



## TEST REPORT

**Report No.:** D8929.01-301-44

**Rendered to:**

All Weather Architectural Aluminum  
Vacaville, CA

**SERIES/MODEL:** 6000

**PRODUCT TYPE:** Fixed Window

**SPECIFICATION:** AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

Title	Summary of Results
Primary Product Designator	Class AW-PG80-Size tested 1524 x 2515 mm (60 x 99 in)-Fixed
Design Pressure	±4320 Pa (±90.00 psf)
Air Infiltration	<0.1L/s/m <sup>2</sup> (<0.01 cfm/ft <sup>2</sup> )
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)

**Test Completion Date:** 07/22/2014

Reference must be made to Report No. D8929.01-301-44 dated 08/15/14 for complete test specimen description and detailed test results.

**1.0 Report Issued To:** All Weather Architectural Aluminum  
777 Aldridge Road  
Vacaville, CA 95688

**2.0 Test Laboratory:** Architectural Testing, Inc.  
2524 East Jensen Ave.  
Fresno, CA 93706  
559 233 8705

**3.0 Project Summary:**

**3.1 Series/Model:** 6000

**3.2 Product Type:** Aluminum Fixed Window

**3.3 Compliance Statement:** Results obtained are tested values and were secured by using the designated test method(s). The specimen tested successfully met the performance requirements for a **Class AW-PG80-Size Tested 1524 x 2515 mm (60 x 99in)-Fixed** rating.

**3.4 Test Dates:** 06/10/2014 - 07/22/2014

**3.5 Test Record Retention End Date:** All test records for this report will be retained until July 22, 2018.

**3.6 Test Location:** Architectural Testing Inc. test facility in Fresno CA.

**3.7 Test Sample Source:** The test specimen was provided by the client. Representative samples of the test specimen will be retained by Architectural Testing for a minimum of four years from the test completion date.

**3.8 Drawing Reference:** The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

**3.9 List of Official Observers:**

<u>Name</u>	<u>Company</u>
Seamus Porter	All Weather Architectural Aluminum
David Douglass	Architectural Testing Inc.

#### 4.0 Test Specifications:

AAMA/WDMA/CSA 101/1.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

AAMA 910-93, *Voluntary "Life Cycle" Specifications and Test Methods for Architectural Grade Windows and Sliding Glass Doors*

#### 5.0 Test Specimen Description:

##### 5.1 Product Sizes:

Overall Area: 3.83 m <sup>2</sup> (41.23 ft <sup>2</sup> )	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1524	60	2515	99

##### 5.2 Frame Construction:

Frame Member	Material	Description
Head, sill jambs	Aluminum	Thermally improved, dual-strutted, extruded aluminum

Location	Joinery Type	Detail
All corners	Mitered	Sealed and secured using four aluminum corner keys. The corners were attached through the corner keys with (2) #8 x1-1/2" square drive pan head screws and (2) #8 x1-1/4" square drive pan head screws

**5.3 Weatherstripping:** No weatherstripping was utilized.

## 5.0 Test Specimen Description: (Continued)

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

Type	Spacer	Interior & Exterior	Glazing Method
1" IG	Metal box	1/4" annealed	Exterior glazed against a bead of silicone and secured using aluminum glazing beads with a wedge gasket. A toe bead was applied at the perimeter.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Fixed daylight opening	1	1441 x 2432	56-11/16 x 95-3/4	1/2"

## 5.5 Drainage:

Drainage Method	Size	Quantity	Location
Weep hole	7/8" x 1/8"	2	Each end of the sill snap in glazing bead.

**5.6 Hardware:** No hardware was utilized.

**5.7 Reinforcement:** No reinforcement was utilized.

## 6.0 Installation:

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

Location	Anchor Description	Anchor Spacing
Nail fin	1/4" x 2" square drive pan head screws	3" from each corner and approximately 16" on center

**7.0 Test Results:** The temperature during testing was 28°C (83°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
<b>Sequential testing per AAMA 910</b>			
<b>Air Leakage,</b> Infiltration per ASTM E 283 at 300 Pa (6.27 psf)	<0.1 L/s/m <sup>2</sup> (<0.01 cfm/ft <sup>2</sup> )	0.5 L/s/m <sup>2</sup> (0.10 cfm/ft <sup>2</sup> ) max.	1
<b>Water Penetration,</b> per ASTM E 547 and ASTM E 331 at 580 Pa (12.11 psf)	Pass	No leakage	2
<b>Uniform Load Deflection,</b> per ASTM E 330 +3840 Pa (+80.2 psf) -3840 Pa (-80.2 psf)	<u>lamb</u> 0.5 mm (0.02") 0.5 mm (0.02")	2.5 mm (0.10") max. 2.5 mm (0.10") max.	2, 3, 4
<b>Air Leakage,</b> Infiltration per ASTM E 283 at 300 Pa (6.27 psf)	<0.1 L/s/m <sup>2</sup> (<0.01 cfm/ft <sup>2</sup> )	0.5 L/s/m <sup>2</sup> (0.10 cfm/ft <sup>2</sup> ) max.	1
<b>Water Penetration,</b> per ASTM E 547 and ASTM E 331 at 580 Pa (12.11 psf)	Pass	No leakage	
<b>Uniform Load Structural,</b> per ASTM E 330 +5760 Pa (+120.3 psf) -5760 Pa (-120.3 psf)	<u>lamb</u> 0.3 mm (0.01") 0.3 mm (0.01")	0.9 mm (0.04") max. 0.9 mm (0.04") max.	3, 4
<b>Forced Entry Resistance,</b> per ASTM F 588 Type: D - Grade: 40	Pass	No entry	

**Note 1:** The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/1.S.2/A440 for air leakage resistance.

**Note 2:** The client opted to start at a pressure higher than the minimum required.

**Note 3:** Loads were held for 10 seconds.

**Note 4:** Tape and film were not used to seal against air leakage during structural testing.

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. 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 Architectural Testing, Inc.

For ARCHITECTURAL TESTING, Inc.

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David Douglass  
Project Manager

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Leaton Kirk  
Director – Regional Operations

LK:DD: ms

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Drawings (5) Complete drawings packet on file with Architectural Testing, Inc.

This report produced from controlled document template ATI 00434, issued 01/27/12.



Test Report No.: D8929.01-301-44  
Report Date: 08/13/14  
Revision 1 Date: 08/15/14  
Record Retention End Date: 07/22/18

### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	08/13/14	N/A	Original Report Issue.
1	08/15/14	Cover, 1	Corrected Performance Grade.



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## **Appendix A**

### **Alteration Addendum**

**Alteration #1:** Date - 07/22/14  
Glass breakage during structural overload  
Remedial action taken – Reglazed the test unit with identical glass



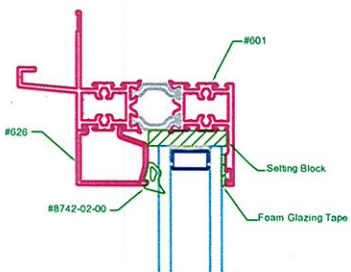


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## Appendix B

### Drawings

**Note:** *Complete drawings packet on file with Architectural Testing, Inc.*

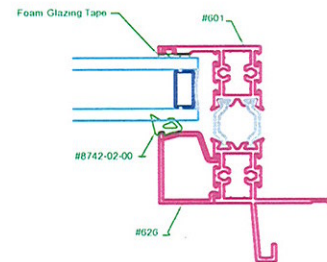
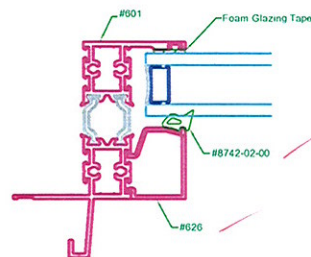
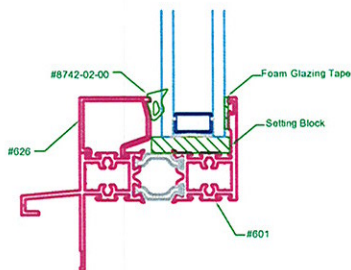


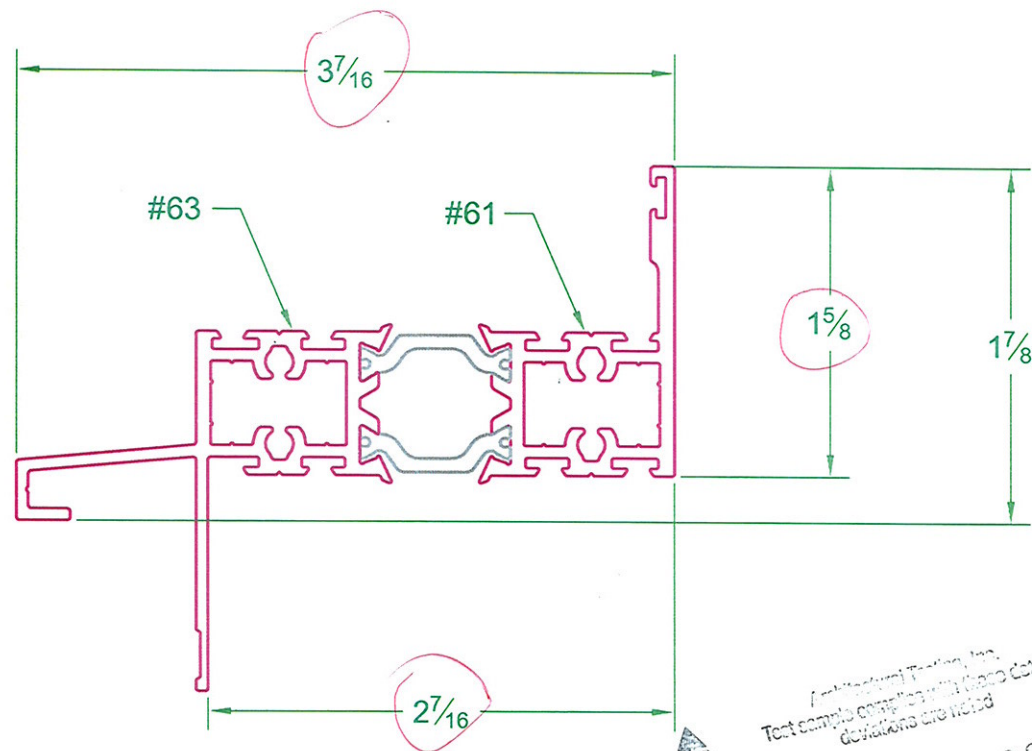
Architectural Testing, Inc.  
 Test sample compliance with these details  
 deviations are noted

D 8 9 2 9

Report #  
 Tech D

100 08 2014  
 Date





Architectural Testing, Inc.  
Test sample cutting and detail  
deviations are noted

D 8 9 2 9

Report #  
Tech D<sup>2</sup>

AUG 08 2014  
Date

REVISION	1	SCALE	1:
DATE	7/28/201		
DRAWN	J. Otaegi		
APPROVED			

601



Technical drawing of a mechanical part, labeled "DETAIL A" and "SCALE: 3:1". The drawing shows a cross-section of a component with various dimensions and features. Key dimensions include .085, .243, .121, .044, .078, .337, .152, .035, .085, .016DP x 90°, .078, .040, (9) R.010, .054, .062, .249, (3) R.008, .264 (2), .144, (6) R.020, .077, .070, .436, .005, and .078. The drawing also includes a note "TYP 33.418°" and a note "SIMILAR 2 PLACES".

**DETAIL "A"**  
**SCALE: 3:1**

**SIMILAR 2 PLACES**

Diagram illustrating the difference between exposed surface and actual size. A dashed box labeled "EXPOSED SURFACE" contains a green outline of a complex shape. To the right, a horizontal line with arrows at both ends is labeled "ACTUAL SIZE".

**DETAIL "B"**  
**SCALE: 3:1**  
**SIMILAR 2 PLACES**

Technical drawing of a test sample with dimensions and callouts. The drawing shows a complex, symmetrical shape with various features labeled A, B, C, and REF. Dimensions are provided in inches, with some values circled in red. The drawing includes a title block with the text "Test sample conforming to the following dimensions" and a note "All dimensions are in inches".

Dimensions (inches):

- Overall width: 1.021
- Overall height: 1.625
- Top horizontal segment: .585
- Top horizontal segment: .313
- Top horizontal segment: .226
- Top horizontal segment: .039(2)
- Top horizontal segment: .201
- Top horizontal segment: .750
- Top horizontal segment: .427
- Top horizontal segment: .828
- Top horizontal segment: .243(B)
- Top horizontal segment: .598
- Top horizontal segment: .495
- Top horizontal segment: .103
- Top horizontal segment: .077
- Top horizontal segment: .219
- Top horizontal segment: .266
- Top horizontal segment: .085
- Top horizontal segment: R.063

Callouts:

- A
- B
- C
- REF
- (e)
- (2)
- (B)

Text:

- Test sample conforming to the following dimensions
- All dimensions are in inches

D 8 9 2 9


Report #  
Tech

AUG 08 2014

Ua: a

**DETAIL "C"**  
**SCALE: 3:1**

NOTE: .062 TYP. WALL EXCEPT AS NOTED  
UNMARKED CORNERS ~~XXXX~~ .016R

CONTAINER	7	DIE RING	5	SPACER RING	2								
AREA	.391	PORTS	2	BKR	-								
WT/FT	.469	W/P	-	BOLSTER	STD-2								
PERL	11.277	ALL40975		DIE SIZE	9x5	C	ADD DEM .226			TAS	8/18/00		
DWN. BY	TAS	DATE	8/13/08	MAT'L.	6063-T6	B	UPPER WAS 208 PERL 11.200 DIA 1.51 WAS 226 - 2 PLACES DIA .070 WAS .070 - DRY C			TAS	8/18/00		
CHKD. BY		DATE		STANDARD TOLERANCES UNLESS OTHERWISE NOTED		LET.		REVISION		BY		DATE	
 SIERRA ALUMINUM COMPANY 2345 Fleetwood Drive Riverside, California 92509 (951)781-7800 FAX (951)781-7864				CUSTOMER				SCALE		PART NO.		503	
				ALL WEATHER ALUMINUM PROD.				2:1					
				PART NAME				1000		DIE NO.			
				SASH/FRAHE HALF W/O STOP				140				H-902777	

UNLESS OTHERWISE SPECIFIED	
SPECIFIED DIM.	TOLERANCE
UP THRU.124	±.006
.125-.249	±.007
.250-.499	±.008
.500-.749	±.009
.750-.999	±.010
1.000-1.499	±.012
1.500-1.999	±.014
2.000-3.999	±.024
ANGULAR	±1°



SUBMITTED BY \_\_\_\_\_ DATE \_\_\_\_\_




APPROVED BY \_\_\_\_\_ DATE \_\_\_\_\_ 0929

▷.010 R. X .010**DEE**I.D. MARK

Test sample complies with the  
deviations are noted

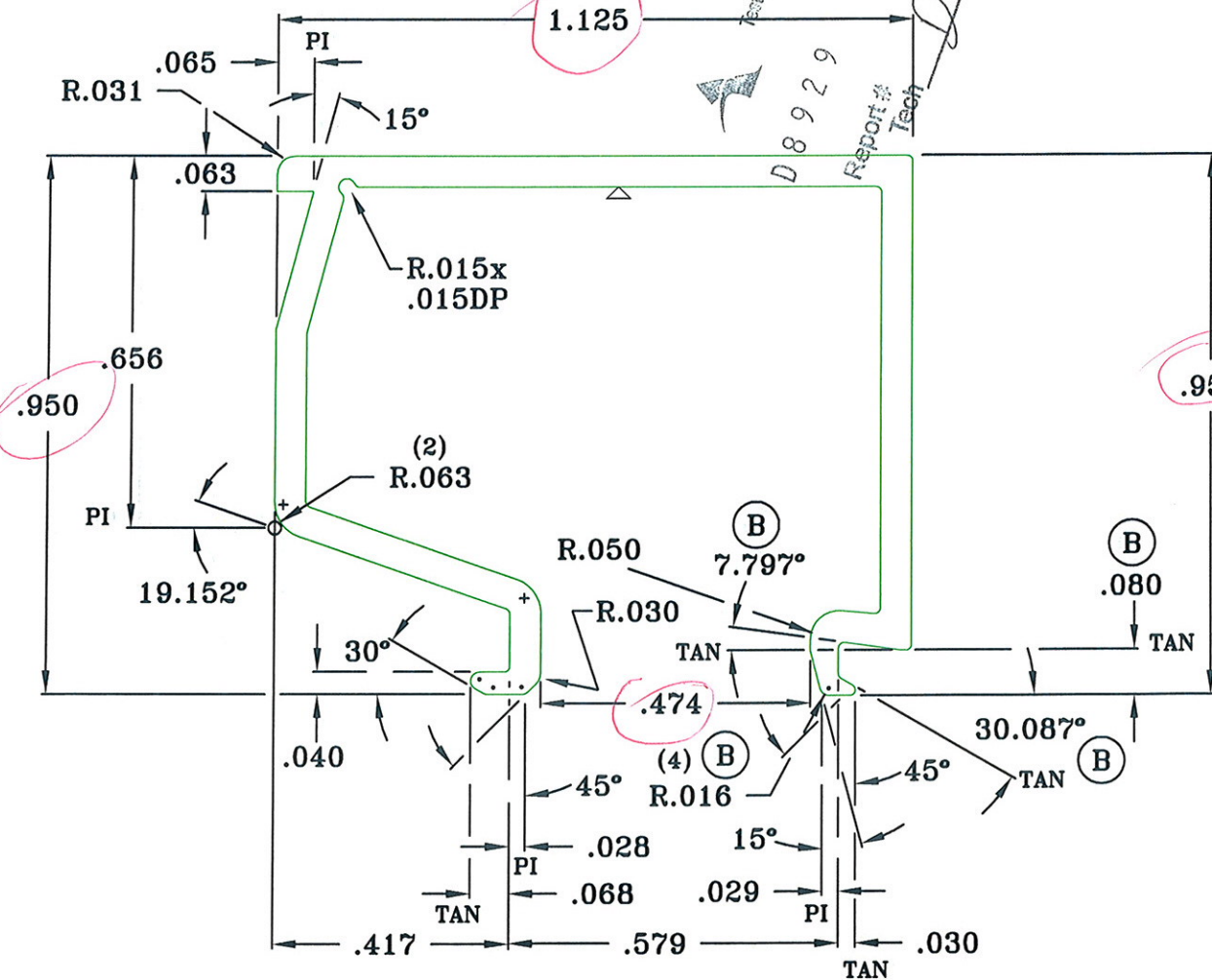
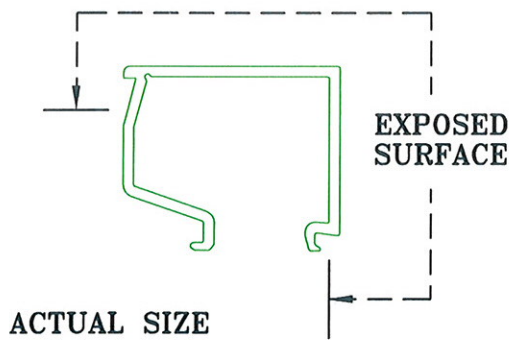
Report #  
Tech

NOTE: .062 TYP. WALL EXCEPT AS NOTED  
UNMARKED CORNERS .010 R.

CONTAINER		DIE RING		SPACER RING					
AREA .458		PORTS		BKR					
WT/PT .550		W/P		BOLSTER					
PERL 14.139		ALL45304		DIE SIZE					
DWN. BY KEN		DATE 8/02/10		MAT'L. 6063-T6					
CHKD. BY		DATE		STANDARD TOLERANCES UNLESS OTHERWISE NOTED		LST.		REVISION	
				CUSTOMER		SCALE		PART NO.	
				ALL WEATHER ALUMINUM PROD.		2:1		63	
				PART NAME		-		DIE NO.	
 <b>SIERRA ALUMINUM COMPANY</b> 2345 Fleetwood Drive Riverside, California 92509 (951)781-7800 FAX (951)781-7864									

FITS WITH PART#

UNLESS OTHERWISE SPECIFIED	
SPECIFIED DIM.	TOLERANCE
UP THRU.124	±.006
.125-.249	±.007
.250-.499	±.008
.500-.749	±.009
.750-.999	±.010
1.000-1.499	±.012
1.500-1.999	±.014
ANGULAR	±1°



▷.010 R. X .010DEEPI.D. MARK

NOTE: .055 TYP. WALL EXCEPT AS NOTED  
UNMARKED CORNERS .010 R.

CONTAINER	7	DIE RING	5	SPACER RING	2				
AREA	.185	PORTS	4	BKR	911261				
WT/FT	.222	W/P	POCKET	BOLSTER	STD-4				
PERI.	6.881	ALL40983	DIE SIZE	9x2	B	PERI WAS 6.872 DIM .080 WAS .085	TAS	9/12/08	
DWN. BY	TAS	DATE	8/13/08	MAT'L.	6063-T6	B	DIM 30.087° WAS 6° DIM R.016 QUANTITY WAS (6) DIM 7.797° WAS 4.998°	TAS	9/12/08
CHKD. BY		DATE		STANDARD TOLERANCES UNLESS OTHERWISE NOTED	LET.	REVISION	BY	DATE	
<p><b>SIERRA ALUMINUM COMPANY</b> 2345 Fleetwood Drive Riverside, California 92509 (951)781-7800 FAX (951)781-7864</p>				CUSTOMER		SCALE	PART NO.		
				ALL WEATHER ALUMINUM PROD.		3:1	525		
				PART NAME		487 200	DIE NO.		
				1" SQUARE GLASS STOP			902782		