Bulletin

Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Number:	SOPI-231265-15
Test Date:	2017-02-02
Publication Date:	2017-04-24
Revision Date:	--
Reappraisal Date:	2020-04-24

MODIFIED BITUMEN MEMBRANE SYSTEM ADHERED WITH TYPE III ASPHALT AND SEBS BITUMEN

(PARS) PARTIALLY ATTACHED (HYBRIDE) ROOFING SYSTEM

Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fully adhered with Soprasphalte M
Base sheet membrane:	Modified bitumen membrane / Fully adhered with Soprasphalte OX
Cover board:	Wood fiber board 1220 x 2438 x 12,7 mm (4’ x 8’ x ½”) / Fully adhered with Soprasphalte OX
Insulation: (top)	Polyisocyanurate foam insulation board 1220 x 1220 x 38 mm (4’ x 4’ x 1½”) / Fully adhered with Soprasphalte OX
Insulation: (bottom)	Polyisocyanurate foam insulation board 1220 x 1220 x 38 mm (4’ x 4’ x 2”) / Mechanically fastened
Vapor barrier:	Kraft paper membrane / Spliced with Soprastop Adhesive
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	-5,4 kPa (-112 psf)	-3,6 kPa (-75 psf)

Roof System Dynamic Wind Uplift Resistance Results

SOPI-231265-15

Products

CAP SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of SBS modified bitumen and a composite reinforcement, the surface is protected by granules and the underside is sanded				
System	**Application Method**			
A	Fully adhered with Soprasphalte M			
ELIGIBLE PRODUCT(S)				
Soprema	Colply Traffic Cap 460			

BASE SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of a glass mat reinforcement and SBS modified bitumen				
System	**Application Method**		**Row spacing**	**Fasteners spacing**
A	Fully adhered with Soprasphalte OX		N/A	N/A
ELIGIBLE PRODUCT(S)				
Soprema	Elastophene Sanded			

COVER BOARD			
TESTED PRODUCT : Wood fiber board asphalt-coated on one side			
System	**Application Method**		**Fastening Rate**
A	Fully adhered with Soprasphalte OX		N/A
ELIGIBLE THICKNESS(ES)			
12,7 mm (½ in)			
ELIGIBLE PRODUCT(S)			
MSL	ISOLtop Enduit 1C		

Roof System Dynamic Wind Uplift Resistance Results

SOPI-231265-15

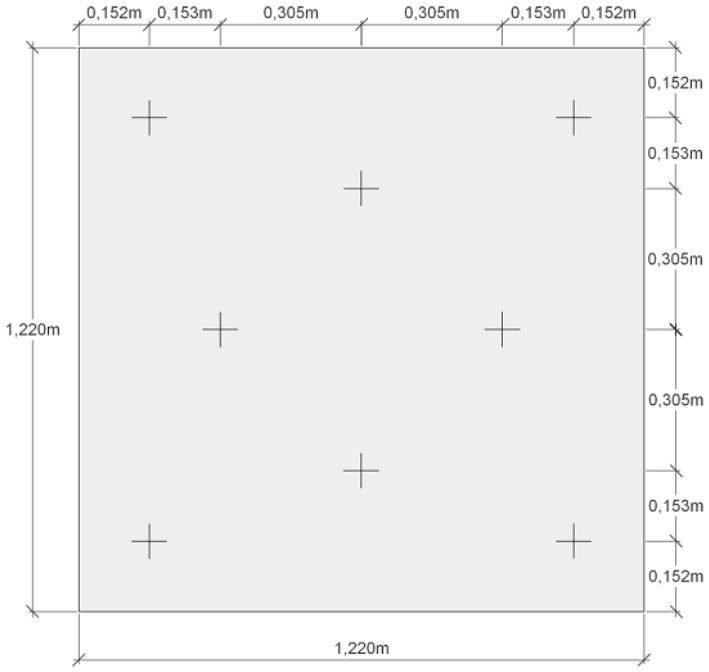
INSULATION (Top Row)				
TESTED PRODUCT : Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced organic felt				
System	**Application Method**		**Fastening Rate**	
A	Fully adhered with Soprasphalte OX		N/A	
ELIGIBLE THICKNESS(ES)				
38 mm (1½ in)				
ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO			

Roof System Dynamic Wind Uplift Resistance Results

SOPI-231265-15

INSULATION (Bottom Row)		
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 / board 1220 x 1220 (4' x 4')
ELIGIBLE THICKNESS(ES)		
51 mm (2 in)		
FASTENING METHOD		
Screws and plates		
FASTENING PATTERN		

System A



ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO			

Roof System Dynamic Wind Uplift Resistance Results

SOPI-231265-15

FASTENERS PULL OUT RESISTANCE		
TESTED PRODUCT(S) : #12 roofing fasteners		
System	**Screws**	**Plates**
A	#12 x 73 mm (2⅞ in)	Round metal plates of 76 mm (3 in)
FASTENERS MEASURED PULL OUT RESISTANCE		
178 kgf (392 lbf)		
ELIGIBLE PRODUCT(S)		
Dekfast	#12 x 73 mm (2⅞ in)	N/A
Trufast	N/A	Round metal plates of 76 mm (3 in)

ADHESIVE				
TESTED PRODUCT : SEBS-modified asphalt (cap sheet)				
TESTED PRODUCT : Oxidized bitumen (base sheet, cover board, top insulation)				
TESTED PRODUCT : Non-flammable adhesive composed of solvents, bitumen and SBS polymers (vapour barrier)				
System	**Ribbon's spacing**		**Primer**	
A	Full surface application (cap sheet, base sheet, cover board, top insulation)		N/A	
	For splicing (vapour barrier)		N/A	
ELIGIBLE PRODUCT(S)				
Soprema	Soprasphalte M			
Soprema	Soprasphalte OX			
Soprema	Soprastop Adhesive			

Roof System Dynamic Wind Uplift Resistance Results

SOPI-231265-15

VAPOR BARRIER				
TESTED PRODUCT : Membrane composed of two layers of kraft paper bonded together with asphalt and a reinforced fiberglass edge				
System	**Fastening Method**		**Primer**	
A	Spliced		N/A	
ELIGIBLE PRODUCT(S)				
Soprema	Soprastop			

THERMAL BARRIER
TESTED PRODUCT : Optional

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 :**

2017-04-24	First edition

Prepared by:

exp Services Inc.

Serge Rochon, P.Eng.
Provincial Director – Roofing & Building Envelope
OIQ Nº 114865

April 24th 2017
Date