

Laboratory Report S13610.12.09

Simulated Uplift Testing of SofSurface Panels in accordance with FM Standard 4470

Prepared for:

SofSurfaces 4393 Discovery Lane Petrolia, Ontario N0N1R0 Canada

Date of Issuance: December 16, 2009

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CLIENT INFORMATION:	SofSurfaces 4393 Discovery Lane Petrolia, Ontario N0N1R0 Canada c/o: Jeromey Morningstar			
Reference:	Project #2009.S13610SC			
SAMPLES:	SofSurface Panels			
SAMPLE DELIVERY:	The named client arranged for shipment of said materials to TRINITY ERD's laboratory for testing. Materials were received on 03/16/2009 and 04/27/2009.			
Test Date(s):	3/30/2009, 5/8/2009 and 05/13/2009			
TRINITY ERD STAFF:	C. Phillips			
PROPERTIES:	Simulated Wind Uplift Resistance – 10×10 ft			
STANDARDS:	FM Standard 4470, Approval Standard for Class 1 Roof Covers, $$ FM Global, 1986 (1992)			
EQUIPMENT:	Simulated Wind Uplift Resistance – 10 x 10:	TRINITY ERD 10 X 10 feet Vacuum Apparatus		



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I. SIMULATED WIND UPLIFT RESISTANCE – 10 x 10 FT WIND UPLIFT TEST

- I.I Specimen Preparation:
- 1.1.1 Specimens measuring 10 ft x 10 ft were constructed for each of the following sample descriptions. The specimen was built atop the specified roof deck and allowed to cure.
- 1.1.2 19/32" Plywood deck was modified to incorporate 1-inch diameter holes, spaced 2 ft o.c., to allow the vacuum pressure vessel to deliver air pressure to the underside of the test specimen.



View of Prepared Plywood Deck

Table 1A: Summary of 10 x 10 ft Specimen Constructions							
Sample I D	Deck	Waterproofing Layer	Insulation		Roof Cover		
			Туре	Attach	Ply Sheet	Tile	
A	19/32″ plywood	Reinforced EPDM	2 layers of XPS with staggered joints	Loose laid	FilterCloth	Soft Surface	

- 1.1.3 Soft Surface Tiles were installed as per manufacturer's instructions and adhered with Sika Adhesive at a rate of 20 lineal ft per tube.
- I.2 Procedure:
- 1.2.1 The simulated wind uplift pressure tests utilize an inverted vacuum pressure vessel to apply air pressure from below the deck.
- 1.2.1 A net vacuum pressure of 30psf (1.4kPa) is applied to the test specimen and maintained for I min. The pressure is increased to 45psf (2.2kPa), then to 60psf (2.9kPa) and held for I min. after each increment. The pressure is increased 15psf (0.7kPa) every min. until failure occurs.



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Table 1B: Test Results, Sample A						
Plywood / Reinforced EPDM /2 layers of XPS / FilterCloth / SoftSuface Panels						
Sample ID:	А					
Failure Pressure (psf):	150					
Failure Time (sec):	45					
Failure Mode:	Seam Failure					
Passing Pressure (psf):	135	The American Street Street				
2:1 Safety Margin(psf):	67.5	Photo 1: Overview of Failure Mode				

2. CONCLUSIONS:

2.1 Trinity|ERD has tested SofSurface Panel systems, described in Table IA in accordance with the procedures set forth in FM Standard 4470, resulting in the wind uplift resistance data noted in Tables IB.

Please contact our offices with any questions.

Sincerely, TRINITY | ERD

Charles Phillips Laboratory Manager

REPORT HISTORY: <u>**Date**</u> 05/22/2009 12/16/2009

<u>Event</u> Draft Report Issued Final Report Issued

Reviewed by:

Robert Nieminen, P.E. Vice President

<u>Notes</u> For Client Review None Authorized By: RN RN

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