

## Roof Testing Laboratory



## Roof System Dynamic Wind Uplift Resistance Results

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### MODIFIED BITUMEN MEMBRANES OVER SOPRABOARD SYSTEM

### (AARS) ADHESIVE APPLIED 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 1/8") / Adhered with Duotack
Insulation:	Polyisocyanurate foam insulation board 1220 x 1220 x 38 mm (4' x 4' x 1 1/2") / Adhered with Duotack
Vapour barrier:	Self-adhesive membrane
Thermal barrier:	Moisture and fire resistant gypsum board 1220 x 2438 x 6,4 mm (4' x 8' x 1/4") / Adhered with Duotack
Decking:	Steel deck or primed concrete

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

System Designation	Measured Value	Computed Value (To Include 1.5 Experimental Factor)
A	-5,4 kPa (-112 psf)	-3,6 kPa (-75 psf)

#### Products

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CAP SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen				
System	Application Method			
A	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	Torch applied	N/A	N/A	
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 180			



COVER BOARD				
<b>TESTED PRODUCT</b> : Semi-rigid board composed of a mineral-fortified asphaltic core between two asphalt-saturated glass mat reinforcement				
System	Application Method		Fastening Rate	
<b>A</b>	Adhered with Duotack		Ribbons at 305 mm (12 in)	
ELIGIBLE THICKNESS(ES)				
3,2 mm (1/8 in)				
FASTENING METHOD				
Duotack adhesive				
FASTENING PATTERN				
<p><b>System A</b></p>				
ELIGIBLE PRODUCT(S)				
<b>Soprema</b>	Sopraboard			

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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	Adhered with Duotack		Ribbons at 305 mm (12 in)	
ELIGIBLE THICKNESS(ES)				
Between 38 to 102 mm (1½ to 4 in)				
FASTENING METHOD				
Duotack adhesive				
FASTENING PATTERN				
<p><b>System A</b></p>				
ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO			



INSULATION (Bottom Row)	
TESTED PRODUCT : N/A	

FASTENERS PULL OUT RESISTANCE	
TESTED PRODUCT(S) : N/A	

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

VAPOUR BARRIER				
TESTED PRODUCT : Self-adhesive membrane composed of a trilaminated woven polyethylene and SBS modified bitumen				
System	Fastening Method		Primer	
A	Self-adhered		Elastocol Stick	
ELIGIBLE PRODUCT(S)				
Soprema	Sopravap'R			

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THERMAL BARRIER			
TESTED PRODUCT : Moisture and fire resistant gypsum board, coated with non-combustible fiberglass felt and non-asphaltic coating			
System	Application Method	Fastening Rate	
<b>A</b>	Adhered with Duotack	Ribbons at 305 mm (12 in)	
ALLOWABLE THICKNESS(ES)			
Between 6,4 to 15,9 mm (¼ to 5⁄8 in)			
FASTENING METHOD			
Duotack adhesive			
FASTENING PATTERN(S)			
<p><b>System A</b></p>			
ELIGIBLE PRODUCT(S)			
<b>Georgia-Pacific</b>	DensDeck Prime		

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### General Notes

#### 1. Decking:

The tests performed by **exp** services inc. («**exp**») 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).

Equivalency; tests have demonstrated that the self-adhered vapour retarder in the system herein described is suitable for application over properly prepared concrete deck primed with Elastocol Stick or Elastocol Stick Zero.

Tests could be conducted on 4 'x 8' x 5/8" standard 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.

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### 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. Change(s) included in review(s) :

2017-05-15	First edition

Prepared by:

**exp** Services Inc.

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Serge Rochon, P.Eng.  
Provincial Director – Roofing & Building Envelope  
OIQ N° 114865

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Date