

TEST REPORT

Report No.: B9474.01-750-44

Rendered to:

SILEX FIBERGLASS WINDOWS & DOORS
Winnipeg, Manitoba

PRODUCT TYPE: Fibreglass Fixed Picture Window
SERIES/MODEL: 2100 Series

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

Title	Summary of Results
Primary Product Designator	Class CW – PG70 – Size Tested 1900 x 1900 mm (74 x 74 in) – Type FW
Design Pressure	±3360 Pa (±70.18 psf) CSA A440-00 Equivalent Rating = C5
Air Infiltration	<0.1 L/s/m ² (<0.02 cfm/ft ²)
Canadian Air Infiltration/Exfiltration Level	Fixed
Water Penetration Resistance Test Pressure	730 Pa (15.25 psf) CSA A440-00 Equivalent Rating = B7

Test Completion Date: 05/28/2012

Reference must be made to Report No. B9474.01-750-44, dated 05/28/12 for complete test specimen description and detailed test results.

1.0 Report Issued To: Silex Fiberglass Windows & Doors
15-1865 Sargent Avenue
Winnipeg, Manitoba R3H 0E4

2.0 Test Laboratory: Architectural Testing Canada, Inc.
356 Saulteaux Crescent
Winnipeg, Manitoba R3J 3T2
(204) 885-9300

3.0 Project Summary:

3.1 Product Type: Fibreglass Fixed Picture Window

3.2 Series/Model: 2100 Series

Compliance Statement: Results obtained are tested values and were secured by using the designated test method. The specimen tested successfully met the performance requirements for a **Class CW - PG70 - Size Tested 1900 x 1900 mm (74 x 74 in) - Type FW** rating.

3.3 Test Dates: 05/16/2012 - 05/28/2012

3.4 Test Record Retention End Date: All test records for this report will be retained until May 28, 2016.

3.5 Test Location: Architectural Testing Canada test facility in Winnipeg, Manitoba.

3.6 Test Sample Source: The test specimen was provided by the client. Representative samples of the test specimen will be retained by Architectural Testing Canada for a minimum of four years from the test completion date.

3.7 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing Canada and are representative of the test specimen reported herein. Test specimen construction was verified by Architectural Testing Canada per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

<u>Name</u>	<u>Company</u>
Zhen Liu	Silex Fiberglass Windows & Doors
Bryan Boyle	Architectural Testing Canada, Inc.
Jack Guerreiro	Architectural Testing Canada, Inc.

4.0 Test Specification:

AAMA/WDMA/CSA 101/1.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 3.6 m ² (38.9 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1900	74-3/4	1900	74-3/4

5.2 Frame Construction:

Frame Member	Material	Description
All	Fibreglass	Head, sill and jamb members were white fiberglass, each filled with one continuous length EPS foam insert.

	Joinery Type	Detail
All corners	Mitered	All frame corners were mitre cut and secured with corner keys.

5.3 Weatherstripping: No weatherstripping was utilized

5.4 Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen can be made.*

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
20 mm IG	Foam super spacer	6 mm tempered	6 mm tempered	Glazing was set directly into the frame, tape-glazed, with glass set from the interior. Silicone sealant was installed around the perimeter of the interior glazing pane. Snap-in vinyl stops were utilized on the interior. A silicon cap bead was installed to the exterior perimeter of the exterior glazing pane.

5.0 Test Specimen Description: (Continued)

5.4 Glazing: (Continued)

Location	Daylight Opening		Glass Bite
	millimeters	inches	
Frame	1744 x 1744	68-3/4 x 68-3/4	12 mm

5.5 Drainage: No drainage was utilized.

5.6 Hardware: No hardware was utilized.

5.7 Reinforcement: No reinforcement was utilized.

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 10 mm (3/8") shim space. The rough opening was filled with urethane foam insulation and the interior and exterior perimeters of the window were sealed with caulked sealant.

Location	Anchor Description	Anchor Location
Frame	#8 x 3" screws	Commencing between 80 mm (3-1/4") and 230 mm (9") from corners, fasteners were secured through the frame and into the buck 200 mm (8") to 350 mm (13-3/4") on centre.

7.0 Test Results: The temperature during testing was 20°C (68°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m ² (<0.02 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m ² (<0.02 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Canadian Air Infiltration/Exfiltration Level	Fixed	N/A	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	3
Forced Entry Resistance, per ASTM F 588 Type: D - Grade: 10	Pass	No entry	
Optional Performance			
Water Penetration, per ASTM E 547 at 730 Pa (15.25 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at hinge stile +3360 Pa (+70.18 psf) -3360 Pa (-70.18 psf)	<0.3 mm (<0.01") <0.3 mm (<0.01")	2.0 mm (0.08") max. 2.0 mm (0.08") max.	4, 5
Uniform Load Structural, per ASTM E 330 taken at hinge stile +5040 Pa (+105.26 psf) -5040 Pa (-105.26 psf)	0.3 mm (0.01") 0.3 mm (0.01")	1.0 mm (0.04") max. 1.0 mm (0.04") max.	4, 5

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: Without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: Loads were held for 10 seconds.

Note 5: Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Architectural Testing Canada will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing Canada, Inc. for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing Canada Inc.

For ARCHITECTURAL TESTING CANADA, Inc.



Digitally Signed by: Jack Guerreiro

Jack Guerreiro
Senior Technician



Digitally Signed by: Bryan Boyle

Bryan Boyle
Director, Regional Operations

BJB:bb

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Drawings (2)

This report produced from controlled document template ATI 00438, issued 01/31/12.

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
1	10/01/12	1	Revision includes correcting the individuals witnessing the test.



Appendix A

Alteration Addendum

Alteration #1: Date - 05/22/12
Cause for alteration – Glass breakage during ASTM E 330 testing. Two panes of 5 mm annealed glass were removed and replaced with two panes of 6 mm tempered glass.



Architectural Testing

Test Report No.: B9474.01-750-44

Report Date: 05/28/12

Appendix B

Drawings



Test sample complies with these details.
Deviations are noted.

Report # B9974.01-20-44

Date 05/28/12 Tech [Signature]

JAMB

HEAD

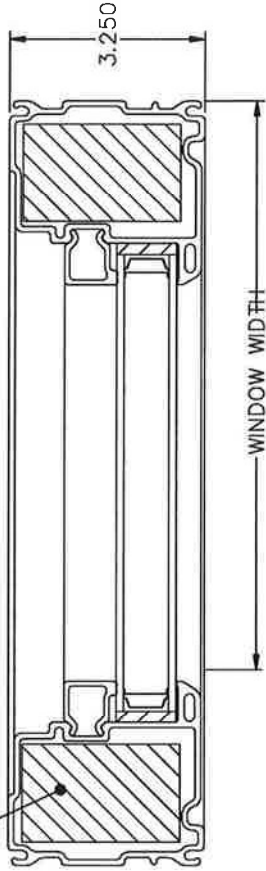
PT 2100 TYP.

BLOCK POLYSTYRENE
FILL (TYP. BLUE)

PT 2112 TYP.

VERTICAL
SECTION

WINDOW
HEIGHT



HORIZONTAL
SECTION

SILL

NO	DATE	BY	REVISIONS	NO	DATE	BY	REVISIONS
1	7-16-08	ALH	UPDATED FRAME PROFILE	7			
2	8-30-08	ALH	PT2112 WAS PT2101	8			
3	4-13-08	JLS	ADDED EPS FOAM FILL	9			
4				10			
5				11			
6				12			

APPROVAL	MATERIAL	AS NOTED
DESIGNER	TYPICAL WALL =	N/A
CHECKER	GLASS AS NOTED	N/A
PERFORMER	GLASS SEALER CAPABILITY	N/A
	WT./FT. =	N/A
	PERIMETER =	N/A
	TOLERANCES	
	(EXCEPT AS NOTED)	
	DECIMAL ± 0.10	
	FRACTIONAL ± 1/32"	
	ANGULAR ± 2'	

		SILLEX FIBERGLASS 16-1645 Newport Ave Wilmington, DE 19810 USA Tel: 304 798 0048 Fax: 304 798 0049
SCALE: 5 DATE: 1-9-2012 DRAWN BY: JERRY	TYPICAL CROSS SECTION FIBERGLASS MULLED PICTURE 2100-106	