Laboratory Report C35830.03.11

Physical Properties Testing
of
Tower PVC Single Ply Roofing Membranes
in accordance with
ASTM D4434-06

Prepared for:
Canadian General-Tower Limited
52 Middleton Street
Cambridge, Ontario
Canada N1R 5T6

Date of Issuance:
March 28, 2011

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CLIENT INFORMATION: Canadian General-Tower Limited
52 Middleton Street
Cambridge, Ontario
Canada N1R 5T6

ERD REFERENCE: 2009.131580SC & 2010.C35830CT

Data reported herein is based on that generated under Project 131580SC after having received written authorization from report holder.

SAMPLES: **Tower PVC** is a single-ply, internally reinforced PVC membrane available in 50, 60 and 80-mil.

Tower PVC Fleeceback is a single-ply, internally reinforced PVC membrane with a polyester fleece backing available in 50, 60 and 80-mil.

SCOPE: The PVC compound used on Tower PVC and Tower PVC Fleeceback is the same for each of the three respective thickness offerings, therefore, Trinity|ERD conducted the full ASTM D4434 series on the thinnest materials (Tower PVC 50-mil Single Ply and Tower PVC 50-mil Single Ply Fleeceback) and conducted Thickness, Thickness Over Scrim, Low Temperature Bend, Linear Dimensional Change and Water Absorption (non-fleeceback) tests on the 60-mil and 80-mil versions.

SAMPLE DELIVERY: Samples were shipped by the client under Project 131580SC to Trinity|ERD's South Carolina Laboratory, received 16/16/09. Trinity|ERD personnel sampled the initial rolls in accordance with ICC-ES AC85 on 12/10/09.

TEST DATE(S): December 2009 through September 2010

ERD TECHNICIANS: Charles Phillips, Michael Bloom, Alex Holtkamp, Von Miller (Sampling)

M-D NOTIFICATION: ERD07081

PROPERTIES:

Thickness overall:	ASTM D 751
Thickness over Scrim:	ASTM D 751
Breaking Strength:	ASTM D 751, Grab Method
Elongation:	ASTM D 751, Grab Method
Seam Strength:	ASTM D 751, Grab Method
Tear Strength	ASTM D 751, Procedure B
Heat Aging:	ASTM D 3045
Low Temperature Bend:	ASTM D 2136
Accelerated Weathering:	ASTM G 154 (formerly G53)
Linear Dim. Change	ASTM D 1204
Water Absorption:	ASTM D 570
Static Puncture:	ASTM D 5602
Dynamic Puncture:	ASTM D 5635

STANDARDS: ASTM D4434-06 – *Standard Specification for Poly (Vinyl Chloride) Sheet Roofing*, © 2006, ASTM.

ASTM D751-06 – *Standard Test Methods for Coated Fabrics*, © 2006, ASTM.

ASTM D3045-03 – *Standard Practice for Heat Aging of Plastics Without Load*, © 2003, ASTM.

ASTM D2136-02 – *Standard Test Method for Coated Fabrics – Low-Temperature Bend Test*, © 2002, ASTM.

ASTM G154-06 – *Standard Practice for Operating Florescent Light Apparatus for UV Exposure of Nonmatalic Materials*, © 2006, ASTM.

ASTM D1204-02 – *Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature*, © 2002, ASTM.

ASTM D570-98 – *Standard Test Method for Water Absorption of Plastics*, © 1998, ASTM.

ASTM D5602-06 – *Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens*, © 2006, ASTM.

ASTM D5635-04 – *Standard Test Method for Dynamic Puncture Resistance of Roofing Membrane Specimens*, © 2004, ASTM.

EQUIPMENT:

Thickness overall:	Starrett Caliper
Breaking Strength:	Satec T-5000
Elongation:	Satec T-5000
Factory Seam Strength:	Satec T-5000
Tearing Strength	Satec T-5000
Low Temperature Bend:	So Lo Freezer; TRINITY|ERD Low Temp Jig
Heat Aging:	Fischer Over
Accelerated Weathering:	UVCON
Linear Dim. Change	Fischer Oven
Water Absorption:	ERD Water Bath, Mettler Scale
Static Puncture:	TRINITY|ERD Static Puncture Apparatus
Dynamic Puncture:	TRINITY|ERD Dynamic Puncture Apparatus

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12. CONCLUSIONS

12.1 TRINITY|ERD has tested Tower PVC and Tower PVC Fleeceback, as marketed by Canadian General-Tower Limited and sampled in accordance with ICC-ES AC85, in accordance with the procedures set forth in ASTM D4434-06 for a Type III membrane.

12.2 Review of results indicates Tower PVC (50, 60 and 80-mil) and Tower PVC Fleeceback (50, 60 and 80-mil) meet requirements for an ASTM D4434, Type III membrane.

Please contact our offices with any questions.

Sincerely,
TRINITY | ERD

Charles Phillips
Laboratory Systems Manager

Robert Nieminen, P.E.
Vice President
Florida Reg. No. 59166

03/28/2011

REPORT HISTORY:

Date	Event	Notes	Authorized By:
03/28/2011	Final Report Issued	None	RN