

## **REPORT SUMMARY**

### **REPORT SPECIFICATION:**

North American Fenestration Standard/specification for windows, doors, and skylights  
AAMA/WDMA/CSA 101/I.S.2/A440-08 & Canadian Supplement A440S1-09

**REPORT #: T16-064**

### **TESTED FOR:**

#### **Panoramic Doors / Magnaline Systems**

2515 Industry Street  
Oceanside, CA 92054

**PRODUCT TYPE: Aluminum Stacking Door System**

**SERIES: Signature EECore Door**

**CONFIGURATION: XXXX**

### **PERFORMANCE GRADE: DP30**

Exceeded 4% permanent set but remained functional

### **PRIMARY DESIGNATOR:**

DP30: Size tested 3835 mm x 2438 mm (~151 x 96") - Type SP

### **Secondary Designator:**

Canadian Air Infiltration/Exfiltration = A2 Level

**TEST COMPLETION DATE: 06/08/2016**

**REPORT DATE: 07/21/2016**

# Fenestration Testing Laboratory, Inc.

10235 8th. Street, Rancho Cucamonga, CA 91730

Report #: T16-064

## 1.0 Tested For: Panoramic Doors / Magnaline Systems

2515 Industry Street  
Oceanside, CA 92054

## 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 Stacking Door System 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/A440-08

3.2 Air Infiltration/Exfiltration - A440S1-09, Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440

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 and 4.2 below. Except that it exceeded the 4% permanent set but remained functional.

### 4.1 Primary Designator:

DP30: Size tested 3835.4 mm x 2438 mm (~151 x 96") - Type SP

### 4.2 Secondary Designator:

Canadian Air Infiltration/exfiltration = A2 Level

5.0 **Sample Submitted** (All references to left and right are as seen from the exterior view. The panels are numbered 1, 2, 3, and 4 from left to right)

5.1 **Product Type:** Stacking Door System

5.2 **Series/Model:** Aluminum Signature EECORE

5.3 **Configuration** XXXX (Panels 1-3 slide to the right and swing out. Panel 4 pivots on the jamb and swings out)

5.4 **Test Sample Provider:** Panoramic Doors / Magnaline Systems

5.5

Product Size:	Millimeters	Inches
Frame:	3835 mm x 2438 mm	151.00" x 96.00"
Panels	918 mm x 2353 mm	36.13" x 92.63"

## 5.6 Glass and Glazing (Applies to all panels)

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
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1.0" Overall IG	3/4" Super Spacer (Tremco)	1/8" clear tempered	1/8" clear tempered	Outside glazed with 0.125" x 0.375" double sided adhesive foam tape. Plastic setting blocks were placed at quarter points on the bottom and four (4) blocks were evenly spaced at each stile. A Silicone cap bead was applied along the bottom rail to glass on the inside and up the stiles 6". A heal bead was applied across bottom rail and up stiles on the exterior. Snap-in PVC stop applied full perimeter with 0.185" x 0.375" double sided adhesive foam tape to glass.
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## 5.7 Weepage

Draining Method	Size	Quantity	Location
Weep holes	9.46 mm (3/8")	8	Sill outside face - one at 6" in from each end and the remainder evenly spaced.
Vertical Weep holes	12.7mm (1/2")	2 per panel	One at each end of the bottom rail of each panel; drilled straight through from glazing pocket to bottom wall.

## 5.8 Weatherstripping

Type:	Quantity	Location
0.270 x 0.450 Poly-pile with center fin	2 strips	Frame full perimeter - one strip facing in and one strip facing out
0.270 x 0.250 Poly-pile	1 strip	Frame full perimeter facing out.
0.187 x 0.340 Poly-pile	2 strips	Lock stile panel #4
Nub gasket	2 strips	Panels #1, 2 and 3 left stile
Angle gasket	1 strip	Panel #3, right stile
0.187 x 0.500 Poly-pile with center fin	2 strips	- One strip on the top rail of each panel on outside edge - One strip on the bottom rail of each panel on outside edge

## 5.9 Hardware

Type:	Quantity	Location/ Discription
Track guides (magnetic)	3	Panels # 1,2,3 Head (floating) one per panel; moved along the operable channel
Track guides	3	Sill (floating); moved along the operable channel
Roller assembly	6	Panels #1, 2, and 3 - one at each end of each panel's bottom rail; Only the roller assembly on right side of each panel had a pivot pin hole
Pivot block assembly	3	Panels # 1, 2, and 3 - one at the top of each panel's right stile
Track locator assembly (similar to a shoot bolt)	3	Panels 1, 2, and 3 - one at the top end of each panel's left stile. Each pin engaged like a spring loaded latch. Each pin was disengaged with a spring loaded thumb actuator on the same stile.

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Pivot Pin assembly	2	One at the top and one at the bottom of panel #4 hinge stile
PVC pull handle	1	Panels #1, 2, and 3 - each on left stile
PVC Anti-lift blocks - 6" x 2.5" x 0.25"	3	One (1) above each panel; each was fastened to the head with a pair of screws.
<b>5.9 Hardware (Continued)</b>		
<b>Type:</b>	<b>Quantity</b>	<b>Location/ Discription</b>
Four point lock and handle	1	The handle operated three lock points - the 2 hooks (one hook at 10" from the top and the other hook at 11" from the bottom) and the latch bolt at 39" from the bottom. The 4th lock point was a keyed dead bolt operated by a thumb turn located 34.5" from the bottom. Each hook engaged its respective metal keeper fastened to panel 3 right stile. Each keeper was fastened with a pair of screws.
PVC snubber block	1	Fastened to the midspan of the panel #4 hinge stile with a pair of screws. The block mated to the jamb channel when the door was closed.

## 5.10 Construction

Location	Joinery Type	Number of Fasteners/ Discription
All frame corners	Mechanical/ Slip Fit	The head and sill corners contained plastic inserts secured with 2 PFH screws and fit into the jamb hollow
Panel Corners	Mechanical	Two (2) - #8 x 2.5" PFH screws
Interlocking aluminum extrusions on stiles of all panels	Mechanically joined to the panel stiles	Panels 1, 2, and 3 each contained a full length male extrusion fastened to each left stile. All four panels contained a full length female extrusion fastened to each right stile.
The jambs	Mechanical	The jambs contained a 1.15 Thermal Break
Sill and Head	Mechanical	The head and sill contained a .40 Thermal Break
Panels	Mechanical	The stiles and rails contained a 1.15 Thermal Break

## 5.11 Reinforcement

Location	Material
Plastic blocks were inserted approximately 6" into each end of the stiles	Plastic

## 5.12 Sealant

Location
All frame corner joints and sill cap to sill.
All sill installation screws.
All panel corner joints and all glazing stop to glazing stop joints.

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### 5.13 Installation

The test specimen was installed into a 2" x 12" wooden rough opening.

Location on frame	Anchor type	Spacing
Head	Eighteen (18) #8 x 3" PFH screws.	First three (3) from right spaced 2.5" apart starting 6" from right edge and the rest were evenly spaced in the field.
Sill	Ten (10) #8 x 3" PFH screws	First three (3) from right spaced 2.5" apart starting 7" from right edge and the rest were evenly spaced in the field.
Jambs	Eight (8) #8 x 3" PFH screws.	Two (2) 6" from top and bottom and the rest evenly spaced in the field.

**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))

#### 6.4.1 - Force-to latch for side hinged door systems

Test Description	Results	Allowed
Force-to-latch	124.55 N (28.0 lbf)	Report only
Force-to-engage dead bolt	44.48 (10.0 lbf)	115 N (25.85 lbf)

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

Test Pressure	Results	Allowed
75 Pa	1.10 L/s*sq.m	1.5 L/s*sq.m
1.57 psf	0.22 cfm/sq.ft.	0.30 cfm/sq.ft.

The tested specimen meets (or exceeds) the performance requirements specified in AAMA/WDMA/CSA 101/ I.S.2/A440 for air leakage resistance.

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

Test Pressure	Results	Allowed
75 Pa	1.10 L/s*sq.m	1.5 L/s*sq.m
1.57 psf	0.22 cfm/sq.ft.	0.30 cfm/sq.ft.

The tested specimen meets (or exceeds) the A2 Level Canadian air exfiltration performance requirements specified in A440S1-09, Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

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

Test Pressure	Results	Allowed	Comments
220 Pa (4.59 psf)	Pass	No Leakage	

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

Test Pressure & Direction	Results	Allowed	Comments
1440 Pa (30.08 psf) Pos	18.03 mm (.71")	Report Only	
1440 Pa (30.08 psf) Neg	24.13 mm (.95")	Report Only	

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

Test Pressure & Direction	Results	Allowed	Comments
2160 Pa (45.11 psf) Pos	12.70 mm (0.50")	9.40 mm (0.37")	#1
2160 Pa (45.11 psf) Neg	19.05 mm (0.75")	9.40 mm (0.37" )	#1

**9.3.5 Forced Entry Resistance - (Applied FER test for SGD and for Side-hinged doors)**

<b>FER For SGD</b>	Results	Allowed	Comments
ASTM F 842-14 Type A Grade 10	No Entry	No Entry	
CAWM 300-96 Type I	No Entry	No Entry	
<b>FER for Side-Hinged Doors</b>	Results	Allowed	Comments
AAMA 1304-02	No Entry	No Entry	

**Additional Testing:**

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

Test Pressure	Results	Allowed	Comments
290 Pa (6.06 psf)	Pass	No Leakage	
330 Pa (6.90 psf)	Pass	No Leakage	
360 Pa (7.52 psf)	Pass	No Leakage	

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Comments: #1 The door remained functional but exceeded the .4% permanent set.

For a complete description of the tested sample refer to the attached thirteen (13) 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: June 08, 2016

Date Report Completed: July 21, 2016



Pete Cruz  
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