

Fenestration Testing Laboratory, Inc.

10235 8th Street • Rancho Cucamonga, CA 91730 • PH. (909) 477-4343 • FAX (909) 477-4348

Report No. : A09H-081
Date : October 23, 2009
Page : 1 of 4

TESTED FOR

INTERNATIONAL WINDOW CORP.

5625 East Firestone Boulevard
South Gate, CA 90280

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 Composite Single Hung 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 LC – PG25: Size Tested 1829 x 1829 mm (72 x 72 in) – Type H*
- 2.2 CAWM 301 - 90 Forced Entry Resistance Tests for Windows.
- 2.3 ASTM F 588-07 Standard Test Method for Measuring the Forced Entry Resistance of Windows

3.0 SUMMARY

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

4.0 SAMPLE SUBMITTED

SERIES: 6220 Composite Single Hung Window

CONFIGURATION: O/X|O/X Single Hung integrally mulled with another Single Hung

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

ACTIVE SASH SIZE: 862 mm x 908 mm (33.94" x 35.75")

FIXED SIZE: 832 mm x 851 mm (32.76" x 33.50") Daylight Opening

GLASS: All lites were glazed with a 0.72" overall insulated glass unit which contained a lite of "SS" clear annealed glass on each side.

INSULATED

GLASS SPACER: The insulated glass spacers were all 'U' shaped aluminum, 0.54" wide, and single sealed.

GLAZING:

Each of the operable glass units was channel glazed with a continuous wrap around vinyl gasket. Each of the fixed lites was glazed with a dual durometer channel that was square cut at the ends.

WEEPAGE:

The sill center leg of each single hung contained a 1.75" x 0.25" weep 3" from each end and contained a snap-in PVC flap weep cover.

WEATHERING: Each operable panel contained a strip of 0.220" overall polypile with a center fin applied at each stile in-line with the sash and a strip full perimeter facing out.

HARDWARE: Each operable panel was supported in the frame with a block and tackle balance fastened its respective frame jamb on one side and to the integral mullion on the other side with one (1) #6 x 0.75" PPH screw.

Each interlock contained a spring-loaded PVC tilt latch fastened at each end with a pair of #8 x 0.75" PPH screws.

Each operable bottom rail contained a metal pivot bar fastened with a pair of #8 x 0.75" PPH screws at each end and each pivot bar engaged its respective PVC boot as part of the block and tackle assembly.

Each lock rail contained a metal sweep lock incorporated with a pull fastened with a pair of #8 x 3/8" square drive security screws 11" from each end of the lock rail. When locked the tongue of each lock engaged a full length lip integral to each fixed interlock extrusion.

CONSTRUCTION: The frame corners were mechanically joined with a pair of #6 x 0.63" PPH screws.

The corners of each of the two active panels were mechanically joined with one #6 x 0.63" PPH screw.

Each fixed interlock was fastened its respective jamb and to the integral mullion with #8 x 0.38" square drive security screw at each end.

The integral vertical mullion was fastened at each end with four #6 x 0.63" PPH.

CAULKING: The following were sealed:

- 1) All frame corners were sealed full profile.
- 2) The vertical integral mullion to the frame full profile at each end.
- 3) The fixed interlock ends to the jambs were sealed from the inside.
- 4) The heads of screws installed through the sill.
- 5) Each of the fixed lites received a cap bead full perimeter from the inside.

ANCHORING: The frame was mounted over a 2" x 6" wood rough opening and fastened block frame style with #8 x 1.5" screws as follows:

- a) Four at the head – one located 8" from each jamb and to each side of the integral mullion.
- b) Four at each jamb – one located 12" from each end and 16" apart in the field.
- c) Two at sill – one 8" to each side of the integral mullion.

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

	<u>TEST DESCRIPTION</u>	<u>MEASURED</u>	<u>ALLOWED</u>
5.3.1.1	Operating Force (ASTM E 2068) Breakaway Motion	77 N (17.3 lbf) 61 N (13.7 lbf)	Report Only 180 N (40 lbf)
5.3.1.2.3	Latching Devices Open and Close Latch Device	13 N (2.9 lbf)	100 N (25 lbf)
5.3.2.1	Air Infiltration (ASTM E 283) 75 Pa (1.6 PSF) The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/1.S.2/A440 for air leakage resistance.	1.5 L/s•m ² (0.3 CFM/Ft ²)	1.5 L/s•m ² (0.3 CFM/Ft ²)
5.3.3.2	Water Penetration (ASTM E 547) 180 Pa (3.75 PSF) With/without screens	No Leakage	No Leakage
5.3.4.2	Uniform Load Deflection (ASTM E 330) 1200 Pa (25.0 PSF) POS 1200 Pa (25.0 PSF) NEG	6.00 mm (0.24") 4.50 mm (0.18")	Report Only Report Only
5.3.4.3	Uniform Load Structural (ASTM E 330) 1800 Pa (37.5 PSF) POS 1800 Pa (37.5 PSF) NEG	0.00 mm (0.00") 0.00 mm (0.00")	7.00 mm (0.28") 7.00 mm (0.28")
5.3.6.3	Deglazing (ASTM E 987) 320 N Rails (70 lbf) 230 N Stiles (50 lbf)	10.0 % 11.0 %	Less than 90% Less than 90%

6.0 5.3.5 ASTM F 588 Forced Entry Resistance Test Results For Windows

1.2.1 Type "A" Operable Window Assemblies
Table A1.1 Grade 10

	<u>TEST</u>	<u>RESULTS</u>	<u>ALLOWED</u>
A2.4.1		Passed	No Entry
A2.4.2	A1	Passed	No Entry
A2.4.3	A2	Passed	No Entry
A2.4.4	A3	Passed	No Entry
A2.4.5	A4	Passed	No Entry
A2.4.6	A5	Passed	No Entry
A2.4.8	A7	Passed	No Entry
A2.2.1		Passed	No Entry
A2.3.1		Passed	No Entry

5.3.5 **CAWM 301 - 90 FORCED ENTRY RESISTANCE TEST RESULTS**

2.4.1 Type "I" Window

	<u>TEST</u>	<u>RESULTS</u>	<u>ALLOWED</u>
5.1.1	Disassembly	Passed	No Entry
5.1.2	A	Passed	No Entry
5.1.3	B	Passed	No Entry
5.1.4	C	Passed	No Entry
5.1.5	E	Passed	No Entry
5.1.6.1	D	Passed	No Entry
5.1.7	E	Passed	No Entry

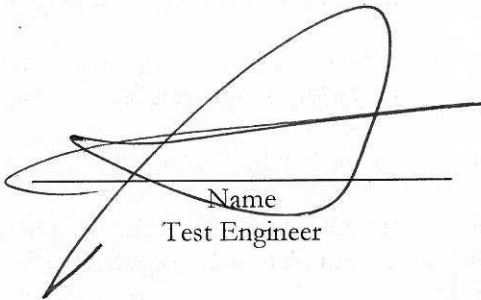
For a complete description of the tested sample refer to the attached eleven (11) pages consisting of the bill of materials, cross section drawings, and individual die drawings.

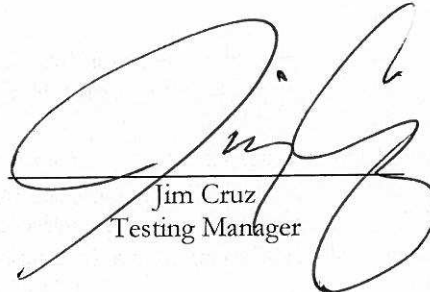
Cross section drawings and die drawings of frame members are on file and have been compared to the sample submitted. Test sample sections, drawings, and a copy of this report will be retained at the test laboratory for four years.

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

The preceding test results relate only the tested specimen and were obtained by using the applicable CAWM and ASTM test methods. This report does not constitute certification of this product. Only an accredited administrator/validator can grant certification.

Testing Completed: August 26, 2009
Report Completed: September 2, 2009


Name
Test Engineer


Jim Cruz
Testing Manager