

# Bulletin

## Roof Testing Laboratory



## Roof System Dynamic Wind Uplift Resistance Results

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### MOD-BIT MILLENNIUM ADHERED SYSTEM

### (AARS) ADHESIVE APPLIED ROOFING SYSTEM

#### Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fully adhered with Cold Gold
Base sheet membrane:	Modified bitumen membrane / Fully adhered with Cold Gold
Cover board:	Cover board composed of a fortified asphaltic core 1220 x 1524 x 3,2 mm (4' x 5' x 1/8") / Adhered with Millennium
Insulation:	Rigid polyisocyanurate foam insulation board 1220 x 1220 x 51 mm (4' x 4' x 2") / Adhered with Millennium
Vapor barrier:	Kraft paper membrane / Adhered with ArmourGard Vapour Barrier Adhesive
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	-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 high-strength non-woven polyester reinforcement saturated with SBS modified bitumen				
System	Application Method			
A	Fully adhered with Cold Gold adhesive			
ELIGIBLE PRODUCT(S)				
IKO	<b>Attachment method: Adhered</b>			
	Modiflex MP-180-Cap	Modiflex MP-HD-Cap	Modiflex MP-250-Cap	PrevEnt MP-250-Cap
	PrevEnt MP-HD-Cap			
	<b>Attachment method: Torch applied</b>			
	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			
	<b>Attachment method: Asphalt adhered</b>			
Any IKO organic/non-organic BUR				



BASE SHEET MEMBRANE				
<b>TESTED PRODUCT:</b> 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 Cold Gold adhesive		N/A	N/A
ELIGIBLE PRODUCT(S)				
IKO	<b>Attachment method: Adhered</b>			
	Modiflex MF-95-SS-Base	Modiflex MP-180-SS-Base	Modiflex MP-HD-SS-Base	Modiflex MP-180-FS-Base
	Modiflex MP-HD-FS-Base	Modiflex MF-95-FS-Base	Modiflex Cold Gold Base	Modiflex MF-95-Base
	Modiflex MP-180-SS-Base (3 mm)			
	<b>Attachment method: Torch applied</b>			
	Torchflex TF-95-SS-Base	Torchflex TF-95-FS-Base	Torchflex TP-180-FF-Base	Torchflex TP-HD-FF-Base
	Torchflex TF-95-SF-Base	Torchflex TP-180-SF-Base	Torchflex HD-FF-Base	
Note: Cap sheet and base sheet must be checked for manufacturer system compatibility.				

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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	
A	Adhered with Millennium adhesive		Ribbons at 305 mm (12 in.)	
ELIGIBLE THICKNESS(ES)				
Between 3,2 to 12,7 mm (1/8 to 1/2 in.)				
FASTENING METHOD				
Millennium Adhesive by IKO				
FASTENING PATTERN(S)				
<p><b>System A</b></p>				
ELIGIBLE PRODUCT(S)				
IKO	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	
A	Adhered with Millennium adhesive		Ribbons at 305 mm (12 in.)	
ELIGIBLE THICKNESS(ES)				
Between 51 to 102 mm (2 to 4 in.)				
FASTENING METHOD				
Millennium Adhesive by IKO				
FASTENING PATTERN(S)				
<p><b>System A</b></p>				
ELIGIBLE PRODUCT(S)				
IKO	IKOTherm	IKOTherm Tapered	IKOTherm 25 psi Tapered	IKOTherm III
	IKOTherm III 25 psi	IKOTherm 25 psi		

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INSULATION (Bottom Row)	
TESTED PRODUCT: N/A	

VAPOR BARRIER			
TESTED PRODUCT: Membrane composed of two layers of kraft paper bonded together with asphalt			
System	Fastening Method		Primer
A	Adhered with ArmourGard Vapour Barrier Adhesive at 152 mm (6 in.)		N/A
ELIGIBLE PRODUCT(S)			
IKO	ArmourGard Vapour Retardant		

THERMAL BARRIER	
TESTED PRODUCT: N/A	

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

ADHESIVE			
TESTED PRODUCT: Solvent-free, moisture-cured, single-component adhesive (membranes)			
TESTED PRODUCT: Foamable elastomeric adhesive (cover board, insulation)			
TESTED PRODUCT: Vapour barrier adhesive composed of fluidized bitumen (vapour barrier)			
System	Ribbon's spacing		Primer
A	Full adhered application (membranes)		N/A
	305 mm (12 in.) (cover board, insulation)		N/A
	152 mm (6 in.) (vapour barrier)		N/A
ELIGIBLE PRODUCT(S)			
IKO	Cold Gold		
IKO	Millennium		
IKO	ArmourGard Vapour Barrier Adhesive		

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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
2015-04-28 (R1)	N/D
2017-02-21 (R2)	New presentation layout
2018-07-20 (R3)	Addition of equivalent membranes

Prepared by:

**EXP** Services Inc.

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Date

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