

INTERNATIONAL WINDOW TEST REPORT

SCOPE OF WORK

AAMA/WDMA/CSA 101/I.S.2/A440-11 TESTING ON 7223 AWNING WINDOW

REPORT NUMBER

G8592.01-301-44 R0

TEST DATES

06/08/17 - 06/20/17

ISSUE DATE

11/01/17

RECORD RETENTION END DATE

06/20/22

PAGES

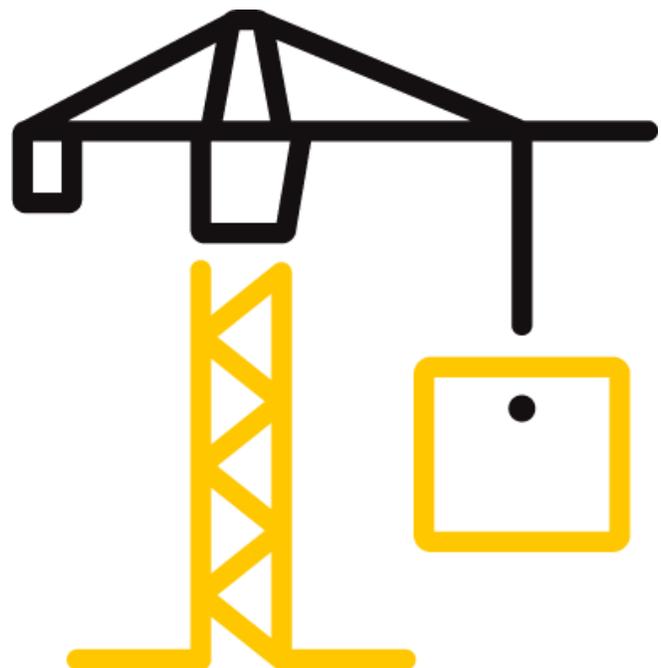
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TEST REPORT FOR INTERNATIONAL WINDOW

Report No.: G8592.01-301-44 R0

Date: 11/01/17

REPORT ISSUED TO INTERNATIONAL WINDOW

1551 E. Orangethorpe Ave.
Fullerton, California 92831

SECTION 1 SCOPE

Intertek Building & Construction (B&C) was contracted by International Window, Fullerton, California to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*, on their 7223 Awning Window. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek B&C test facility in Fresno, California. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2 SUMMARY OF TEST RESULTS

TITLE	RESULTS
Primary Designator	Class CW – PG30: Size Tested 1527 x 1220 (60 x 48) – Type AP
Design Pressure	±1440 Pa (±30.08 psf)
Air Infiltration	0.3 L/s/m ² (0.05 cfm/ft ²)
Water Penetration Resistance	Test Pressure 220 Pa (4.59 psf)

For INTERTEK B&C:

COMPLETED BY:	David Douglass	REVIEWED BY:	Tyler Westerling, P.E.
TITLE:	Project Manager	TITLE:	Senior Project Engineer
SIGNATURE:		SIGNATURE:	
DATE:	11/01/17	DATE:	11/01/17

EC:ms

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SECTION 3

TEST METHODS

The specimens were evaluated in accordance with the following:

AAMA/WDMA/CSA 101/I.S.2/A440-08 and -11, NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights

CAWM 301-90 – Forced Entry Resistance Tests for Windows

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client. Representative samples of the test specimen will be retained by Intertek B&C for a minimum of five years from the test completion date.

The specimen was installed into a Douglas fir wood buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone.

ANCHOR DESCRIPTION	LOCATION	SPACING
#6 x 1-5/8" Phillips Flat Head Screws	Nail fin	2" – 3" from corners; 14" – 16" on center.

SECTION 5

EQUIPMENT

Type	Manufacturer	Asset Number
Control Panel	Intertek-ATI	005724, 005062
Micro MULE	Intertek-ATI	005722
Lab Conditions Monitor	Comet	63304
Deglazing Fixture	Intertek-ATI	005264
Load Cell – 1 K	Interface	63196,005135
Load Cell – 3k	Interface	65472
Digital Force Gauge	Wagner	65863
Spray Rack – Lab	Intertek-ATI	004047
Linear Transducer	Celesco	004483, 64336, 003429

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LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
David Douglass	Intertek B&C

SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Awning Window

Series/Model: 7223

Product Size:

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
1.86 m ² (20.1 ft ²)				
Overall Size	1527	60-1/8	1220	48-1/16
Vent	1488	58-9/16	1181	46-1/2

Frame Construction:

MEMBER	MATERIAL	DESCRIPTION
Head, Sill, and Jambs	Thermally broken aluminum	Extruded aluminum with poured and debridged thermal break.
JOINT	JOINERY TYPE	DETAIL
All Corners	Mitered	Fastened and sealed with two Phillips pan head screws.

Vent Construction:

MEMBER	MATERIAL	DESCRIPTION
All Members	Thermally broken aluminum	Extruded aluminum with poured and debridged thermal break.
Glazing Stop	Aluminum	Extruded; snap-fit.
JOINT	JOINERY TYPE	DETAIL
All Corners	Mitered	Fastened and sealed with two Phillips pan head screws into a corner key.

Reinforcement: *No reinforcement was utilized.*

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Weatherstripping:

DESCRIPTION	QUANTITY	LOCATION
Foam Filled Bulb Gasket	1 row	Head, sill, jambs, rails, and stiles.

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

TYPE	SPACER	GLASS	GLAZING METHOD
1" IG	Steel interceptor	1/8" Annealed Interior & Exterior	Exterior set with 1/16" x 1/2" glazing tape and interior snap-fit glazing stop with wedge gasket.

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Vent	1	1369 x 1061	53-7/8 x 41-3/4	1/2"

Drainage:

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Weephole with Cover	1-1/4" x 1/8"	2	3-1/2" from corners on sill face.

Hardware:

DESCRIPTION	QUANTITY	LOCATION
Lock (Truth)	2	17" from corner on jambs secured by two Phillips flat head screws.
Lock Keeper (Truth)	2	17" from corner on stiles secured by two Phillips flat head screws.
Wing Clip	4	2" from corners.
Friction Hinge	2	Secured by three Phillips pan head screws into the stiles and three into the jambs.

Screen Construction: *No screen was utilized*

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TEST RESULTS

Temperature during testing was 30°C (86°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Operating Force per ASTM E2068 Initiate Motion Maintain Motion Locks	121 N (27.25 lbf) 47 N (10.5 lbf) 10 N (2.25 lbf)	Report only 135 N (30.25 lbf) max 100 N (22.5 lbf) max	
Air Leakage per ASTM E283 75 Pa (1.57 psf) Infiltration	0.3 L/s/m ² (0.05 cfm/ft ²)	<u>Maximum</u> 1.5 L/s/m ² (0.3 cfm/ft ²)	1, 2
Water Penetration per ASTM E547 – Cyclic	Pass 220 Pa (4.59 psf)	No leakage	
Uniform Loads per ASTM E330 <u>Deflections</u> +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf) <u>Permanent sets</u> +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	<u>Top Rail</u> <0.1 mm (<0.01") 1.4 mm (0.06") 0.4 mm (0.02") <0.1 mm (<0.01")	<u>Maximum</u> 8.5 mm (0.33") 8.5 mm (0.33") 4.5 mm (0.18") 4.5 mm (0.18")	3, 4
Forced Entry Resistance per ASTM F588, Type B per CAWM 301, Type II	Pass Grade: 20	No entry	
Blocked Sash Operation 140 N (31.5 lbf) load	<u>Deflection</u> 3.6 mm (0.14")	<u>Maximum</u> 67.3 mm (2.65")	

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: Air Leakage was tested on 06/08/17, at 09:39 AM.

Note 3: Loads were held for 10 seconds.

Note 4: The use of tape and film to reduce extraneous air leakage during uniform load testing did not, in the opinion of the Intertek B&C technician, affect test results.

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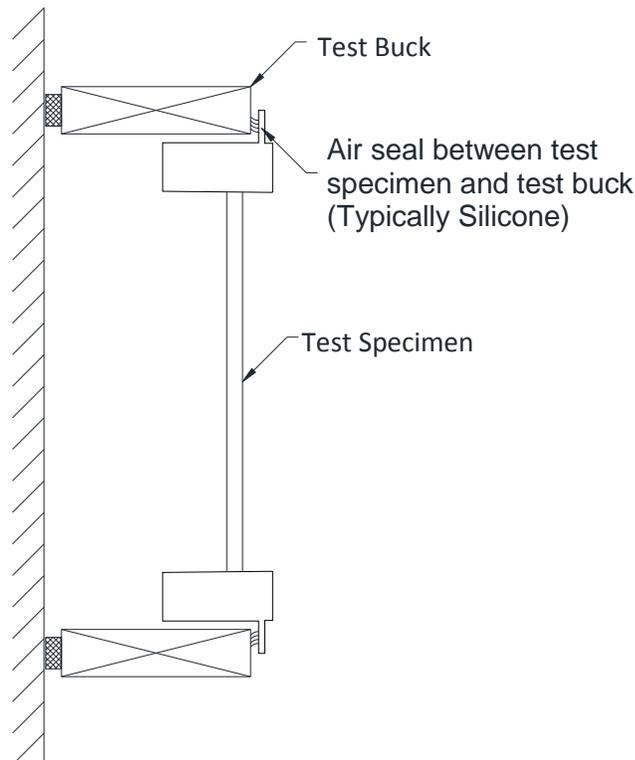
SECTION 9 ALTERATIONS

Alteration #1: Date - 06/08/17
Cause for alteration – Failed during water penetration testing
Remedial action taken – Resealed mitered joints

Alteration #2: Date - 06/20/17
Cause for alteration – Locks broke during uniform load testing
Remedial action taken – Replaced locks

SECTION 10 LOCATION OF AIR SEAL

The air seal between the test specimen and the test buck is detailed below. The seal is made of sealant, typically silicone, between the mounting fin and the exterior face of the rough opening.



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SECTION 11

CONCLUSION

The test specimen successfully met the performance requirements for the following rating:

Class CW – PG30: Size Tested 1527 x 1220 (60 x 48) – Type AP

SECTION 12

DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

Note: *Complete drawings packet on file with Intertek B&C.*



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SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	11/01/17	N/A	Original Report Issue