

Bulletin

Roof Testing Laboratory (ISO 17025)

UL Third Party Test Data Program participant



Roof System Dynamic Wind Uplift Resistance Results



File number:	MTS-21022994
Test date:	2022-03-11
Reappraisal date:	2025-06-30



MODIFIED BITUMEN SYSTEM COMPRISING COMPOSITE COVER BOARD AND DEXCELL THERMAL BARRIER

(AARS) ADHESIVE APPLIED ROOFING SYSTEM

Tested Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fused
Base sheet membrane:	Included to cover board
Cover board:	Board composed of a base sheet membrane laminated to a high density polyisocyanurate board 3 x 8 ft x 1/2 in / Adhered
Insulation:	Polyisocyanurate foam insulation board 4 x 4 ft x 1 1/2 in / Adhered
Additional insulation:	Polystyrene insulation board 4 x 4 ft x 2 in / Adhered
Vapour barrier:	Self-adhesive membrane
Thermal barrier:	Fire and moisture resistant cement board 4 x 4 ft x 7/16 in / Adhered
Decking:	Steel deck

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

System Designation	Measured testing value According to CSA A123.21:20	Result reduced by a factor of 1,5 According to CSA A123.21:14
A	-7,1 kPa (-149 psf)	-4,7 kPa (-99 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 non-woven polyester mat strengthened with glass fiber strands and saturated with SBS modified bitumen.				
System	Application Method			
A	Fused			
ELIGIBLE PRODUCT(S)				
System with fused cap sheet membrane				
IKO	Torchflex TP-250-Cap	Torchflex TP-180-Cap	Torchflex TP-250-Cap 5 mm	Torchflex PrevEnt TP-180
	Torchflex PrevEnt TP-250	Torchflex PrevEnt Premium TP-250	Torchflex 180-FF	Torchflex 180-SF ⁽¹⁾
	Torchflex TP-HD-Cap	Torchflex TP-HD-FF-Base	PrevEnt TP-HD-Cap	PrevEnt TP Premium
	ArmourCool Granular TP-HD-Cap	ArmourCool HD-Cap	ArmourCool	Carrara ArmourCool-250
	Carrara ArmourCool HD			
LEXCOR	Vanguard TP 250 Cap	Vanguard 180 FF	Vanguard 180 SF ⁽¹⁾	
Johns Manville	DynaWeld Cap 180	DynaWeld Cap 180 FR	DynaWeld Cap 250	DynaWeld Cap 180 FR CR G
	DynaWeld 180 S ⁽¹⁾	DynaWeld 250 FR	DynaWeld Cap FR CR (coated)	DynaKap FR T1 HW
System with asphalt type III applied cap sheet membrane				
IKO	Modiflex MP-180-SS ⁽¹⁾	Modiflex MP-180-Cap	Modiflex MP-250-Cap	Modiflex MP-HD-Cap
	Modiflex MP-HD-FS-Base	Modiflex MP-HD-SS-Base ⁽¹⁾	PrevEnt MP Premium 250	PrevEnt MP-250 Cap
	PrevEnt MP-HD-Cap			
LEXCOR	Vanguard 180 SS ⁽¹⁾	Vanguard 250 MC		
Johns Manville	DynaLastic 250 FR	DynaLastic 180 FR CR G	DynaLastic 180 S ⁽¹⁾	DynaLastic 180 Cap
	DynaLastic 250 Cap	DynaKap T1	DynaKap FR T1	
System with asphalt applied cap sheet membrane & gravel surface embedded in asphalt, type III				
IKO	Modiflex MP-180-SS			
LEXCOR	Vanguard 180 SS			
Johns Manville	DynaLastic 180 S			

⁽¹⁾ these membranes can be covered with a finishing surface; asphalt and gravel, reflective coating, others.



BASE SHEET MEMBRANE

TESTED PRODUCT: Included to cover board.

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COVER BOARD				
TESTED PRODUCT: 2-in-1 composite board composed of a bituminous base sheet membrane factory-laminated to a high density polyisocyanurate board. The base sheet membrane is composed of a non-woven fiberglass or polyester material, enhanced with fiberglass strands and SBS modified bitumen.				
System	Application Method		Fastening Rate	
A	Adhered		Ribbons at 6 in o.c.	
ELIGIBLE THICKNESS(ES)				
1/2 in				
FASTENING METHOD				
Insultac II adhesive				
FASTENING PATTERN				
<p>The diagram illustrates a rectangular fastening pattern on a 96" wide board. There are 16 vertical fastening ribbons spaced 6" on center. The ribbons are positioned 3" from the left and right edges. The board height is 36".</p>				
ELIGIBLE PRODUCT(S)				
Lexcor	Lexbase R+	Lexbase R+ sanded		

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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	Adhered		Ribbons at 6 in o.c.	
ELIGIBLE THICKNESS(ES)				
1½ in minimum				
FASTENING METHOD				
Insultac II adhesive				
FASTENING PATTERN				
<p>The diagram shows a square fastening pattern with a width of 48 inches and a height of 48 inches. There are 10 vertical ribbons spaced at 6 inches on center. The first ribbon is 3 inches from the left edge, and the last ribbon is 3 inches from the right edge.</p>				
ELIGIBLE PRODUCT(S)				
LEXCOR	Isolex	Isolex II		
FRANSYL	Izolon HR	Izolon THR	Izolon HD	Izolon THD
IKO	IKOTherm	IKOTherm III		
Atlas Roofing Corp.	ACFoam II	ACFoam III	ACFoam IV	
Johns Manville	ENRGY 3	ENRGY 3 CGF		

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ADDITIONAL INSULATION (Bottom Row)				
TESTED PRODUCT: Expanded polystyrene insulation board.				
System	Application Method		Fastening Rate	
A	Adhered		Ribbons at 6 in o.c.	
ELIGIBLE THICKNESS(ES)				
2 in minimum				
FASTENING METHOD				
Insultac II adhesive				
FASTENING PATTERN				
<p style="text-align: center;">3" 6" 6" 6" 6" 6" 6" 6" 6" 3"</p> <p style="text-align: center;">48"</p> <p style="text-align: center;">48"</p>				
ELIGIBLE PRODUCT(S)				
FRANSYL	Izolon HR	Izolon THR	Izolon HD	Izolon THD
LEXCOR	Isolex	Isolex II		
IKO	IKOTherm	IKOTherm III		
Atlas Roofing Corp.	ACFoam II	ACFoam III	ACFoam IV	
Johns Manville	ENRGY 3	ENRGY 3 CGF		



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			

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THERMAL BARRIER			
TESTED PRODUCT: Fire and moisture resistant board composed of Portland cement and lightweight aggregates with heavy duty fiberglass-mesh facers.			
System	Application Method		Fastening Rate
A	Adhered		Ribbons at 12 in o.c.
ELIGIBLE THICKNESS(ES)			
7/16 in minimum			
FASTENING METHOD			
Insultac II adhesive			
FASTENING PATTERN(S)			
ELIGIBLE PRODUCT(S)			
National Gypsum Company	DEXcell Cement Roof Board	DEXcell FA Glass Mat Roof Board	
Unifix	PermaBASE DEK		

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FASTENERS	
TESTED PRODUCT(S): n/a	

ADHESIVE			
TESTED PRODUCT: Two-component low-rise urethane foam adhesive.			
System	Ribbon's spacing		Primer
A	Cover board and insulation boards: 6 in o.c.		n/a
	Thermal barrier: 12 in o.c.		n/a
ELIGIBLE PRODUCT(S)			
Lexcor	Insultac II		

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 decks or standard 4' x 8' x 5/8" plywood decks to assess eligibility for possible 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 NBCC requirements).				



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 2011 standard, over a minimum of 10 test samples on a **Com-Ten** apparatus 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 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:

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 requested in written, on EXP application form, 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. Experimental factor:

In accordance with CSA A123.21 -14 standard, the published dynamic uplift resistance (DUR) includes a computed experimental factor of 1,5.

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10. 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, perimeters and corners, as per 2015 NBCC requirement, without experimental factor. It will also compute perimeters' and corner's zone dimensions.

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:

2022-06-30	First edition.

Prepared by:

EXP Services Inc.

Serge Rochon, P. Eng.
O.I.Q. N° : 114865
P.E.O. N° : 100023274
Provincial Manager – Building science and CSA laboratory

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Date