

Bulletin

Roof Testing Laboratory (ISO 17025)

UL Third Party Test Data Program participant



Roof System Dynamic Wind Uplift Resistance Results

File number:	PTFS-240597-03
Test date:	2017-06-20
Reappraisal date:	2026-05-26



FULLY ADHERED TPO LEXCAN WITH ULTRASTICK AND LEXPHALT LG (AARS) ADHESIVE APPLIED ROOFING SYSTEM

Tested Roofing System Summary

Cap sheet membrane:	Single ply TPO membrane / Adhered
Base sheet membrane:	n/a
Cover board:	Polyisocyanurate board 4 x 8 ft x ¼ in / Adhered
Insulation:	Polystyrene insulation board 4 x 4 ft x 3 in / Adhered
Vapour barrier:	Self-adhesive membrane
Thermal barrier:	n/a
Decking:	Steel deck

Dynamic Uplift Resistance (DUR) as per CSA A123.21

System Designation	Sustained Pressure (S.P.) (measured)	As per CSA A123.21:20 DUR = (S.P. x 0,65)	As per CSA A123.21:14 DUR = (S.P. ÷ 1,5)
A	-5,7 kPa (-120 psf)	-3,7 kPa (-78 psf)	-3,8 kPa (-80 psf)

According to the scope of accreditation published on the SCC website
Accredited Laboratory No. 797





Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a polyester reinforcement encapsulated between two plies of thermoplastic polyolefin.				
System	Application Method			
A	Fully adhered with Ultrastick			
ELIGIBLE PRODUCT(S)				
Lexcan	TPO Hi-Tuff 1,5 mm (60 mil)	TPO Hi-Tuff 2,0 mm (80 mil)		

BASE SHEET MEMBRANE				
TESTED PRODUCT: n/a				

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COVER BOARD				
TESTED PRODUCT: Polyisocyanurate board laminated to a mineral coated fiberglass reinforced facer.				
System	Application Method		Fastening Rate	
A	Adhered		Ribbons at 6 in o.c.	
ELIGIBLE THICKNESS(ES)				
¼ in minimum				
FASTENING METHOD				
Lexphalt LG adhesive				
FASTENING PATTERN				
ELIGIBLE PRODUCT(S)				
Lexcor	Lexboard			
Georgia-Pacific	DensDeck	DensDeck Prime		
USG	Securock Gypsum Fiber			
Unifix	PermaBase Dek			
National Gypsum Company	DEXcell Cement Roof Board	DEXcell FA Glass Mat Roof Board		

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INSULATION				
TESTED PRODUCT: Expanded polystyrene insulation board.				
System	Application Method		Fastening Rate	
A	Adhered		Ribbons at 6 in o.c.	
ELIGIBLE THICKNESS(ES)				
3 to 8 in				
FASTENING METHOD				
Lexphalt LG adhesive				
FASTENING PATTERN				
ELIGIBLE PRODUCT(S)				
Fransyl	Izolon HR	Izolon THR	Izolon HD	Izolon THD
Lexcor	Isolex	Isolex II		
Atlas Roofing Corp.	ACFoam II	ACFoam III		
Johns Manville	ENRGY 3	ENRGY 3 CGF		
IKO	IKOTherm	IKOTherm III		



ADDITIONAL INSULATION	
TESTED PRODUCT: Optional (same thicknesses and same eligible products as top row).	

VAPOUR BARRIER				
TESTED PRODUCT: Self-adhesive membrane composed of a non-asphaltic adhesive backing and a reinforced surface of woven polypropylene laminated with a non-woven polyester.				
System	System			System
A	Self-adhered			Ultrastick
ELIGIBLE PRODUCT(S) : Vapour barrier				
Adhered membranes				
Lexcor	Permate Stick			
Fused membranes (over suitable substrate)				
Lexcor	Vanguard 95 SF	Vanguard 180 SF		
IKO	Torchflex 95 SF	Torchflex 180 SF		
ELIGIBLE PRODUCT(S) : Primer				
With adhered membranes				
Lexcor	Ultrastick	Multigrip		
With fused membranes				
Lexcor	Lexprime TG			

THERMAL BARRIER
TESTED PRODUCT: n/a

FASTENERS
TESTED PRODUCT(S): n/a



ADHESIVE				
TESTED PRODUCT: Membranes : Sprayed adhesive consisting of a mixture of synthetic rubber in a non-chlorinated organic solvent.				
TESTED PRODUCT: Board stock: One-component low-rise liquid polyurethane adhesive that cures with moisture.				
System	Ribbon's spacing			Primer
A	Membrane and vapour barrier: full surface			n/a
	Board stock: 6 in o.c.			
ELIGIBLE PRODUCT(S)				
Lexcor	Ultrastick	Multigrip		
Lexcor	Lexphalt LG	Insultac II	Adphalt	

DECKING				
PRODUCT: Steel deck.				
Grade	Thickness (in)	Yield strength (ksi)	Span spacing (in)	Fasteners spacing (in)
230	0,03	33	54	6
Additional testing could be performed on concrete, plywood, planks or other substrates to assess eligibility to possible decking equivalencies. On a building, the attachment of the decking to the supporting structure must be strong enough to resist wind uplift loads (as defined per NBC requirements).				



General Notes

1. Source:

This publication is based on a test conducted by **EXP Services inc.**

2. Deck equivalency products:

EXP carried tests over exterior type Douglas Fir Plywood deck, of 16 mm (5/8 in.) minimum thickness, meeting CSA 0121, CSA 0151, CSA 0153 standards, EASY T&G and DFP grade, yielding a load limit of L/180; 6 kPa (125 psf). Those tests demonstrated that Permaste Stick self-adhered membrane, used as a vapour barrier, is suitable over a wood deck previously prepared with Ultrastick or Multigrip primer from Lexcor.

EXP carried tests over cured concrete slab. Those tests demonstrated that a Vanguard 95 SF membrane, used as a vapour barrier, is suitable over concrete deck previously prepared with Lexprime TG primer from Lexcor.

The deck's fastening to the supporting structure must be strong enough to resist wind uplift loads (as defined per NBC requirements).

3. Fasteners Pull Out Resistance:

Tests were conducted in laboratory according to ANSI/SPRI FX-1 standard, over a minimum of 10 specimens over steel deck (unless stated otherwise).

4. Adhesive Pull Resistance (when applicable):

Tests were conducted in laboratory over 3 test samples, according to ANSI/SPRI IA-1 standard over steel deck (unless stated otherwise) or, according to ASTM D1623 standard.

5. Note on adhesive:

It is EXP opinion that the application of the adhesive beads in an "S" or straight-line arrangement will not affect the results of this publication. The intention at the job site should be that the glue bead spacings be reasonably distributed on the substrate, in order to come as close as possible to the theoretical patterns when the boards are laid in. Comply with all additional manufacturer's requirements regarding the use of adhesives.

6. Liquid primers and adhesives:

Please observe the application rates specified by the manufacturers, as well as any additional requirements when applying liquid primers and adhesives.

7. Equivalent products:

Only the products listed in this report under eligible products are deemed acceptable as substitute to the tested products. Any other modifications must be formally requested to EXP to be studied for approval.



8. Optional components:

Any components of this roofing system listed as optional, may be removed from the roof design. Inclusion or exclusion of the said component having no effect on the published dynamic uplift resistance results. (DUR).

9. Building Wind Load Calculation:

An online calculator will compute the Wind Load of any given building, for field, perimeters and corners, as per 2015 NBC requirement. It will also provide the dimensions of the perimeter and corner areas. The calculator is available at <https://nrc.canada.ca/en/research-development/products-services/software-applications/wind-load-calculators-roof-cladding-vegetated-roof-assembly>

10. Dynamic Uplift Resistance (DUR) calculation:

CSA A123.21 (2014 and earlier) specified to divide the measured result by 1,5 to obtain the effective wind resistance (DUR).
CSA A123.21 (2020) suggest to multiply the measured result with 0,65 to obtain the effective wind resistance (DUR).

11. Technical Advisories:

This roof system assessment reports must be read in conjunction with any issued technical advisories from EXP.

12. Notice:

EXP reserves the right to withdraw, without prior notice, any Bulletin of Roof System Dynamic Wind Uplift Resistance Results published and/or make any necessary corrections.

The information in this roofing system report (the "Report") are based on the tests run by EXP of certain combination of materials in a specific and controlled condition to determine the resistance of different roofing systems to wind uplift forces (the "Test"). The results of the Test are subject to certain prerequisite conditions and assumptions made during the Test. In this regard, the Report is for the exclusive use of EXP client for whom the Report was prepared. The information contained in the Report must not be reproduced, used or relied upon in whole or in part without the written consent of EXP. Any third-party user assumes sole responsibility for the use it makes of the information in the Report including but not limited to any decision to purchase roofing material in reliance of the information found in the Report or on the Site. **Exp disclaims all warranties as to the accuracy, completeness, or adequacy of the information in the Report or on the Site and accepts no responsibility for damages suffered by any third party arising out of decisions made or actions based on the Report.**

13. Version tracking table:

2017-09-18	First edition.
2019-06-05 (R1)	Addition of eligible products.
2020-03-10 (R2)	Addition of eligible vapour barrier membranes.
2021-04-08 (R3)	Removal of the optional thermal barrier (not tested in an AARS system) and update of the presentation layout.
2023-05-26 (R4)	Presentation update, addition of eligible cap sheet membranes and vapour barriers.

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Date