

Roof Testing Laboratory



Roof System Dynamic Wind Uplift Resistance Results

Client's

| | |
|-------------------|--------------------|
| File Number: | SOPI-DRS-231265-16 |
| Test Date: | 2017-02-22 |
| Publication Date: | 2017-05-25 |
| Revision Date: | N/A |
| Reappraisal Date: | 2020-05-25 |



INSULATED COLVENT SYSTEM WITH THERMAL BARRIER

(PARS) PARTIALLY ATTACHED (HYBRIDE) ROOFING SYSTEM

Roofing System Summary

| | |
|----------------------|--|
| Cap sheet membrane: | Modified bitumen membrane / heat fused |
| Base sheet membrane: | Modified bitumen membrane / semi adhered (self adhering strip) |
| Cover board: | N/A |
| Insulation: | Coated glass faced polyisocyanurate and organic faced polyisocyanurate board in two rows, 1220 x 1220 x 38 mm (4' x 4' x 1,5 ") adhered. |
| Vapour barrier: | Modified bitumen membrane / heat fused |
| Thermal barrier: | Gypsum board, mechanically fasten |
| Decking: | Galvanised cold formed steel |

Dynamic Uplift Resistance (DUR) as per CSA A123.21

| System Designation | Measured Value | Computed Value (To Include 1.5 Experimental Factor) |
|--------------------|---------------------|--|
| A | -4,8 kPa (-100 psf) | -3,2 kPa (-67 psf) |

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Products

| CAP SHEET MEMBRANE | | | | |
|--|-------------------------|--|--|--|
| TESTED PRODUCT : Membrane composed of SBS modified bitumen and a composite reinforcement. | | | | |
| System | Application Method | | | |
| A | Torched | | | |
| ELIGIBLE PRODUCT(S) | | | | |
| Soprema | Colvent Traffic Cap 860 | | | |
| | | | | |
| | | | | |

| BASE SHEET MEMBRANE | | | |
|---|----------------------|-------------|-------------------|
| TESTED PRODUCT : Membrane composed of SBS modified bitumen and a fiberglass fleece reinforcement | | | |
| System | Application Method | Row spacing | Fasteners spacing |
| A | Self adhering strips | | |
| ELIGIBLE PRODUCT(S) | | | |
| Soprema | Colvent Base 830 | | |
| | | | |

| COVER BOARD |
|-----------------------------|
| TESTED PRODUCT : N/A |

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| INSULATION (Top Row) | | | | |
|---|--------------------|--|---------------------------|--|
| TESTED PRODUCT: rigid insulation board composed of a close cell polyisocyanate foam expanded between two coated fiberglass felts. | | | | |
| System | Application Method | | Fastening Rate | |
| A | adhered | | Ribbon, 305 mm (12") o.c. | |
| ELIGIBLE THICKNESS(ES) | | | | |
| 38 à 102 mm (1½ à 4 in) | | | | |
| FASTENING METHOD | | | | |
| Duotack adhesive | | | | |
| FASTENING PATTERN | | | | |
| <p>Sytem A</p> | | | | |
| ELIGIBLE PRODUCT(S) | | | | |
| Soprema | Sopra-ISO-Plus | | | |

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| INSULATION (Bottom Row) | | | | |
|---|--------------------|--|---------------------------|--|
| TESTED PRODUCT: rigid insulation board composed of a close cell polyisocyanate foam expanded between two organic reinforced felts. | | | | |
| System | Application Method | | Fastening Rate | |
| A | Adhered | | Ribbon, 305 mm (12") o.c. | |
| ELIGIBLE THICKNESS(ES) | | | | |
| 38 à 102 mm (1½ à 4 in) | | | | |
| FASTENING METHOD | | | | |
| Duotack adhesive | | | | |
| FASTENING PATTERN | | | | |
| <p>System A</p> | | | | |
| ELIGIBLE PRODUCT(S) | | | | |
| Soprema | Sopra-ISO | | | |

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| VAPOUR BARRIER | | | |
|--|--------------------|--|---------------|
| TESTED PRODUCT : membrane composed of SBS modified bitumen and a fiberglass fleece reinforcement | | | |
| System | Fastening Method | | Primer |
| A | Torched | | Elastocol 500 |
| ELIGIBLE PRODUCT(S) | | | |
| Soprema | Elastophene SP 2.2 | | |

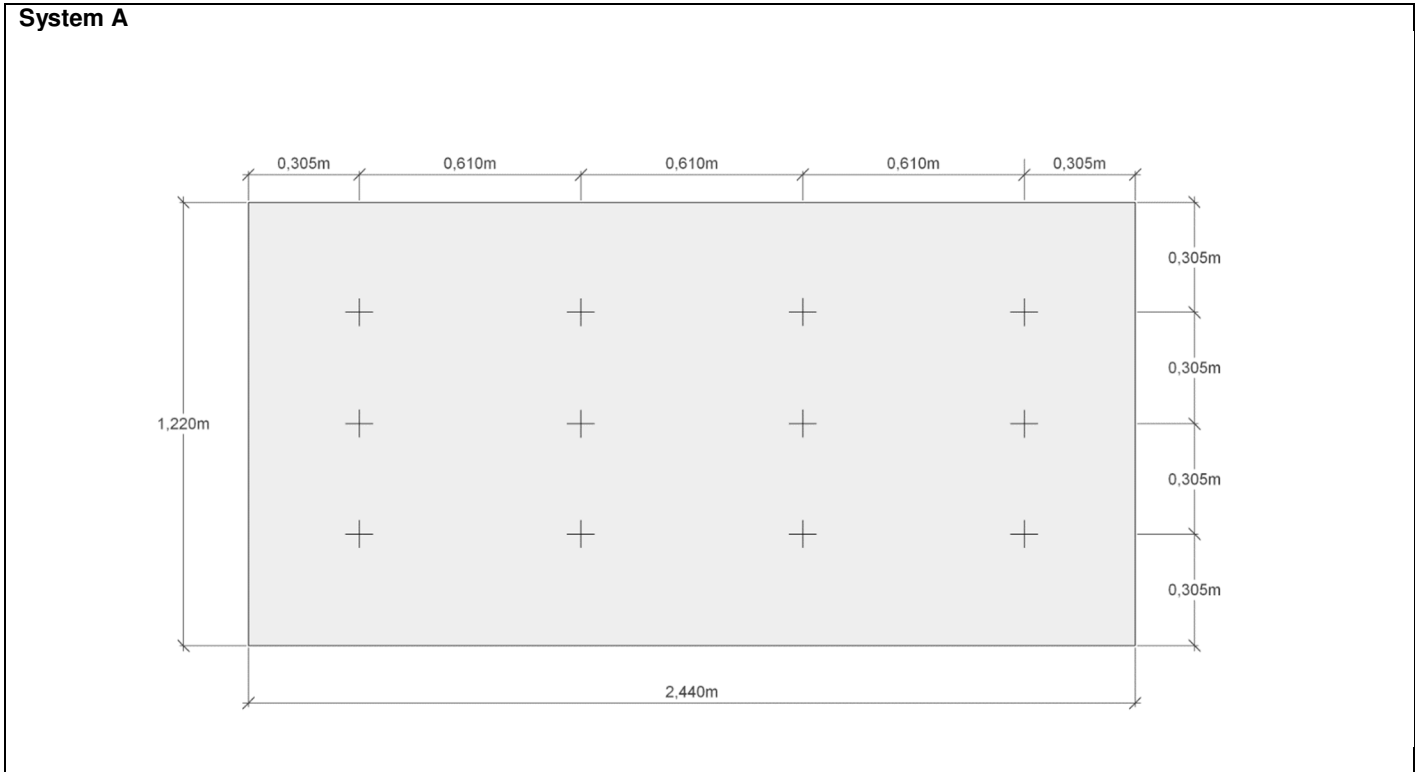
| THERMAL BARRIER | | |
|---|---------------------|--|
| TESTED PRODUCT: Moisture and fire resistent gypsum board with fiberglass facers and non-asphaltic coating | | |
| System | Application Method | Fastening Rate |
| A | Mechanically fasten | 12 fasteners per 2440 x 1220 mm board (4 x 8 ft) |
| ELIGIBLE THICKNESS(ES) | | |
| 12, à 15,8 mm (½ à ⅝ in) | | |
| FASTENING METHOD | | |
| Screws and plates | | |
| FASTENING PATTERN(S) | | |

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| ELIGIBLE PRODUCT(S) | | | | |
|---------------------|----------------|--|--|--|
| Georgia Pacific | DensDeck Prime | | | |
| | | | | |

| FASTENERS PULL OUT RESISTANCE | | |
|---|--------------------|----------------------------------|
| TESTED PRODUCT(S): Roofing screws #12 and steel plates. | | |
| System | Screws | Plates |
| A | DF- #12x1 5/8 -PH3 | 3 in galvalume steel round plate |
| FASTENERS MEASURED PULL OUT RESISTANCE | | |
| 178 kgf (392 lbf) | | |
| ELIGIBLE PRODUCT(S) | | |
| Deckfast | DF- #12x1 5/8 -PH3 | 3 in galvalume steel round plate |

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| ADHESIVE | | | | |
|---|---------------------|--|--------|--|
| TESTED PRODUCT : Two parts low rise polyurethane adhesive | | | | |
| System | Ribbon's spacing | | Primer | |
| A | 305 mm (12 in) o.c. | | N/A | |
| 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 heat welded vapour barrier in the system herein described is suitable for application on concrete deck properly primed with Elastocol 500.

Tests could be conducted on 4 'x 8' x 5/8 "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.

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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:

| | |
|------------|-------------------|
| 2017-05-25 | First publication |
| | |

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May 25th 2017

Date