

Bulletin

Roof Testing Laboratory



Roof System Dynamic Wind Uplift Resistance Results

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MOD-BIT ASPHALT ADHERED SYSTEM

(AARS) ADHESIVE APPLIED ROOFING SYSTEM

Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fully adhered with asphalt
Base sheet membrane:	Modified bitumen membrane / Fully adhered with asphalt
Cover board:	Cover board composed of a fortified asphaltic core 1220 x 1524 x 3,2 mm (4' x 5' x 1/8") / Fully adhered with asphalt
Insulation:	Rigid polyisocyanurate foam insulation board 1220 x 1220 x 51 mm (4' x 4' x 2") / Fully adhered with asphalt
Vapor barrier:	#15 saturated felt membrane (2 plies) / Fully adhered with asphalt
Thermal barrier:	Moisture and fire resistant gypsum board 1220 x 2438 x 12,7 mm (4' x 8' x 1/2") / Adhered with Millennium
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	-7,2 kPa (-150 psf)	-4,8 kPa (-100 psf)

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a high-strength non-woven polyester reinforcement saturated with SBS modified bitumen				
System	Application Method			
A	Fully adhered with asphalt type III			
ELIGIBLE PRODUCT(S)				
IKO	Application method: asphalt applied:			
	Modiflex MP-180-Cap	Modiflex MP-HD-Cap	Modiflex MP-250-Cap	PrevENT MP-250-Cap
	PrevENT MP-HD-Cap	Any IKO organic/non-organic BUR		
	Application method: torch applied:			
	Torchflex TP-250-Cap	PrevENT TP-250-Cap	ArmourCool Granular TP-HD	Torchflex TPQ-250-Cap
	PrevENT Premium TP-250-Cap	ArmourCool Granular PrevENT TP-HD	Torchflex TP-HD-Cap	PrevENT TP-HD-Cap
	ArmourCool Granular PrevENT Premium TP-HD	Torchflex TP-250-Cap (5 mm)	PrevENT Premium TP-HD	ArmourCool Granular TP
	Torchflex TP-180-Cap	PrevENT ArmourCool Granular TP	Carrara ArmourCool 250	PrevENT ArmourCool HD Cap
	Carrara ArmourCool HD			



BASE SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a high-strength non-woven fiberglass reinforcement saturated with SBS modified bitumen				
System	Application Method		Row spacing	Fasteners spacing
A	Fully adhered with asphalt type III		N/A	N/A
ELIGIBLE PRODUCT(S)				
IKO	Application method: asphalt applied:			
	Modiflex MF-95-SS-Base	Modiflex MP-180-FS-Base	Modiflex MP-180-SS-Base	Modiflex MP-HD-SS-Base
	Modiflex MP-HD-FS-Base	Modiflex MF-95-FS-Base	Modiflex MF-95-SS-Base	Modiflex Cold Gold Base
	Modiflex MF-95-Base	Modiflex MP-180-SS-Base (3 mm)		
	Application method: torch applied:			
	Torchflex TF-95-SF-Base	Torchflex TF-95-FS-Base	Torchflex TP-180-FF-Base	Torchflex TP-HD-FF-Base
	Torchflex TP-180-SF-Base	Torchflex HD-FF-Base		

COVER BOARD				
TESTED PRODUCT: Cover board composed of a mineral-fortified asphaltic core between two layers of high-strength reinforcing glass fiber mat				
System	Application Method		Fastening Rate	
A	Fully adhered with asphalt type III		N/A	
ELIGIBLE THICKNESS(ES)				
Between 3,2 to 12,7 mm (1/8 to 1/2 in)				
FASTENING METHOD				
Asphalt type III				
ELIGIBLE PRODUCT(S)				
IKO	Protectoboard	Protectobase 95	Protectobase 180	

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INSULATION (Top Row)				
TESTED PRODUCT: Rigid insulation board composed of a closed-cell polyisocyanurate foam, between two fiber-reinforced facer				
System	Application Method			Fastening Rate
A	Fully adhered with asphalt type III			N/A
ELIGIBLE THICKNESS(ES)				
Between 51 to 102 mm (2 to 4 in)				
FASTENING METHOD				
Asphalt type III				
ELIGIBLE PRODUCT(S)				
IKO	IKOTherm	IKOTherm Tapered	IKOTherm 25 psi Tapered	IKOTherm III
	IKOTherm III 25 psi	IKOTherm 25 psi		

INSULATION (Bottom Row)				
TESTED PRODUCT : N/A				

VAPOR BARRIER				
TESTED PRODUCT: Membrane composed of two plies of #15 organic felt glued together with type III oxidized bitumen				
System	Fastening Method			Primer
A	Fully adhered with asphalt type III			Fast Dry Modified Adhesive
ELIGIBLE PRODUCT(S)				
IKO	No.15 Perforated Saturated Asphalt Felt - Imperial			
ELIGIBLE PRODUCT(S) over thermal barrier				
IKO	No.15 Perforated Saturated Asphalt Felt - Imperial			

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THERMAL BARRIER				
TESTED PRODUCT: Moisture and fire resistant gypsum board, coated with non-combustible fiberglass felt and non-asphaltic coating				
System	Application Method		Fastening Rate	
A	Adhered with Millennium		Ribbons at 305 mm (12 in) O.C.	
ELIGIBLE THICKNESS(ES)				
Between 12,7 to 15,9 mm (½ to ⅝ in)				
FASTENING METHOD				
Millennium Adhesive				
FASTENING PATTERN(S)				
<p>System A</p> <p>The diagram shows a rectangular panel with a total width of 2.440m and a total height of 1.220m. On the right side, there are five horizontal lines representing fastening ribbons. The spacing between these ribbons is 0.305m, and the distance from the top and bottom edges to the first and last ribbons is 0.152m. On the left and right sides, there are vertical lines representing end offsets, with a distance of 0.076m from each edge to the start and end of the fastening pattern.</p>				
ELIGIBLE PRODUCT(S)				
Georgia-Pacific CGC / USG	DensDeck Prime	DensDeck		
	Securock			

2400 Canadien Street, Drummondville, QC J2C 7W3 Tel. : 819 850-6247 www.exp.com

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FASTENERS PULL OUT RESISTANCE	
TESTED PRODUCT(S): N/A	

ADHESIVE			
TESTED PRODUCT: Type III asphalt consisting of oxidized bitumen (membranes, cover board, insulation, vapour barrier)			
TESTED PRODUCT: Foamable elastomeric adhesive (thermal barrier)			
System	Ribbon's spacing		Primer
A	Full surface applied (membranes, cover board, insulation, vapour-barrier)		N/A
	305 mm (12 in) O.C. (thermal barrier)		N/A
ELIGIBLE PRODUCT(S)			
IKO	Easy-Melt 200	Type III oxidized bitumen (generic)	
IKO	Millennium		

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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). The tests could also be performed on concrete deck or standard 4' x 8' x 5/8" plywood deck.

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 <http://www.exp.com/fr/rooftesting>.

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.

12. Version tracking table :

2014-11-17	First edition
2015-10-05 (R1)	N/D
2017-10-03 (R2)	New presentation layout
2018-07-19 (R3)	Addition of equivalent membranes

Prepared by:

EXP Services Inc.

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Date

Serge Rochon, P.Eng.
Provincial Director – Roofing, & Building Envelope and
CSA test laboratory
OIQ N° 114865