Bulletin

Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Number:	IKOI-DRS-231263-05
Test Date:	2017-02-09
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Reappraisal Date:	2021-07-23

INSULATED MOD BIT ROOFING SYSTEM, ADHERED AND MECHANICALLY FASTEN

(PARS) PARTIALLY ATTACHED (HYBRIDE) ROOFING SYSTEM

Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / torch applied
Base sheet membrane:	Modified bitumen membrane / torch applied
Cover board:	Semi-rigid asphaltic board 1220 x 1520 x 3 mm (4' x5' x ⅛") / adhered
Insulation top row:	Polyisocyanurate board 1220 x 1220 x 51 mm (4' x 4' x 2") / adhered
Insulation bottom row:	Polyisocyanurate board 1220 x 2440 x 51 mm (4' x 8' x 2") / mechanically fasten
Vapour barrier:	Kraft paper / loose laid, splice glued
Thermal barrier:	Gypsum board / loose laid
Decking:	Galvanised steel deck

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

System Designation	Measured Value	Computed Value (To Include 1.5 Experimental Factor)
A	-4.5 kPa (-93 psf)	-3.0 kPa (-62 psf)

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a non-woven polyester reinforcement saturated with SBS modified bitumen				
System	**Application Method**			
A	Torched			
ELIGIBLE PRODUCT(S)				
IKO	**Application method: torch applied**			
	Torchflex TP-180-Cap	Torchflex TP-250-Cap	Torchflex TP-250-Cap (5 mm)	Torchflex TP-HD-Cap
	PrevENt Premium TP-250-Cap	PrevENt TP-250 Cap	PrevENt TP-HD-Cap	ArmourCool Granular TP
	PrevEnt ArmourCool Granular TP	PrevEnt ArmourCool HD-TP	ArmourCool Granular TP HD	Carrara ArmourCool 250
	Carrara ArmourCool HD	PrevENt ArmourCool HD-Cap		
	Application method: asphalt applied			
	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		

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

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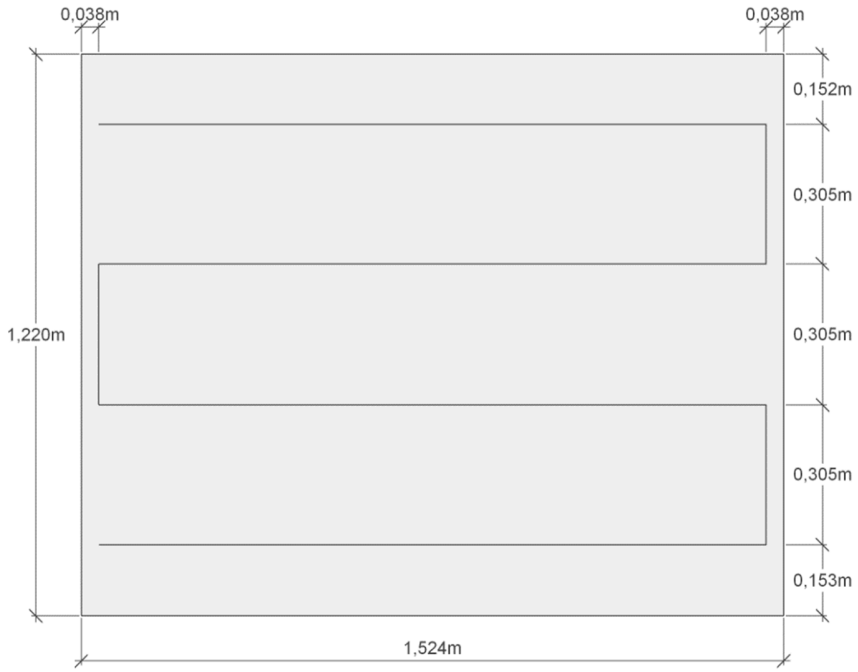
COVER BOARD		
TESTED PRODUCT: Semi-rigid board composed of a mineral-fortified asphaltic core between two asphalt-saturated fiberglass felts		
System	**Application Method**	**Fastening Rate**
A	Adhered	Ribbon at 305 mm (12 po) o.c.
ELIGIBLE THICKNESS(ES)		
3 mm (¼ in)		
FASTENING METHOD		
Millennium Adhesive		
FASTENING PATTERN		

System A



ELIGIBLE PRODUCT(S)				
IKO	Protectoboard			

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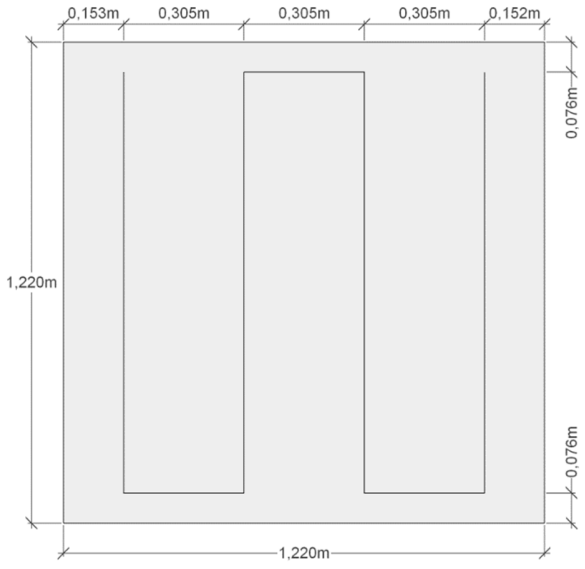
INSULATION (Top Row)		
TESTED PRODUC: Rigid insulation board composed of a closed-cell polyisocyanurate foam, between two fiber-reinforced facer		
System	**Application Method**	**Fastening Rate**
A	Adhered	Ribbon at 305 mm (12 in) o.c.
ELIGIBLE THICKNESS(ES)		
38 to 102 mm (1½ to 4 in)		
FASTENING METHOD		
Millennium adhesive		
FASTENING PATTERN		

System A



ELIGIBLE PRODUCT(S)				
IKO	IKOTherm	IKOTherm 25 psi	IKOTherm III	IKOTherm III 25 psi
	Flat or tapered panel			

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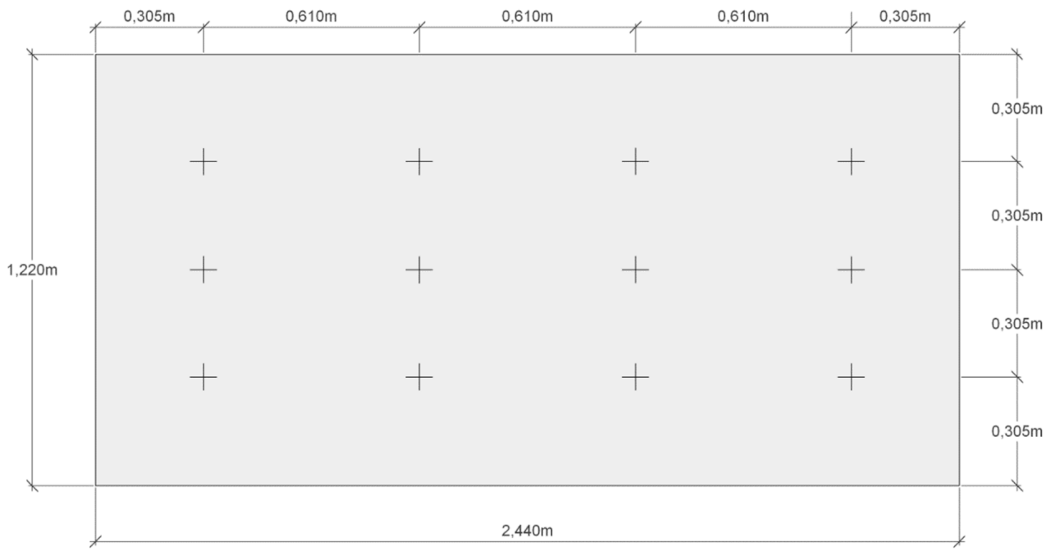
INSULATION (Bottom Row)		
TESTED PRODUCT: Rigid insulation board composed of a closed-cell polyisocyanurate foam, between two fiber-reinforced facer		
System	**Application Method**	**Fastening Rate**
A	Mechanically fasten	12 screws / 1220 x 2440 mm (4 x 8 ft.) board
ELIGIBLE THICKNESS(ES)		
38 to 102 mm (1½ to 4 in)		
FASTENING METHOD		
Screws and plates		
FASTENING PATTERN		

System A



ELIGIBLE PRODUCT(S)				
IKO	IKOTherm	IKOTherm 25 psi	IKOTherm III	IKOTherm III 25 psi

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VAPOUR BARRIER				
TESTED PRODUCT: Membrane composed of two layers of kraft paper bonded together with asphalt and a reinforced fiberglass edge				
System	**Fastening Method**		**Adhesive**	
A	Loose laid, splice glued		Armourguard vapor retarder adhesive	
ELIGIBLE PRODUCT(S)				
IKO	Armourguard 34	TF 95 SF 2.2	TF 95 SF 3.0	TP 180 SF 3.0
	TP 180 SF-3.5	10 mil Poly		

THERMAL BARRIER				
TESTED PRODUCT: Moisture and fire resistant gypsum board, covered with non-combustible fiberglass felt and non-asphaltic coating				
System	**Application Method**		**Fastening Rate**	
A	Loose laid		N.A.	
ELIGIBLE THICKNESS(ES)				
13 to 16 mm (½ to ⅝ in)				
FASTENING METHOD				
N.A.				
ELIGIBLE PRODUCT(S)				
Georgia Pacific	DensDeck Prime	DensDeck		
CGC	Structural Panel Concrete Roof Deck	Gyplap		
National Gypsum	PermaBase			
USG	Securock			

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FASTENERS PULL OUT RESISTANCE		
TESTED PRODUCT(S): Roofing screws and plates		
System	**Screws**	**Plates**
A	# 14 HD-4000	76 mm (3 in) diam.
FASTENERS MEASURED PULL OUT RESISTANCE		
189 kgf (417 lbf)		
ELIGIBLE PRODUCT(S)		
Trufast	Roofing screws #14 HD	76 mm (3 in.) diam. round metal plate

ADHESIVE				
TESTED PRODUCT: Low rise two components polyurethane foam adhesive.				
System	**Ribbon's spacing**		**Primer**	
A	305 mm (12 in.) o.c.		N.A.	
ELIGIBLE PRODUCT(S)				
IKO	Millennium 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). Tests could be performed on concrete deck or standard 4′ x 8′ x ⅝″ 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 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**.

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:

2017-05-31	First publication
2018-07-23 (R1)	Addition of equivalent membranes

Prepared by:

EXP Services Inc.

Serge Rochon, P.Eng.
Provincial Director – Roofing, building envelope and CSA test laboratory
OIQ Nº 114865

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