

## **REPORT SUMMARY**

### **REPORT SPECIFICATION**

North American Fenestration Standard/specification for windows, doors, and skylights  
AAMA/WDMA/CSA 101/I.S.2/A440-11, Canadian Supplement A440S1-09

### **REPORT #**

**T16-095**

### **TESTED FOR**

#### **Fleetwood Windows and Doors**

1 Fleetwood Way  
Corona, CA 92879

### **PRODUCT TYPE**

Fixed Window Aluminum Thermally Broken

### **SERIES**

Series 3800-T

### **CONFIGURATION**

Five lites wide and three lites high 00000/00000/00000

### **PERFORMANCE GRADE**

**R-20 PG-20**

### **PRIMARY DESIGNATOR**

Class R - PG20: Size tested 9144 mm x 3658 mm (~360.00" x 144.00") - Type FW

### **Secondary Designator**

Canadian Air Infiltration / Exfiltration = Fixed Level

### **TEST COMPLETION DATE**

9/22/2016

### **REPORT DATE**

10/14/2016

# Fenestration Testing Laboratory, Inc.

10235 8th. Street, Rancho Cucamonga, CA 91730

**1.0 Tested For: Fleetwood Windows and Doors**  
1 Fleetwood Way  
Corona, CA 92879

**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 fixed window described in paragraph 5.0 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/A440-11
- 3.2** ASTM F 588 -14 Forced Entry Resistance Tests for Windows.
- 3.3** CAWM 301 - 90 Forced Entry Resistance Tests for Windows.
- 3.4** Canadian Supplement A440S1-09

**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 Primary Designator:**

Class R - PG20: Size tested 9144 mm x 3658 mm (~360" x 144") - Type FW

**5.0 Sample Submitted**

**5.1 Product Type:** Fixed Window (Aluminum Thermally Broken)

**5.2 Series/Model:** 3800-T

**5.3 Configuration** OOOOO/OOOOO/OOOOO

**5.4 Test Sample Provider:** Fleetwood Windows and Doors

**5.5 Product Size:**

	<b>Millimeters</b>	<b>Inches</b>
Frame:	9144 mm x 3658 mm	~360" x 144"
Fixed Lite DLO all fifteen (15)	1465 mm x 1154 mm	~69.48" x 45.42"

# Fenestration Testing Laboratory, Inc.

10235 8th. Street, Rancho Cucamonga, CA 91730

## 5.0 Sample Submitted (Continued)

### 5.6 Glass and Glazing

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" Overall	0.5" wide metal Spacer	1/4" clear tempered	1/4" clear tempered	<p>Outside glazed onto hollow glazing EPDM bulb (Tremco Part # TX20801E).                      Silicone was applied 6" in each direction in each glazing corner.                      Each IGU was set on 0.375" high setting block at 1/4 points of each lite and one block at each vertical side.                      Aluminum snap-in glazing stop was applied full perimeter of each lite. Each stop contained a strip of hollow glazing EPDM bulb (Tremco Part # TX20801E).</p>

### 5.7 Weepage

Draining Method	Size	Quantity	Location
Rectangular Weep Hole	0.5" x 0.19"	10	Sill outside face - two (2) weeps per lite; one weep 4.5" from each vertical.
Round Vertical Weep Hole	0.28" diameter	20	At each end of each horizontal TDL immediately inboard of the TDL outside leg. This was to allow water to run down verticals to the sill.

### 5.8 Weatherstripping / Sealant:

The frame corners were sealed full profile.  
 The TDLs to frame and to each other were sealed full profile.  
 All frame and TDL fasteners were set in sealant.  
 The nail-on fin was sealed to the wooden rough opening and all fasteners through the fin were sealed.  
 The frame sat in the metal pan and was sealed to the pan full length on the inside.

### 5.9 Hardware

Type:	Quantity	Location
None	N/A	N/A

# Fenestration Testing Laboratory, Inc.

10235 8th. Street, Rancho Cucamonga, CA 91730

## 5.0 Sample Submitted (Continued)

### 5.10 Construction

Location	Joinery Type	Number of Fasteners/ Size
Frame corners	Mechanically joined with screws	Three (3)- #10 x 1" PPH Screws
Vertical TDLs to head and sill and Horizontal TDLs to jambs	Mechanically joined with screws	Two (2)- #10 x 1" PPH Screws
Horizontal TDLs to Vertical TDLs	Mechanically joined with 3" x 3" x 1 1/2 x .12" Aluminum L-Brackets 4 per intersection	Eight (8) screws 10/32 x 7/8" PPH screws with 10/32 nuts per L-bracket
Pan	Sealed to rough bottom of rough opening	N/A

### 5.11 Reinforcement

Location	Material
N/A	N/A

### 5.13 Installation

The test specimen was installed into a 2" x 8" wooden rough opening.

Location on frame	Anchor type	Spacing
Head, jambs, and sill	#8 x 1.5" PPH screw applied through the nail-on fin and into the wooden rough opening.	6" from each corner and 12" on center.

**6.0 Test Procedures and Results:** All testing procedures were conducted in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. (Laboratory conditions during test were 23.8 degrees Celsius (75 degrees Fahrenheit))

### 9.3.2 - Air Leakage (ASTM E 283-04)(2012) Infiltration

Test Pressure	Results	Allowed
75 Pa	0.00 L/s*sq.m	1.5 L/s*sq.m
1.57 psf	0.00 cfm/sq.ft.	0.30 cfm/sq.ft.
300 pa	0.00 L/s*sq.m	.5 L/s*sq.m
6.27 psf	0.00 cfm/sq.ft.	0.10 cfm/sq.ft.

# Fenestration Testing Laboratory, Inc.

10235 8th. Street, Rancho Cucamonga, CA 91730

### 9.3.2 - Air Leakage (ASTM E 283-04)(2012) Exfiltration - Canada

Test Pressure	Results	Allowed
75 Pa	0.00 L/s*sq.m	1.5 L/s*sq.m
1.57 psf	0.00 cfm/sq.ft.	0.10 cfm/sq.ft.
300 pa	0.00 L/s*sq.m	0.5 L/s*sq.m
6.27 psf	0.00 cfm/sq.ft.	0.10 cfm/sq.ft.

**The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/1.S.2/A440-11 and Canadian Supplement A440S1-09 for air leakage resistance.**

### 9.3.3 Water Penetration (ASTM E 547-00) (2009)

Test Pressure	Results	Allowed
580 Pa (12.11 psf)	Pass	No Leakage

### 9.3.4.2 Uniform Load Deflection at Design Pressure (ASTM E 330-14)

Test Pressure & Direction	Results	Allowed
960 Pa (20.05 psf) Pos	4.83 mm (~0.19 In.)	Report only
-960 Pa (-20.05 psf) Neg	6.60 mm (~0.26 In.)	Report only

### 9.3.4.3 Uniform load Structural Performance (Overload/Proof Load) (ASTM E 330-14)

Test Pressure & Direction	Results	Allowed	Comments
1440 Pa (30.08 psf) Pos	4.06 mm (~0.16 In. )	14.48 mm (~0.57 In. )	0.4%
-1440 Pa (-30.08 psf) Neg	5.08 mm (~0.20In. )	14.48 mm (~0.57 In. )	0.4%



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### 9.3.5 ASTM F 588 - Forced Entry Resistance Test for Windows

Test	Test	Allowed	Result
1.2.4 Type 'D' Fixed Window Assemblies			
A2.7.1	A2.1	Passed	No Entry
A2.7.3	A2.1	Passed	No Entry

### 9.3.5 CAWM 301 - 90 Forced Entry Resistance Test for Windows

Test	Test	Allowed	Result
2.4.5 Type 'V' Fixed Window Assemblies			
5.4.1	A	Passed	No Entry
5.4.2	B	Passed	No Entry

#### Additional Testing

#### 9.3.4.2 Uniform Load Deflection at Design Pressure (ASTM E 330-14)9.3.4.2

Test Pressure & Direction	Results	Allowed
1200 Pa (25.05 psf) Pos	6.35 mm (~0.25 In.)	Report only
-1200 Pa (-25.05 psf) Neg	18.03 mm (~0.71 In.)	Report only

#### 9.3.4.3 Uniform load Structural Performance (Overload/Proof Load) (ASTM E 330-14)

Test Pressure & Direction	Results	Allowed	Comments
1800 Pa (37.59 psf) Pos	4.06 mm (~0.16 In. )	14.48 mm (~0.57 In.)	0.04%
-1800 Pa (-37.59 psf) Neg	5.84 mm (~0.23In. )	14.48 mm (~0.57 In.)	0.04%

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For a complete description of the tested sample refer to the attached three (3) pages consisting of the bill of materials, cross section drawings, and individual die drawings. This report is complete only when all of the above referenced drawings and bill of materials are attached.

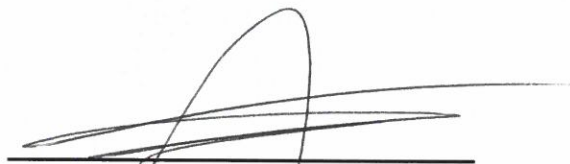
Cross section drawings and die drawings of frame members are on file and have been compared to the sample submitted. Test sample sections, drawings and a copy of this report will be retained at the test laboratory for four years.

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


The preceding test results relate only to the tested specimen and were obtained by using the applicable test methods listed in sections 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.

Date Testing Completed: September 22, 2016

Date Report Completed: October 14, 2016



Pete Cruz  
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