

# Bulletin

## Roof Testing Laboratory (ISO 17025)



### Roof System Dynamic Wind Uplift Resistance Results

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### SOPRAFIX BASE 635 MODIFIED BITUMEN MEMBRANE SYSTEM, FASTENED AT 6 INCHES

### (MARS) MECHANICALLY ATTACHED ROOFING SYSTEM

#### Tested Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fused
Base sheet membrane:	Modified bitumen membrane / Mechanically fastened
Cover board:	N/A
Insulation:	Polyisocyanurate foam insulation board 4 x 8 ft x 1½ in / Mechanically fastened
Vapour barrier:	Self-adhesive 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	-6,3 kPa (-131 psf)	-4,2 kPa (-87 psf)

According to the scope of accreditation published on the SCC website  
Accredited Laboratory No. 797



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### Products

CAP SHEET MEMBRANE				
<b>TESTED PRODUCT:</b> Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen.				
System	Application Method			
A	Fused			
ELIGIBLE PRODUCT(S)				
SOPREMA	SOPRALENE FLAM 250 GR	SOPRALENE FLAM 180 GR	SOPRALENE FLAM 180 FR GR	SOPRALENE FLAM 250 FR GR
	SOPRALENE MAMMOUTH GR	SOPRASTAR FLAM GR	SOPRASTAR FLAM FR GR	SOPRAPLY TRAFFIC CAP
	SOPRAPLY TRAFFIC CAP FR	SOPRAPLY TRAFFIC CAP PLUS	SOPRAPLY TRAFFIC CAP PLUS FR	
SOPREMA System with gravel surfacing	Note: Follow the manufacturer's recommendations for the definition of the type of gravel / amount of gravel / adhesive rate in which to embed the gravel.			
	Eligible membranes: All membranes mentioned above, but in sanded surface version.			

BASE SHEET MEMBRANE			
<b>TESTED PRODUCT:</b> Membrane composed of SBS modified bitumen and a non-woven polyester reinforcement.			
System	Application Method	Row spacing	Fasteners spacing
A	Mechanically fastened	35 in o.c.	6 in o.c.
ELIGIBLE PRODUCT(S)			
SOPREMA	SOPRAPHIX BASE 635		

COVER BOARD
<b>TESTED PRODUCT:</b> N/A

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INSULATION (Top Row)				
<b>TESTED PRODUCT:</b> Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced organic felt.				
System	Application Method		Fastening Rate	
A	Mechanically fastened		6 fasteners / 32 ft <sup>2</sup>	
ELIGIBLE THICKNESS(ES)				
1½ to 4 in				
FASTENING METHOD				
Screws and plates				
FASTENING PATTERN				
ELIGIBLE PRODUCT(S)				
SOPREMA	SOPRA-ISO	SOPRA-ISO PLUS	SOPRAROCK DD	SOPRAROCK DD PLUS
	SOPRA-XPS 35			
Atlas Roofing Corp.	ACFoam-II	ACFoam-III	ACFoam-IV	
Johns Manville	ENRGY 3	ENRGY 3 CGF		
Hunter Panels	H-Shield	H-Shield CG		



ADDITIONAL INSULATION				
TESTED PRODUCT: Optional (same thicknesses and same eligible products as top row).				

VAPOUR BARRIER				
TESTED PRODUCT: Self-adhesive membrane composed of a trilaminated woven polyethylene and SBS modified bitumen.				
System	Fastening Method		Primer	
A	Self-adhered		N/A	
ELIGIBLE PRODUCT(S)				
SOPREMA	SOPRAVAP'R			
SOPREMA	SOPRAPLY STICK DUO			
	Note: thermal barrier required on steel deck.			
SOPREMA	SOPRALENE 180 SP 3.5	ELASTOPHENE SP 2.2		
	Note: thermal barrier required on steel deck or wood deck.			
SOPREMA	SOPRASTOP	2-1 SOPRASMA ROCK SANDED		
SOPREMA	SOPRAVAP'R	SOPRALENE STICK	SOPRAPLY STICK DUO	
	Note: on wood deck primed according to the manufacturer's recommendations.			
When applying a vapor barrier over a thermal barrier in a SOPRAFIX system, whether by fusion or self-adhering, the use of primer is optional.				

THERMAL BARRIER				
TESTED PRODUCT: Optional				
ELIGIBLE PRODUCT(S)				
CGC	Securock (½ in min.)			
Unifix	PermaBase Dek (½ in min.)			
Application method: loose laid, adhered or mechanically fastened, the fastening method and rate are under the responsibility of the designer.				



FASTENERS		
TESTED PRODUCT(S): Base sheet: #14 roofing fasteners.		
TESTED PRODUCT(S): Insulation: #12 roofing fasteners.		
System	Screws	Plates
A	Base sheet: DF #14 – 3 in	SB Stress Plates – 2 in
	Insulation: DP #12 – 2 7/8 in	Insulation metal plates – 3 in
FASTENERS MEASURED PULL OUT RESISTANCE		
Base sheet: 440 lbf		
Insulation: 469 lbf		
ELIGIBLE PRODUCT(S)		
SOPREMA	Base sheet: Dekfast DF #14	SB Stress plates
	Insulation: Trufast DP #12	Insulation metal plates
ADHESIVE		
TESTED PRODUCT: N/A		



### 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). Tests could be performed on concrete deck or standard 4' x 8' x 5/8" 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:

It is EXP opinion that the application of the adhesive beads in an "S" or straight-line arrangement will not affect the results of this publication. The intention at the job site should be that the glue bead spacings be reasonably distributed on the substrate, in order to come as close as possible to the theoretical patterns when the boards are laid in. Comply with all additional manufacturer's requirements regarding the use of adhesives.

#### 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 <https://www.nrc-cnrc.gc.ca>.

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.

The information in this roofing system report (the "Report") are based on the tests run by EXP of certain combination of materials in a specific and controlled condition to determine the resistance of different roofing systems to wind uplift forces (the "Test"). The results of the Test are subject to certain prerequisite conditions and assumptions made during the Test. In this regard, the Report is for the exclusive use of EXP client for whom the Report was prepared. The information contained in the Report must not be reproduced, used or relied upon in whole or in part without the written consent of EXP. Any third-party user assumes sole responsibility for the use it makes of the information in the Report including but not limited to any decision to purchase roofing material in reliance of the information found in the Report or on the Site. **Exp disclaims all warranties as to the accuracy, completeness or adequacy of the information in the Report or on the Site and accepts no responsibility for damages suffered by any third party arising out of decisions made or actions based on the Report.**

### 12. Version tracking table:

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