

Roof Testing Laboratory



Roof System Dynamic Wind Uplift Resistance Results

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

Roofing System Summary

Cap sheet membrane:	Single ply TPO membrane / Adhered with Ultrastick
Base sheet membrane:	N/A
Cover board:	Very high density polyisocyanurate board 1220 x 2440 x 6 mm (4' x 8' x 1/4") / Adhered with Lexphalt LG
Insulation:	Polystyrene insulation board 1220 x 1220 x 76 mm (4' x 4' x 3") / Adhered with Lexphalt LG
Vapour barrier:	Self-adhesive membrane
Thermal barrier:	Optional
Decking:	Steel deck

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

System Designation	Measured Value	Computed Value (To Include 1.5 Experimental Factor)
A	-5,7 kPa (-120 psf)	-3,8 kPa (-80 psf)

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Products

CAP SHEET MEMBRANE			
TESTED PRODUCT: Membrane composed of a polyester reinforcement encapsulated between two plies of thermoplastic polyolefin.			
System	Application Method	Row spacing	Fasteners spacing
A	Fully adhered	N/A	N/A
ELIGIBLE PRODUCT(S)			
Lexcan	TPO Hi-Tuff 1.5 mm (60 mil)		
BASE SHEET MEMBRANE			
TESTED PRODUCT: N/A			

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COVER BOARD				
TESTED PRODUCT: Polyisocyanurate foam core bonded between two ore-coated reinforced fiberglass mat.				
System	Application Method		Fastening Rate	
A	Adhered with Lexphalt LG		Ribbons at 152 mm (6 in) o.c.	
ELIGIBLE THICKNESS(ES)				
6 mm (¼ in)				
FASTENING METHOD				
Lexphalt LG adhesive				
FASTENING PATTERN				
<p>System A</p>				
ELIGIBLE PRODUCT(S)				
Lexcor	Lexboard			



INSULATION (Top Row)		
TESTED PRODUCT: Expanded polystyrene insulation board.		
System	Application Method	Fastening Rate
A	Adhered with Lexphalt LG	Ribbons at 152 mm (6 in) o.c.
ELIGIBLE THICKNESS(ES)		
76 à 203 mm (3 à 8 in)		
FASTENING METHOD		
Lexphalt LG adhesive		
FASTENING PATTERN		
<p>System A</p> <p>The diagram shows a square panel measuring 1,220m by 1,220m. It features four horizontal adhesive ribbons. The spacing between the ribbons is 152mm. The distance from the top and bottom edges to the first and last ribbons is 76mm. The distance from the left and right edges to the first and last ribbons is also 76mm.</p>		

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ELIGIBLE PRODUCT(S)				
Fransyl	Izolon HR	Izolon THR	Izolon HD	Izolon THD
Lexcor	Isolex	Isolex II		
Atlas Roofing Corp.	ACFoam II	ACFoam III	ACFoam IV	
Johns Manville	ENRGY 3	ENRGY 3 CGF		
IKO	IKOTherm	IKOTherm III		

INSULATION (Bottom Row)
TESTED PRODUCT: N/A

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	Fastening Method	Primer
A	Self-adhered	Ultrastick
ELIGIBLE PRODUCT(S) : VAPOUR BARRIER		
Lexcor	Permate Stick	
ELIGIBLE PRODUCT(S) : PRIMER		
Lexcor	Multigrip	

THERMAL BARRIER				
TESTED PRODUCT: Optional				
ELIGIBLE PRODUCT(S) → with 16 #12 screws and 3 in metal plates, per board of 4' x 8'				
Finex	Finex (½ in min.)			
Georgia-Pacific	DensDeck (½ in min.)	DensDeck Prime (½ in min.)		
USG	Securock (½ in min.)			
Unifix	PermaBase Dek (½ in min.)			



FASTENERS	
TESTED PRODUCT(S): N/A	

ADHESIVE			
TESTED PRODUCT: membranes: aerosol 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 vapor retarder: full surface		N/A
	Board stock: 152 mm (6 in) o.c.		N/A
ELIGIBLE PRODUCT(S)			
Lexcor	Ultrastick	Multigrip	
Lexcor	Lexphalt LG	Insultac II	Adphalt



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General Notes

1. **Decking:**

The tests performed by EXP services inc. («EXP») were performed over a standard roll formed steel deck profile, with a galvanized or aluminum/zinc alloy coating finished, as per ASTM A653, A792, A1008 or CSSBI 10M standards, bearing a thickness of 0.76 mm (0.03 inch) minimum (commonly defined as 22 gauge), corresponding to the ASTM A653M grade SS 230, having a yield point of 230 MPa (33 ksi) and a tensile strength of 310 MPa (45 Ksi).

2. **Equivalencies:**

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:**

Testing were conducted in laboratory according to ANSI/SPRI FX-1 2011 standard, over a minimum of 10 test samples on a **Com-Ten** apparatus over steel deck (unless stated otherwise).

4. **Adhesive Pull Resistance:**

Testing were conducted in laboratory over 3 test samples, according to ANSI/SPRI IA-1 2010 standard on a **Com-Ten** apparatus over steel deck (unless stated otherwise) or, according to ASTM D1623 standard over a universal press testing bench, for in-between materials.

5. **Note on adhesive:**

Follow all guide lines or supplementary instructions from the manufacturer regarding adhesive application.

6. **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 requested in written, on EXP application form, to be studied for approval.

7. **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).

8. **Experimental factor:**

In accordance with CSA A123.21 standard, the published dynamic uplift resistance (DUR) include a computed experimental factor of 1,5.

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9. Building Wind Load Calculation:

An online calculator is available at <https://www.nrc-cnrc.gc.ca>.

The calculator will compute, the Wind Load of any given building, for field, perimeter and corners, as per 2015 CNB requirement, without experimental factor. It will also compute perimeter's and corner's zone dimensions.

10. Technical Advisories:

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

11. 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.**

12. Version tracking table:

2017-09-18	First edition
2019-06-05 (R1)	Addition of eligible products

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