

# Bulletin

## Roof Testing Laboratory



## Roof System Dynamic Wind Uplift Resistance Results

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### ADHESIVE APPLIED SYSTEM OVER THERMAL BARRIER

### (AARS) ADHESIVE APPLIED ROOFING SYSTEM

#### Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Torch applied
Base sheet membrane:	Modified bitumen membrane / Torch applied
Cover board:	Board composed of a fortified asphaltic core 1220 x 1524 x 3,2 mm (4' x 5' x 1/8") / Adhered with foam adhesive
Insulation:	Rigid polyisocyanurate foam insulation board 1220 x 1524 x 51 mm (4' x 5' x 2") / Adhered with foam adhesive
Vapor barrier:	Modified bitumen membrane / Torch applied
Thermal barrier:	Moisture and fire resistant gypsum board 1220 x 2438 x 12,7 mm (4' x 8' x 1/2") / Adhered with foam adhesive
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	-6,3 kPa (-131 psf)	-4,2 kPa (-87 psf)

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### Products

CAP SHEET MEMBRANE				
<b>TESTED PRODUCT</b> : Membrane composed of a non-woven polyester reinforcement saturated with SBS modified bitumen				
System	Application Method			
<b>A</b>	Torch applied			
ELIGIBLE PRODUCT(S)				
<b>IKO Industries</b>	<b>Application method: torch applied</b>			
	Torchflex TP-180-Cap	Torchflex TP-250-Cap	Torchflex TP-250-Cap (5 mm)	PrevEnt TP-250-Cap
	ArmourCool Granular TP	PrevEnt ArmourCool Granular TP	Carrara ArmourCool 250	PrevEnt TP-HD-Cap
	PrevEnt Premium TP-250-Cap	Torchflex TP-HD-Cap	ArmourCool Granular TP-HD	PrevEnt ArmourCool HD-Cap
	Carrara ArmourCool HD			
	<b>Application method: asphalt applied</b>			
	Modiflex MP-250-Cap	PrevEnt MP-250-Cap	Modiflex MP-180-Cap	Modiflex MP-HD-Cap
	PrevEnt MP-HD-Cap	Any IKO organic/non-organic BUR		

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

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COVER BOARD				
<b>TESTED PRODUCT:</b> Cover board composed of a mineral-fortified asphaltic core between two layers of high-strength reinforcing glass fiber mat				
System	Application Method		Fastening Rate	
<b>A</b>	Adhered with Millennium		Ribbons at 305 mm (12 in)	
ELIGIBLE THICKNESS(ES)				
3,2 mm (1/8 in)				
FASTENING METHOD				
Millennium adhesive				
FASTENING PATTERN				
System A				
ELIGIBLE PRODUCT(S)				
<b>IKO Industries</b>	Protectoboard			

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INSULATION (Top Row)				
<b>TESTED PRODUCT:</b> Rigid insulation board composed of a closed-cell polyisocyanurate foam, between two fiber-reinforced facer				
System	Application Method		Fastening Rate	
<b>A</b>	Adhered with Millennium		Ribbons at 305 mm (12 in)	
ELIGIBLE THICKNESS(ES)				
Between 25 to 102 mm (1 to 4 in)				
FASTENING METHOD				
Millennium adhesive				
FASTENING PATTERN				
System A				
ELIGIBLE PRODUCT(S)				
<b>IKO Industries</b>	IKOTherm			

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<b>INSULATION (Bottom Row)</b>
<b>TESTED PRODUCT : N/A</b>

<b>VAPOR BARRIER</b>			
<b>TESTED PRODUCT:</b> Membrane composed of a non-woven fiberglass reinforcement saturated with SBS modified bitumen			
<b>System</b>	<b>Fastening Method</b>		<b>Primer</b>
<b>A</b>	Torch applied		IKO Mod-Bit Primer
<b>ELIGIBLE PRODUCT(S)</b>			
<b>IKO Industries</b>	Torchflex TF-95-SF-Base		
<b>ELIGIBLE PRODUCT(S) over thermal barrier</b>			
<b>IKO Industries</b>	Torchflex TF-95-SF-Base		



THERMAL BARRIER				
<b>TESTED PRODUCT:</b> Moisture and fire resistant gypsum board, coated with non-combustible fiberglass felt				
System	Application Method		Fastening Rate	
<b>A</b>	Adhered with Millennium		Ribbons at 305 mm (12 in)	
ALLOWABLE THICKNESS(ES)				
Between 12,7 to 15,9 mm (½ to 5⁄8 in)				
FASTENING METHOD				
Millennium adhesive				
FASTENING PATTERN(S)				
<p style="text-align: left; margin-left: 20px;">System A</p>				
ELIGIBLE PRODUCT(S)				
<b>Georgia-Pacific</b>	DensDeck	DensDeck Prime		

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

ADHESIVE		
TESTED PRODUCT: Foamable elastomeric adhesive		
System	Ribbon's spacing	Primer
A	305 mm (12 in)	N/A
ELIGIBLE PRODUCT(S)		
IKO Industries	Millennium	

### General Notes



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### 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.

### 10. Technical Advisories:

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

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### 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. Change(s) included in review(s) :

2017-01-30	First edition
2018-07-23 (R1)	Addition of equivalent membranes

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Date

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