Bulletin

Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Numbers:	SOPI-216809-12 SOPI-216809-17 SOPI-233880-08 SOPI-233880-12
Test Dates:	2014-08-18 / 2014-12-12 / 2015-04-30 / 2015-06-26
Publication Date:	2015-08-18
Revision Dates:	2015-09-29(R1) 2017-05-16 (R2)
Reappraisal Date:	2020-05-16

SOPRABOARD MODIFIED BITUMEN SYSTEM

(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 board composed of a fortified asphaltic core 1220 x 1524 x 3,2 mm (4′ x 5′ x ⅛") ou 1220 x 1524 x 4,8 mm (4′ x 5′ x 3/16") / Mechanically fastened
Insulation:	Polyisocyanurate foam insulation board 1220 x 1220 x 38 mm (4’ x 4’ x 1½”) / Loose laid
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	-2,2 kPa (-45 psf)	-1,4 kPa (-30 psf)
B	-3,4 kPa (-72 psf)	-2,3 kPa (-48 psf)
C	-4,2 kPa (-87 psf)	-2,8 kPa (-58 psf)
D	-5,0 kPa (-105 psf)	-3,4 kPa (-70 psf)

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen				
System	**Application Method**			
A, B, C, D	Torch applied			
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 250 GR	Sopralene Flam 180 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 560
	Sopraply Traffic Cap FR 561	Soprafix Traffic Cap 660	Soprafix Traffic Cap FR 661	

BASE SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen				
System	**Application Method**		**Row spacing**	**Fasteners spacing**
A, B, C, D	Torch applied		N/A	N/A
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 180	Elastophene Flam	Sopraply Base 520	Sopralene Flam 250

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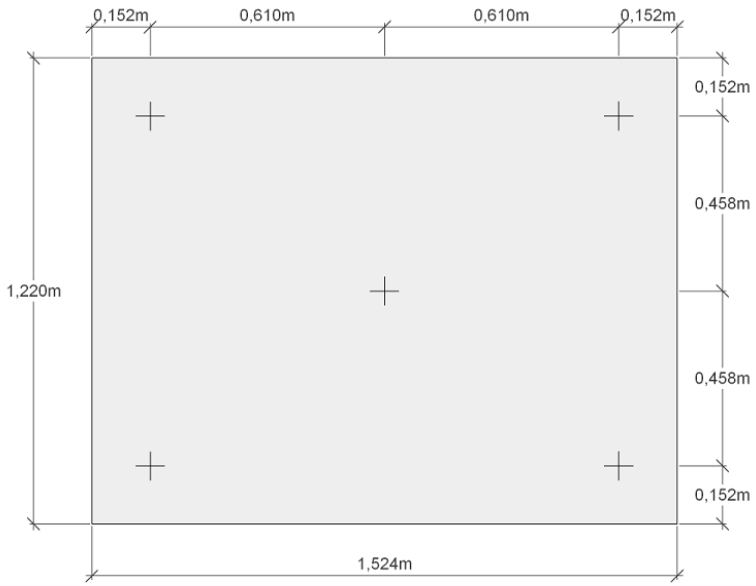
COVER BOARD		
TESTED PRODUCT : Semi-rigid board composed of a mineral-fortified asphaltic core between two asphalt-saturated fiberglass felts		
System	**Application Method**	**Fastening Rate**
A	3,2 mm (⅛ in) board mechanically fastened	5 fasteners per board 1220 x 1524 mm (4 ft x 5 ft)
B	3,2 mm (⅛ in) board mechanically fastened	8 fasteners per board 1220 x 1524 mm (4 ft x 5 ft)
C	4,8 mm (3/16 in) board mechanically fastened	12 fasteners per board 1220 x 1524 mm (4 ft x 8 ft)
D	4,8 mm (3/16 in) board mechanically fastened	16 fasteners per board 1220 x 1524 mm (4 ft x 8 ft)
ELIGIBLE THICKNESS(ES)		
Between 3,2 mm to 6,4 mm (⅛ in to ¼ in)		
FASTENING METHOD		
Screws and plates		
FASTENING PATTERN		

System A



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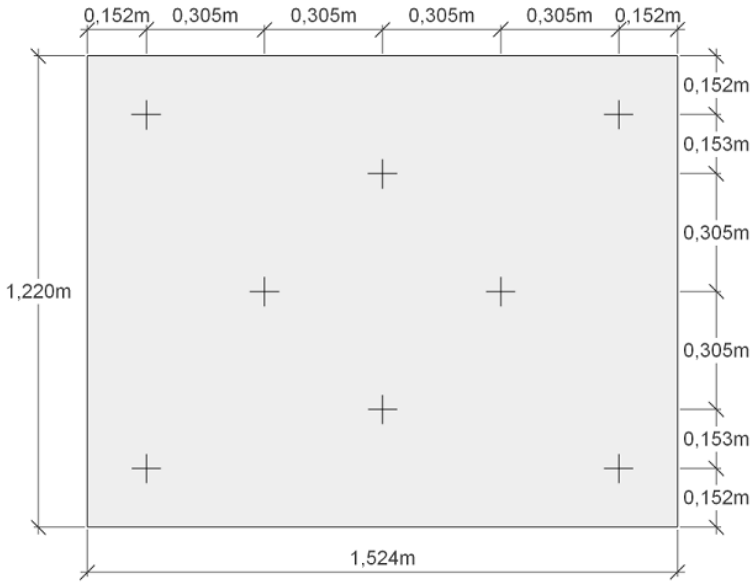
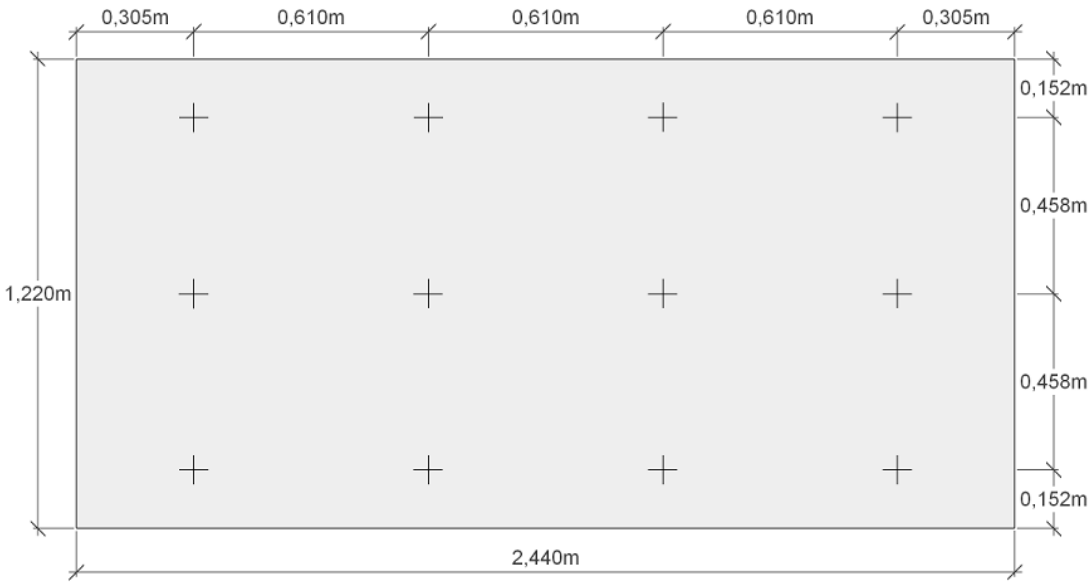
System B



System C



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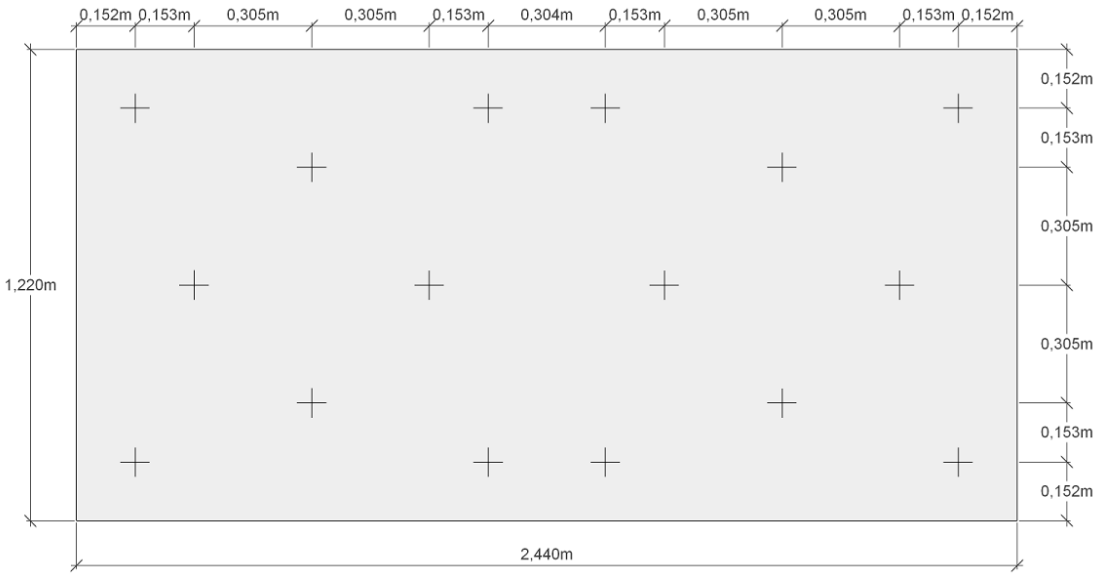
System D



ELIGIBLE PRODUCT(S)				
Soprema	Sopraboard			

INSULATION (Top Row)				
TESTED PRODUCT: Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced organic felt and polyisocyanurate foam insulation board laminated on both sides with polymer-coated glass fibers facers				
System	**Application Method**		**Fastening Rate**	
A, B, C, D	Loose laid		N/A	
ELIGIBLE THICKNESS(ES)				
Between 38 mm to 102 mm (1½ in to 4 in)				
ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO	Sopra-ISO 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 fasteners with anticorrosion coating and #12 roofing fasteners		
System	**Screws**	**Plates**
A	Soprafix #14 x 76 mm (3 in)	Round of 76 mm (3 in)
B	# 12 x 73 mm (2⅞ in)	Round of 76 mm (3 in)
C and D	# 12 x 73 mm (2⅞ in)	Hexagonal of 73 mm (2⅞ in)
FASTENERS MEASURED PULL OUT RESISTANCE		
#14 : 201 kgf (442 lbf) and #12 : 178 kgf (393 lbf)		
ELIGIBLE PRODUCT(S)		
Soprema	Soprafix #14 x 76 mm (3 in)	N/A
Dekfast	# 12 x 73 mm (2⅞ in)	Steel round of 76 mm (3 in)
	N/A	Steel Hexagonal of 73 mm (2⅞ in)

ADHESIVE
TESTED PRODUCT : N/A

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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	Sopralene Stick		
Attachment method : Self-adhered (Steel deck excepted, all substrates must be primed with Elastocol Stick or Elastocol Stick Zero.)				
Soprema	Sopralene 180 SP 3.5	Elastophene SP 2.2		
Attachment method : Torch applied (All substrates must be primed with Elastocol 500.)				
Soprema	Xpress vap'R	Soprastop		
Attachment method : Loose laid or adhered or mechanically fastened				

THERMAL BARRIER				
TESTED PRODUCT : Optional				
ELIGIBLE THICKNESS(ES)				
Between 6,3 mm to 15,9 mm (¼ in to ⅝ in)				
ELIGIBLE PRODUCT(S)				
Georgia Pacific	DensDeck	DensDeck Prime		
CGC / USG	Securock Gypsum Fiber 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). 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:

2015-08-18	First edition
2015-09-29 (R1)	First posted on site
2017-05-16 (R2)	New presentation layout

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May 16th 2017

Date