Bulletin

Roof Testing Laboratory (ISO 17025)

Roof System Dynamic Wind Uplift Resistance Results

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SIPLAST NVS SYSTEM WITH PARADIENE 30 TG / 20 TG

(PARS) PARTIALLY ATTACHED (HYBRID) ROOFING SYSTEM

Test conducted by PRI Construction Materials Technologies LLC

Tested Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Fused
Ply sheet:	Modified bitumen membrane / Fused
Base sheet membrane:	Oxidized bitumen membrane / Mechanically fastened
Cover board:	N/A
Insulation:	EPS board between two layers of lightweight insulating concrete / Poured in place
Vapour barrier:	Modified bitumen membrane / Fused
Thermal barrier:	Moisture and fire-resistant gypsum board 4 x 8 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	-2,7 kPa (-57 psf)	-1,8 kPa (-38 psf)

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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	Parafor 50 LT	Paradiene 20 PR TG	Paradiene 40 FR TG
	Parafor 50 TG	Parafor 30 TG	Paradiene 30 FR TG	Paradiene 30 HT FR TG
	Veral Aluminum			
Siplast	Parapro			

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	Fused		N/A	N/A
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 20 TG	Paradiene 20 EG TG	Paradiene 20 HT TG	Paradiene 20 HT TG F
	Paradiene 20 HT TS	Paradiene 20 HT TS F	Paradiene 20 HV TG	Paradiene 20 TG F
Siplast (with Parapro only)	Pro Base TG			

BASE PLY				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with oxidized asphalt.				
System	**Application Method**		**Row spacing**	**Fasteners spacing**
A	Mechanically fastened, with NVS fasteners		Fastened 7” o.c. in the lap and 7” o.c. in two equally spaced and staggered rows in the field of the roll	
ELIGIBLE PRODUCT(S)				
Siplast	Parabase			

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COVER BOARD
TESTED PRODUCT: N/A

INSULATION				
TESTED PRODUCT: EPS insulation encapsulated in poured in place lightweight insulating concrete.				
System	**Application Method**		**Fastening Rate**	
A	Poured in place		N/A	
ELIGIBLE THICKNESS(ES)				
3¼ in minimum				
ELIGIBLE PRODUCT(S)				
Siplast	NVS Lightweight Insulating Concrete			

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	Fused		PA-917	
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 20 TG			

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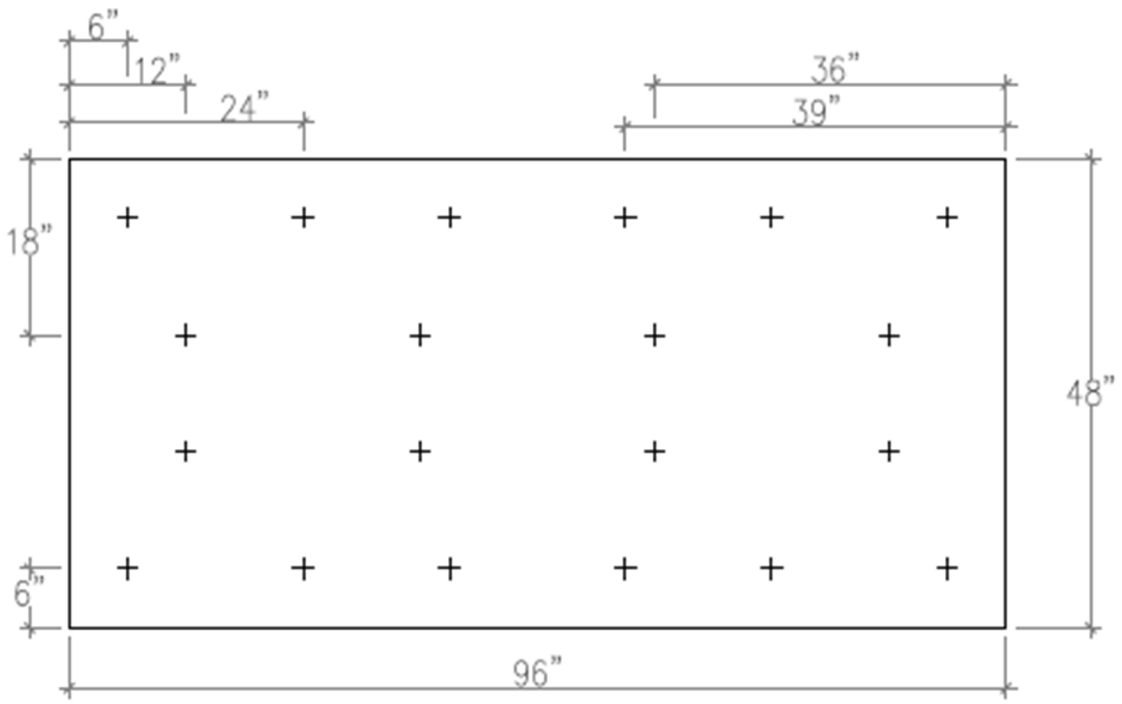
THERMAL BARRIER		
TESTED PRODUCT: Moisture and fire-resistant gypsum board, covered with non-combustible fiberglass felt and non-asphaltic coating.		
System	**Application Method**	**Fastening Rate**
A	Mechanically fastened	20 fasteners per 4 x 8 ft board
ELIGIBLE THICKNESS(ES)		
½ in minimum		
FASTENING 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): Base ply : NVS fasteners.		
TESTED PRODUCT(S): Thermal barrier : #12 Parafast fasteners.		
System	**Screws**	**Plates**
Siplast	Base ply: one piece of specially coated galvanized steel	
	Thermal barrier: Pre-assembled fasteners	Metal plates of 3 in
FASTENERS MEASURED PULL OUT RESISTANCE		
Parafast fasteners: assumed strength at 418 lbf, as previously measured NVS fasteners: unmeasured resistance		
ELIGIBLE PRODUCT(S)		
Siplast (base ply)	NVS fasteners	
Siplast (thermal barrier)	#12 Parafast fasteners	Metal plates of 3 in

ADHESIVE
TESTED PRODUCT: N/A

DECKING						
PRODUCT: Steel deck.						
Gauge	**Type**	**Grade**	**Thickness (in)**	**Yield point (ksi)**	**Span spacing (in)**	**Fasteners spacing (in)**
22	B	33	n/d	n/d	n/d	n/d
Additional testing could be performed on concrete decks or standard 4′ x 8′ x ⅝″ 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).						

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General Notes

1. **Source:**

   This publication is based on a test conducted by **PRI Construction Materials Technologies LLC.**

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.

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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