Bulletin

Roof Testing Laboratory

Roof System Dynamic Wind Uplift Resistance Results

File Number:	SOPI-223880-14
Test Date:	2015-08-13
Publication Date:	2017-05-19
Reappraisal Date:	2020-05-19

DENSDECK PRIME ADHERED WITH DENSDECK PRIME MECHANICALLY FASTENED SYSTEM

(PARS) PARTIALLY ATTACHED (HYBRIDE) ROOFING SYSTEM

Roofing System Summary

Cap sheet membrane:	Modified bitumen membrane / Torch applied
Base sheet membrane:	Modified bitumen membrane / Torch applied
Cover board:	Moisture and fire resistant gypsum board 1220 x 1220 x 6,4 mm (4' x 4' x ¼'') / Adhered
Insulation:	Polyisocyanurate foam insulation board 1220 x 1220 x 38 mm (4′ x 4′ x 1½") / Adhered
Vapor barrier:	Self-adhering membrane
Thermal barrier:	Moisture and fire resistant gypsum board 1220 x 2438 x 12,7 mm (4′ x 8′ x ½") / 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	-3,4 kPa (-72 psf)	-2,3 kPa (-48 psf)

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Products

CAP SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen				
System	**Application Method**			
A	Torch applied			
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 250 GR			

BASE SHEET MEMBRANE				
TESTED PRODUCT : Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen				
System	**Application Method**		**Row spacing**	**Fasteners spacing**
A	Torch applied		N/A	N/A
ELIGIBLE PRODUCT(S)				
Soprema	Sopralene Flam 180			

Notes: Receiving surface to be primed with Elastocol 500.

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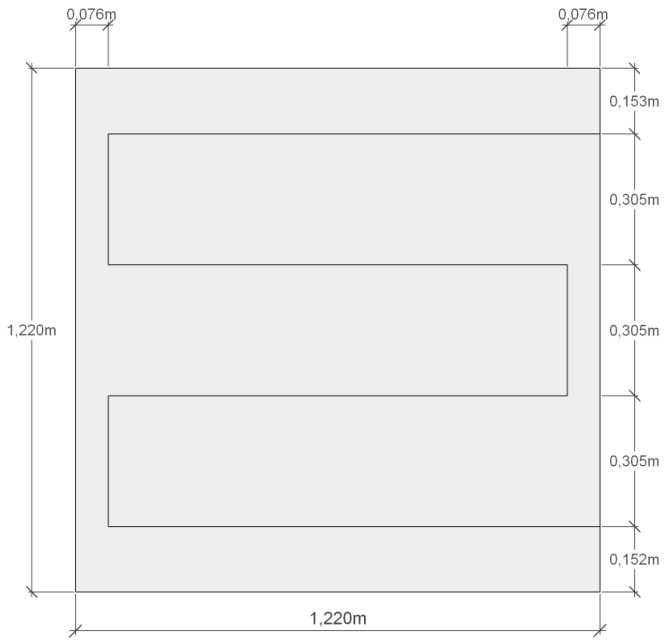
COVER BOARD		
TESTED PRODUCT : Moisture and fire resistant gypsum board, covered with non-combustible fiberglass felt and non-asphaltic coating		
System	**Application Method**	**Fastening Rate**
A	Adhered with Duotack	Ribbons at 305 mm (12 in)
ELIGIBLE THICKNESS(ES)		
Between 6,4 to 15,9 mm (¼" to ⅝")		
FASTENING METHOD		
Duotack adhesive		
FASTENING PATTERN		

System A



ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck Prime			

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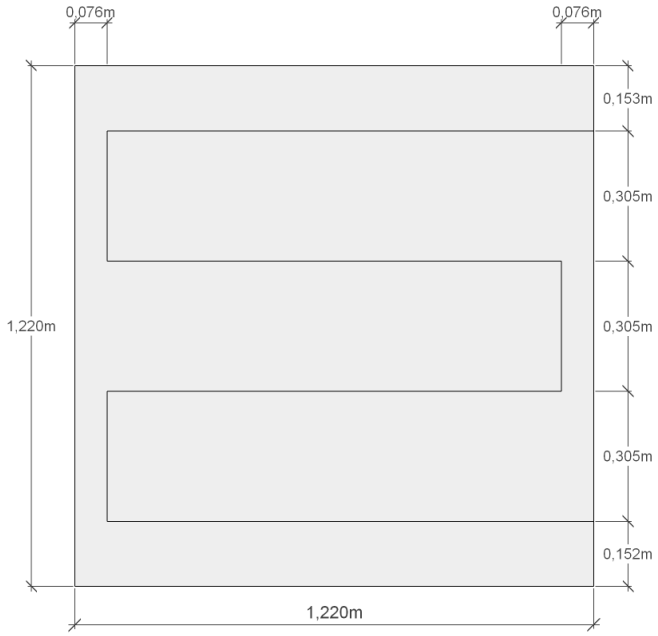
INSULATION (Top Row)		
TESTED PRODUCT : Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced felt		
System	**Application Method**	**Fastening Rate**
A	Adhered with Duotack	Ribbons at 305 mm (12 in)
ELIGIBLE THICKNESS(ES)		
Between 38 to 102 mm (1½ to 4 in)		
FASTENING METHOD		
Duotack adhesive		
FASTENING PATTERN		

System A



ELIGIBLE PRODUCT(S)				
Soprema	Sopra-ISO			

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INSULATION (Bottom Row)
TESTED PRODUCT : N/A

VAPOR BARRIER				
TESTED PRODUCT : Self-adhesive membrane composed of a trilaminated woven polyethylene and SBS modified bitumen				
System	**Fastening Method**		**Primer**	
A	Self-adhered		Elastocol Stick	
ELIGIBLE PRODUCT(S)				
Soprema	Sopravap'R			
ELIGIBLE PRODUCT(S) over thermal barrier				
Soprema	Sopravap'R			

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	8 fasteners per board 1220 x 2438 mm (4' x 8')
ALLOWABLE THICKNESS(ES)		
Between 12,7 to 15,9 mm (½" to ⅝")		
FASTENING METHOD		
Screws and plates (Dekfast)		
FASTENING PATTERN(S)		

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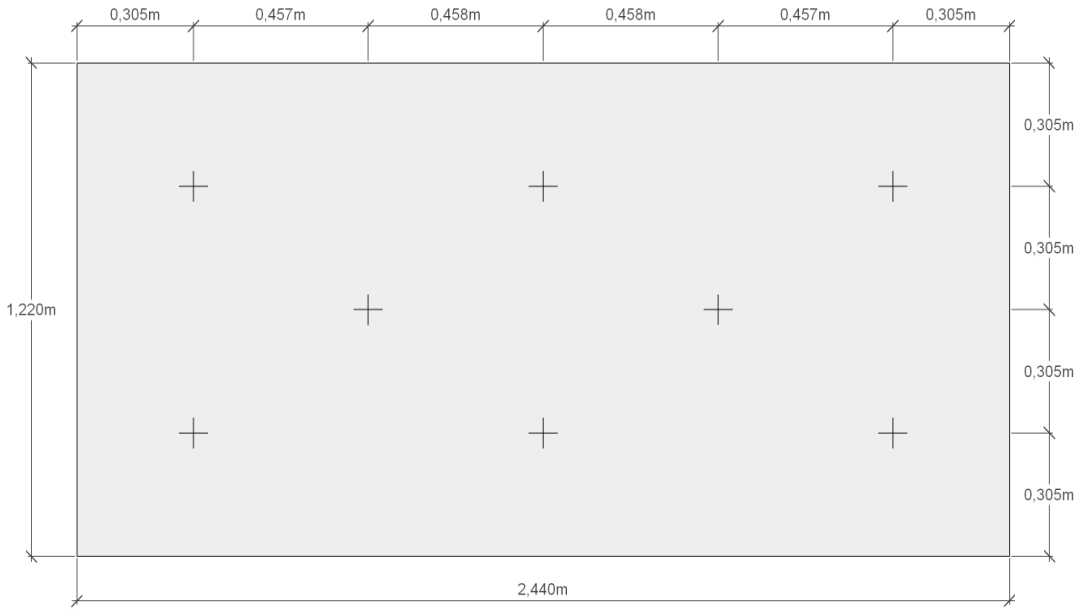
System A



ELIGIBLE PRODUCT(S)				
Georgia-Pacific	DensDeck Prime			

FASTENERS PULL OUT RESISTANCE		
TESTED PRODUCT(S) : #12 roofing fasteners		
System	**Screws**	**Plates**
A	#12 DP 41,3 mm (1⅝ in)	Round of 76 mm (3 in)
FASTENERS MEASURED PULL OUT RESISTANCE		
233 kgf (513 lbf) as per manufacturer data sheet		
ELIGIBLE PRODUCT(S)		
Dekfast (screws)	#12 DP 41,3 mm (1⅝ in)	
Dekfast (plates)	Round metal insulation plates	

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ADHESIVE				
TESTED PRODUCT : Low-rise, two-component, polyurethane adhesive				
System	**Ribbon's spacing**		**Primer**	
A	305 mm (12 in)		Elastocol 500 (on cover board) Elastocol Stick (on thermal barrier)	
ELIGIBLE PRODUCT(S)				
Soprema	Duotack			

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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).

   Equivalency; tests have demonstrated that the self-adhered vapour retarder in the system herein described is suitable for application over properly prepared concrete deck primed with Elastocol Stick or Elastocol Stick Zero.

   Tests could be conducted on 4 'x 8' x ⅝ "standard 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 :

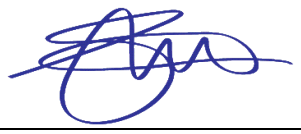
Exp reserves the right to withdraw, without prior notice, any Bulletin of Roof System Dynamic Wind Uplift Resistance Results published and/or make any necessary corrections.

12. Change(s) included in review(s) :

2017-05-19	First edition

Prepared by:

exp Services Inc.



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May 19th 2017
Date