

# Bulletin

## Roof Testing Laboratory (ISO 17025)

UL Third Party Test Data Program participant



## Roof System Dynamic Wind Uplift Resistance Results

EXP file number:	MTS-21002383-D13
Source report:	2b-SOPC-20-LSWUD-01.A-R1
Test date:	2021-04-22
Reappraisal date:	2024-09-08



### INDUCTION WELD FASTENED PVC ROOFING SYSTEM

### (MARS) MECHANICALLY ATTACHED ROOFING SYSTEM

Test conducted by NEMO ETC, LLC, Oxford

### Tested Roofing System Summary

Cap sheet membrane:	PVC membrane / Induction welded
Base sheet membrane:	N/A
Cover board:	N/A
Insulation:	Polyisocyanurate foam insulation board 4 x 8 ft x 2 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 testing value According to CSA A123.21:20	Result reduced by a factor of 1,5 According to CSA A123.21:14
A	-4,5 kPa (-94 psf)	-3,0 kPa (-63 psf)

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





Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of thermoplastic polyvinyl chloride (PVC) and a non-woven polyester reinforcement.				
System	Application Method			
A	Induction welded			
ELIGIBLE PRODUCT(S)				
SOPREMA	SENTINEL P150	SENTINEL P200		

BASE SHEET MEMBRANE
TESTED PRODUCT: N/A

COVER BOARD
TESTED PRODUCT: N/A

# Roof Testing Laboratory (ISO 17025)



## Roof System Dynamic Wind Uplift Resistance Results

MTS-21002383-D13

INSULATION				
TESTED PRODUCT: Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced organic felt.				
System	Application Method		Fastening Rate	
A	Mechanically fastened		8 fasteners / 4 x 8 ft board (1 per 4 ft <sup>2</sup> )	
ELIGIBLE THICKNESS(ES)				
2 in minimum				
FASTENING METHOD				
Screws and plates				
FASTENING PATTERN				
<p>The diagram shows a rectangular fastening pattern on a 48" x 96" board. There are 8 fasteners arranged in two rows of four. The horizontal spacing is 12" from the left edge, 24" between the first and second fasteners, 24" between the second and third, 24" between the third and fourth, and 12" from the fourth to the right edge. The vertical spacing is 12" from the top edge, 24" between the first and second rows, and 12" from the second row to the bottom edge.</p>				
ELIGIBLE PRODUCT(S)				
<b>SOPREMA</b>	SOPRA-ISO	SOPRA-ISO PLUS		
<b>Atlas Roofing Corp.</b>	ACFoam-II	ACFoam-III	ACFoam-IV	
<b>Johns Manville</b>	ENRGY 3	ENRGY 3 CGF		
<b>Hunter Panels</b>	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 SOPRASMART ROCK		
SOPREMA	SOPRAVAP'R	SOPRALENE STICK	SOPRAPLY STICK DUO	
	Note: on wood deck primed according to the manufacturer's recommendations.			

THERMAL BARRIER				
TESTED PRODUCT : Optional				
ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck (½ in min.)	DensDeck Prime (½ in min.)		
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.				

# Roof Testing Laboratory (ISO 17025)



## Roof System Dynamic Wind Uplift Resistance Results

MTS-21002383-D13

FASTENERS (see general note #3)		
TESTED PRODUCT(S): #12 roofing fasteners.		
System	Screws	Plates
	#12 DP	PVC IW Plates
FASTENERS MEASURED PULL OUT RESISTANCE		
#12 DP : 375 lbf calculated point load		
ELIGIBLE PRODUCT(S)		
Trufast	#12 DP	PVC IW Plates

ADHESIVE
TESTED PRODUCT: N/A

DECKING						
PRODUCT: Steel deck.						
Gauge	Type	Grade	Thickness (in)	Yield point (ksi)	Span spacing (ft)	Fasteners spacing (in)
22	B	40	0,030	43,7	6	6
Additional testing could be performed on concrete decks or standard 4' x 8' x 5/8" plywood decks to assess eligibility for possible equivalencies. On a building, the attachment of the decking to the supporting structure must be strong enough to resist wind uplift loads (as defined per NBCC requirements).						

# Roof Testing Laboratory (ISO 17025)



## Roof System Dynamic Wind Uplift Resistance Results

MTS-21002383-D13

### General Notes

**1. Source:**

This publication is based on a test conducted by **NEMO ETC, LLC, Oxford.**

**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" 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 (when applicable):**

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.

**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 NBCC requirement, without experimental factor. It will also compute perimeter's and corner's zone dimensions.

# Roof Testing Laboratory (ISO 17025)



## Roof System Dynamic Wind Uplift Resistance Results

MTS-21002383-D13

### 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:

2021-09-08	First edition.

Prepared by:

EXP Services Inc.

---

Serge Rochon, P. Eng.  
O.I.Q. N° : 114865  
P.E.O. N° : 100023274  
Provincial Manager – Building science and CSA laboratory

---

2021-09-08

Date