

Roof Testing Laboratory



Roof System Dynamic Wind Uplift Resistance Results

| | |
|-------------------|------------------------------------|
| File Numbers: | SOP1-204337-12 SOP1-204337-20 |
| Test Dates: | 2012-04-30 2012-06-15 |
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| Reappraisal Date: | 2020-10-19 |



SOPRAROCK DD PLUS OVER SOPRAROCK DD PLUS COLD APPLIED

(AARS) ADHESIVE APPLIED ROOFING SYSTEM

Roofing System Summary

| | |
|----------------------|--|
| Cap sheet membrane: | Modified bitumen membrane / Torch applied |
| Base sheet membrane: | Modified bitumen membrane / Torch applied |
| Cover board: | N/A |
| Insulation (top): | Mineral fiber board with bitumen saturated top surface 1220 x 1220 x 51 mm (4' x 4' x 2") / Adhered with Duotack |
| Insulation (bottom): | Mineral fiber board with bitumen saturated top surface 1220 x 1220 x 51 mm (4' x 4' x 2") / Adhered with Duotack |
| Vapour barrier: | Self-adhesive membrane |
| Thermal barrier: | Optional |
| 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 | -2,9 kPa (-60 psf) | -1,9 kPa (-40 psf) |
| B | -6,0 kPa (-125 psf) | -4,0 kPa (-83 psf) |

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Products

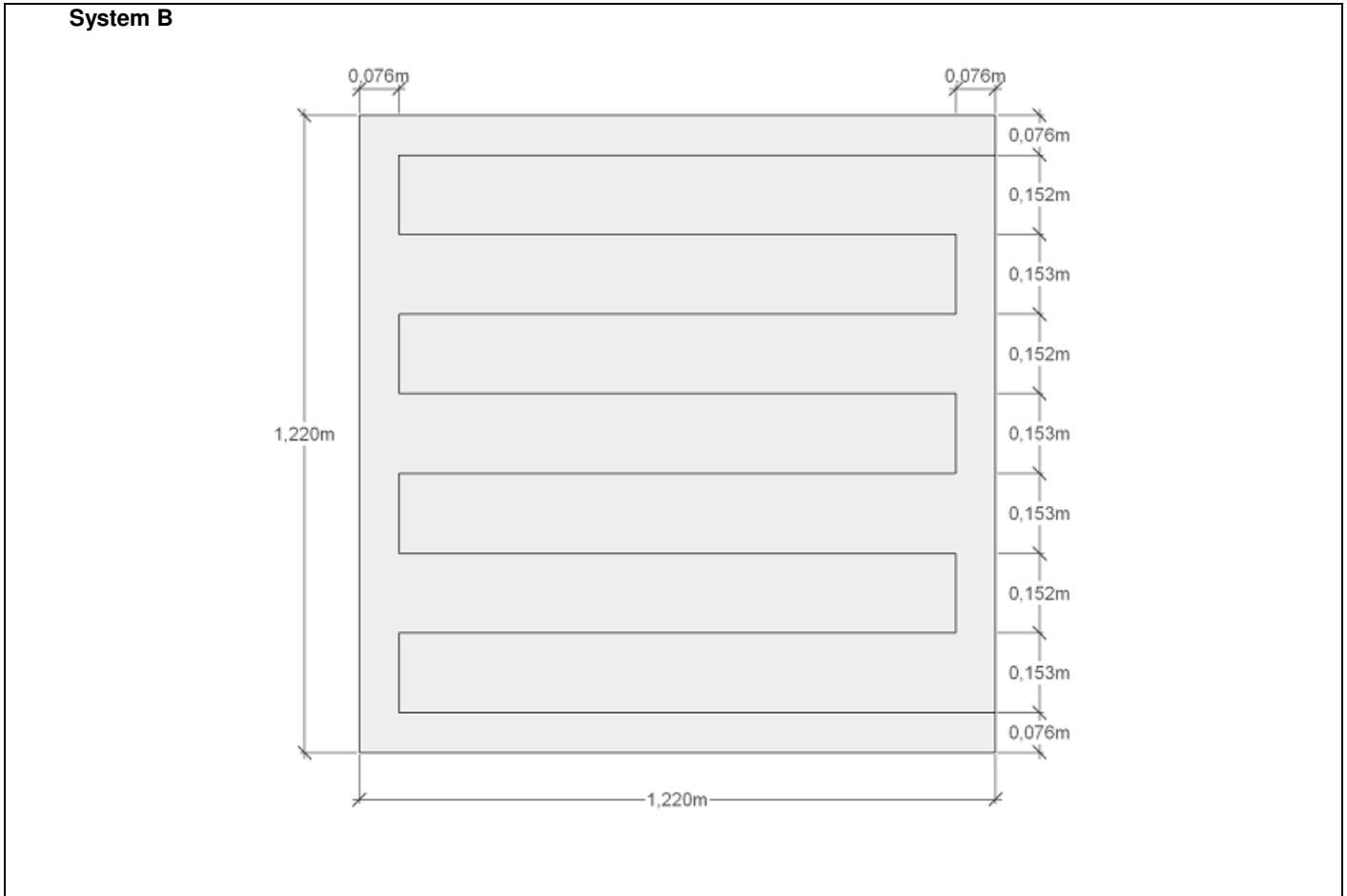
| CAP SHEET MEMBRANE | | | | |
|--|-----------------------------|-------------------------|-----------------------|--------------------------|
| TESTED PRODUCT: Membrane composed of a non-woven polyester reinforcement and SBS modified bitumen | | | | |
| System | Application Method | | | |
| A, B | Torch applied | | | |
| ELIGIBLE PRODUCT(S) | | | | |
| Soprema | Sopralene Flam 250 GR | Sopralene Flam 180 GR | Soprastar Flam HD GR | Sopralene Flam 180 FR GR |
| | Sopralene Flam 250 FR GR | Soprastar Flam HD FR GR | Sopralene Mammouth GR | Sopraply Traffic Cap 660 |
| | Sopraply Traffic Cap FR 661 | | | |

| 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, B | Torch applied | N/A | N/A |
| ELIGIBLE PRODUCT(S) | | | |
| Soprema | Sopralene Flam 180 | Elastophene Flam | Sopraply Base 520 |
| | | | Sopralene Flam 250 |

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



| INSULATION (Top Row) | | |
|---|----------------------|---------------------------|
| TESTED PRODUCT: Mineral fiber (rock wool) insulation board with a rigid surface impregnated with a bitumen layer | | |
| System | Application Method | Fastening Rate |
| A | Adhered with Duotack | Ribbons at 305 mm (12 in) |
| B | Adhered with Duotack | Ribbons at 152 mm (6 in) |
| ELIGIBLE THICKNESS(ES) | | |
| 51 to 102 mm (2 to 4 in) | | |
| FASTENING METHOD | | |
| Duotack adhesive | | |
| FASTENING PATTERN | | |
| <p>System A</p> | | |



| ELIGIBLE PRODUCT(S) | | | | |
|---------------------|-------------------|--|--|--|
| Soprema | Soprarock DD Plus | | | |
| | | | | |



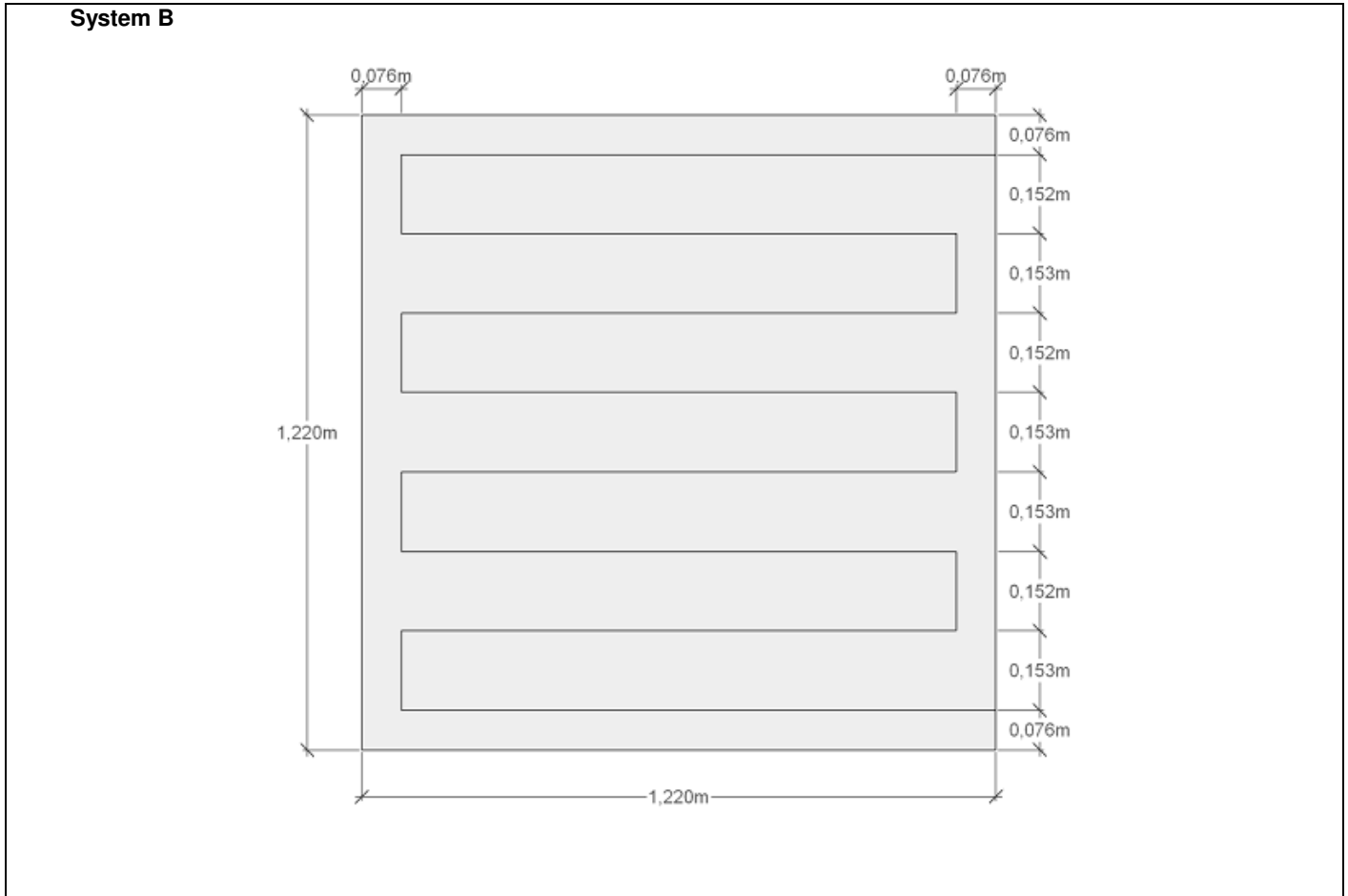
| INSULATION (Bottom Row) | | |
|---|----------------------|---------------------------|
| TESTED PRODUCT: Mineral fiber (rock wool) insulation board with a rigid surface impregnated with a bitumen layer | | |
| System | Application Method | Fastening Rate |
| A | Adhered with Duotack | Ribbons at 305 mm (12 in) |
| B | Adhered with Duotack | Ribbons at 152 mm (6 in) |
| ELIGIBLE THICKNESS(ES) | | |
| 51 to 102 mm (2 to 4 in) | | |
| FASTENING METHOD | | |
| Duotack adhesive | | |
| FASTENING PATTERN | | |
| <p>System A</p> | | |

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| ELIGIBLE PRODUCT(S) | | | | |
|---------------------|-------------------|--|--|--|
| Soprema | Soprarock DD Plus | | | |
| | | | | |



| VAPOUR BARRIER | | | | |
|---|--------------------|--------------------------|--|--------|
| TESTED PRODUCT: Self-adhesive membrane composed of a trilaminated woven polyethylene and SBS modified bitumen | | | | |
| System | Fastening Method | | | Primer |
| A, B | Self-adhered | | | N/A |
| ELIGIBLE PRODUCT(S) | | | | |
| Soprema | Sopravap'R | Sopralene Stick Adhesive | | |
| When applied by adhesion, all substrates, except the steel deck, must be primed with Elastocol Stick or Elastocol Stick Zero. | | | | |
| Soprema | Elastophene SP 2.2 | Sopralene 180 SP 3.5 | | |
| When applied by torch fusing, all substrates must be primed with Elastocol 500. | | | | |

| THERMAL BARRIER |
|---------------------------------|
| TESTED PRODUCT: Optional |

| FASTENERS |
|-------------------------------|
| TESTED PRODUCT(S): N/A |

| ADHESIVE | | | | |
|---|------------------|--|--|--------|
| TESTED PRODUCT: Low-rise, two-component, polyurethane adhesive | | | | |
| System | Ribbon's spacing | | | Primer |
| A | 305 mm (12 in) | | | N/A |
| B | 152 mm (6 in) | | | N/A |
| ELIGIBLE PRODUCT(S) | | | | |
| Soprema | Duotack | | | |

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General Notes

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 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).

1. 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.

2. 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).

3. 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.

4. Note on adhesive:

Follow all guide lines or supplementary instructions from the manufacturer regarding adhesive application.

5. 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.

6. 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).

7. 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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8. 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.

9. Technical Advisories:

This roof system assessment reports must be read in conjunction with any issued technical advisories from EXP.

10. 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.

11. Version tracking table:

| | |
|-----------------|-------------------------|
| 2012-09-27 | First edition |
| 2013-03-25 (R1) | N/D |
| 2017-10-19 (R2) | New presentation layout |

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Date