



CONSTRUCTION MATERIALS

TECHNOLOGIES

LABORATORY TEST REPORT

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

Product(s):	Deksmart Ultra 68mil Decking Membrane	Manufacturer:	O'Sullivan Films, Inc.
Date Received:	Aug. 7, 2017	Sampling:	<i>Client provided samples</i>
PRI-CMT Project No.:	DKSM-001-02-01	Test Dates:	Aug. 9, 2017 – Apr. 12, 2018

Purpose: Evaluate the physical properties for compliance with **CAN/CGSB 37.54-95 Polyvinyl Chloride Roofing and Waterproofing Membrane** Type III, Class B. Type III products are defined as "with a non-embedded fabric backing". Class B is defined as "exposed roofing".

Test Methods: Testing was completed in compliance with **CAN/CGSB 37.54-95 Polyvinyl Chloride Roofing and Waterproofing Membrane**. Test methods assigned or referenced include ASTM D 570: *Standard Test Method for Water Absorption of Plastics*; ASTM D 751: *Standard Test Method for Coated Fabrics*; ASTM D 1790: *Standard Test Method for Brittleness Temperature of Plastic Sheeting by Impact*; ASTM D 2136: *Standard Test Method for Coated Fabrics Low Temperature Bend Test*; ASTM D 2565: *Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications*; ASTM E 96/E 96M: *Standard Test Methods for Water Vapor Transmission of Materials*; and *Waterproofing Materials*; and ASTM G 53: *Standard Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensate Type) for Exposure of Nonmetallic Materials*.

Sampling: A roll of PVC decking membrane was provided in the color Silver Maple 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
Thickness, (mm) Overall;	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	
		2.0	2.1	2.1	2.0	2.0	2.0	0.0	≥ 1.2
Thickness, (mm) Over scrim	CAN/CGSB 37.54-95	1	2	3	4	5	Avg.	St. Dev.	No individual measurement less than 0.32
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	≥ 0.4
Breaking Strength, (kN/m) 5 specimens each direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	
	MD	51	53	52	52	49	52	1	≥ 35
	CMD	57	54	51	50	53	53	3	≥ 35
Elongation at Break, (%) 5 specimens each direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	PVC matrix intact at break
	MD	139	137	125	129	123	131	7	≥ 15
	CMD	159	151	141	133	135	144	11	≥ 15
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Property	Test Method	Results										Requirement
Lap Joint Strength, (% of Breaking Strength) 5 specimens; 102 x 152 mm; Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.				
		106	115	109	111	102	109	5	≥ 75			
		96	102	98	96	98	98	2	≥ 70			
Low Temperature Impact, (# of passing specimens) 10 specimens; Cond. 90 min @ -30±1°C; Test @ -30±1°C;	ASTM D 1790	1	2	3	4	5	6	7	8	9	10	
		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	8 of 10 specimens shall pass
Low Temperature Flexibility, (<i>Pass/Fail</i>) 3 specimens; Cond. 4 h @ -40±1°C; Test @ -40±1°C; Bend 180° over 3.2 mm Ø steel rod	ASTM D 2136	1	2	3								
		Pass	Pass	Pass								Pass
Water Vapor Transmission, (g/m ² in 24 h) 3 specimens; Test @ 23±1°C & 50±2% RH	ASTM E 96 Procedure A	1	2	3	Avg.	St. Dev.						
		0.7	0.7	0.6	0.7	0.0					≤ 4.0	
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Property	Test Method	Results							Requirement
Retention of Properties after Heat Aging, After 60 days at 80±1°C; 18h recovery	CAN/CGSB 37.54-95								
Breaking Strength – MD, (% of original) 5 specimens each direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	
	MD	102	94	108	117	129	110	12	≥ 90
	CMD	126	117	117	108	11	116	6	≥ 90
Elongation at Break, (% of original) 5 specimens each direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	PVC matrix intact at break
	MD	84	73	97	95	134	97	21	≥ 90
	CMD	141	123	135	99	110	123	15	≥ 90
Low Temperature Flexibility, (<i>Pass/Fail</i>) 3 specimens; Cond. 4 h @ -40±1°C; Test @ -40±1°C; Bend 180° over 3.2 mm Ø steel rod	ASTM D 2136	1	2	3					
		Pass	Pass	Pass					Pass
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Property	Test Method	Results										Requirement
Retention of Properties after Accelerated Weathering, UVA-340 bulbs; 8h light; 4h condensate; Black panel temp. 63±3°C; Condensate temp. 50±3°C;	ASTM G 53											
Visual Inspection	CAN/CGSB 37.54-95	Pass										No cracking, blistering, or appreciable color change
Elongation at Break, (% of original) 5 specimens CMD direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	PVC matrix intact at break			
		92	97	87	92	94	92	3	≥ 90			
Low Temperature Impact, (# of passing specimens) 10 specimens; Cond. 90 min @ -20±1°C; Test @ -20±1°C;	ASTM D 1790	1	2	3	4	5	6	7	8	9	10	
		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	8 of 10 specimens shall pass
Low Temperature Flexibility, (<i>Pass/Fail</i>) 3 specimens; Cond. 4 h @ -40±1°C; Test @ -40±1°C; Bend 180° over 6.4 mm Ø steel rod	ASTM D 2136	1	2	3								
		Pass	Pass	Pass								Pass
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Property	Test Method	Results							Requirement
Effect of Water Absorption After immersion for 7 days at 70±1°C									
Mass Increase, (% of original)	ASTM D 570	1	2	3	Avg.	St. Dev.			
		-2.2	-2.2	-2.6	-2.3	0.2			≤ 3.0
Breaking Strength – MD, (% of original) 5 specimens each direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	
	MD	106	104	100	96	94	100	4	≥ 90
	CMD	87	109	128	102	111	108	14	≥ 90
Elongation at Break, (% of original) 5 specimens each direction; 102 x 152 mm Test @ 23±2°C & 50±5%RH; Rate = 5±2 mm/s	ASTM D 751	1	2	3	4	5	Avg.	St. Dev.	PVC matrix intact at break
	MD	132	121	106	98	87	109	16	≥ 90
	CMD	88	118	130	114	103	111	14	≥ 90
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Property	Test Method	Results							Requirement
Dimensional Change, (%) After 6 h at 80±1°C; Without Loading;	CAN/CGSB 37.54-95	1	2	3	4	5	Avg.	St. Dev.	
	MD	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	0.0	≤ 0.5
	CMD	0.1	0.1	0.0	0.0	0.1	0.1	0.1	≤ 0.5
Dimensional Change, (%) After 6 h at 80±1°C; With Loading;	CAN/CGSB 37.54-95	Left	Center	Right	Avg.	St. Dev.			
	MD	-0.1	0.0	-0.1	-0.1	0.0			≤ 0.5
	CMD	0.0	0.0	0.1	0.0	0.0			≤ 0.2
Cone Penetration, (N) 5 specimens; 50 x 50 mm; Test @ 23±2°C & 50±5%RH; Rate = 1.27 mm/min	CAN/CGSB 37.54-95	1	2	3	4	5	Avg.	St. Dev.	
		89	80	82	90	99	88	7	≥ 30

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Statement of Compliance:

The product tested has demonstrated compliance with the physical property requirements of **CAN/CGSB 37.54-95 Polyvinyl Chloride Roofing and Waterproofing Membrane** Type III, Class B. The laboratory test results presented in this report are representative of the material supplied.

Signed: 

Zachary Priest, P.E.
Director

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	05/01/2018	8	NA

END OF REPORT

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