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TESTED FOR
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1.0 PURPOSE

The purpose of this report is to present the testing methods employed and the test results obtained during the performance testing of one (1) **Aluminum Fixed Window** described in paragraph 4.0 of this report.

2.0 TEST REFERENCES

2.1 NAFS – North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-08

Class CW – PG40: Size tested 2435 x 1829 mm (96 X 72 in)

2.2 CAWM 301 – 90/ASTM F 588 Forced Entry Resistance Tests for Windows.

3.0 SUMMARY

The test results in paragraphs 5.0 and 6.0 indicate that the test sample described in paragraph 4.0 of this report complied with the performance requirements of the above referenced specifications.

4.0 SAMPLE SUBMITTED BY MANUFACTURER

SERIES: **6223 Picture Window**

CONFIGURATION: OO

FRAME SIZE: 2435 mm x 1829 mm (95.87" x 72.01")

DAYLIGHT SIZE: 1159 mm x 1772 mm (45.63" x 69.76")

GLASS: The fixed lites were 0.75"overall wide insulated glass with 3/16" clear annealed glass on both sides.

SPACER: Single sealed 3/8" wide Intercept spacer

GLAZING: The glass lites rested on (2) 4" x 5/32" x 7/8" rubber setting blocks placed at ends of glazing spans and were glazed from the exterior onto a 0.5" x 0.05"double-sided adhesive foam tape. The I.G./frame interface had a bead of sealant full perimeter on the inside.
Each lite was retained from the exterior with aluminum extruded stops which contained a pull-in vinyl hollow bulb seal. Each glass stop was fastened to the frame with #8 x 1.25" PFH screws 12" on center. These screws penetrated the frame outboard of the nail-on fin and were not sealed.

WEEPAGE: Each sill glazing stop contained a 0.5" x 0.125" weep notch 4" from each end on the exterior face and a corresponding 2.5" x 0.25" notch on the glazing side of the stop extrusion.

WEATHERING: The glass stops each contained a single strip of full length pull-in vinyl hollow bulb weather strip.

HARDWARE: None.

CONSTRUCTION: The aluminum frame corners were each mechanically joined with a pair of #6 x 1.25" PFH screws. The integral mullion was fastened to the frame with (4) four #6 x 1.25" PFH screws on each end.

CAULKING: The frame corners and mullion to frame interface were sealed full profile. All fastening screw heads were sealed. The insulated glass units to the frame were sealed on the interior full perimeter.

ANCHORING: The frame was mounted over a 2" x 6" wood rough opening and fastened through the nail fin with #6 x 1⅝" screws every 16" on center. Wood furring was applied over the nail fins and screwed to the wooden buck.

5.0 TEST PROCEDURES AND RESULTS

5.1 All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 2.0 of this report.

5.2 TEST RESULTS

PARAGRAPH	TEST DESCRIPTION	MEASURED	ALLOWED
5.3.2.1	**Air Infiltration (ASTM E 283)**		
	75 Pa	0.0 L/s•m²	1.5 L/s•m²
	1.6 PSF	0.0 CFM/Ft²	0.3 CFM/Ft²
	The tested specimen exceeds the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.		
5.3.3.2	**Water Penetration (ASTM E 547)**		
	220 Pa (4.5 PSF)	No Leakage	No Leakage
5.3.4.2	**Uniform Load Deflection (ASTM E 330)**		
	1440 Pa (30.0 PSF) POS	6.25 mm (0.25")	10.25 mm (0.40")
	1440 Pa (30.0 PSF) NEG	6.50 mm (0.26")	10.25 mm (0.40")
5.3.4.3	**Uniform Load Structural (ASTM E 330)**		
	2160 Pa (45.0 PSF) POS	0.00 mm (0.00")	5.25 mm (0.21")
	2160 Pa (45.0 PSF) NEG	0.00 mm (0.00")	5.25 mm (0.21")

5.3 OPTIONAL PERFORMANCE GRADES TEST RESULTS

PARAGRAPH	TEST DESCRIPTION	MEASURED	ALLOWED
5.3.3.2	Water Penetration (ASTM E 547)		
	290 Pa (6.00 PSF)	No Leakage	No Leakage
5.3.4.2	Uniform Load Deflection (ASTM E 330)		
	1920 Pa (40.0) PSF POS	8.25 mm (0.32")	10.25 mm (0.40")
	1920 Pa (40.0) PSF NEG	9.00 mm (0.35")	10.25 mm (0.40")

5.3 OPTIONAL PERFORMANCE GRADES (Continued)
TEST RESULTS

5.3.4.3	Uniform Load Structural (ASTM E 330)		
	2880 Pa (60.0 PSF) POS	0.00 mm (0.00")	5.25 mm (0.21")
	2880 Pa (60.0 PSF) NEG	0.00 mm (0.00")	5.25 mm (0.21")

5.4 ADDITIONAL TESTING

TEST RESULTS

PARAGRAPH	TEST DESCRIPTION	MEASURED	ALLOWED
5.3.4.3	Uniform Load Structural (ASTM E 330)		
	3840 Pa (80.0 PSF) POS	0.00 mm (0.00")	5.25 mm (0.21")
	3840 Pa (80.0 PSF) NEG	0.00 mm (0.00")	5.25 mm (0.21")

6.0 5.3.5 ASTM F 588 Forced Entry Resistance Test Results For Windows
1.2.4 Type "D" Fixed Window Assemblies

Table A1.1 Grade 20

	TEST	RESULTS	DESCRIPTION
A2.7.1	A2.1	Passed	No Entry
A2.7.3	A2.1	Passed	No Entry

6.1 5.3.5 CAWM 301 - 90 Forced Entry Resistance Tests for Windows.
2.4.5 Type "V" Fixed Window Assemblies

	TEST	RESULTS	DESCRIPTION
5.4.1	A	Passed	No Entry
5.4.2	B	Passed	No Entry

For a complete description of the tested sample refer to the attached 6 pages consisting of the bill of materials, cross section drawings, and individual die drawings.

Cross section drawings and die drawings of frame members are on file and have been compared to the sample submitted. Test sample sections, drawings and a copy of this report will be retained at the test laboratory for four years.

This test report may not be modified in any way without the written consent of Fenestration Testing Laboratory.

The preceding test results relate only to the tested specimen and were obtained by using the applicable ASTM and CAWM test methods. This report does not constitute certification of this product. Certification can only be granted by an approved administrator and/or validator.

Testing Completed: October 14, 2009
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