

INTERNATIONAL WINDOW TEST REPORT

SCOPE OF WORK

AAMA/WDMA/CSA 101/I.S.2/A440 TESTING ON 6220 A O/X AWNING

REPORT NUMBER

F9262.01-301-44 R0

TEST DATE(S)

06/29/17 - 08/16/17

ISSUE DATE

09/26/18

RECORD RETENTION END DATE

08/16/22

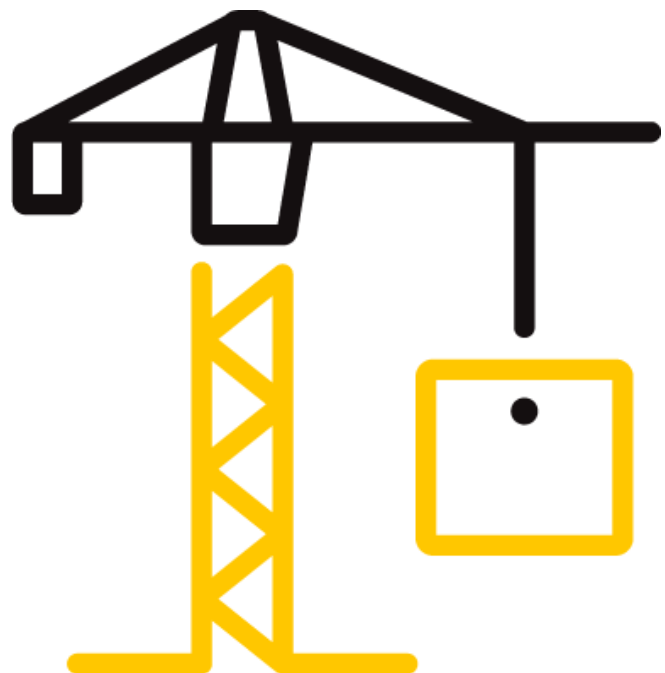
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TEST REPORT FOR INTERNATIONAL WINDOW

Report No.: F9262.01-301-44 R0

Date: 09/26/18

REPORT ISSUED TO

INTERNATIONAL WINDOW

1551 E. Orangethorpe Avenue

Fullerton, California 92831

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by International Window to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 on their 6220 A O/X Awning Window. Results obtained are tested values and were secured by using the designated test method(s). 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
AAMA/WDMA/CSA 101/I.S.2/A440-17	Class R – PG20 – Size tested: 1525 x 2439 mm (60 x 96 in) – Type AP
Design Pressure	±960 Pa (±20.05 psf)
Air Infiltration	<0.1 L/s/m ² (<0.01 cfm/ft ²)
Water Penetration Resistance Test Pressure	180 Pa (3.76 psf)

Reference must be made to Intertek B&C Report No. F9262.01-301-44, dated 09/26/18 for complete test specimen description and detailed test results.

For INTERTEK B&C:

COMPLETED BY:	Erick Caldera	REVIEWED BY:	Tyler Westerling, P.E.
TITLE:	Technician	TITLE:	Senior Project Engineer
SIGNATURE:		SIGNATURE:	
DATE:	09/26/18	DATE:	09/26/18

EC:ms

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TEST SPECIFICATION(S)/METHOD(S)

The specimens were evaluated in accordance with the following:

AAMA/WDMA/CSA 101/I.S.2/A440-17- *North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

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

The following test methods were used during testing:

ASTM E283-04(2012), *Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen*

ASTM E330/E330M-14, *Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E547-00(2016), *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference*

ASTM F588-17, *Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact*

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client. Representative samples of the test specimen(s) 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 and the exterior perimeter of the specimen was sealed to the test buck.

LOCATION	ANCHOR DESCRIPTION	ANCHOR SPACING
Nail fin	#10 x 3" Phillips flat heads through 2x2 wood strip over fin	16" on center

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Erick Caldera	Intertek B&C
Gino Vitali	Intertek B&C

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TEST SPECIMEN DESCRIPTION

Product Type: Awning Window

Series/Model: 6220 A O/X

Product Size(s):

OVERALL AREA:	WIDTH		HEIGHT	
	Millimeters	Inches	Millimeters	Inches
3.72 m ² (40.0 ft ²)				
Overall size	1525	60-1/16	2439	96
Sash	1490	58-11/16	917	36-1/8

Frame Construction:

MEMBER	MATERIAL	DESCRIPTION
Head, sill, jambs, mullion	Aluminum	
	JOINERY TYPE	DETAIL
All corners	Mitered	Sealed; fastened using two #6 x 1" Phillips oval head screws
Mullion	Fastened	Sealed; fastened using two #6 x 1" Phillips oval head screws

Sash Construction:

MEMBER	MATERIAL	DESCRIPTION
Rails and stiles	Aluminum	
	JOINERY TYPE	DETAIL
All corners	Mitered	Sealed; fastened using two #6 x 1" Phillips oval head screws

Reinforcement: *No reinforcement was utilized.*

Weatherstripping:

DESCRIPTION	QUANTITY	LOCATION
Vinyl fin	1 row	Rails and stiles
Vinyl bulb	1 row	Awning opening (mullion, sill, jambs bellow mullion)

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

GLASS TYPE	SPACER TYPE	INTERIOR LITE	EXTERIOR LITE	GLAZING METHOD
3/4" IG	Stainless steel	3/32" annealed	3/32" annealed	Interior set with 1/16" x 1/2" glazing tape and exterior secured by aluminum glazing bead

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Sash	1	1430 x 852	56-5/16 x 33-9/16	1/2"
Fixed lite	1	1440 x 1390	56-11/16 x 54-3/4	1/2"

Drainage: *No drainage was utilized.*

Hardware:

DESCRIPTION	QUANTITY	LOCATION
Hinge	2	Jambs; 20" from sill - #8 x 3/8" Phillips truss head
Snubber	2	Mullion and top rail - #6 x 3/8" Phillips pan head
Latch	2	Jambs; 6" from sill - #8 x 3/8" Phillips truss head
Keeper	2	Stiles; opposite latch - #8 x 5/8" Phillips oval head
Roto operator	1	Sill; mid-span-#8 x 3/8" Phillips truss head

Screen Construction: *No screen construction was utilized.*

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TEST RESULTS

The temperature during testing was 22°C (71.6°F). The results are tabulated as follows:

Test Specimen #1:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Operating Force, per ASTM E2068 Initiate Motion: Maintain Motion: Latches	16 N (3.6 lbf) 13 N (2.9 lbf) 46 N (10.3 lbf)	60 N (13.5 lbf) max 30 N (6.7 lbf) max 100 N (22.5 lbf) max	
Air Leakage, Infiltration per ASTM E283 at 75 Pa (1.57 psf)	<0.1 L/s/m ² (<0.01 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1, 2
Water Penetration, per ASTM E547 at 180 Pa (3.76 psf)	Pass	No leakage	3
Uniform Load Deflection, per ASTM E330 Deflections taken at top rail +960 Pa (+20.05 psf) -960 Pa (-20.05 psf) Deflections taken at mullion +960 Pa (+20.05 psf) -960 Pa (-20.05 psf)	1.3 mm (0.05") 1.5 mm (0.06") 1.5 mm (0.06") 6.9 mm (0.27)	Report only	3, 4, 5, 6
Uniform Load Structural, per ASTM E330 Permanent set taken at top rail +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf) Permanent set taken at mullion +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	0.3 mm (0.01") 0.3 mm (0.01") 1.3 mm (0.05") 0.3 mm (0.01")	6.1 mm (0.24") max. 6.1 mm (0.24") max. 5.8 mm (0.23") max. 5.8 mm (0.23") max.	3, 5, 6
Forced Entry Resistance, per ASTM F588 Type: B - Grade: 10 Type: D - Grade: 10	Pass Pass	No entry No entry	

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Test Specimen #1:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Awning, Hopper, Projected Hardware Load Test 70 N (15 lbf)	3.0 mm (0.12")	Report Only	

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: Test Date 09/29/18 / Time: 01:30 PM

Note 3: The client opted to start at a pressure higher than the minimum required.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

Note 5: Loads were held for 10 seconds.

Note 6: 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.

SECTION 8

ALTERATIONS

Alteration #1: Date – 06/29/17
Cause for alteration – Glass broke under structural loads
Remedial action taken – Reglazed unit

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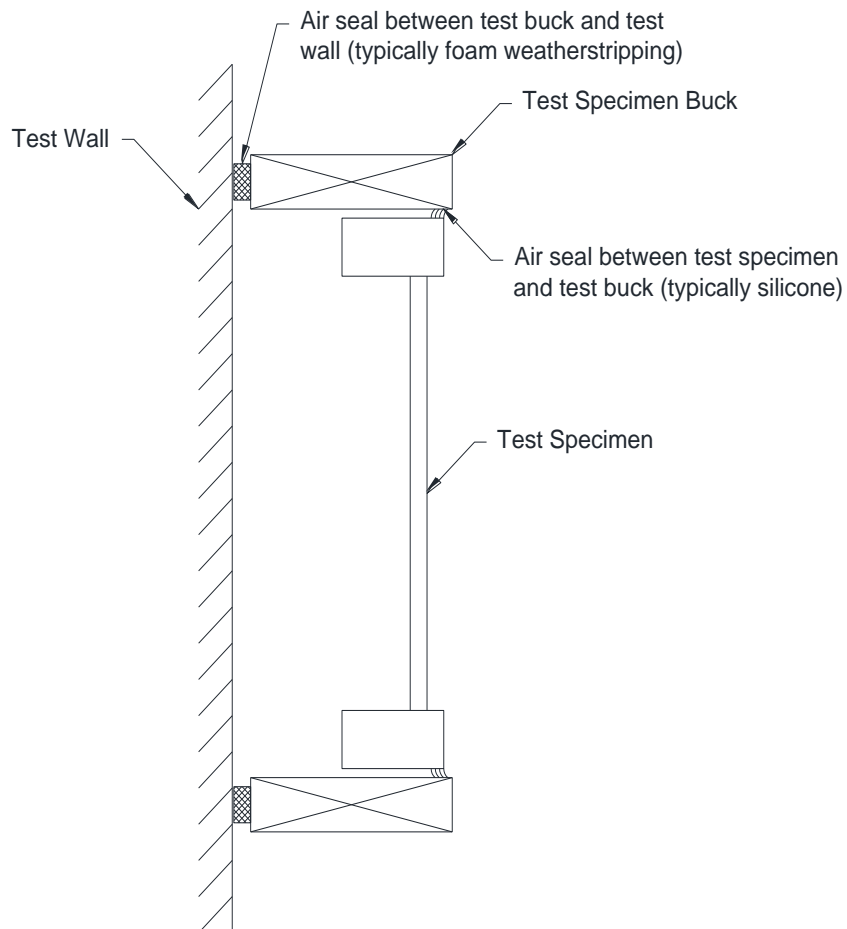
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LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



SECTION 10

CONCLUSION

The specimen tested successfully met the performance requirements for a **Class R – PG20 – Size tested: 1525 x 2439 mm (60 x 96 in) – Type AP** rating.



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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.



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REVISION LOG

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