Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Numbers:	SOPI-015-059
	SOPI-009-059
	SOPI-011-059-001
	SOPI-016-059-900
Test Dates:	2007-12-20 / 2007-11-15 / 2007-12-05 / 2008-11-26
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Revision Dates:	2015-04-30 (R1) 2017-05-19 (R2)
Reappraisal Date:	2020-05-19

MOD-BIT SOPRAFIX BASE 630 SYSTEM

(MARS) MECHANICALLY ATTACHED ROOFING SYSTEM

Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Torch applied
Base sheet membrane:	Modified bitumen membrane / Mechanically fastened
Cover board:	Optional
Insulation:	Rigid polyisocyanurate foam insulation board 1220 x 1220 mm (4' x 4')
Vapor barrier:	Self-adhering membrane
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 Safety Factor)
A	-3,0 kPa (-63 psf)	-2,0 kPa (-42 psf)
B	-3,6 kPa (-75 psf)	-2,4 kPa (-50 psf)
C	-5,0 kPa (-105 psf)	-3,3 kPa (-70 psf)
D	-9,3 kPa (-195 psf)	-6,2 kPa (-130 psf)

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of SBS modified bitumen and a glass mat reinforcement				
System	**Application Method**			
A, B, C, D	Torch applied			
ELIGIBLE PRODUCT(S)				
Soprema	Soprafix Cap 650	Sopralene Flam 180 GR	Sopralene Flam 250 GR	Soprastar Flam HD GR
	Sopralene Flam 180 FR GR	Sopralene Flam 250 FR GR	Soprastar Flam HD FR GR	Sopralene Mammouth GR
	Sopraply Traffic Cap 660	Sopraply Traffic Cap FR 661		

BASE SHEET MEMBRANE			
TESTED PRODUCT : Membrane composed of SBS modified bitumen and composite reinforcement			
System	**Application Method**	**Row spacing**	**Fasteners spacing**
A	Mechanically fastened	914 mm (36 in) o.c.	610 mm (24 in) o.c.
B	Mechanically fastened	914 mm (36 in) o.c.	457 mm (18 in) o.c.
C	Mechanically fastened	914 mm (36 in) o.c.	305 mm (12 in) o.c.
D	Mechanically fastened	914 mm (36 in) o.c.	152 mm (6 in) o.c.
ELIGIBLE PRODUCT(S)			
Soprema	Soprafix Base 630		

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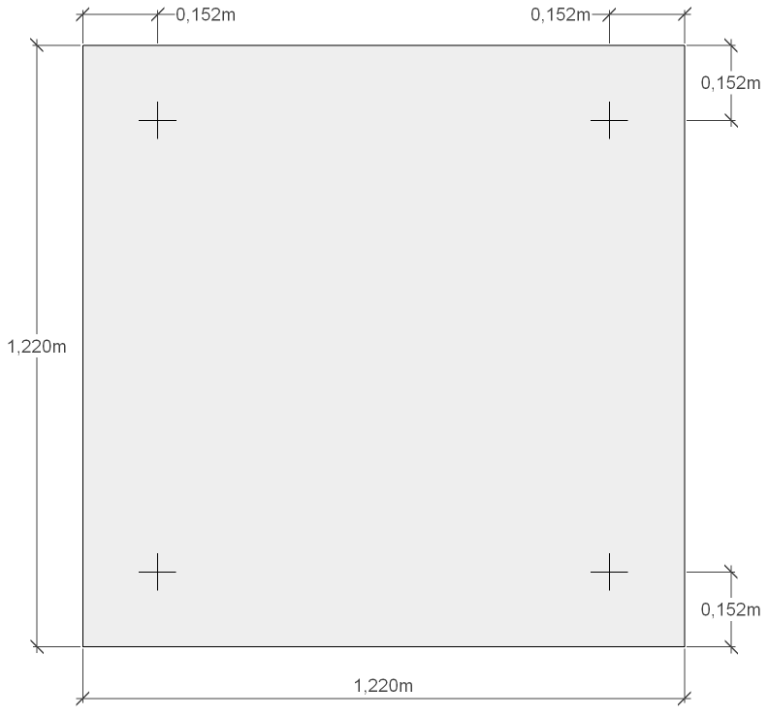
COVER BOARD				
TESTED PRODUCT : Optional				
ELIGIBLE THICKNESS(ES)				
Between 6,4 to 19,5 mm (¼ to ⅝ in)				
ELIGIBLE PRODUCT(S)				
Soprema	Sopraboard			
Georgia-Pacific	DensDeck	DensDeck Prime		
CGC / USG	Securock			
Unifix	PermaBase Dek			

INSULATION (Top Row)		
TESTED PRODUCT : Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced felt		
System	**Application Method**	**Fastening Rate**
A	Mechanically fastened, 38 mm (1½ in) thick	4 fasteners / board 1220 x 1220 mm (4' x 4') Equally spaced in each corner
B	Loose laid, 38 mm (1½ in) thick	N/A
C	Mechanically fastened, 38 mm (1½ in) thick	4 fasteners / board 1220 x 1220 mm (4' x 4') Equally spaced in each corner
D	Mechanically fastened, 102 mm (4 in) thick	4 fasteners / board 1220 x 1220 mm (4' x 4') Equally spaced in each corner
ELIGIBLE THICKNESS(ES)		
Between 38 to 102 mm (1½ to 4 in)		
FASTENING METHOD		
#14 Soprafix screws		
Round or square 75 mm (3 in) metal plates		

(following) INSULATION (Top Row)

FASTENING PATTERN

Systems A, C, D



ELIGIBLE PRODUCT(S)

Soprema	Sopra-ISO	Sopra-ISO Plus	SopraRock MD	SopraRock MD Plus
	SopraRock DD	SopraRock DD 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 : Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced felt				
System	**Application Method**		**Fastening Rate**	
A	N/A		N/A	
B	N/A		N/A	
C	N/A		N/A	
D	Loose laid, 102 mm (4 in) thick		N/A	
ELIGIBLE THICKNESS(ES)				
Between 38 to 102 mm (1½ to 4 in)				
ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO	Sopra-ISO Plus	SopraRock MD	SopraRock MD Plus
	SopraRock DD	SopraRock DD Plus		
Atlas Roofing Corp.	ACFoam II	ACFoam III	ACFoam IV	
Johns Manville	ENRGY 3	ENRGY 3 CGF		
Hunter Panels	H-Shield	H-Shield CG		

ADHESIVE
TESTED PRODUCT : N/A

VAPOR BARRIER				
TESTED PRODUCT : Self-adhesive membrane composed of a trilaminated woven polyethylene and SBS modified bitumen				
System	**Fastening Method**		**Primer**	
A, B, C, D	Self-adhered		N/A	
ELIGIBLE PRODUCT(S)				
Soprema	Sopravap'R			
Receiving surface must be primed with Elastocol Stick or Elastocol Stick Zero				
Soprema	Soprastop	Xpress Vap'R Board		

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THERMAL BARRIER
TESTED PRODUCT : N/A

FASTENERS PULL OUT RESISTANCE		
TESTED PRODUCT(S) : Hardened carbon #14 Phillips head fasteners with anticorrosion coating		
System	**Screws**	**Plates**
A	Base sheet membrane : #14 x 76 mm (3 in)	Round of 51 mm (2 in)
	Insulation : #14 x 76 mm (3 in)	Square of 76 mm (3 in)
B	Base sheet membrane : #14 x 76 mm (3 in)	Round of 51 mm (2 in)
C	Base sheet membrane : #14 x 76 mm (3 in)	Round of 51 mm (2 in)
	Insulation : #14 x 76 mm (3 in)	Round of 76 mm (3 in)
D	Base sheet membrane : #14 x 229 mm (9 in)	Round of 51 mm (2 in)
	Insulation : #14 x 229 mm (9 in)	Round of 76 mm (3 in)
FASTENERS MEASURED PULL OUT RESISTANCE		
245 kgf (541 lbf)		
ELIGIBLE PRODUCT(S)		
Soprema	Soprafix fasteners	Soprafix plates (membrane) Metal round or square plate (insulation)

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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 :

2013-04-02	First edition
2015-04-30 (R1)	N/D
2017-05-19 (R2)	Mesured results adjustment, new presentation layout

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