

## Roof Testing Laboratory



## Roof System Dynamic Wind Uplift Resistance Results

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### VANGUARD LEXBASE G MECHANICALLY FASTENED

### (PARS) PARTIALLY ATTACHED (HYBRIDE) ROOFING SYSTEM

#### Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Torch applied
Base sheet membrane:	N/A
Cover board:	Gypsum board with modified bitumen membrane 914 x 2440 x 6 mm (3' x 8' x 1/4") / Mechanically fastened
Insulation:	Polystyrene insulation board 1220 x 1220 x 76 mm (4' x 4' x 3") / Loose laid
Vapour barrier:	Plastic sheeting / Loose laid
Thermal barrier:	N/A
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	-3,8 kPa (-80 psf)	-2,5 kPa (-53 psf)

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### Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: SBS modified bitumen membrane composed of heavy-duty non-woven polyester reinforced with glass fiber strands.				
System	Application Method			
A	Torch applied			
ELIGIBLE PRODUCT(S)				
Lexcor	Vanguard 250 TC	Vanguard TP-250-Cap	Vanguard 180 SF	
IKO	Torchflex TP-180-SF	TP-250-Cap 5 mm	Torchflex TPQ-250-Cap	Torchflex TP-180-Cap
	Torchflex 250-Cap	Torchflex TP-250-Cap	Armourcool	Torchflex Prevent TP-180
	Torchflex Prevent TP-250	Torchflex Prevent Premium TP-250		
Bakor	Modified Plus NP 180	Modified Plus NP 250		

BASE SHEET MEMBRANE				
TESTED PRODUCT: N/A				

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COVER BOARD			
<b>TESTED PRODUCT:</b> Board composed of SBS modified bitumen membrane made of non-woven polyester reinforced with glass fiber strands and factory-laminated to a fiberglass-embedded gypsum board.			
System	Application Method	Fastening Rate	
A	Mechanically fastened	457 mm (18 in) o.c. in overlaps and 457 mm (18 in) o.c. in the board middle line	
ELIGIBLE THICKNESS(ES)			
6 mm (¼ in)			
FASTENING METHOD			
Screws and plates			
FASTENING PATTERN			
<p><b>System A</b></p>			
ELIGIBLE PRODUCT(S)			
Lexcor	Vanguard Lexbase G		

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INSULATION (Top Row)				
TESTED PRODUCT: Expanded polystyrene insulation board.				
System	Application Method		Fastening Rate	
A	Loose laid		N/A	
ELIGIBLE THICKNESS(ES)				
All thicknesses				
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		

INSULATION (Bottom Row)				
TESTED PRODUCT: S/O				

VAPOUR BARRIER			
TESTED PRODUCT: Polyethylene plastic sheeting.			
System	Fastening Method		Primer
A	Loose laid		N/A
ELIGIBLE PRODUCT(S)			
Lexcor	PE-6 polyethylene 6 mil (0,15 mm)		
Generic	Any type of vapour barrier		

THERMAL BARRIER			
TESTED PRODUCT: N/A			



FASTENERS		
TESTED PRODUCT(S): #15 roofing fasteners		
System	Screws	Plates
A	#15	Round toothed metal of 51 mm (2 in) or 61 mm (2,4 in)
FASTENERS MEASURED PULL OUT RESISTANCE		
327 kgf (721 lbf)		
ELIGIBLE PRODUCT(S)		
Lexcor (Lexgrip)	#15	Round toothed metal plates (2 in)
ADHESIVE		
TESTED PRODUCT: N/A		

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### General notes

#### 1. Decking:

Tests 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). Tests could be performed on concrete deck or standard 4' x 8' x 5/8" plywood deck to assess eligibility for possible equivalencies.

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

#### 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:

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.

#### 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.

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### 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:

2017-08-21	First edition
2019-03-20 (R1)	Addition of eligible products
2019-06-05 (R2)	Addition of eligible products

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Date

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