Fenestration Testing Laboratory, Inc.

10235 8th Street, Rancho Cucamonga, CA 91730

Report #: T18-054

REPORT SUMMARY:

REPORT #:
T18-054

TESTED FOR:
International Window Corp.
1551 E. Orangethorpe Ave.
Fullerton, CA 92831

SERIES & PRODUCT TYPE:
7880 - ALUMINUM MULTI-SLIDE DOOR

CONFIGURATION:
OXXO

FRAME SIZE:
6083.30 mm x 3035.30 mm (239.50" x 119.50")

SPECIFICATION:
NAFS - North American Fenestration Standard/specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/I.S.2/A440-17

PRIMARY DESIGNATOR:
CLASS R-PG20 6083.30 x 3035.30 mm (239.50 x 119.50 in) Type: SD

TEST COMPLETION DATE: August 27, 2018

REPORT DATE: September 28, 2018

1.0 Tested For: International Window Corp.
1551 E. Orangethorpe Ave.
Fullerton, CA 92831

2.0 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 MULTI-SLIDE DOOR described in paragraph 4.0 of this report.

3.0 Test References:
3.1 NAFS - North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-17
3.2 ASTM F 842-17 Forced Entry Resistance Tests for Sliding Door Assemblies
3.3 CAWM 300-96 Forced Entry Test Resistance Tests for Sliding Glass Doors

4.0 Compliance Statement: The test results in paragraph 6.0 indicate that the test sample described in paragraph 5.0 of this report met the performance requirements of the above specifications for the performance grade shown in 4.1 below.
4.1 CLASS R-PG20 6083.30 x 3035.30 mm (239.50 x 119.50 in) Type: SD

5.0 Sample Submitted:
5.1 Product Type: ALUMINUM MULTI-SLIDE DOOR
5.2 Series: 7880
5.3 Configuration: OXXO
5.4 Product Dimensions:

	Millimeters	Inches
Total Frame:	6083.30 x 3035.30	239.50 x 119.50
Fixed Panels - Both:	1584.45 x 2994.15	62.38 x 117.88
Active Strike Panel:	1495.55 x 2994.15	58.88 x 117.88
Active Lock Panel:	1504.95 x 2994.15	59.25 x 117.88

5.5 Glass and Glazing: Applies to all four panels

IGU Thickness	*Spacer Type*	*Interior Lite*	*Exterior Lite*	*Glazing method*
1" overall wide	Metal box type	1/4" tempered	1/4" tempered	Channel glazed with wrap around gasket

5.6 Weepage:

Drainage Method	*Size*	*Quantity*	*Location*
Weep notch	1.0" x 0.25"	Nine (9)	Sill extrusion on outside face – each notch was made on the bottom edge of the extrusion and the notch continued inward along the bottom of the extrusion to the innermost channel. The legs notched along the bottom of the sill allowed water to drain from the top of the sill to the pan and out the weep notches. A sloped aluminum extrusion (sill nose) was fastened to the outside face of the sill and concealed the weeps from view. The sill nose also sat on the pan but was not sealed to it such that some water could drain between the sill nose and the pan. The ends of the sill nose were open and also allowed water to drain in that manner.

5.7 Pressure balancing: None

5.8 Weather-stripping:

Type	*Quantity*	*Location*
0.270" overall high finseal	See "Locations"	- Active panel strike stile channel contained two strips – one facing in and one facing out. - Head and jambs each contained 4 strips – two strips in the active channel and two strips in the fixed channel. One strip faced in and one strip faced out in each channel. - Sill contained eights strips – there were two channels for the active panels and two channels for the fixed panels (total of four channels). Each channel contained two strips; one strip facing in and one strip facing out.
0.220" overall high fin seal	Four (4)	Each interlock PVC adapter, fixed and active, contained one strip. The active interlock strips faced out and the fixed interlock strips faced in.
Bug Strip Flap	Four (4)	One strip per interlock facing mating interlock.

5.9 Sealants:

Sealant was applied at the following locations:
- The frame corner were sealed full profile.
- The Pan was set in a bed of sealant on the rough opening.
- The sill was set in sealant in the pan but no sealant where weeps where cut into the under side of the sill.
- The screws fastening the sill to the pan were sealed.

5.10 Hardware:

Type	*Quantity*	*Location*
Tandem steel adjustable rollers	2 per active panel	One at each end of each active panel bottom rail. Each roller housing fit into a fabricated slot in the bottom rail and was fastened with a pair of screws applied vertically through the glazing pocket and two screws to the adjacent stile wall.
Aluminum riser block	2 per fixed panel	One at each end of each fixed panel bottom rail. Each riser block fit into a fabricated slot in the bottom rail and was fastened to the adjacent stile with a pair of screws.
Metal dual mortise lock and recessed handle and strike	One lock, handle, and strike set	Located on the lock stile 40.5" from the bottom of the panel. The flush pull was fastened with a pair of screws applied from the inside that went through the lock box and into the exterior pull handle. The lock box was fastened to the a metal cover plate with a pair of #10 PFH screws into the stile wall. The metal strike was fastened to the strike stile with four PPH screws.

5.11 Construction:

Location	*Joinery Type*	*Number of Fasteners*	*Fastener Size*
Frame corners	Mechanically joined	Two (2)	#8 x 1" PPH
Active and fixed sash top corners	Mechanically joined	One (1)	One (1) #10 x 2" PPH
Active sash bottom corners (note that the ¼" diameter screws went into the roller housing)	Mechanically joined	See next column	One (1) #10 x 2" PPH Two (2) 1/4" x ½ PPH screws
Fixed sash bottom corners (note that the ¼" gauge screws went into an aluminum block)	Mechanically joined	See next column	One (1) #10 x 2" PPH Two (2) 1/4" x 3" PPH screws

5.11 Construction: (Continued)

The fixed panels were fastened to their respective jamb with three #8 x 1" PPH screws applied at quarter points from the inside.
The fixed channel at sill, the fixed channel at head, and active channels in both jambs contained a snap-in aluminum covers.
The interlocks (two fixed and two active) each contained a PVC snap-in extrusion that contained the weather strip.
The access holes for panel corner fasteners at top and bottom of each stile each contained a rubber plug/bumper.
The sloped aluminum sill nose slid into a race in the sill outside face of the double sill track and was also fastened with screws.

5.12 Reinforcement: None

5.13 Installation:

Location on frame	*Anchor type*	*Spacing*
The frame was fastened to the rough opening through the frame head, jambs and sill.	#10 x 1.5" PFH	A pair of screws was set 6" from each end and 18" on center in the field.

6.0 - Test procedures and results: All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. The number preceding each test listed below refer to the corresponding sections in the NAFS.

9.3.1 – Operation Force (ASTM E2068-00(2016))

Test Description	Results	Allowed	Comments
Maximum force to initiate motion	66.72 N (15.00 lbf)	135 N (30.35 lbf)	
Maximum force to maintain motion	31.13 N (7.00 lbf)	90 N (20.23 lbf)	
Latching device force	15.56 N (3.50 lbf)	100 N (22.48 lbf)	

9.3.2 – Air Infiltration (ASTM E283-04(2012))

Test Description	Results	Allowed	Comments
75 Pa differential pressure	1.15 L/s*m^2	1.5 L/s*m^2	
1.57 psf differential pressure	0.23 cfm/ft^2	0.30 cfm/ft^2	
The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.			

9.3.3 – Water Penetration (ASTM E547-00(2016)) – With 1-3/16" pan inside leg

Test Description	Results	Allowed	Comments
DP20 - 150 Pa (3.13 psf)	No water penetration	No water penetration	1, 2

9.3.4.2 – Uniform Load Deflection at Design Pressure (ASTM E330-14)

Test Description	Results	Allowed	Comments
DP20 - 960 Pa (20.05 psf) Pos	51.05 mm (2.01")	Report only	2, 3
DP20 - 960 Pa (20.05 psf) Neg	48.77 mm (1.92")	Report only	2, 3

9.3.4.3 – Uniform Load Structural at 1.5 x Design Pressure (ASTM E330-14)

Test Description	Results	Allowed	Comments
OL for DP20 - 1440 Pa (30.08 psf) Pos	1.78 mm (0.07")	11.94 mm (0.47")	2, 3
OL for DP20 - 1440 Pa (30.08 psf) Neg	3.05 mm (0.12")	11.94 mm (0.47")	2, 3

9.3.5 – Forced Entry Resistance (ASTM F842-17 & CAWM 300-96)

Test Description	Results	Allowed	Comments
ASTM F842 Type C D and CAWM Type III	No Entry	No Entry	

9.3.6.3 – Deglazing Test

Test Description	Results	Allowed	Comments
Active Sash Pull Stile - 320 N (71.94 lbf)	3%	Less than 90% of glazing bite	
Active Sash Rail - 230 N (51.71 lbf)	3%	Less than 90% of glazing bite	

Comment #1 – Tested without insect screen.
Comment #2 – Manufacturer opted to start testing at a level above the gateway.
Comment #3 – Deflection measurement taken from the lock stile.

Additional Water Testing Results:

9.3.3 – Water Penetration (ASTM E547-00(2016))

Test Description	Results	Allowed	Comments
With pan inside leg 3/4" high			
95.76 Pa (2.00 psf)	No water penetration	No water penetration	
With pan inside leg 1-9/16" high			
DP30 - 220 Pa (4.59 psf)	No water penetration	No water penetration	
With pan inside leg 1-15/16" high			
DP40 - 290 Pa (6.06 psf)	No water penetration	No water penetration	

Testing was witnessed by: Jim Cruz with FTL and by Bill Tancordo and Abe Peralta with International Window Corp..

For a complete description of the tested sample, refer to the attached twenty-seven (27) pages consisting of a bill of materials, cross section drawings, and individual die drawings. This report is complete only when all the above referenced bill of materials and drawings are attached.

The bill of materials, cross section drawings, and die drawings of frame and sash members are on file and have been compared to the sample submitted. Test sample sections, bill of materials, 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, Inc. (FTL).

The preceding test results relate only to the tested specimen and were obtained by using the applicable test methods listed in section 3.0 and 6.0 above. This report does not constitute certification of this product or an endorsement by this laboratory. It is the property of the client named in section 1.0 above. Certification can only be granted by an approved administrator and/or validator.

Test Completion Date: August 27, 2018
Report Completion Date: September 28, 2018

Pete Cruz - Test Engineer

Jim Cruz – Laboratory Manager