



Roof System Assessment Report of Wind Uplift Resistance (ISO 17025)

Document Number:	PUB-DRU168455
Publication Date:	2013-07-18
Revised:	2015-07-21
Revaluation Date:	2016-07-18

Supplier:



UltraPly™ TPO 10 fasteners mechanically attached System, Mechanically Attached Roof System (MARS)

Roofing System Summary :

- membrane: TPO membrane or allowable products
- Cover board: Optional
- Insulation: Polyisocyanurate or allowable products
- Vapour barrier: Membrane or allowable products
- Thermal barrier: Optional
- Decking: Steel Deck

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

Description	Test observation reading	With SF of 1.5
System A	-5.7 kPa (-120 psf)	-3.8 kPa (-80 psf)
System B	-6.3 kPa (-131 psf)	-4.2 kPa (-87 psf)

Notes :

Allow 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 (SF 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 **exp** Services Inc.

Values

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

Notice

Exp Services inc. reserve their right to withdraw, without prior notice, the test report performed as per CSA A123.21 Standard.

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Roofing System's Specific Data:

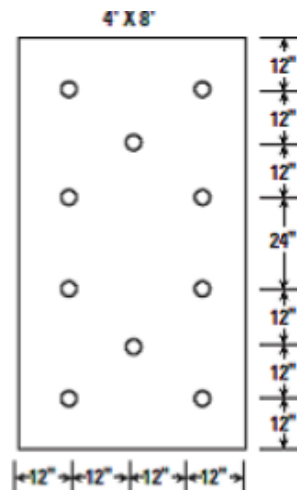
Membrane:

- Allowable product:	Firestone		
	UltraPly™ TPO	Platinum TPO	ReflexEON 60 mil
- Attachment mode:	Mechanically attached		
Mechanically attached Pattern for System A result	Row spacing	Fasteners spacing	
	2892 mm (114 in.) o.c.	305 mm (12 in.) o.c.	
- Attachment type:	Fasteners #14 and plates, Pre-assembled Heavy Duty (W56TPO3107)		
- Pullout fastener resistance:	Minimal reference resistance base on test: 820 lbf or 372 Kg		
- Attachment supplier:	Firestone		
Mechanically attached Pattern for System B result	Row spacing	Fasteners spacing	
	2892 mm (114 in.) o.c.	152 mm (6 in.) o.c.	
- Attachment type:	Fasteners #14 and plates, Pre-assembled Heavy Duty (W56TPO3107)		
- Pullout fastener resistance:	Minimal reference resistance base on test: 820 lbf or 372 Kg		
- Attachment supplier:	Firestone		

Cover board (optional): See optional products table

Insulation second row:

- Allowable products:	Firestone		
	ISO 95+	Resista	
- Allowable thickness:	Between 25 mm (1 in) to 203 mm (8 in)		
Mechanically attached Pattern for System A result	Row spacing	Fasteners spacing	
	10 fasteners per 32 ft²	As fastener drawing pattern	
- Attachment type:	Fasteners #14 and plates, Pre-assembled HD (W56RAC4007)		
- Pullout fastener resistance:	Minimal reference resistance base on test: 749,4 lbf or 340 Kg		
- Attachment supplier:	Firestone		
Mechanically attached Pattern for System B result	Row spacing	Fasteners spacing	
	10 fasteners per 32 ft²	As fastener drawing pattern	
- Attachment type:	Fasteners #14 and plates, Pre-assembled HD (W56RAC4007)		
- Pullout fastener resistance:	Minimal reference resistance base on test: 749,4 lbf or 340 Kg		
- Attachment supplier:	Firestone		



Fastener Drawing Pattern



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Insulation first row:

- Allowable products:	Firestone
	ISO 95+ Resista
- Allowable thickness:	Between 25 mm (1 in.) to 203 mm (8 in.)
- Attachment mode:	Loose laid or adhered or mechanically attached

Vapour Barrier:

- Allowable products:	Firestone
	V-Force Basegard SA
	Generic
	Polyethylene Kraft paper
- Attachment mode:	Adhered or loose laid
- Attachment type:	Self-adhering membrane or loose laid or adhered

Thermal Barrier (optional): See optional products table

Decking:

- Type:	Galvanized construction steel or coated with an aluminum/zinc alloy or PVC in accordance with ASTM A653, ASTM A792, ASTM A1008 or CSSBI 10M Standards.
- Supplier:	Generic
- 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.
- 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):	2.09 kN (470 pf)
- -Equivalence:	Steel deck thickness of 18 to 22 gauges or wood deck or concrete deck with pullout resistance equal or higher than the Fastening uplift resistance specified above.

Optional Products Table:

Cover board:

- Allowable product:	Firestone
	ISOGard HD ISOGard HD Composite HailGard
	CGC / USG
	Securock Gypsum Fiber Roof Board
	Georgia Pacific
	Dens Deck Dens Deck Primed
- Allowable thickness:	Between 6 mm (¼ in.) to 15.9 mm (5/8 in.)
Mechanically attached Pattern for System A result	Row spacing Fasteners spacing
	10 fasteners per 32 ft² As fastener drawing pattern
- Attachment type:	Fasteners #14 and plates, Pre-assembled HD (W56RAC4007)
- Pullout fastener resistance:	Minimal reference resistance base on test: 749,4 lbf or 340 Kg
- Attachment supplier:	Firestone
Mechanically attached Pattern for System B result	Row spacing Fasteners spacing
	10 fasteners per 32 ft² As fastener drawing pattern
- Attachment type:	Fasteners #14 and plates, Pre-assembled HD (W56RAC4007)
- Pullout fastener resistance:	Minimal reference resistance base on test: 749,4 lbf or 340 Kg
- Attachment supplier:	Firestone

Note: If a Cover board is used, the insulation board could be adhered or mechanically attached or loose laid.



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Thermal barrier:

- Allowable product:	Georgia Pacific		
	DensDeck	DensDeck Prime	
	CGC / USG		
	Securock	Gypsum Fiber Roof Board	
- Allowable thickness:	Between 6 mm (¼ in.) to 15.9 mm (5/8 in.)		
- Attachment mode:	Loose laid or adhered or mechanically attached		