Bulletin

Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Number:	SOPI-210663-10 SOPI-216809-T4
Test Date:	2013-06-21 2014-02-11
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MODIFIED BITUMEN SYSTEM; SOPRABOARD / INSULATION / XPRESS BOARD

(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 / Adhered
Insulation:	Polyisocyanurate foam insulation board / Adhered
Vapour barrier:	N/A
Thermal barrier:	Composite board consisting of a bitumen membrane laminated on top of a rockwool board / Mechanically fastened
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	-2,9 kPa (-60 psf)	-1,9 kPa (-40 psf)
B	-4,3 kPa (-90 psf)	-2,9 kPa (-60 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	Torch applied			
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 250 GR			

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	Torch applied		N/A	N/A
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 180			

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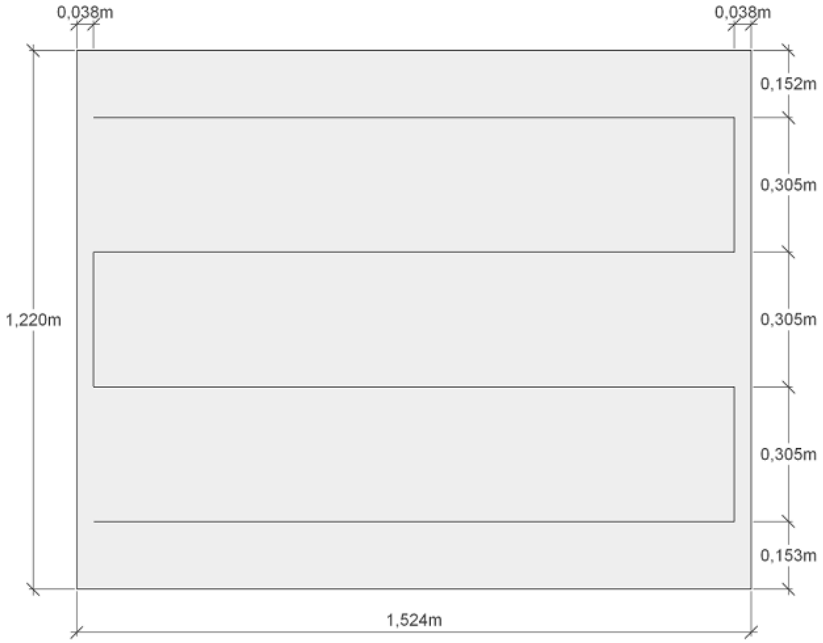
COVER BOARD		
TESTED PRODUCT: Semi-rigid board composed of a mineral-fortified asphaltic core between two asphalt-saturated fiberglass felts.		
System	**Application Method**	**Fastening Rate**
A	Adhered	Ribbons at 305 mm (12 in)
B	Adhered	Ribbons at 152 mm (6 in)
ELIGIBLE THICKNESS(ES)		
3,2 mm (⅛ in)		
FASTENING METHOD		
Duotack adhesive		
FASTENING PATTERN		

System A



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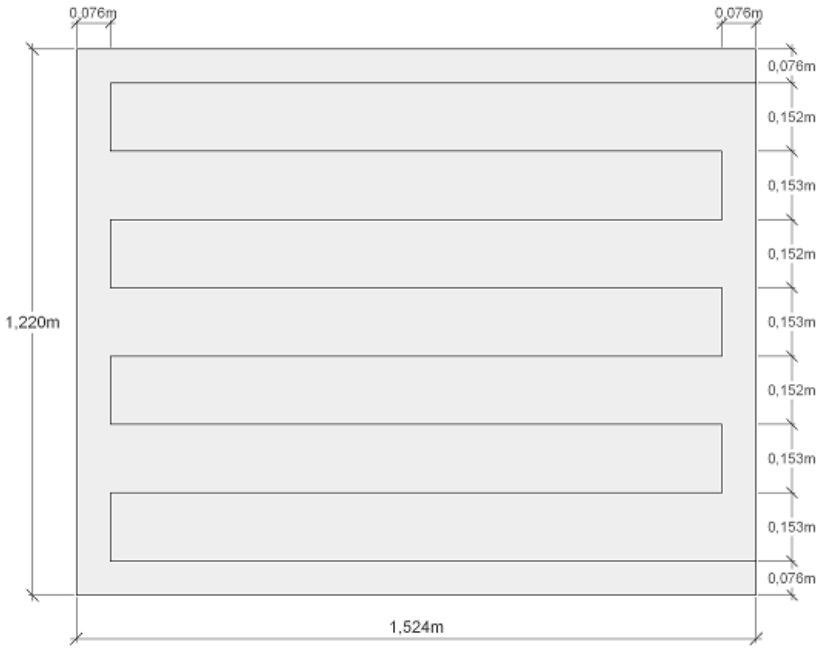
System B



ELIGIBLE PRODUCT(S)				
Soprema	Sopraboard			

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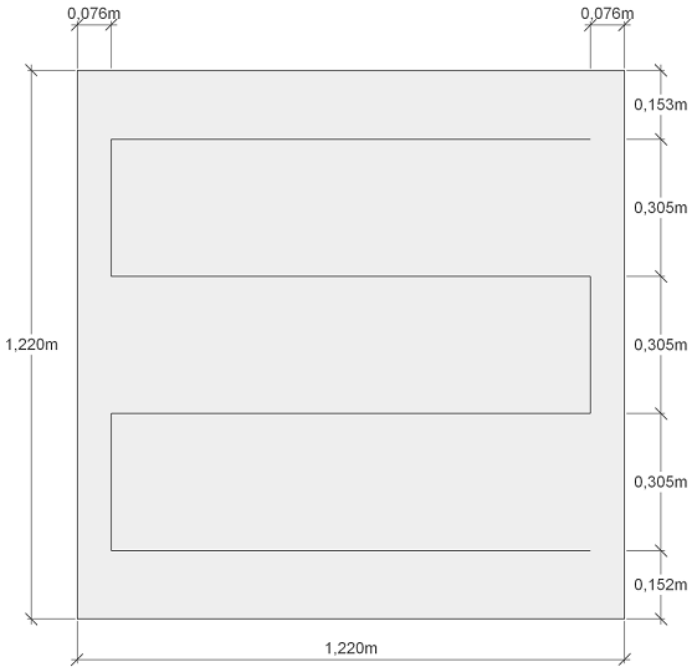
INSULATION (Top Row)		
TESTED PRODUCT: Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced organic felt.		
System	**Application Method**	**Fastening Rate**
A	Adhered	Ribbons at 305 mm (12 in)
B	Adhered	Ribbons at 152 mm (6 in)
ELIGIBLE THICKNESS(ES)		
38 to 102 mm (1½ to 4 in)		
FASTENING METHOD		
Duotack adhesive		
FASTENING PATTERN		

System A



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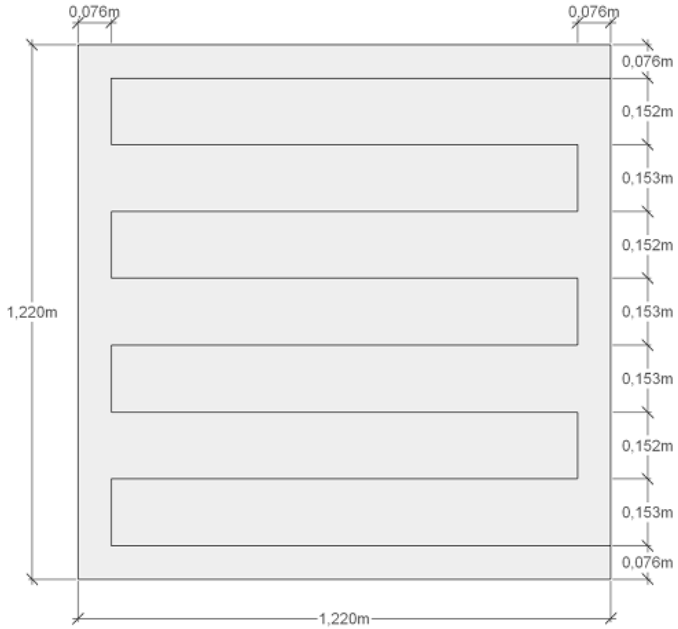
System B



ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO			

INSULATION (Bottom Row)
TESTED PRODUCT: N/A

VAPOUR BARRIER
TESTED PRODUCT: N/A

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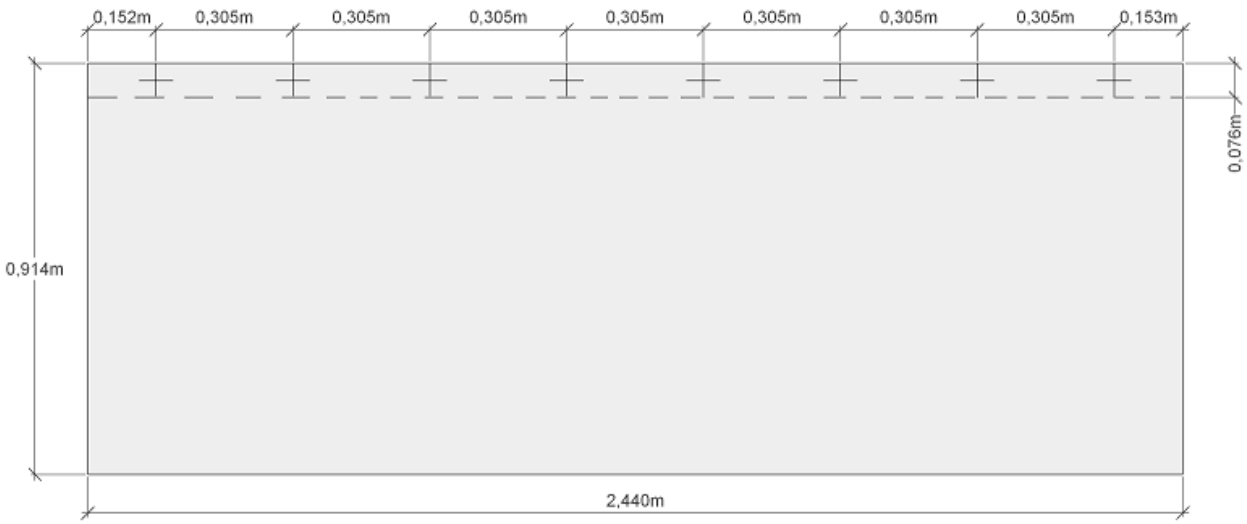
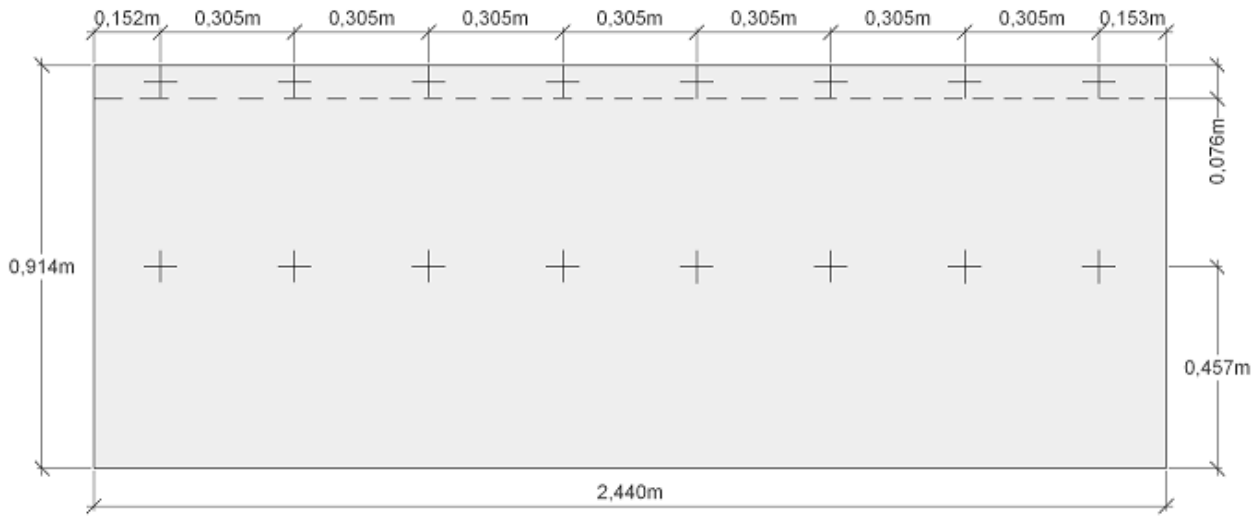
THERMAL BARRIER		
TESTED PRODUCT: Composite board consisting of a non-woven polyester reinforced modified bitumen membrane factory applied to a high density insulation rockwool board, the top surface is sanded.		
System	**Application Method**	**Fastening Rate**
A, B	Mechanically fastened	305 mm (12 in)
ELIGIBLE THICKNESS(ES)		
15,9 mm (⅝ in)		
FASTENING METHOD		
Screws and plates		
FASTENING PATTERN(S)		

System A



System B



ELIGIBLE PRODUCT(S)				
Soprema	Xpress Board HD Sanded			

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FASTENERS		
TESTED PRODUCT(S): #14 roofing fasteners and plates.		
System	**Screws**	**Plates**
A, B	#14	Round metal plates of 51 mm (2 in)
FASTENERS MEASURED PULL OUT RESISTANCE		
245 kgf (541 lbf)		
ELIGIBLE PRODUCT(S)		
Soprema	Soprafix fastener	Round metal plates of 51 mm (2 in)

ADHESIVE				
TESTED PRODUCT : Low-rise, two-component, polyurethane adhesive.				
System	**Ribbon's spacing**		**Primer**	
A	305 mm (12 in)		N/A	
B	152 mm (6 in)		N/A	
ELIGIBLE PRODUCT(S)				
Soprema	Duotack			

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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:

2017-12-18	First edition

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