x 7.9" specimens; Cond.: 8h @ 73±2°F; Load 33lbf for 24±0.25h @ 73±2°F; Type IX EPS;	ASTM D 5602	1	2	3			
		Pass	Pass	Pass			Pass
Dynamic Puncture Resistance, Pass/Fail] 9.8" x 9.8" specimens; Cond.: 8h @ 73±2°F; Load 20J @ 73±2°F over Type IX EPS;	ASTM D 5635	1	2	3			
		Pass	Pass	Pass			Pass
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Property	Test Method	Results							Requirement Type III
Retention of Properties After Heat Aging									
Heat Aging Exposure: 56d @ 176±2°F	ASTM D 3045								
Breaking Strength, (% of original) 4" x 6" specimens; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 12±0.5 in./min;	ASTM D 751 Procedure A	1	2	3	4	5	Avg.	St. Dev.	
	MD	103	100	92	106	92	98	6	≥ 90
	CMD	104	107	104	106	105	105	1	≥ 90
Elongation at Break, (% of original) 4" x 6" specimens; Cond.: Min. 24h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 12±0.5 in./min;	ASTM D 751 Procedure A	1	2	3	4	5	Avg.	St. Dev.	
	MD	103	94	89	97	92	95	5	≥ 90
	CMD	111	95	114	108	100	105	8	≥ 90
Accelerated Weathering									
Accelerated Weathering UVA-340 bulbs; 8h light; 4h condensate; Black panel temp. 63±3°C; Condensate temp. 50±3°C;	ASTM D 4434/ ASTM G 154	1	2	3					
Cracking, [Report] Visual inspection at 7x magnification		None	None	None				None	
Crazing, [Report] Visual inspection at 7x magnification		None	None	None				None	

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Statement of Compliance:

The products tested have demonstrated compliance with **ASTM D 4434-06, -12 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing**, Type III.

Signed: 
Zachary Priest, P.E.
Director

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	04/27/2018	6	NA

END OF REPORT

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