Bulletin

Roof Testing Laboratory (ISO 17025)

Roof System Dynamic Wind Uplift Resistance Results

EXP file number:	MTS-21000825-13
Source report:	H4021.07-109-44
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SIPLAST PARADIENE 30 FR / 20 SA ADHERED OVER DENSDECK PRIME

(PARS) PARTIALLY ATTACHED (HYBRID) ROOFING SYSTEM

Test conducted by Intertek B&C, Pennsylvania

Tested Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Adhered
Base sheet membrane:	Modified bitumen membrane / Self-adhered
Cover board:	Moisture and fire-resistant gypsum board feu 4 x 8 ft x ½ in / Adhered
Top insulation:	Polyisocyanurate foam insulation board 4 x 8 ft x 1½ in / Adhered
Bottom insulation:	Polyisocyanurate foam insulation board 4 x 8 ft x 1½ in / Adhered
Vapour barrier:	Modified bitumen membrane / Self-adhered
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	-3,0 kPa (-63 psf)	-2,0 kPa (-42 psf)

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

Products

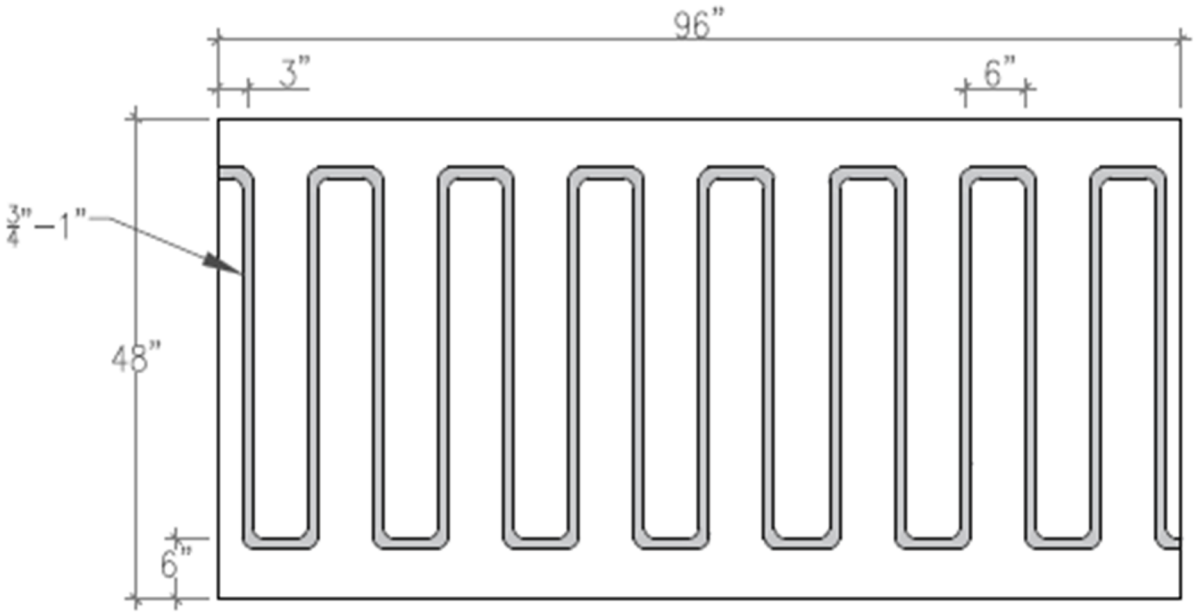
CAP SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with SBS modified bitumen and surfaced with ceramic granules.				
System	**Application Method**			
A	Adhered with PA-311 R Adhesive (1,5 to 2,0 gal/100 ft^2).			
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 30 FR			
Siplast	Parapro			

BASE SHEET MEMBRANE				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with SBS modified bitumen. The back surface is coated with a self-adhesive bitumen layer.				
System	**Application Method**		**Row spacing**	**Fasteners spacing**
A	Self-adhered, primed with TA-119			
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 20 SA	Paradiene 20 HT SA	Paradiene 20 EG SA	Paradiene 20 TS SA
	Paradiene 20 SA F	Paradiene 20 TS SA F		
Siplast (with Parapro only)	Pro Base SA			

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

COVER BOARD		
TESTED PRODUCT: Moisture and fire-resistant gypsum board, covered with non-combustible fiberglass felt and non-asphaltic coating.		
System	**Application Method**	**Fastening Rate**
A	Adhered	Ribbons at 6 in. o.c.
ELIGIBLE THICKNESS(ES)		
½ in minimum		
FASTENING METHOD		
Parafast Insulation Adhesive		
FASTENING PATTERN		

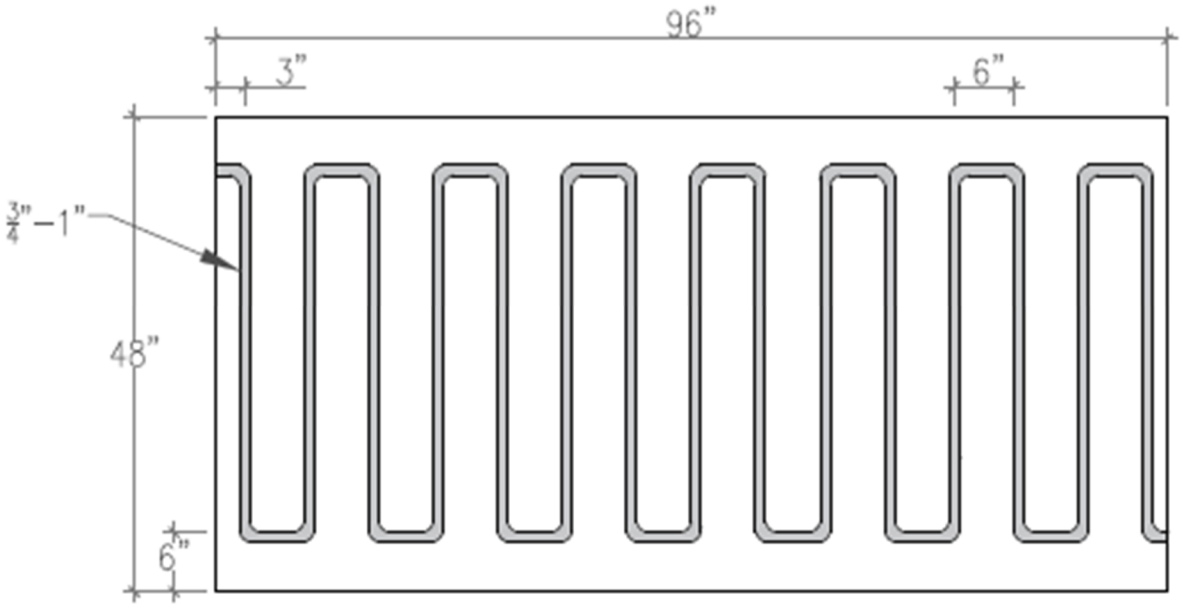


ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck Prime			

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

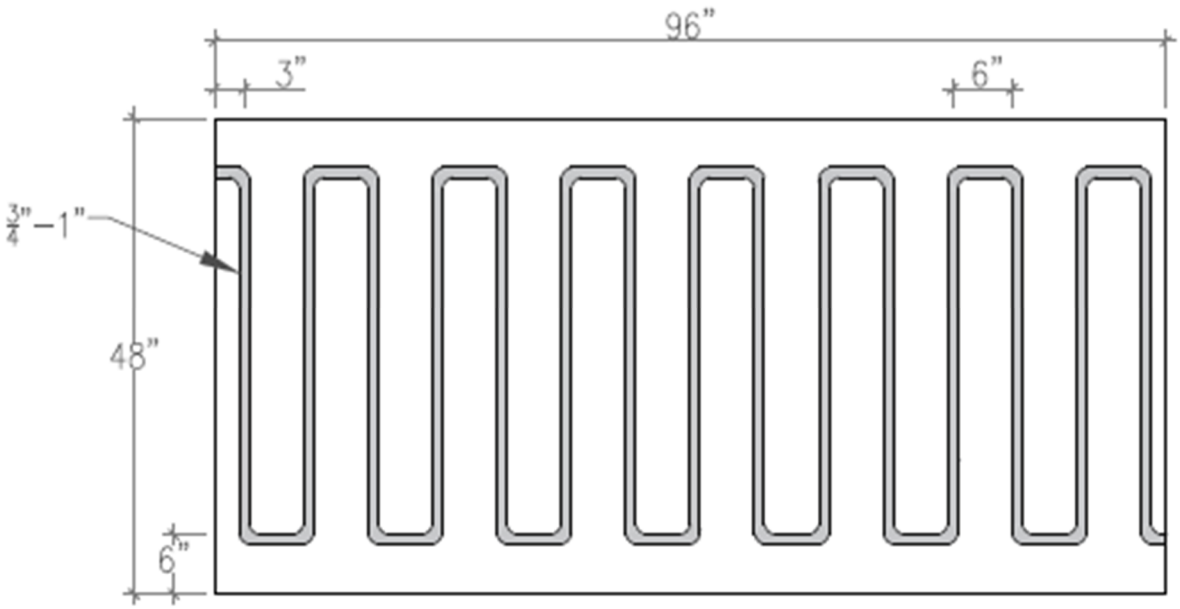
INSULATION (Top Row)		
TESTED PRODUCT: Insulation board composed of a polyisocyanurate foam core bonded on both sides to a glass fiber reinforced cellulosic felt facers.		
System	**Application Method**	**Fastening Rate**
A	Adhered	Ribbons at 6 in o.c.
ELIGIBLE THICKNESS(ES)		
1½ in minimum		
FASTENING METHOD		
Parafast Insulation Adhesive		
FASTENING PATTERN		



ELIGIBLE PRODUCT(S)				
Siplast	Paratherm G	Paratherm W	Paratherm	Paratherm CG
GAF	EnergyGuard	EnergyGuard Ultra		
Atlas Roofing Corp.	ACFoam-II	ACFoam-III	ACFoam-IV	
IKO	IKOTherm II	IKOTherm III		

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

INSULATION (Bottom Row)				
TESTED PRODUCT: Insulation board composed of a polyisocyanurate foam core bonded on both sides to a glass fiber reinforced cellulosic felt facers.				
System	**Application Method**	**Fastening Rate**		
A	Adhered	Ribbons at 6 in o.c.		
ELIGIBLE THICKNESS(ES)				
1½ in minimum				
FASTENING METHOD				
Parafast Insulation Adhesive				
FASTENING PATTERN				
				
ELIGIBLE PRODUCT(S)				
Siplast	Paratherm G	Paratherm W	Paratherm	Paratherm CG
GAF	EnergyGuard	EnergyGuard Ultra		
Atlas Roofing Corp.	ACFoam-II	ACFoam-III	ACFoam-IV	
IKO	IKOTherm II	IKOTherm III		

Roof System Dynamic Wind Uplift Resistance Results

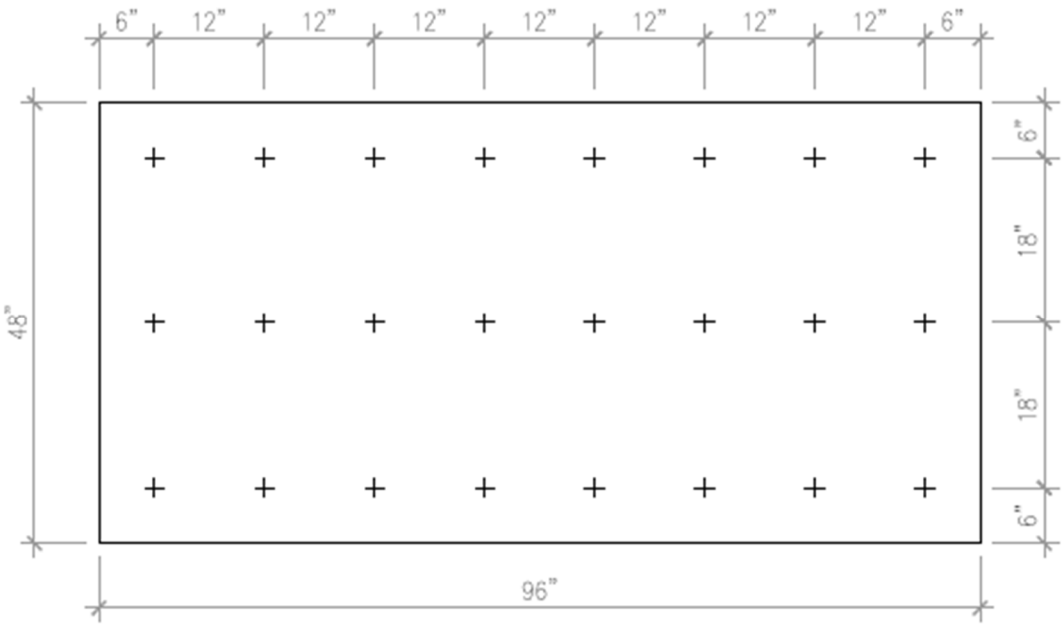
MTS-21000825-13

VAPOUR BARRIER				
TESTED PRODUCT: Membrane composed of a lightweight random fibrous glass mat impregnated and coated with SBS modified bitumen. The back surface is coated with a self-adhesive bitumen layer.				
System	**Fastening Method**		**Primer**	
A	Self-adhered		TA-119	
ELIGIBLE PRODUCT(S)				
Siplast	Paradiene 20 SA			

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

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	24 fasteners par 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			

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

FASTENERS (see general note #3)		
TESTED PRODUCT(S): #12 roofing fasteners.		
System	**Screws**	**Plates**
A	#12	Metal plates of 3 in
FASTENERS MEASURED PULL OUT RESISTANCE		
n/d		
ELIGIBLE PRODUCT(S)		
Siplast	#12	Metal plates of 3 in

ADHESIVE				
TESTED PRODUCT: Quick curing, two component, bead-applied polyurethane adhesive.				
System	**Ribbon's spacing**		**Primer**	
A	6 in o.c.		N/A	
ELIGIBLE PRODUCT(S)				
Siplast	Parafast Insulation Adhesive	Parafast Insulation Adhesive C	Parafast Insulation Adhesive T	
OMG	OlyBond Classic	OlyBond 500	OlyBond 500 Green	

DECKING						
PRODUCT: Steel deck.						
Gauge	**Type**	**Grade**	**Thickness (in)**	**Yield point (ksi)**	**Span spacing (in)**	**Fasteners spacing (in)**
22	B	33	0,034	33	72	6
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).						

Roof System Dynamic Wind Uplift Resistance Results

MTS-21000825-13

General Notes

1. **Source:**

   This publication is based on a test conducted by **Intertek B&C, Pennsylvania.**

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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