Bulletin

Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Numbers:	SOPI-216809-T8 / SOPI-216809-T9
	SOPI-216809-T10 / SOPI-019-059-000
Test Dates:	2014-06-27 / 2014-06-11
	2014-06-10 / 2008-12-03
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Revision Dates:	2015-04-30 (R1) 2017-05-19 (R2)
Reappraisal Date:	2020-05-19

MOD-BIT UNILAY 750 SYSTEM

(MARS) MECHANICALLY ATTACHED ROOFING SYSTEM

Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Mechanically fastened
Base sheet membrane:	N/A
Cover board:	Optional
Insulation:	Polyisocyanurate foam insulation board 1220 x 1220 x 38 mm (4′ x 4′ x 1½") / Loose laid (A, B, C) and mechanically fastened (D)
Vapor barrier:	Self-adhering membrane
Thermal barrier:	Optional
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	-3,0 kPa (-62 psf)	-2,0 kPa (-41 psf)
B	-4,3 kPa (-90 psf)	-2,9 kPa (-60 psf)
C	-6,0 kPa (-126 psf)	-4,0 kPa (-84 psf)
D	-7,8 kPa (-162 psf)	-5,2 kPa (-108 psf)

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of SBS modified bitumen and a composite reinforcement with one side sanded				
System	**Application Method**			
A	Mechanically fastened (into overlap)	Rows spacing : 787 mm (31 in) o.c. Fasteners spacing : 610 mm (24 in) o.c.		
B	Mechanically fastened (into overlap)	Rows spacing : 787 mm (31 in) o.c. Fasteners spacing : 457 mm (18 in) o.c.		
C	Mechanically fastened (into overlap)	Rows spacing : 787 mm (31 in) o.c. Fasteners spacing : 305 mm (12 in) o.c.		
D	Mechanically fastened (into overlap)	Rows spacing : 787 mm (31 in) o.c. Fasteners spacing : 152 mm (6 in) o.c.		
ELIGIBLE PRODUCT(S)				
Soprema	Unilay 750			

BASE SHEET MEMBRANE
TESTED PRODUCT : N/A

COVER BOARD				
TESTED PRODUCT : Optional				
ELIGIBLE THICKNESS(ES)				
Between 3,2 to 15,9 mm (⅛ to ⅝ in)				
ELIGIBLE PRODUCT(S)				
Soprema	Sopraboard	Soprarock MD	Soprarock MD Plus	
Georgia-Pacific	DensDeck	DensDeck Prime		
CGC / USG	Securock Gypsum Fiber Roof Board			
Unifix	PermaBase Dek			

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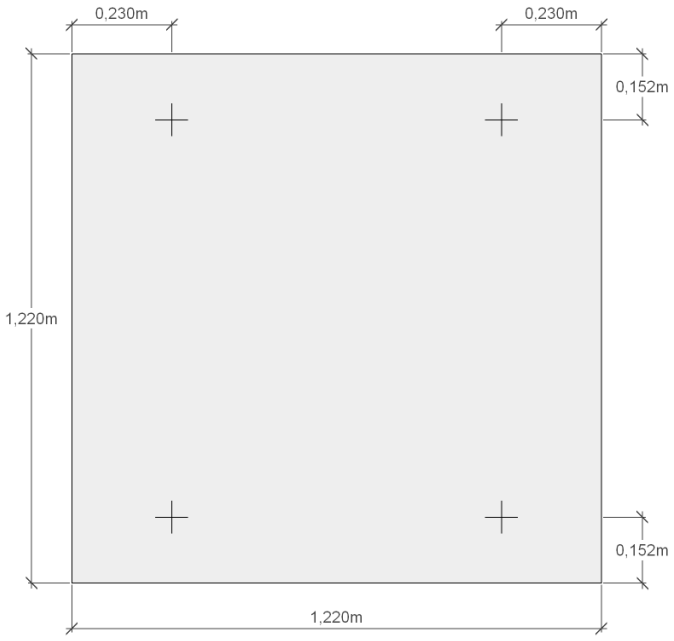
INSULATION (Top Row)		
TESTED PRODUCT : Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced felt.		
System	**Application Method**	**Fastening Rate**
A, B, C (Sopra-ISO)	Loose laid	N/A
D (ENERGY 3)	Mechanically fastened	4 fasteners / board 1220 x 1220 mm(4' x 4')
ELIGIBLE THICKNESS(ES)		
Between 38 to 102 mm (1½ to 4 in)		
FASTENING METHOD		
Screws and plates		
FASTENING PATTERN		

System D



ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO	Sopra-ISO Plus	Soprarock MD	Soprarock MD Plus
Atlas Roofing Corp.	ACFoam II	ACFoam III	ACFoam IV	
Johns Manville	ENRGY 3	ENRGY 3 CGF		
Hunter Panels	H-Shield	H-Shield CG		

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INSULATION (Bottom Row)
TESTED PRODUCT : N/A

FASTENERS PULL OUT RESISTANCE		
TESTED PRODUCT(S) : Hardened carbon #14 Phillips head fasteners with anticorrosion coating		
System	**Screws**	**Plates**
A, B, C	Membrane : #14 x 76 mm (3 in)	Membrane : round of 51 mm (2 in)
D	Membrane : #14 x 102 mm (4 in) Insulation : #14 x 102 mm (4 in)	Membrane : round of 51 mm (2 in) Insulation : square of 70 mm (2¾ in)
FASTENERS MEASURED PULL OUT RESISTANCE		
201 kgf (442 lbf)		
ELIGIBLE PRODUCT(S)		
Soprema	Soprafix Fasteners and plates	Round toothed metal plates
Soprema	Soprafix Fasteners and plates	Square metal plates

ADHESIVE
TESTED PRODUCT : N/A

VAPOR BARRIER				
TESTED PRODUCT : Self-adhesive membrane composed of a trilaminated woven polyethylene and SBS modified bitumen				
Systems	**Fastening Method**		**Primer**	
A, B, C, D	Self-adhered		N/A	
ELIGIBLE PRODUCT(S)				
Soprema	Sopravap'R	Sopralene Stick Adhesive		
Fastening method : self-adhered				
Soprema	Sopralene SP 3.5	Sopralene SP 2.2		
Fastening method : torch applied (substrates must be primed with Elastocol 500)				
Soprema	Xpress Vap'R Board	Soprastop		
Fastening method : loose laid, adhered or mechanically fastened				
ELIGIBLE PRODUCT(S) over thermal barrier : N/A				

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THERMAL BARRIER				
TESTED PRODUCT : Optional				
ALLOWABLE THICKNESS(ES)				
Between 6,4 to 15,9 mm (¼ to ⅝ in)				
ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck	DensDeck Prime		
CGC / USG	Securock Gypsum Fiber Roof Board			
Unifix	PermaBase Dek			

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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 ⅝″ 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**.

11. Notice :

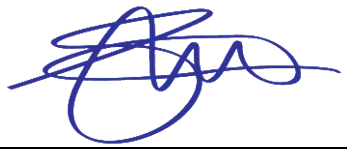
Exp reserves the right to withdraw, without prior notice, any Bulletin of Roof System Dynamic Wind Uplift Resistance Results published and/or make any necessary corrections.

12. Version tracking table :

2010-07-28	First edition
2015-04-30 (R1)	N/D
2017-05-19 (R2)	New presentation layout

Prepared by:

exp Services Inc.



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Date