

Bulletin

Roof Testing Laboratory (ISO 17025)

UL Third Party Test Data Program participant



Roof System Dynamic Wind Uplift Resistance Results

File number:	DRS-23004948
Test date:	2023-05-01
Reappraisal date:	2026-07-10



LEXCAN TPO MEMBRANE 60 MIL INDUCTION BONDED, PATTERN 18" X 24" (APPROX. 10 FASTENERS PER 4'X8' BOARD)

(MARS) MECHANICALLY ATTACHED ROOFING SYSTEM

Tested Roofing System Summary

Cap sheet membrane:	TPO membrane / Induction bonded
Base sheet membrane:	n/a
Cover board:	Optional
Insulation (top):	Polyisocyanurate foam insulation board 4 x 8 ft x 1½ in / Mechanically fastened
Additional insulation (bottom):	Polystyrene insulation board 4 x 8 ft x 1½ in / Loose laid
Vapour barrier:	Plastic sheeting / Loose laid
Thermal barrier:	Optional
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	-4,3 kPa (-90 psf)	-2,8 kPa (-59 psf)	-2,9 kPa (-60 psf)

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



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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: Two-ply membrane composed of thermoplastic polyolefin and reinforced with polyester.				
System	Application Method			
A	Membrane induction-bonded to insulation plates. Joints between membranes fused over approximately 2 inches.			
ELIGIBLE PRODUCT(S)				
Lexcan	TPO Lexcan (60 mil)	Hi-Tuff TPO XTRA membrane 2.0 mm (80 mil)	Hi-Tuff TPO HS membrane 1.5 mm (60 mil)	Hi-Tuff TPO XTRA HS membrane 1.8 mm (72 mil)
	Hi-Tuff TPO XTRA HS membrane 1.8 mm (80 mil)			

BASE SHEET MEMBRANE				
TESTED PRODUCT: n/a				

COVER BOARD				
TESTED PRODUCT: Optional.				
ELIGIBLE PRODUCT(S)				
Lexcor	Lexboard	Isolex Mach 12		
Georgia-Pacific	DensDeck	DensDeck Prime		
USG	Securock Gypsum fiber Roof Board			
Unifix	PermaBase Dek			
National Gypsum	DEXcell Cement Roof Board	DEXcell FA Glass Mat Roof Board	DEXcell	
Generic	Oriented Strand Board (OSB)	Plywood	Gypsum Board	

Roof Testing Laboratory (ISO 17025)



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DRS-23004948

INSULATION (Top Row)				
TESTED PRODUCT: Closed cell polyisocyanurate foam board, laminated on both sides to a black felt covering (no asphalt) reinforced with fiberglass.				
System	Application Method		Fastening Rate	
A	Mechanically fastened		Fasteners positioning is independent of insulation (see drawing below)	
ELIGIBLE THICKNESS(ES)				
1½ in minimum				
FASTENING METHOD				
Screws and plates				
FASTENING PATTERN				
ELIGIBLE PRODUCT(S)				
Lexcor	Isolex	Isolex II	Isolex Mach 12	
IKO	IKOTherm	IKOTherm II		
Atlas Roofing Corp.	ACFoam II	ACFoam III		
Johns Manville	ENRGY 3	ENRGY 3 CGF		

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DRS-23004948

ADDITIONAL INSULATION (Bottom Row)				
TESTED PRODUCT: Expanded polystyrene insulation board.				
System	Application Method		Fastening Rate	
A	Loose laid		n/a	
ELIGIBLE THICKNESS(ES)				
1½ in minimum				
ELIGIBLE PRODUCT(S)				
FRANSYL	Izolon HR	Izolon THR	Izolon HD	Izolon THD
Lexcor	Isolex	Isolex II	Isolex Mach 12	
IKO	IKOTherm	IKOTherm II		
Atlas Roofing Corp.	ACFoam II	ACFoam III		
Johns Manville	ENRGY 3	ENRGY 3 CGF		

VAPOUR BARRIER				
TESTED PRODUCT: Polyethylene plastic sheeting.				
System	Fastening Method		Primer	
A	Loose laid		n/a	
ELIGIBLE PRODUCT(S)				
Lexcor	Polyethylene PE-6 (6 mil)	Lexshield	Permate Stick	Permate
Generic	Polyethylene membrane (6 mil minimum)		Self-adhesive membrane	

THERMAL BARRIER				
TESTED PRODUCT: Optional.				
ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck	DensDeck Prime		
USG	Securock Gypsum Board			
National Gypsum	DEXcell	DEXcell FA	DEXcell Cement Board	
Application method: loose laid, adhered or mechanically fastened. The securement method, rate and thickness to meet codes requirements, are the designer's responsibilities.				



FASTENERS (see general note #3)				
TESTED PRODUCT(S)				
System	Screw		Plate	
A	Lexgrip #15 DP		JM TPO Rhino Plates	
FASTENERS MEASURED PULL OUT RESISTANCE				
520 lbf (measured)				
ELIGIBLE PRODUCT(S)				
	Screw		Plates	
	Manufacturer	Identification	Manufacturer	Identification
Membrane	n/a	n/a	n/a	n/a
Insulation	Lexcor	Lexgrip #15 DP	Johns Manville	JM TPO Rhino Plates
			SRD	SRD TPO Induction plates
			Lexcor	Lexgrip TPO induction plate
			OMG*	TPO induction plate

*Or any brand of plates manufactured by OMG under private label.

ADHESIVE
TESTED PRODUCT: n/a

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, plank, 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).				

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General Notes

1. Source:

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

2. Deck equivalency products:

18 to 22 gage steel deck. Wood or concrete deck which testing gave equivalent or superior uplift resistance than the value specified in the "Fasteners Pull Out Resistance" section.

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:

2023-07-10	First edition.

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