Roof System Assessment Report of Wind Uplift Resistance

Publication date: December 12, 2011
Cancels and Replaces:
LLS Document Number: RAP-DRU208096

Manufacturer:

CARLISLE SYNTEC

Authorized membrane production sites: Senatobia, MS and Tooele, UT - USA

Roofing System Summary: TPO Adhered System

- Membrane:	Sure-Weld TPO or equivalent membrane
- Insulation:	Polyiso HP-H or equivalent product
- Vapour barrier:	CCW 725 TR or equivalent product
- Thermal barrier:	Optional
- Decking:	Steel deck 22 gauge or equivalent

- Dynamic Uplift Resistance (DUR) as per CSA A123.21 standard: -1.7 kPa (-35 psf)

- Notes:

Equivalent products:
Only equivalent products included into the roofing system's report are admissible.

Optional components:
Components of the roofing system designated as optional may be included or excluded from the roofing system which will not change the published dynamic uplift resistance (DUR).

Safety factor:
As required by in the CSA A123.21 standard, the published dynamic uplift resistance (DUR) are reduced by a safety factor of 1.5.

Admissible wind uplift load calculation:
An online calculator is available at www.sigders.ca. The user will have to provide the following information:

- building location,
- building geometry,
- building exposure,
- building openings,
- building importance factor.

The calculator will display the allowable design load of the roof's field surface, edges and corners as well as the dimensions of the edge and corner zones.

Technical Advisories:
Assessment reports must be read in conjunction with technical advisories issued by Les Services **exp**.

Values
For this document, the metric values are the standard and values in parentheses are for information only.

Notice
Les Service **exp** reserve their right to withdraw, without prior notice, the test report performed as per CSA A123.21 standard.

Roofing System's Specific Data:

Membrane:

- Membrane:	Sure-Weld TPO, 1.1 mm (45 mil)
- Membrane description:	White or colored reinforced Thermoplastic Polyolefin (TPO) roofing membrane
- Equivalents:	1.5 mm (60 mil) Sure-Weld, 1.8 or 2.1 mm (72 or 80 mil) Sure-Weld Extra, 1.1 or 1.5 mm (45 or 60 mil) Sure-Weld HS, 1.8 or 2.1 mm (72 or 80 mil) Sure-Weld HS Extra, 1.1 to 2.1 mm (45 to 80 mil) Spectro-Weld
- Attachment method:	Adhered with Carlisle Sure-Weld TPO Bonding Adhesive or Low VOC Bonding adhesive or Aqua-base 120 bonding adhesive.

Insulation:

- Insulation type:	Polyisocyanurate, Carlisle Polyiso HP-H
- Supplier:	Carlisle SynTec
- Insulation description:	Composed of polyisocyanurate plastic foam inserted between two facers with a compressive strength of 138 kPa (20 psi) in accordance with the ASTM D 1621 standard.
- Attachment method:	1 fastener and plate per 0.372 m² (4 ft²)
- Admissible thickness:	50 mm (2 inches) minimum
- Equivalents:	Carlisle SecurShield or SecurShield HD Composite; Hunter Panels H-Shield, H-Shield-CG or H-Shield HD Composite.
- Screw type:	Carlisle fasteners or minimum No. 12 roofing fastener with an anticorrosion coating,
- Plate type:	Carlisle insulation plates, 75 mm (3 in) round or square plastic or metal roofing insulation plate or 73 mm (2 7/8 in.) hexagonal plastic or metal roofing insulation plate. Metal plates must have an anticorrosion coating.

Vapour Barrier:

- Vapour barrier:	Carlisle CCW 725 TR
- Supplier:	Carlisle SynTec
- Attachment method:	Self-adhered or loosely laid and sealed at the laps in the case of the polyethylene
- Equivalents:	Carlisle CCW 725, CCW 705 or minimum 0.15 mm (6mil) thick polyethylene

Thermal Barrier (optional):

- Type:	Gypsum panel
- Supplier:	Generic
- Description:	Panel with gypsum core
- Thickness:	6 mm (1/4 in.) minimum
- Attachment method:	Loosely laid, adhesively attached or mechanically attahced
- Equivalents:	DensDeck, DensDeck Prime, Securock

Decking:

- Supplier:	Generic
- Decking type:	Galvanized or aluminum/zinc alloy coated steel in accordance with ASTM A653, ASTM A792, ASTM A1008 or CSSBI 10M standards.
- Thickness:	0.76 mm (0.03 in.) minimum, with a yield strength of 230 MPa (33 ksi) and a tensile strength of 310 MPa (45 ksi) commonly defined as being of a 22 gauge minimum thickness.
- Equivalents:	Steel deck thickness of 18 to 22 gauges or other deck with pull-out resistance equivalent to the one specified below.
- Attachment method:	The deck's fastening to the supporting structure must be strong enough to resist wind uplift loads (adjusted as per NBC requirements).
- Fastening uplift resistance (CSA S136.F04):	2.0 kN (450 pf)