Bulletin

Roof Testing Laboratory (ISO 17025)

Roof System Dynamic Wind Uplift Resistance Results

File number:	SIPZ-215482-01
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PROTECTOBOARD WITH ASPHALT

(PARS) PARTIALLY ATTACHED (HYBRID) ROOFING SYSTEM

Tested Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fused
Base sheet membrane:	Modified bitumen membrane / Fully adhered
Cover board:	Cover board composed of a fortified asphaltic core 4 x 5 ft x ¼ in / Fully adhered
Insulation:	Polyisocyanurate foam insulation board 4 x 4 ft x 2 in / Fully adhered
Vapour barrier:	Modified bitumen membrane / Self-adhered
Thermal barrier:	Moisture and fire-resistant gypsum board 4 x 4 ft x ½ in / 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	-4,3 kPa (-90 psf)	-2,9 kPa (-60 psf)

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

SCC Accredited LAB
LAB Accrédité CCN

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with SBS modified bitumen and surfaced with ceramic granules.				
System	**Application Method**			
A	Fused			
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 30 TG	Paradiene 20 PR TG	Paradiene 40 FR TG	Parafor 50 TG
	Parafor 30 TG			

BASE SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with SBS modified bitumen.				
System	**Application Method**		**Row spacing**	**Fasteners spacing**
A	Fully adhered with type II hot bitumen		N/A	N/A
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 20	Paradiene 20 F	Paradiene 20 HV	Irex HT
	Paradiene 20 HT	Paradiene 20 EG		

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COVER BOARD				
TESTED PRODUCT: Cover board composed of a mineral-fortified asphaltic core between two layers of high-strenght reinforcing glass fiber mat.				
System	**Application Method**		**Fastening Rate**	
A	Fully adhered		N/A	
ELIGIBLE THICKNESS(ES)				
¼ in minimum				
FASTENING METHOD				
Type II bitumen				
FASTENING PATTERN				
ELIGIBLE PRODUCT(S)				
IKO	Protectoboard			

INSULATION (Top Row)				
TESTED PRODUCT: Board composed of a closed-cell polyisocyanurate foam core bonded on each side to fiberglass facers. (ASTM C1289, Type II, Class 2, Grade 2 (20 psi) and CAN/ULC-S704 Type 2, Class 3 or Type 3, Class 3)				
System	**Application Method**		**Fastening Rate**	
A	Fully adhered		N/A	
ELIGIBLE THICKNESS(ES)				
2 in minimum				
FASTENING METHOD				
Type II bitumen				
FASTENING PATTERN				
ELIGIBLE PRODUCT(S)				
Atlas Roofing Corp.	ACFoam-IV	ACFoam-III		
Siplast	Paratherm CG			
GAF	EnergyGuard Ultra			
IKO	IKOTherm III			

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

VAPOUR BARRIER				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with SBS modified bitumen.				
System	**Fastening Method**		**Primer**	
A	Self-adhered		N/A	
ELIGIBLE PRODUCT(S)				
Tradesman	SBS Glass SA Base			

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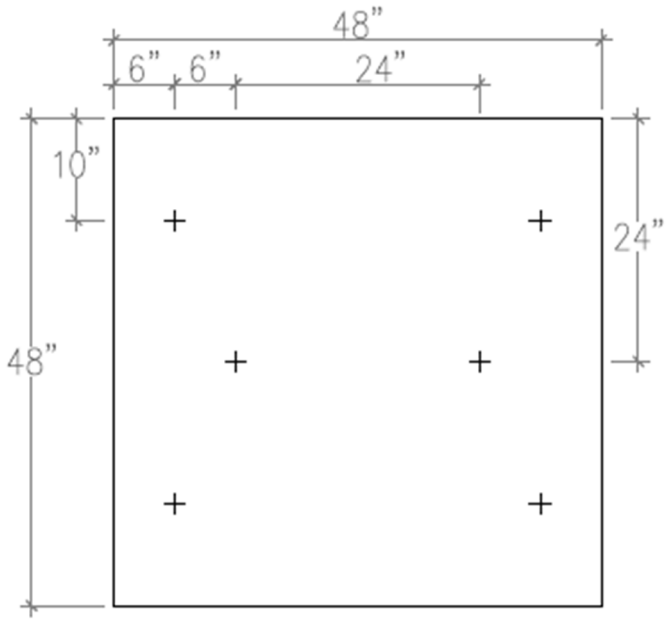
THERMAL BARRIER		
TESTED PRODUCT: Moisture and fire-resistant gypsum board, covered with non-combustible fiberglass felt and non-asphaltic coating.		
System	**Application Method**	**Fastening Rate**
A	Mechanically fastened	6 fasteners / 4 x 4 ft board
ELIGIBLE THICKNESS(ES)		
½ in		
FASTENING METHOD		
Screws and plates		
FASTENING PATTERN(S)		



ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck Prime			

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FASTENERS (see general note #3)		
TESTED PRODUCT(S): #12 roofing fasteners.		
System	**Screws**	**Plates**
A	#12	Round metal plates
FASTENERS MEASURED PULL OUT RESISTANCE		
491 lbf (measured)		
ELIGIBLE PRODUCT(S)		
Siplast	Parafast PA #12	Round metal plates

ADHESIVE				
TESTED PRODUCT: Type II oxidized asphalt.				
System	**Ribbon's spacing**		**Primer**	
A	Fully adhered		N/A	
ELIGIBLE PRODUCT(S)				
BP	Type II bitumen			

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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). 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:**

   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 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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