TEST REPORT

Report No.: E5566.01-301-44

Rendered to:

INTERNATIONAL WINDOW
Fullerton, California

PRODUCT TYPE: Sliding Glass Door (OXXO)
SERIES/MODEL: 8880

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

Title	Summary of Results
AAMA/WDMA/CSA 101/I.S.2/A440-11	Class R – DP20: Size Tested 4865 x 2730 mm (191-1/2 x 107-1/2 in.) – Type SGD
Design Pressure	±960 Pa (±20.08 psf)
Air Infiltration	1.5 L/s/m^2 (0.29 cfm/ft^2)
Water Penetration Resistance Test Pressure	150 Pa (3.13 psf)

Test Completion Date: 12/18/16

Reference must be made to Report No. E5566.01-301-44, dated 05/05/17 for complete test specimen description and detailed test results.

1.0 Report Issued To: International Window
1551 East Orangethorpe Avenue
Fullerton, California 92831

2.0 Test Laboratory: Architectural Testing, Inc., an Intertek company ("Intertek-ATI")
25800 Commercentre Drive
Lake Forest, California 92630
949-460-9600

3.0 Project Summary:

3.1 Product Type: Sliding Glass Door (OXXO)

3.2 Series/Model: 8880

3.3 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 R – DP20: Size Tested 4865 x 2730 mm (191-1/2 x 107-1/2 in.) – Type SGD** rating.

3.4 Test Dates: 04/22/15 – 12/18/16

3.5 Test Record Retention End Date: All test records for this report will be retained until December 18, 2020.

3.6 Test Location: Intertek-ATI test facility in Lake Forest, California.

3.7 Test Specimen Source: The test specimen was provided by the client. Representative samples of the test specimen will be retained by Intertek-ATI for a minimum of four years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
Charles Presley	Intertek-ATI
Jarod Hardman	Intertek-ATI

4.0 Test Specifications:

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

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 13.28 m² (142.96 ft²)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	4865	191-1/2	2730	107-1/2
Primary active panel	1245	49	2680	105-1/2
Secondary active panel	1300	51-3/16	2680	105-1/2
Fixed panel (x2)	1245	49	2680	105-1/2
Screen (x2)	1240	48-13/16	2691	105-15/16

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Head	Aluminum	Thermally broken extrusion with thermobreak Part No. FT1802, Part Nos. 23065 and 23060, see attached drawing in Appendix C.
Jamb	Aluminum	Thermally broken extrusion with thermobreak Part No. FT1802, Part Nos. 23062 and 23066, see attached drawing in Appendix C.
Sill	Aluminum	Thermally broken extrusion with thermobreak Part No. FT1802, Part Nos. 23064 and 23067, see attached drawing in Appendix C.
Head, jamb, and sill	Aluminum	Filler, press fit into frame, Part No. 23113.

	Joinery Type	**Detail**
All corners	Coped	Sealed at corners with silicone sealant when assembled with #8 x 1" Phillips flat head screws.

5.0 Test Specimen Description: (Continued)

5.3 Panel Construction:

Panel Member	Material	Description
Active lock stile	Aluminum	Thermally broken extrusion with thermobreak Part No. RS1802, Part Nos. 50553 and 50554, see attached drawing in Appendix C.
Active interlock	Aluminum	Interior, Part No. 50556, see attached drawing in Appendix C.
Active interlock	Aluminum	Interior, Part No. 50556, see attached drawing in Appendix C.
Fixed	Aluminum	Stile, thermally broken extrusion with thermobreak Part No. RS1802, Part Nos. 50567 and 50568, see attached drawing in Appendix C.
Top rail	Aluminum	Thermally broken extrusion with thermobreak Part No. RS1802, Part Nos. 50559 and 50560, see attached drawing in Appendix C.
Bottom rail	Aluminum	Thermally broken extrusion with thermobreak Part No. RS1802, Part Nos. 50575 and 50576, see attached drawing in Appendix C.

	Joinery Type	Detail
All corners	Flush	Secured through stiles into head and sill with #8 x 3" Phillips truss head screw.

5.4 Reinforcement: No reinforcement was utilized.

5.5 Weatherstripping:

Description	Quantity	Location
0.270 x 0.220 pile with fin	2 rows	Inserted into the interior and exterior channel of the frame around full perimeter.
Bugstrip	1 row	Inserted into fixed panel interlock at exterior face of stile and intermediate active panel to lock active panel joint interlock.
One finger vinyl	1 row	Inserted into interior side of fixed panel interlock and intermediate active panel to lock active panel joint interlock.

5.0 Test Specimen Description: (Continued)

5.6 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
1" IG	Aluminum Spacer - Dual Seal (A1-D)	1/4" clear tempered	1/4" clear tempered	Channel glazed with 1" vinyl gasket, Part No. VY8900B

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Active panel	2	1115 x 2555	43-7/8 x 100-5/8	1/2"
Fixed panel	2	1115 x 2555	43-7/8 x 100-5/8	1/2"

5.7 Drainage:

Drainage Method	Size	Quantity	Location
Weep hole	1-1/2" x 1/8"	8	Equally spaced along sill beneath each lite.

5.8 Hardware:

Description	Quantity	Location
Mortise lock and handle assembly, Part No. SP6820	1	Located approximately 38" from sill on active panel lock stile.
Keeper, Part No. SP3366	1	Located directly opposite mortise lock.

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Aluminum	Mitered with key	Fabric	Hollow spline

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone sealant.

Location	Anchor Description	Anchor Location
Alternating between innermost and outermost track of head and jambs	#8 x 2" Phillips flat head screws	5" from corner and 16" on center spacing

7.0 Test Results: The temperature during testing was 21°C (69.7°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 71.2 N (16.0 lbf) Maintain motion: 44.5 N (10.0 lbf) Locks: 40.0 N (9.0 lbf)	135 N (30.35 lbf) max. 90 N (20.23 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	1.5 L/s/m^2 (0.29 cfm/ft^2)	1.5 L/s/m^2 (0.3 cfm/ft^2) max.	1, 2
Water Penetration, per ASTM E 547 at 140 Pa (2.92 psf)	N/A	N/A	4
Uniform Load Deflection, per ASTM E 330 Deflections taken at interlock +720 Pa (+15.04 psf) -720 Pa (-15.04 psf)	N/A	N/A	4
Uniform Load Structural, per ASTM E 330 Permanent sets taken at interlock +1080 Pa (+22.56 psf) -1080 Pa (-22.56 psf)	N/A	N/A	4
Forced Entry Resistance, per ASTM F 842, Type: A - Grade: 25	Pass	No entry	
Forced Entry Resistance, per ASTM F 842, Type: D - Grade: 25	Pass	No entry	
Forced Entry Resistance, per CAWM 300	Pass	No entry	
Deglazing, per ASTM E 987 Operating direction, 320 N (70 lbf) Remaining direction, 230 N (50 lbf)	 Pass Pass	 Meets as stated Meets as stated	

7.0 Test Results: (Continued)

Optional Performance			
Title of Test	**Results**	**Allowed**	**Note**
Water Penetration, per ASTM E 547 at 150 Pa (3.13 psf)	Pass	No leakage	3
Uniform Load Deflection, per ASTM E 330 Deflections taken at interlock			
+960 Pa (+20.05 psf)	26.9 mm (1.06")		
-960 Pa (-20.08 psf)	27.9 mm (1.10")	Report Only	5, 6, 7
Uniform Load Structural, per ASTM E 330 Permanent sets taken at interlock			
+1440 Pa (+30.08 psf)	5.1 mm (0.20")	10.4 mm (0.41") max.	
-1440 Pa (-30.08 psf)	1.0 mm (0.04")	10.4 mm (0.41") max.	6, 7

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 05/04/15 Time: 9:00 AM

Note 3: With and without insect screen.

Note 4: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 5: 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 6: Loads were held for 10 seconds.

Note 7: 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.

Intertek-ATI will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI 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(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, Inc.

Digitally Signed by: Charles Presley II

Charles Presley
Technician

Digitally Signed by: Jarod Hardman

Jarod S. Hardman
Laboratory Manager

JSH:ec

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Location of Air Seal (1)
Appendix-C: Drawings (29) Complete drawings packet on file with Intertek-ATI.

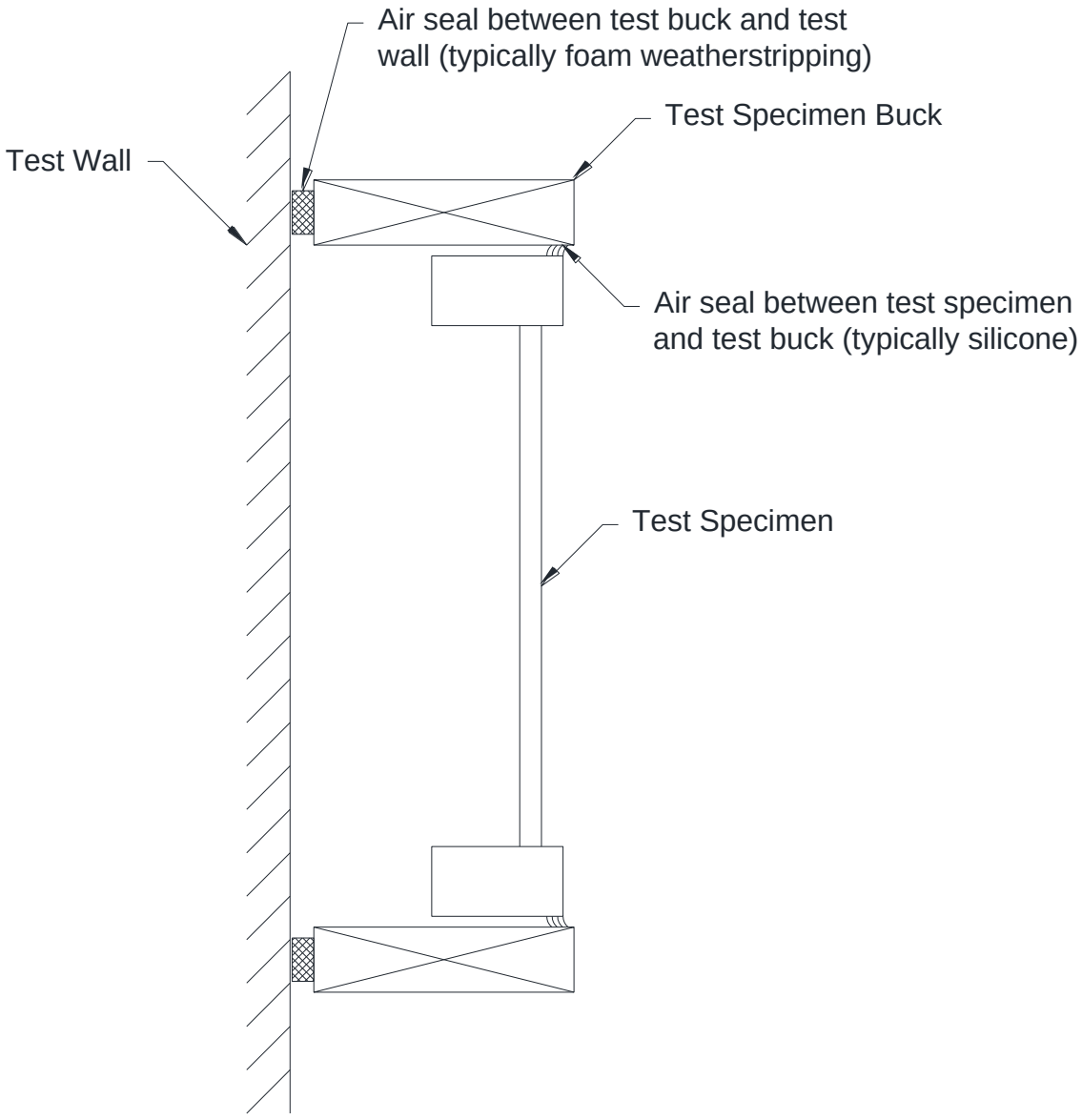
Appendix A

Alteration Addendum

Alteration #1: Date – 04/24/15
Cause for alteration – Water testing failure
Remedial action taken – swap weather strip on interlocks from vinyl with finger to pile with fin.

Appendix B

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.



Appendix C

Drawings

***Note**: Complete drawings packet on file with* Intertek-ATI.