



ALL WEATHER
ARCHITECTURAL ALUMINUM

SERIES 5000 WINDOWS

PRODUCT SPECIFICATIONS | EXTRUSION DETAILS | TEST REPORTS

INTRODUCTION

Our Series 5000 2 ¼" product line uses 6063 extruded aluminum and are age hardened to a T-6 rating for strength and durability. The Series 5000 windows have integral extrusion walls with a nominal web thickness of .125", and a wall thickness of .094". The nailing fins are .062" thick. The material thickness on all wall sections meets or exceeds commercial window standards.

The pour and debridge thermal break profiles are extruded as a single extrusion with a cavity for the thermal break material. Once the profile is extruded, the cavity is filled with a two part polyurethane that has a low coefficient of thermal conductivity. After the polyurethane has cured, a saw is used to debridge the profile by ripping the aluminum web of the cavity. The profile is now thermally broken, providing both improved thermal performance as well as improved condensation resistance.

The Series 5000 2 ¼" window line is available in the following finishes:

- Class I Clear Anodized**
- Class I Bronze Anodized**
- Standard White
- Custom Anodized
- 70% Kynar Paint Color

*** Indicates Finishes In Stock.*

STRUCTURAL TESTING

Our Series 5000 projected, casement and fixed windows have been tested to AAMA/WDMA/CSA101/1.5.2/A440-05 standards as listed below: (Please see test reports located in the back of this section for window sizes.)

- Fixed Window FW - C60
- Casement Combination Window OO/XX/OO C50
- Awning and Hopper Combination Awning / Awning / Fixed / Hopper C50
- Awning Combination 2 Wide Fixed / 2 Wide Awning C50
- Casement Combination Window XXX C50

All Weather has comprehensive files containing all historical testing. Each of the tests in the proceeding list are current, however, our archived testing may be more specific for your particular project and will be provided upon request.

ACOUSTICAL TESTING

All Weather has completed acoustical testing on several window configurations and glass make-ups, including the test results listed below. Additional testing has been performed and can be provided upon request.

- STC 41 / OITC 32 Fixed Awning Combo 8.8 mm Lami Over ¼" Glass
- STC 41 / OITC 33 Fixed Casement Combo 8.8 mm Lami Over ⅜" Glass

CONSTRUCTION

Corners of frame and ventilators are mitered and welded for structural integrity. All muntin and other intermediate bars are firmly attached to their cross joints and their abutting sash sections. The frame sill, vents, and intermediate bars contain weep provisions and are sloped for positive drainage to the exterior. Frames are drilled and tapped to receive screen attachment hardware as required. All surfaces to be glazed have a bead retaining notch.

HARDWARE

Projected & Casement Windows: Vents shall operate on 4-bar heavy duty stainless steel hinges, and have die cast zinc cam handles with pole ring. Project-in type units use a snaplock or cam handle with pawl. White bronze hardware or brushed nickel hardware is available upon request.

Series 5000 awning and casement alternate: A worm gear rotary control operator with butt hinges and side mounted locking handle is provided for each casement ventilator. Casements can have a multipoint lock system upon request. Awnings can also be equipped with worm gear rotary hardware with loose pin/concealed hinges and locking handles on the jambs.



SCREENS

Screens are made of painted roll formed aluminum to match the window frame and use charcoal fiberglass mesh with plastic wicket doors. Wire mesh and Ultraview mesh screens are available upon request. The screens are installed and are removable from the inside of the building (Exception: Our project-in hopper screen is mounted on the exterior).

Series 5000 rotary casement and awning windows will have flat screens, also removable from inside the building. Flat screens are made with extruded screen channel with mitered corners and an internal corner key.

GLAZING

The Series 5000 offers a 1" OA on insulated glass units. Series 5000 offers square or beveled extruded bead.

WEATHER-STRIPPING

Our Series 5000 casement, awnings, and project-in windows are weather stripped with a santoprene, 64A durometer black bulb insert. It is inserted in an extruded slot at the perimeter of the vent or opening. Two (2) rows are used to ensure low air infiltration and weather penetration prevention. The bulb seal can be replaced in the field after installation, if necessary, for maintenance purposes.

INSTALLATION GUIDELINES

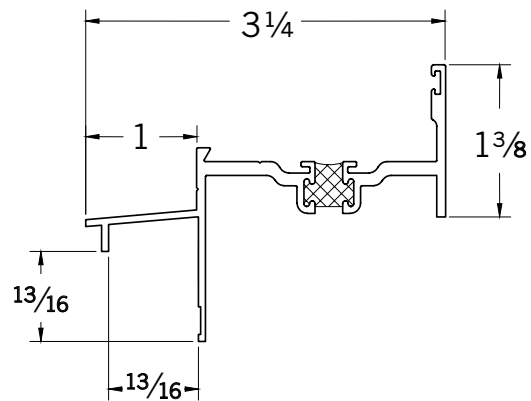
- All windows must be installed in prepared openings in accordance with AAMA recommendations and the below-listed manufacturers' recommendations (If shop drawings are required, please refer to approved shop drawings for installation):
- All vent panels must be closed and locked.

- Each unit must be installed level, plumb and square with a ¼" clearance on the jambs and the header of the window.
- Remove wet plaster, mortar, stucco and cement immediately.
(Note: windows should only be cleaned with mild soap and water.)
- Do not set items on the sill.
- In nail-on applications, a bead of caulking material should be applied to the inside nail-on fin just before installation to insure a water tight seal between the building and the window. In an equal leg window a bead of caulking material should also be applied.
- Any attachment screws or bolts should be sealed during the process of installation.
- After installation is complete, building paper and stucco wire (if a stucco application) should overlap the window nail-on flange.
- For installation instructions please contact sales.

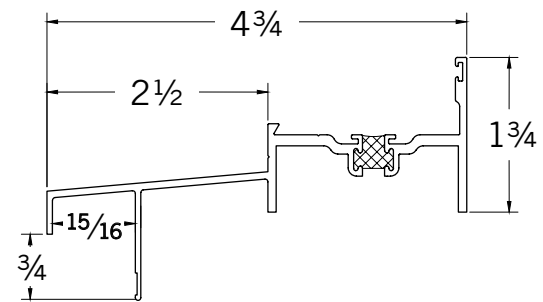
CARE & MAINTENANCE

- Windows should be kept free of all dust, dirt, paint and plaster.
- The sill should be kept clean at all times. A vacuum cleaner with a crevice attachment is recommended.
- Window should only be cleaned with mild soap and water.
- **Caution:** Damage will occur to the frame finish, and to the sealed glass unit, if solvents, petroleum products, or caustic chemicals such as acetone or paint thinner are used to clean window frames. Damage caused by this type of abuse is not covered under warranty.

501 NAIL ON FRAME BAR

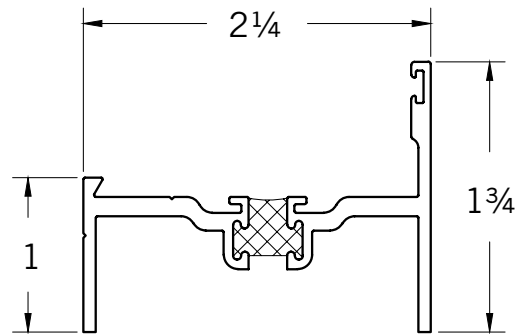


550 PANNING FRAME BAR

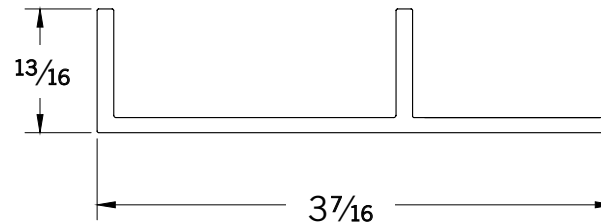




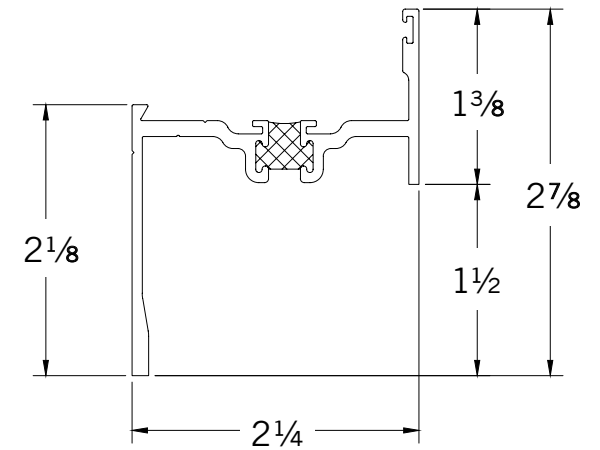
502 EQUAL LEG FRAME BAR



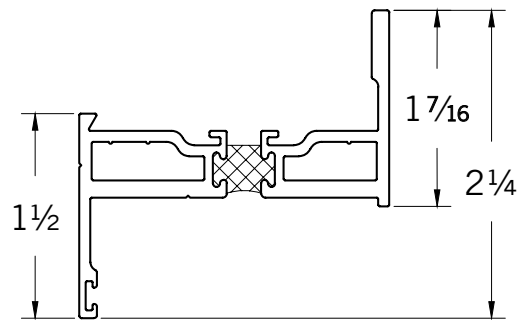
598 F-CLIP FOR 502 EQUAL LEG



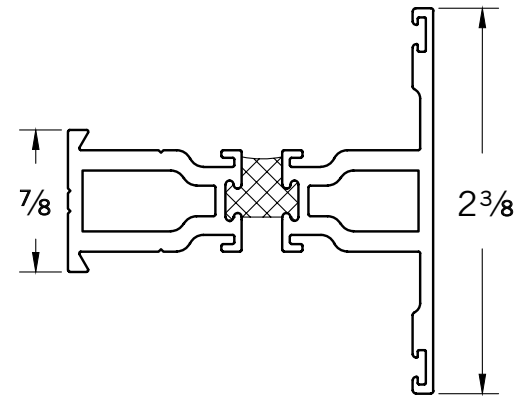
539 Z-BAR FRAME



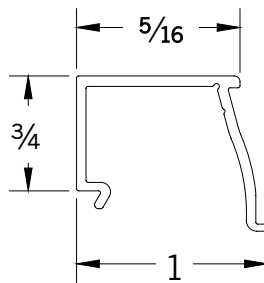
503 VENT BAR



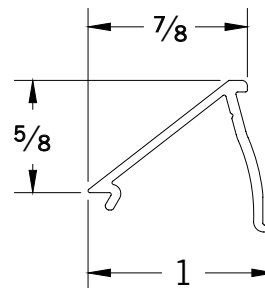
**506 TEE BAR /
HOPPER VENT BAR**



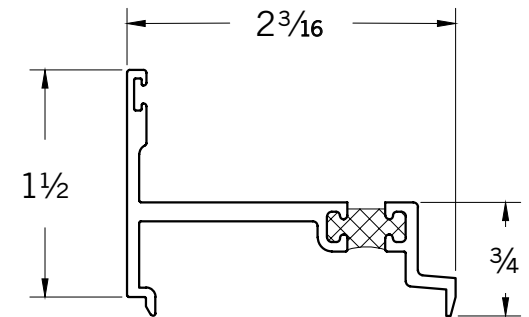
527 SQUARE BEAD
FOR 1" OA GLASS



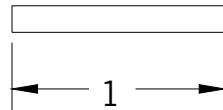
530 BEVEL BEAD
FOR 1" OA GLASS



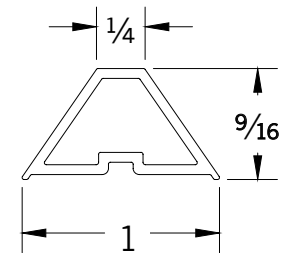
507 INVERT BAR



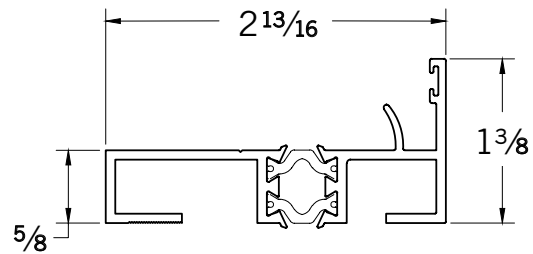
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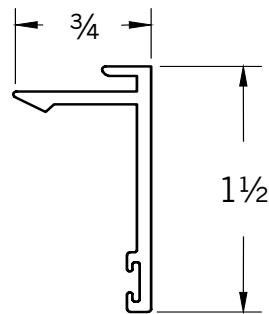
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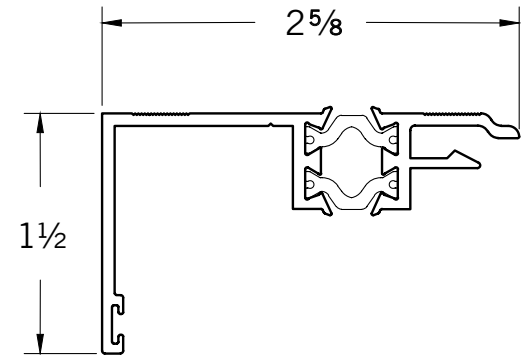
**520 COMPENSATION
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SILL**



**5622 COMPENSATION
CHANNEL
SNAP FACE**

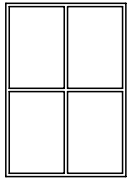


**521 COMPENSATION
CHANNEL
HEAD & JAMB**



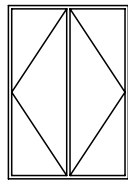
SERIES 5000 CONFIGURATIONS

TABLE OF CONTENTS



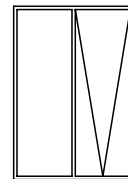
NAIL ON FIXED

PAGE 13



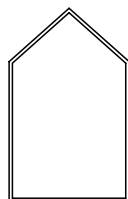
NAIL ON CASEMENT
CSMT HL / CSMT HR

PAGE 14



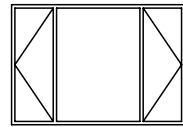
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FIXED / HOPPER

PAGE 15



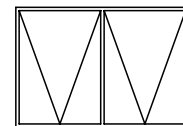
EQUAL LEG FIXED

PAGE 16



NAIL ON CASEMENT
CSMT HL / FIXED / CSMT HR

PAGE 17



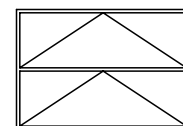
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HOPPER / HOPPER

PAGE 18



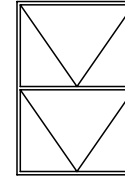
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SHOWN WITH COMP CHANNEL

PAGE 19



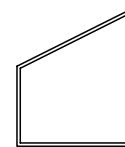
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AWNING / AWNING

PAGE 20



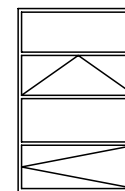
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HOPPER / HOPPER

PAGE 21



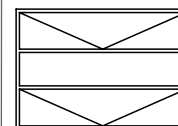
RETRO FIT FIXED
SLOPE SILL

PAGE 22



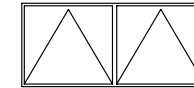
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FIXED / AWNING / FIXED / CSMT

PAGE 23



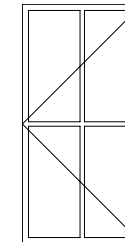
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HOPPER / FIXED / HOPPER

PAGE 24



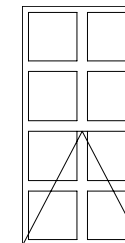
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AWNING / AWNING

PAGE 25



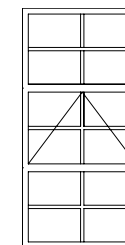
NAIL ON CASEMENT
SDL CASEMENT

PAGE 26



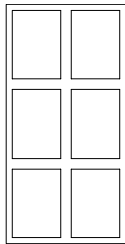
NAIL ON FIXED / AWNING
TDL PICTURE AWNING

PAGE 27



NAIL ON FIXED / AWNING / FIXED
SDL PICTURE AWNING

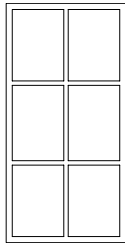
PAGE 28



EQUAL LEG FIXED

TDL FIXED

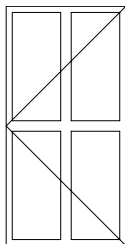
PAGE 29



EQUAL LEG FIXED F-CLIP

SDL FIXED

PAGE 30



PANNING FRAME

CASEMENT

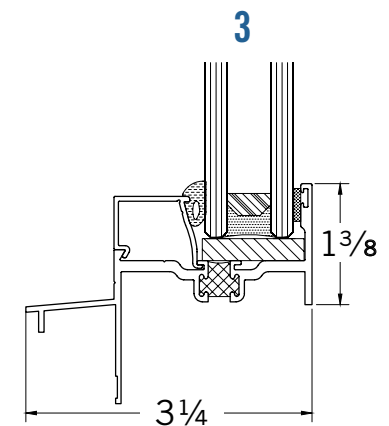
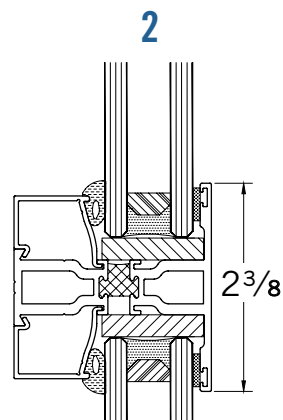
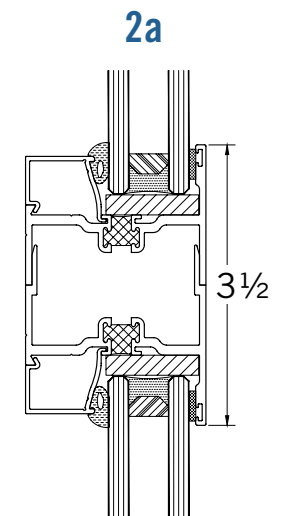
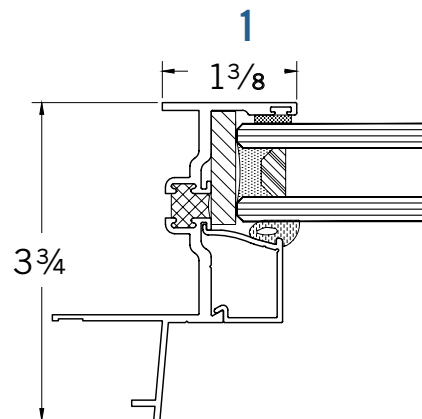
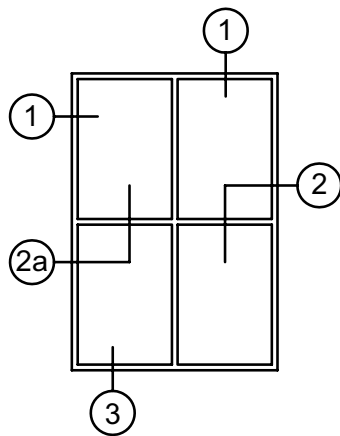
TDL CASEMENT

PAGE 31

NAIL ON FIXED

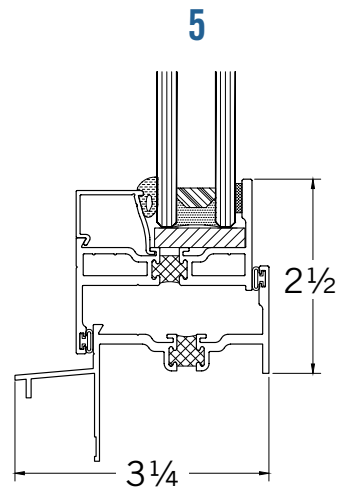
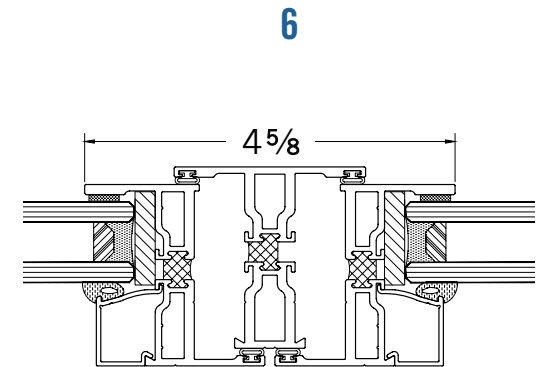
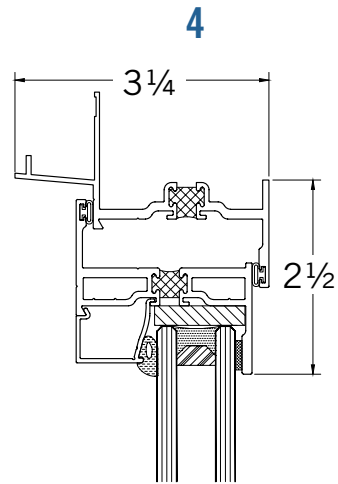
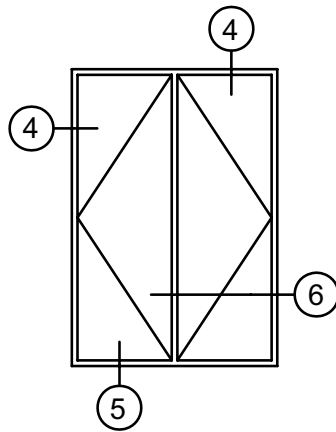
506 TEE BAR

502 510 MULLION

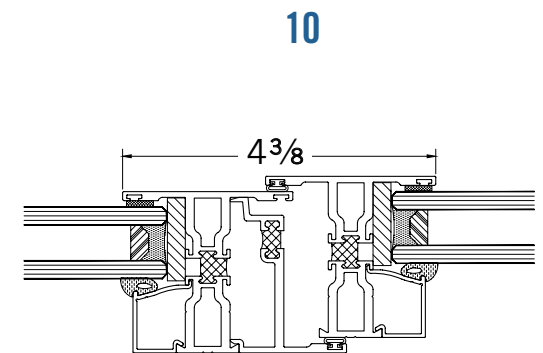
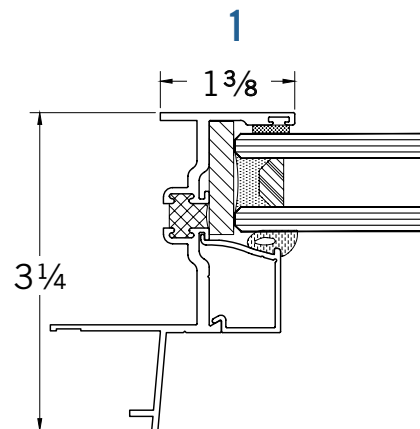
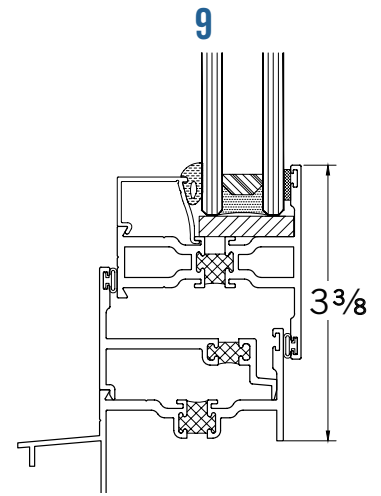
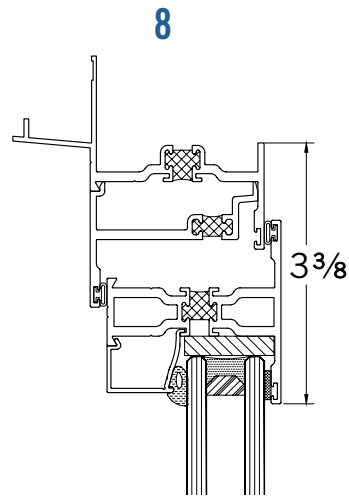
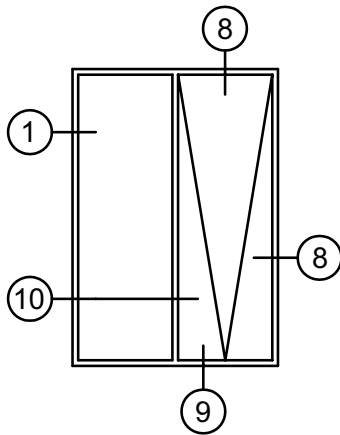


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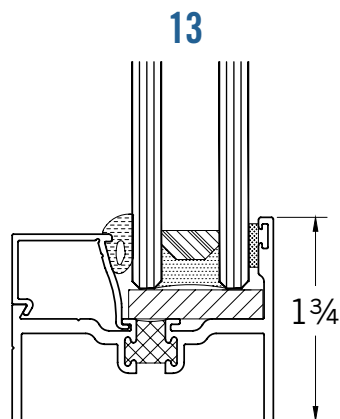
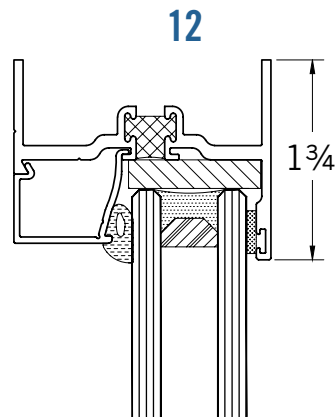
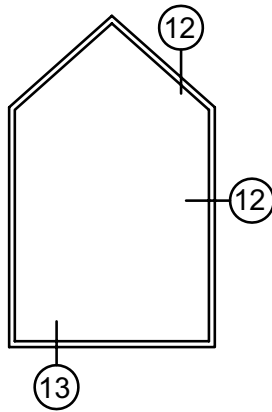
CSMT HL / CSMT HR



NAIL ON HOPPER FIXED / HOPPER

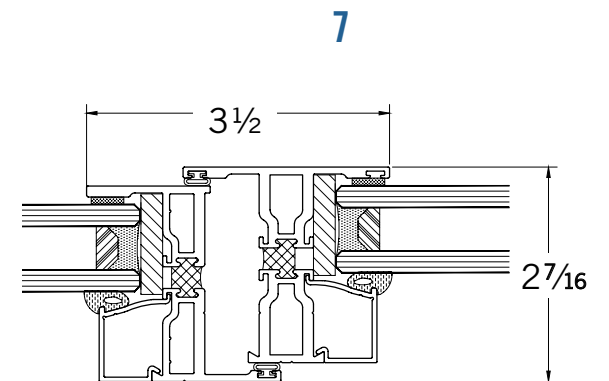
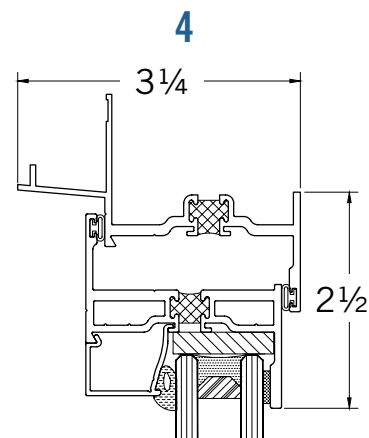
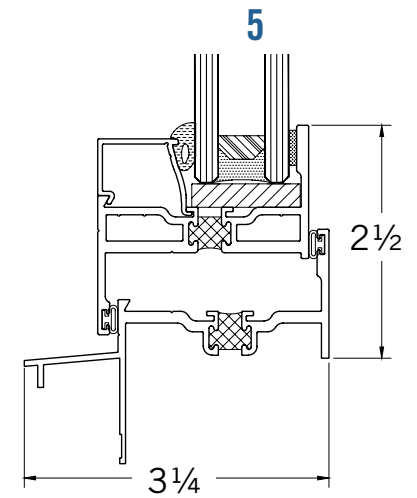
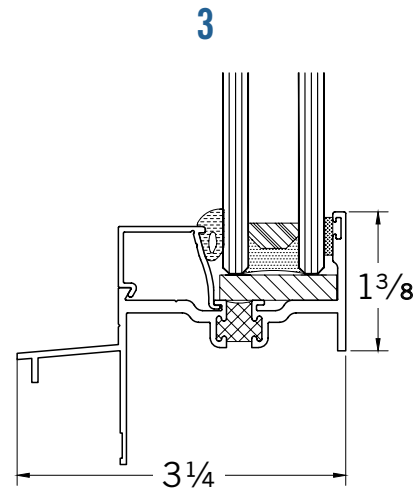
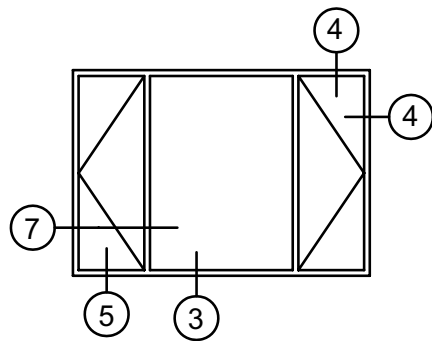


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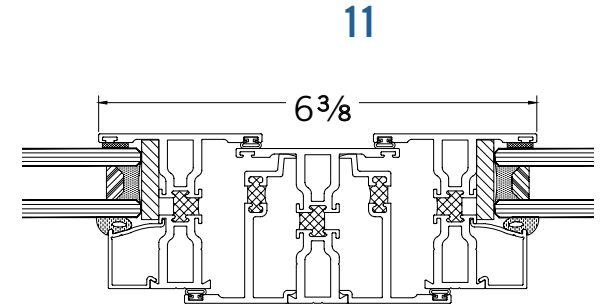
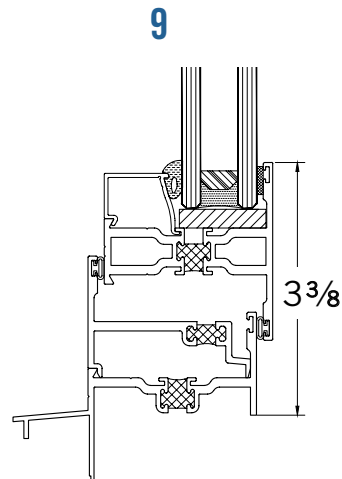
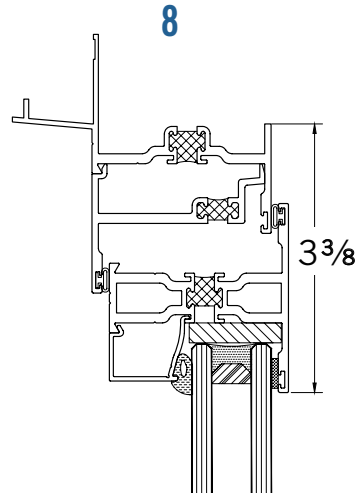
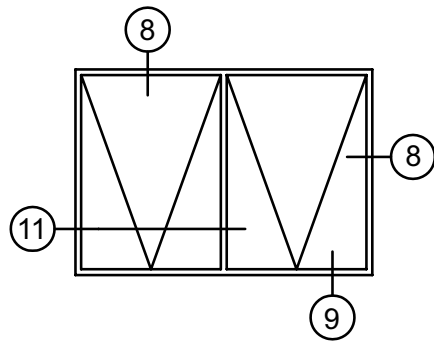


NAIL ON CASEMENT

CSMT HL / FIXED / CSMT HR

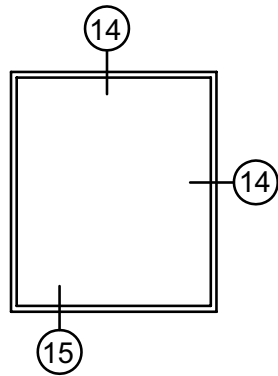


NAIL ON HOPPER HOPPER / HOPPER

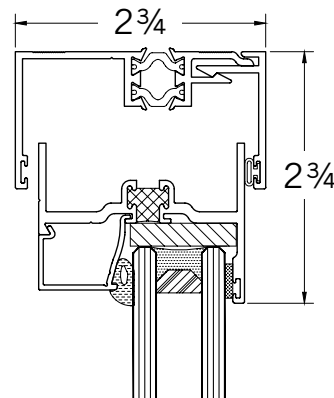


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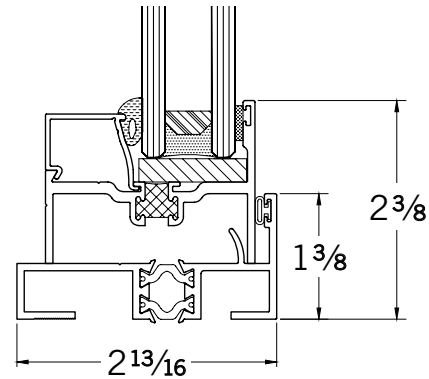
SHOWN WITH COMP CHANNEL



14

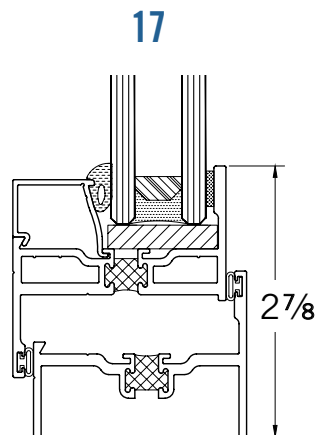
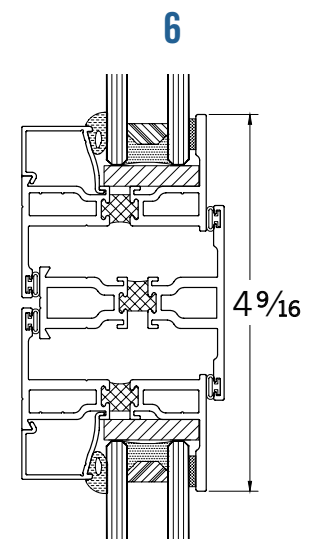
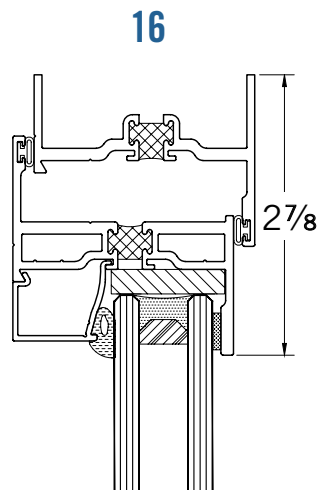
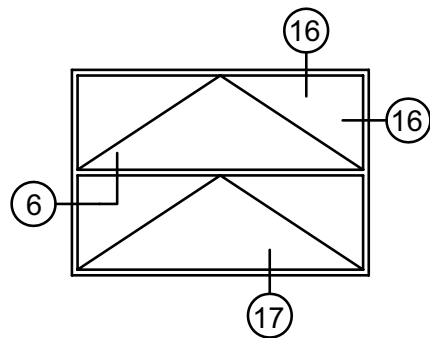


15



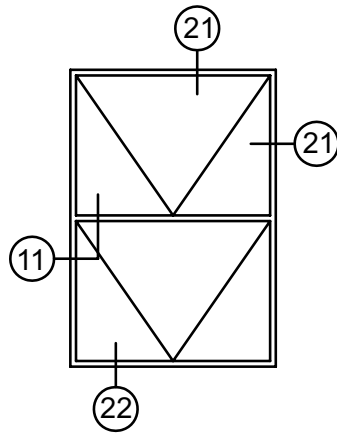
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AWNING / AWNING

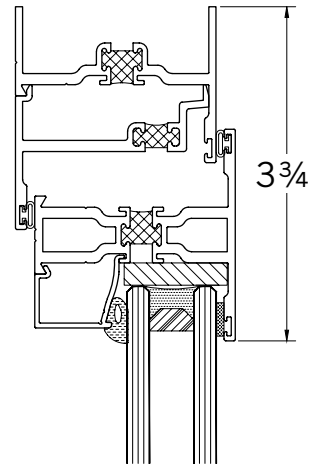


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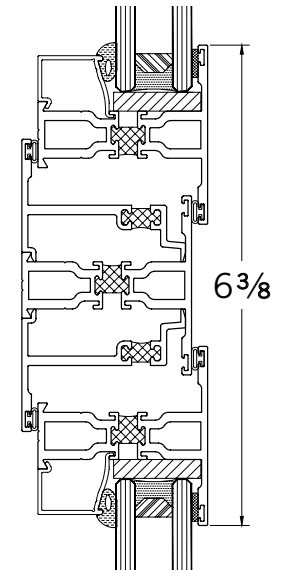
HOPPER / HOPPER



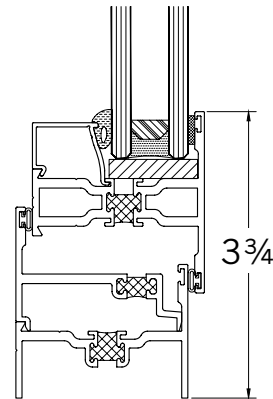
21



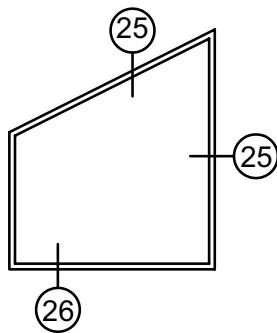
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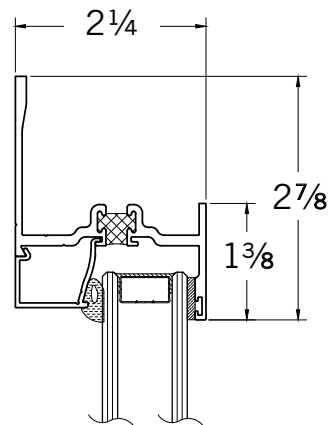
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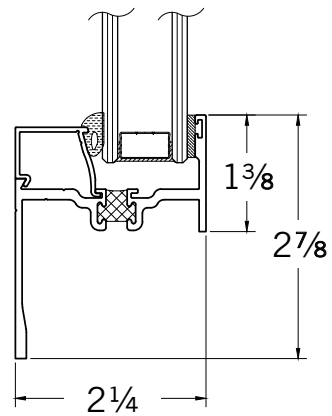
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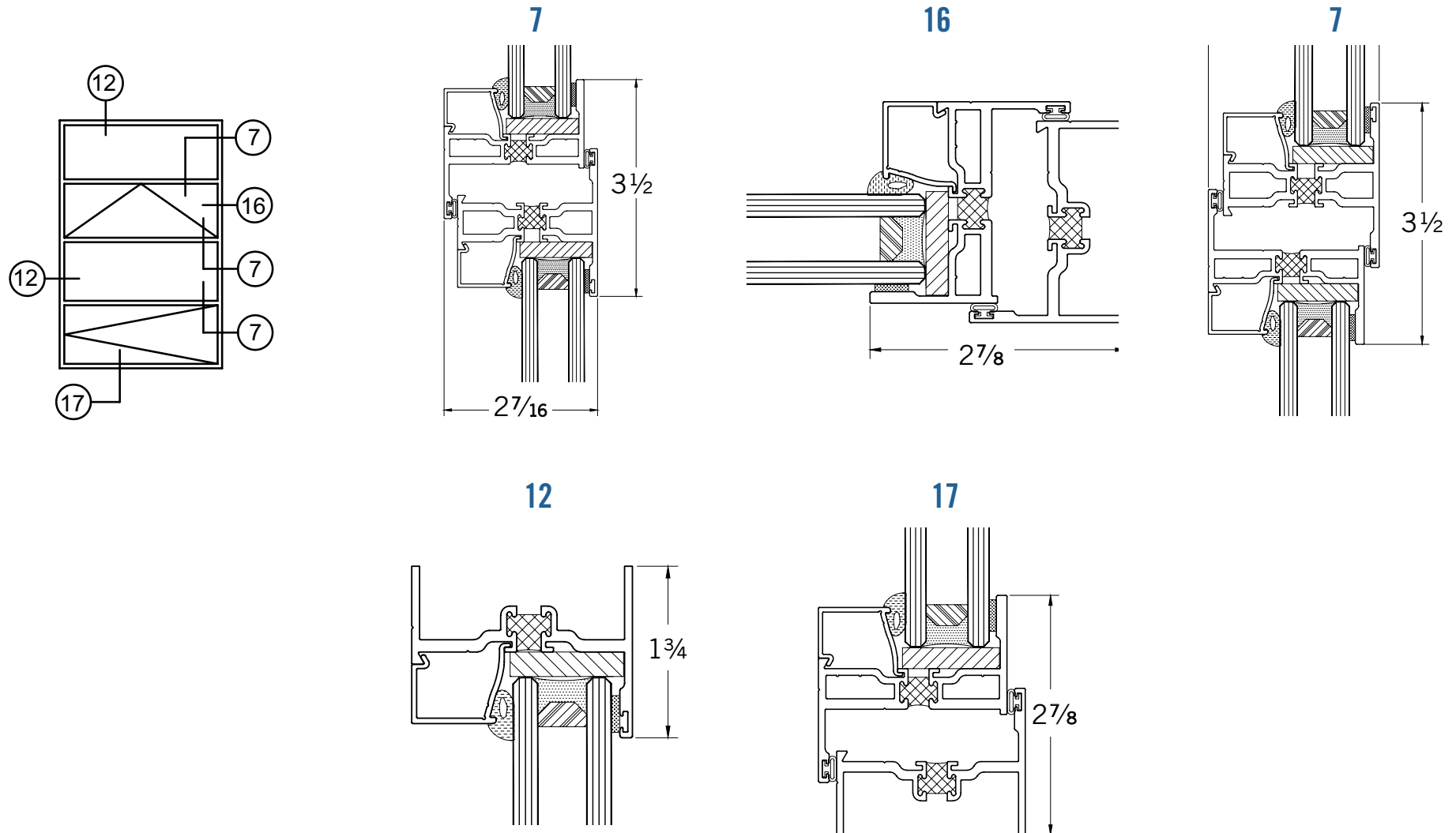


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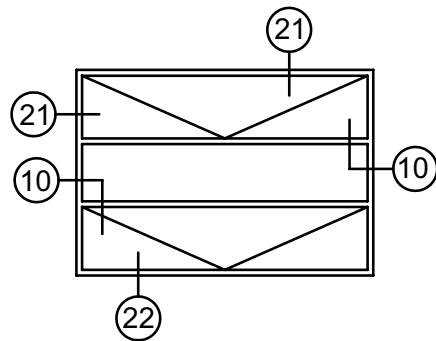
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FIXED / AWNING / FIXED / CASEMENT

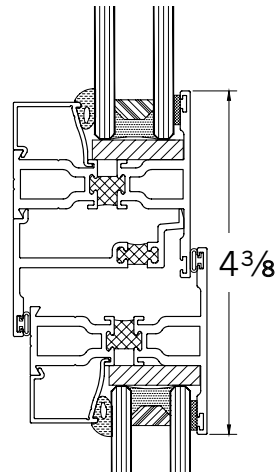


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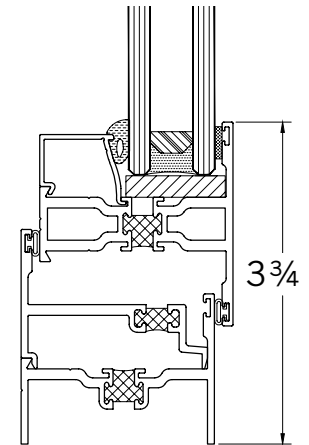
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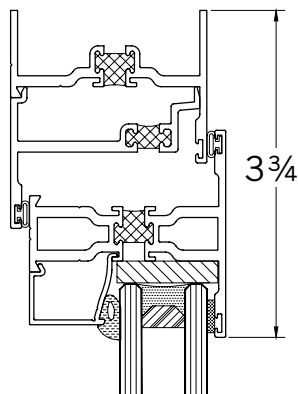
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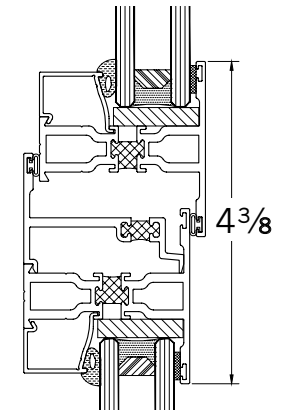
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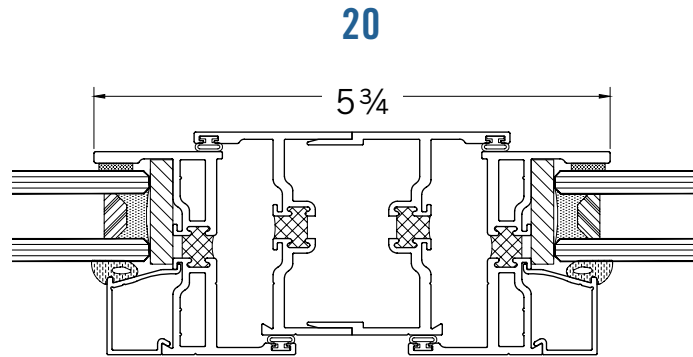
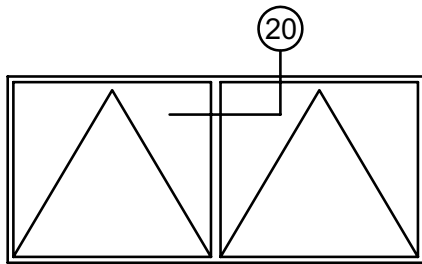


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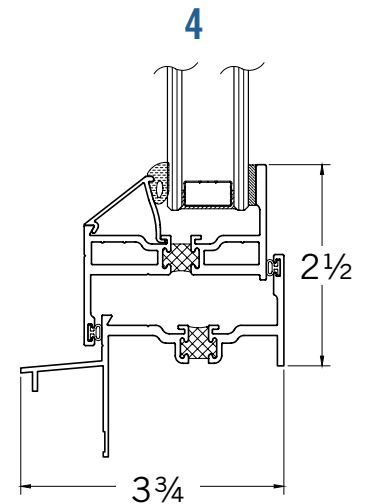
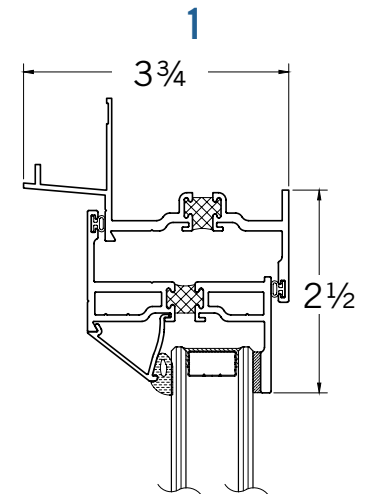
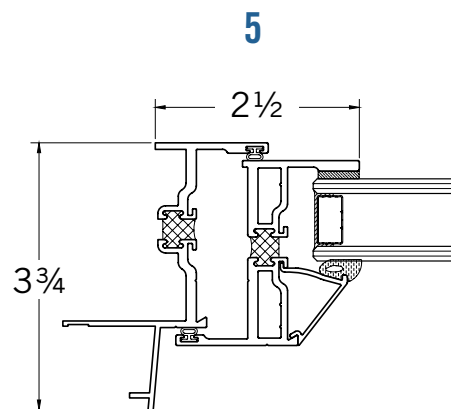
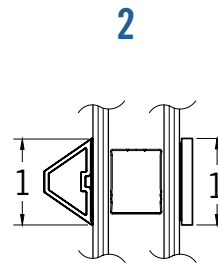
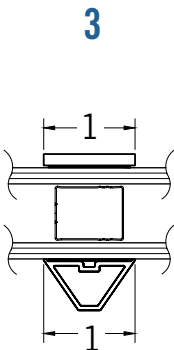
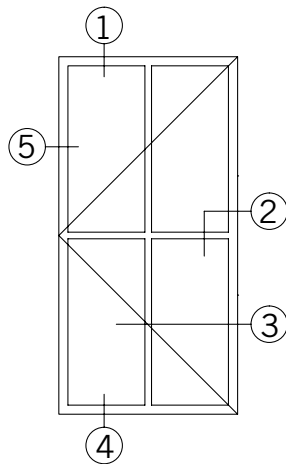


EQUAL LEG AWNING

AWNING / AWNING



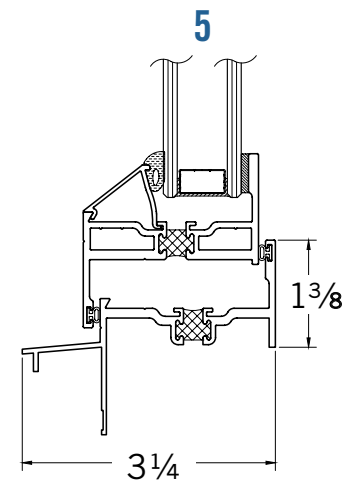
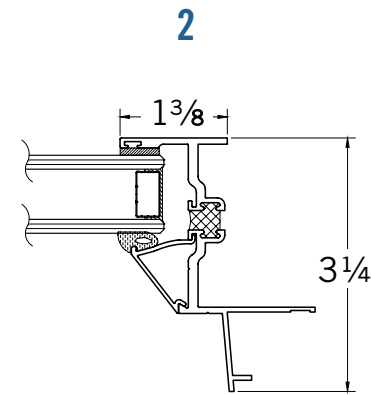
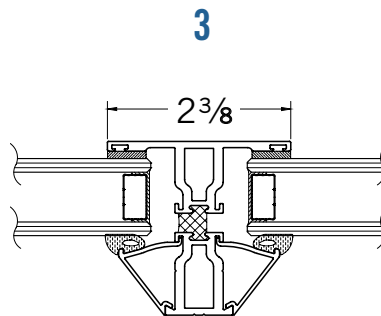
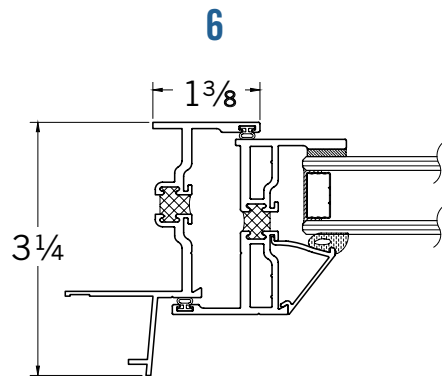
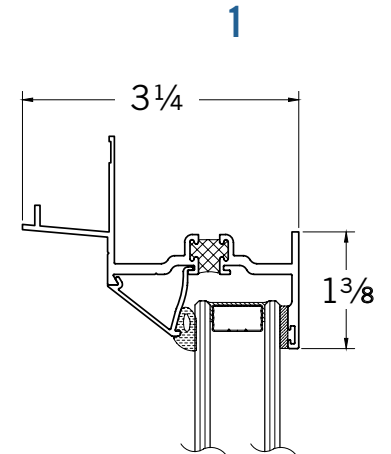
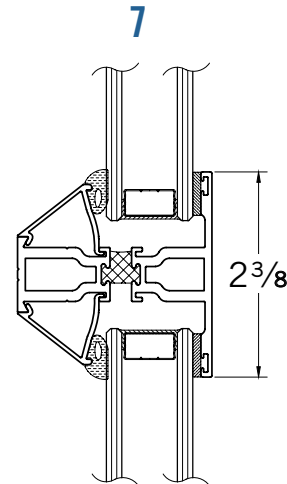
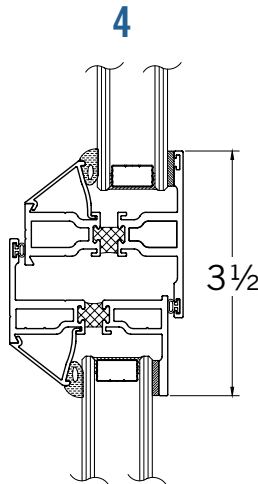
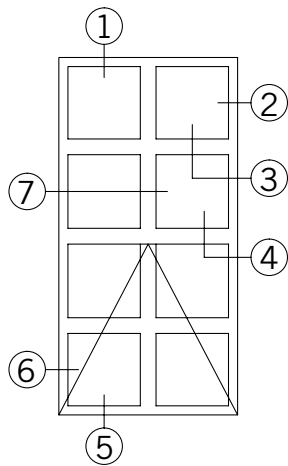
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NAIL ON

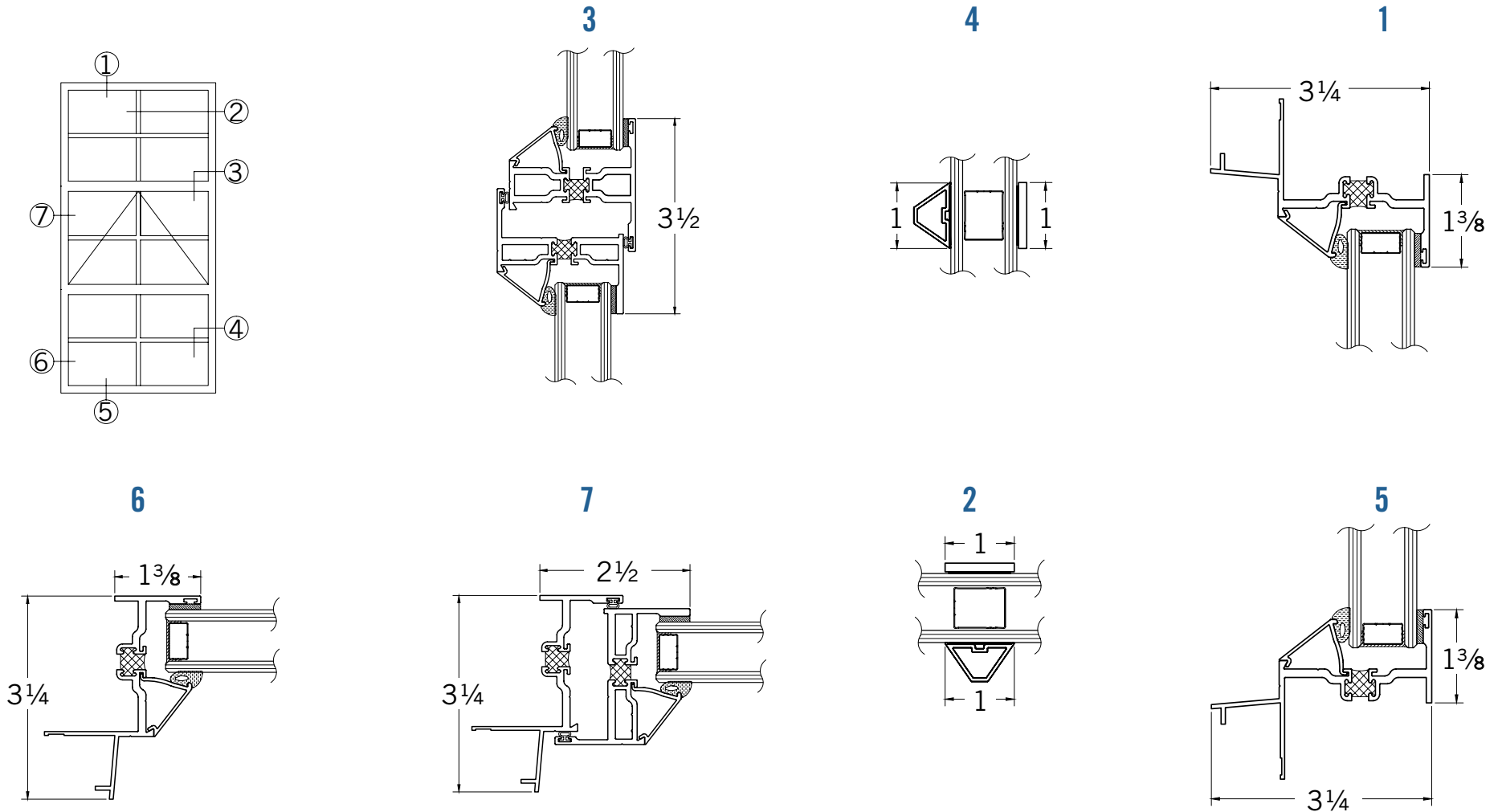
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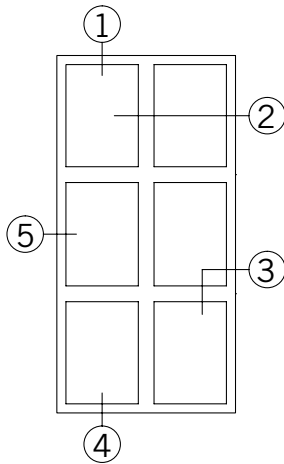
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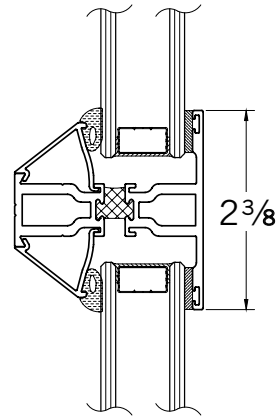
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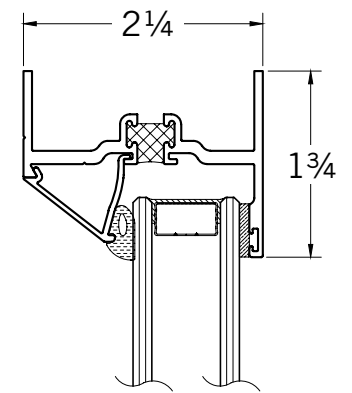
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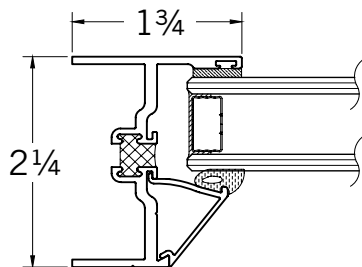
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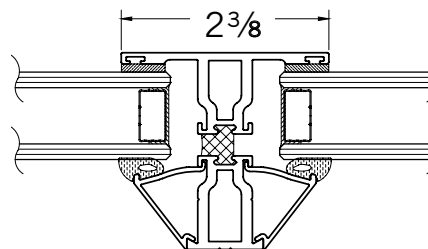
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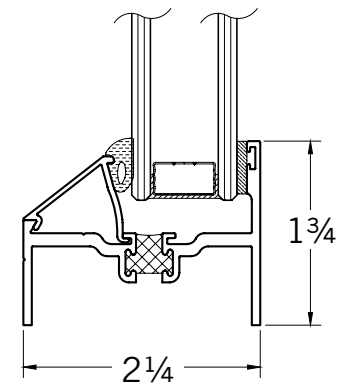
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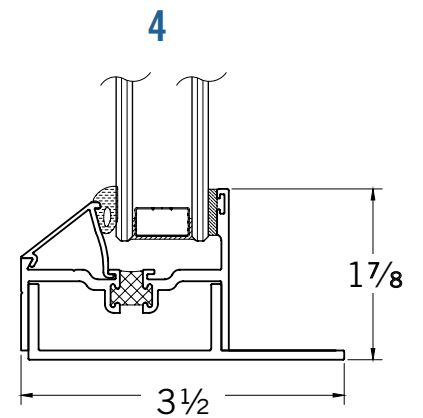
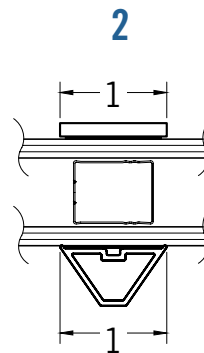
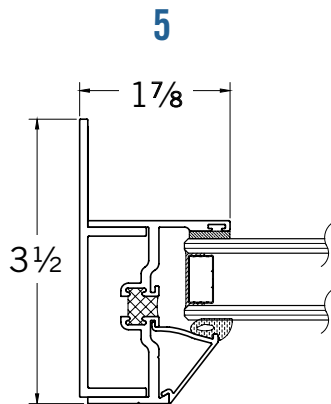
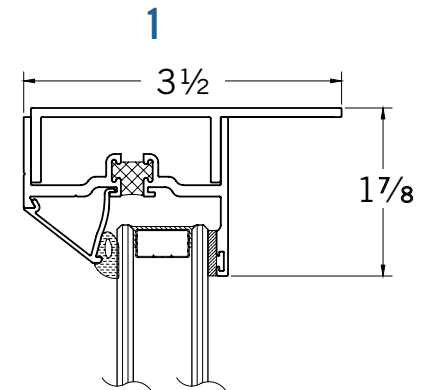
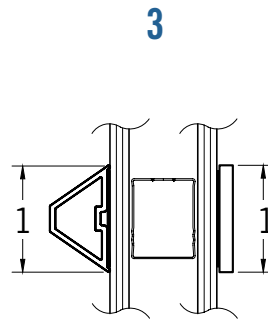
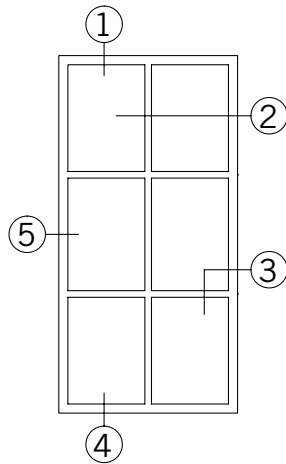
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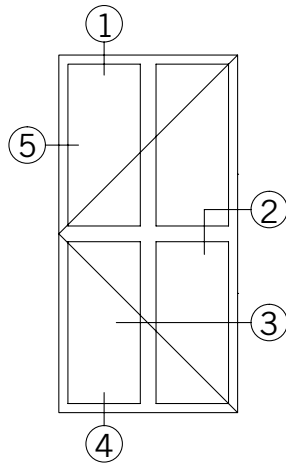
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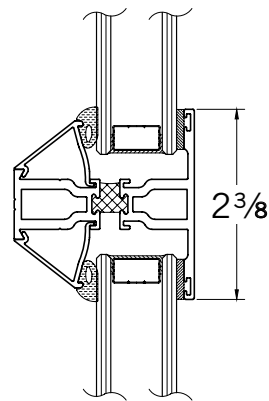
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CASEMENT

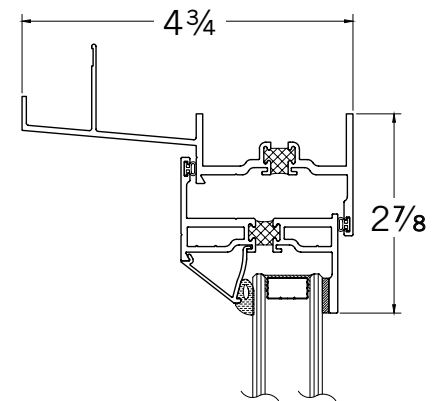
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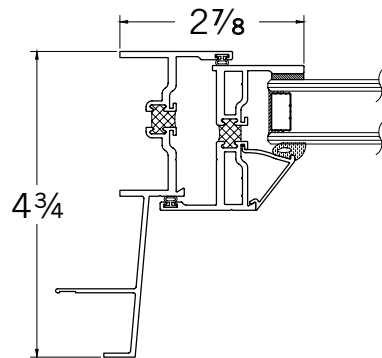
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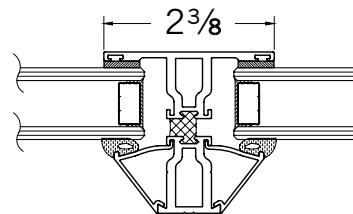
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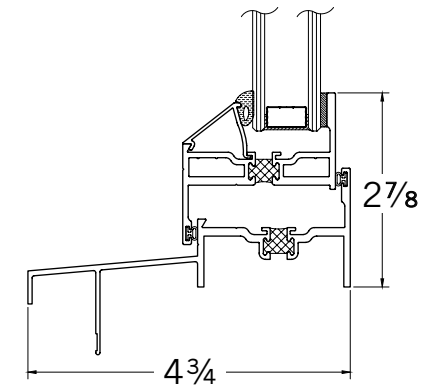
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3



4





TEST REPORT

Report No.: C9428.01-301-44

Rendered to:

ALL WEATHER ARCHITECTURAL ALUMINUM
Vacaville, California

SERIES/MODEL: 5000 Series

PRODUCT TYPE: Thermally Broken Aluminum Fixed Window

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

AAMA/WDMA/CSA 101/LS.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

Title	Summary of Results
Primary Product Designator, AAMA/WDMA/CSA 101/LS.2/A440-08	Class C - PG60: Size Tested 1502 x 1502 (59 x 59) - Type FW
Primary Product Designator, AAMA/WDMA/CSA 101/LS.2/A440-05	FW - C60 1502 x 1502 (59 x 59)
Design Pressure	±2880 Pa (±60.15 psf)
Air Infiltration	0.0 L/s/m ² 0.00 cfm/ft ²
Water Penetration Resistance Test Pressure	440 Pa (9.19 psf)

Test Completion Date: 06/17/2013

Reference must be made to Report No. C9428.01-301-44 dated 01/20/14 for complete test specimen description and detailed test results.



Test Report No.: C9428.01-301-44
Report Date: 01/20/14
Record Retention End Date: 06/17/17
Page 1 of 6

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

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
559-233-8705

3.0 Project Summary:

3.1 Series/Model: 5000 Series

3.2 Product Type: Thermally Broken Aluminum Fixed Window

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for an AAMA/WDMA/CSA 101/LS.2/A440-08 rating of **Class C - PG60: Size Tested 1502 x 1502 (59 x 59) - Type FW**, and an AAMA/WDMA/CSA 101/LS.2/A440-05 rating of **FW - C60 1502 x 1502 (59 x 59)**.

3.4 Test Date: 06/17/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until June 17, 2017.

3.6 Test Location: Architectural Testing, Inc. test facility in Fresno, California.

3.7 Test Sample Source: The test specimen was provided by the client.

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:

Name	Company
Seamus Porter	All Weather Architectural Aluminum
David Douglass	Architectural Testing, Inc.

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Test Report No.: C9428.01-301-44
Report Date: 01/20/14
Record Retention End Date: 06/17/17
Page 2 of 6

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/WDMA/CSA 101/1.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 2.26 m ² (24.3 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1502	59-1/8	1502	59-1/8

5.2 Frame Construction:

Frame Member	Material	Description
Head and Sill	Aluminum	Extruded aluminum with poured and debridged thermal break
Jambs	Aluminum	Extruded aluminum with poured and debridged thermal break

Joinery Type		Detail
Frame corners	Mitered	Corners were welded and sealed with seam sealer.

5.3 Panel Construction: No panel was utilized.

5.4 Weatherstripping: No weatherstripping was utilized.

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Test Report No.: C9428.01-301-44
Report Date: 01/20/14
Record Retention End Date: 06/17/17
Page 3 of 6

5.0 Test Specimen Description: (Continued)

5.5 Glazing: No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen can be made.

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Aluminum	3/16" clear annealed	3/16" clear annealed	Glazing was direct set to the frame from the exterior onto double-sided foam tape, sealed at the corners with silicone, and secured with a snap-fit glazing bead. Each glazing bead utilized a rubber gasket against the glass.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Fixed lite	1	1433 x 1433	56-7/16 x 56-7/16	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep Notch	11/16" x 1/8"	2	Sill at fixed lite, 7/8" from each corner.

5.7 Hardware: No hardware was utilized

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

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Test Report No.: C9428.01-301-44
 Report Date: 01/20/14
 Record Retention End Date: 06/17/17
 Page 4 of 6

6.0 Installation:

The specimen was installed into a Douglas fir test buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone.

Location	Anchor Description	Anchor Location
Nail fin	1/4" x 2" Phillips flat head screw	1-1/2" from each corner and spaced 12" - 13" on center.

7.0 Test Results: The temperature during testing was 21°C (69°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.0 L/s/m ² (0.00 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	2
Uniform Load Deflection, per ASTM E 330	N/A	N/A	2
Uniform Load Structural, per ASTM E 330	N/A	N/A	2
Forced Entry Resistance, per ASTM F 588, Type D, Grade 40 and per CAWM-301, Type V	Pass	No entry	

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Test Report No.: C9428.01-301-44
 Report Date: 01/20/14
 Record Retention End Date: 06/17/17
 Page 5 of 6

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 440 Pa (9.19 psf)	Pass	No leakage	3
Uniform Load Deflection, per ASTM E 330 <u>Lock-to-Lock Mullion</u> -2880 Pa (-60.15 psf) +2880 Pa (+60.15 psf)	0.1 mm (0.01") 0.3 mm (0.01")	1.9 mm (0.07") 1.9 mm (0.07")	4, 5, 6
Uniform Load Structural, per ASTM E 330 <u>Lock-to-Lock Mullion</u> -4320 Pa (-90.23 psf) +4320 Pa (+90.23 psf)	0.1 mm (0.01") 0.0 mm (0.00")	1.0 mm (0.04") 1.0 mm (0.04")	5, 6

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: Without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: The deflections reported are given different allowable limits by the stated specifications. The allowable limits reported are the more restrictive. The deflection data in this report may also be used for special code compliance or information purposes.

Note 5: Loads were held for 10 seconds.

Note 6: 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.

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Test Report No.: C9428.01-301-44
Report Date: 01/20/14
Record Retention End Date: 06/17/17
Page 6 of 6

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.



Digitally Signed by: David Douglass
David Douglass
Project Manager



Digitally Signed by: Leaton Kirk
Leaton Kirk
Director - Regional Operations

DD:ms

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Drawings (4)

This report produced from controlled document template ATI 00430, issued 01/31/12.

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TEST REPORT

Report No.: C9427.01-301-44

Rendered to:

ALL WEATHER ARCHITECTURAL ALUMINUM
Vacaville, California

SERIES/MODEL: 5000 Series

PRODUCT TYPE: Thermally Broken Aluminum
Combination Fixed & Casement Window OO/XO/OO

SPECIFICATIONS: AAMA/WDMA/CSA 101/LS.2/A440-08, NAFS –
North American Fenestration Standard/Specification for Windows, Doors, and Skylights
AND
AAMA/WDMA/CSA 101/LS.2/A440-05,
Standard/Specification for Windows, Doors, and Unit Skylights

Title	Summary of Results
Primary Product Designator, AAMA/WDMA/CSA 101/LS.2/A440-08	Class LC – PG50: Size Tested 1613 x 3353 (64 x 132) – Type C
Primary Product Designator, AAMA/WDMA/CSA 101/LS.2/A440-05	C – C50 1613 x 3353 (64 x 132)
Design Pressure	±2400 Pa (±50.13 psf)
Air Infiltration	<0.01 L/s/m ² (<0.01 cfm/ft ²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 07/03/2013

Reference must be made to Report No. C9427.01-301-44, dated 01/17/14 for complete test specimen description and detailed test results.



Test Report No.: C9427.01-301-44
Report Date: 01/17/14
Record Retention: 07/26/17
Page 1 of 7

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

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
559-233-8705

3.0 Project Summary:

3.1 Product Type: Thermally Broken Aluminum Combination Fixed & Casement Window OO/XO/OO

3.2 Series/Model: 5000 Series

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for an AAMA/WDMA/CSA 101/LS.2/A440-08 rating of **Class LC – PG50: Size Tested 1613 x 3353 (64 x 132) – Type C**, and an AAMA/WDMA/CSA 101/LS.2/A440-05 rating of **C – C50 1613 x 3353 (64 x 132)**.

3.4 Test Dates: 04/18/2013 – 07/26/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until July 26, 2017.

3.6 Test Location: Architectural Testing, Inc. test facility in Fresno, California.

3.7 Test Sample Source: The test specimen was provided by the client.

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:

Name	Company
Seamus Porter	All Weather Architectural Aluminum
Jay Ratliff	Architectural Testing, Inc.
David Douglass	Architectural Testing, Inc.

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Test Report No.: C9427.01-301-44
 Report Date: 01/17/14
 Record Retention: 07/26/17
 Page 2 of 7

4.0 Test Specifications:

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

AAMA/WDMA/CSA 101/LS.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*.

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 5.41 m ² (58.23 ft.)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1613	63-1/2	3353	132
Active Panel	797	31-3/8	1520	59-13/16

5.2 Frame Construction:

Frame Member	Material	Description
Head, Sill, and Jamb	Aluminum	Extruded aluminum with poured and debridged thermal break.
Mullions	Aluminum	Extruded aluminum with poured and debridged thermal break.

	Joinery Type	Detail
Frame corners	Mitered	Joints were welded and sealed with seam sealer.
Horizontal Mullion joints	Coped	Mullion ends were coped and tabs were staked through slots at each jamb; sealed with seam sealer.
Vertical Mullion Joints	Coped	Vertical mullions were coped and welded to each horizontal mullion, coped and tabs staked through slots at head and sill; sealed with seam sealer.

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Test Report No.: C9427.01-301-44
 Report Date: 01/17/14
 Record Retention: 07/26/17
 Page 3 of 7

5.0 Test Specimen Description: (Continued)

5.3 Panel Construction:

Panel Member	Material	Description
Rails and stiles	Aluminum	Extruded aluminum with poured and debridged thermal break.

	Joinery Type	Detail
Panel corners	Miter	Joined with aluminum corner keys crimped in place; sealed with seam sealer.

5.4 Weatherstripping:

Description	Quantity	Location
Hollow bulb vinyl	1 row	Interior face of panel.
Hollow bulb vinyl	1 row	Frame at casement opening perimeter.

5.5 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	1/8" clear annealed	1/8" clear annealed	Glazing was set from the exterior onto 3/8" wide double-sided foam tape sealed with silicone at each corner; secured using a snap-fit glazing bead with a rubber gasket against the glass.

Lite	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Top & bottom fixed lites	4	741 x 850	29-3/16 x 57-5/8	5/8"
Middle active panel	1	674 x 1400	26-9/16 x 55-1/8	5/8"
Middle fixed	1	741 x 1463	29-3/16 x 57-5/8	5/8"

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Test Report No.: C9427.01-301-44
 Report Date: 01/17/14
 Record Retention: 07/26/17
 Page 5 of 7

6.0 Installation:

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

Location	Anchor Description	Anchor Location
Nail fin	1/4" x 2" Phillips flat head screw	2-1/2" from each corner, spaced 8-1/2" - 13" on center.

7.0 Test Results: The temperature during testing was 18°C (64°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 15 N (3.4 lbf) Maintain motion: 4 N (1.0 lbf) Locks: 40 N (9.0 lbf)	70 N (15.7 lbf) max. 45 N (10.1 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.01 L/s/m ² (<0.01 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	2
Uniform Load Deflection, per ASTM E 330	N/A	N/A	2
Uniform Load Structural, per ASTM E 330	N/A	N/A	2
Forced Entry Resistance, per ASTM F 588, Type B, Grade 10 and per CAWM-301, Type II	Pass	No entry	
Sash Vertical Deflection 270 N (60.7 lbf)	1.0 mm (0.04")	15.9 mm (0.62") max.	
Distributed Load 300 Pa (6.27 psf)	Pass	No damage	

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Test Report No.: C9427.01-301-44
 Report Date: 01/17/14
 Record Retention: 07/26/17
 Page 6 of 7

7.0 Test Results: (Continued)

Optional Performance			
Title of Test	Results	Allowed	Note
Water Penetration, per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	3
Uniform Load Deflection, per ASTM E 330 <u>taken at bottom rail</u> +2520 Pa (+52.63 psf) -2520 Pa (-52.63 psf) <u>taken at horizontal mullion</u> +2520 Pa (+52.63 psf) -2520 Pa (-52.63 psf)	0.3 mm (0.01") 0.3 mm (0.01") 14.6 mm (0.57") 15.2 mm (0.60")	N/A	4, 5, 6
Uniform Load Structural, per ASTM E 330 <u>taken at bottom rail</u> +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf) <u>taken at horizontal mullion</u> +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	0.5 mm (0.02") 0.3 mm (0.01") 2.7 mm (0.11") 2.3 mm (0.09")	2.4 mm (0.09") max. 2.4 mm (0.09") max. 4.7 mm (0.19") max. 4.7 mm (0.19") max.	5, 6

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/LS2/A440 for air leakage resistance.

Note 2: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 3: Without insect screen.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/LS2/A440 for the product designations shown. Deflection data are reported for special code compliance and information only.

Note 5: Loads were held for 10 seconds.

Note 6: 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.

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Test Report No.: C9427.01-301-44
Report Date: 01/17/14
Record Retention: 07/26/17
Page 7 of 7

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For ARCHITECTURAL TESTING, Inc.


Digitally Signed by: David Douglass

David Douglass
Project Manager


Digitally Signed by: Leaton Kirk

Leaton Kirk
Director - Regional Operations

DD: ms

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Drawings (7)

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TEST REPORT

Report No.: C9429.01-301-44

Rendered to:

ALL WEATHER ARCHITECTURAL ALUMINUM
Vacaville, California

SERIES/MODEL: 5000 Series

PRODUCT TYPE: Thermally Broken Aluminum Combination Window
Stacked Outswing Awnings / Fixed / Inswing Hopper

SPECIFICATION: AAMA/WDMA/CSA 101/LS.2/A440-08, NAFS - North American
Fenestration Standard/Specification for Windows, Doors, and Skylights
AND
AAMA/WDMA/CSA 101/LS.2/A440-05, Standard/Specification
for Windows, Doors, and Unit Skylights.

Title	Summary of Results
Primary Product Designator, AAMA/WDMA/CSA 101/LS.2/A440-08	Class C - PG50: Size Tested 1206 x 3257 (48 x 128) - Type AP
Primary Product Designator, AAMA/WDMA/CSA 101/LS.2/A440-05	AP - C50 1206 x 3257 (48 x 128)
Design Pressure	±2400 Pa (±50.13 psf)
Air Infiltration	0.00 L/s/m² (0.00 cfm/ft²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 07/23/2013

Reference must be made to Report No. C9429.01-301-44, dated 01/23/14 for complete test specimen description and detailed test results.



Test Report No.: C9429.01-301-44
Report Date: 01/20/14
Revision 1 Date: 01/23/14
Record Retention End Date: 07/23/17
Page 1 of 7

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

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
559-233-8705

3.0 Project Summary:

3.1 Series/Model: 5000 Series

3.2 Product Type: Thermally Broken Aluminum Combination Window
Stacked Outswing Awnings / Fixed / Inswing Hopper

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for an AAMA/WDMA/CSA 101/LS.2/A440-08 rating of Class C - PG50: Size Tested 1206 x 3257 (48 x 128) - Type C, and an AAMA/WDMA/CSA 101/LS.2/A440-05 rating of C - C50 1206 x 3257 (48 x 128).

3.4 Test Dates: 06/19/2013 - 07/23/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until July 23, 2017.

3.6 Test Location: Architectural Testing, Inc. test facility in Fresno, California.

3.7 Test Sample Source: The test specimen was provided by the client.

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:

Name	Company
Seamus Porter	All Weather Architectural Aluminum
Jay Ratliff	Architectural Testing, Inc.
Jarod Hardman	Architectural Testing, Inc.
Jeff Osugi	Architectural Testing, Inc.
David Douglass	Architectural Testing, Inc.

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Test Report No.: C9429.01-301-44
 Report Date: 01/20/14
 Revision 1 Date: 01/23/14
 Record Retention End Date: 07/23/17
 Page 2 of 7

4.0 Test Specifications:

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

AAMA/WDMA/CSA 101/LS.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*.

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 3.92 m ² (42.2 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1206	47-1/2	3257	128-1/4
Awning Panels (2)	1194	47	807	31-3/4
Hopper Panel (1)	1156	45-1/2	768	30-1/4

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill and jambs	Aluminum	Extruded aluminum with poured and de-bridged thermal break.
Mullions	Aluminum	Extruded aluminum with poured and de-bridged thermal break.
Invert bar	Aluminum	Extruded aluminum with poured and de-bridged thermal break.

Joinery Type		Detail
Frame corners	Mitered	Corners were welded; sealed with seam sealer.
Horizontal Mullion joints	Coped	Mullion ends were coped and staked at tabs through slots in jambs; sealed with seam sealer.
Invert bar	Snap-fit and fastened	Fastened to frame members at perimeter of inswing vent opening using #10 x 1" square-drive self-drilling screws at mid-span and 4-1/2" from each end, pan heads in the horizontal members and flat heads in the jambs; sealed to the frame at the ends with seam sealer; horizontal members held back 7/8" from each corner.

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Test Report No.: C9429.01-301-44
 Report Date: 01/20/14
 Revision 1 Date: 01/23/14
 Record Retention End Date: 07/23/17
 Page 3 of 7

5.0 Test Specimen Description: (Continued)

5.3 Panel Construction:

Panel/Member	Material	Description
Awning/All	Aluminum	Extruded aluminum with poured and de-bridged thermal break.
Hopper/All	Aluminum	Extruded aluminum with poured and de-bridged thermal break.

Joinery Type		Detail
All Panel Corners	Miter	Joined with aluminum corner keys crimped in place; sealed with seam sealer.

5.4 Weatherstripping:

Description	Quantity	Location
Hollow bulb vinyl	1 row	Awning stiles and rails.
Hollow bulb vinyl	1 row	Hopper stiles and rails.
Hollow bulb vinyl	1 row	Frame at all vent opening perimeters.

5.5 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	1/8" clear annealed	1/8" clear annealed	Glazing was set from the exterior onto 3/8" wide double-sided foam tape sealed at the corners with silicone; secured using a snap-fit glazing bead with a rubber gasket against the glass.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Awning	2	1083 x 695	42-5/8 x 27-3/8	9/16"
Fixed	1	1137 x 752	44-3/4 x 29-5/8	9/16"
Hopper	1	1036 x 648	40-13/16 x 25-1/2	5/8"

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Test Report No.: C9429.01-301-44
Report Date: 01/20/14
Revision 1 Date: 01/23/14
Record Retention End Date: 07/23/17
Page 4 of 7

5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep Notch	5/8" x 1/8"	2	Horizontal mullion exterior glazing track leg at fixed lite, 7/8" from each end.
Weep Notch	5/8" x 1/8"	6	Exterior glazing track leg all bottom rails, 7/8" from each end.
Weep slot	5/8" x 1/8"	4	Horizontal mullion exterior leg at bottom of each awning vent, 7/8" from each end.
Weatherstripping gap	1" Gap	2	Awning bottom rails, 1" from each end.
Weatherstripping gap	1/4" Gap	2	Awning stiles, 1" from top end.

5.7 Hardware:

Description	Quantity	Location
Locking handle assembly	4	14-1/2" from each end of awning bottom rails each attached with four #10-24 x 5/8" Phillips flat head screws.
Strike plate	4	Interior face of horizontal lock mullions, each attached with two #10-24 x 5/8" Phillips flat head screws.
Locking handle assembly	2	13-1/4" from each end of hopper top rail each attached with four #10-24 x 5/8" Phillips flat head screws.
Keeper	2	Inner face of horizontal lock mullion, each attached with two #10-24 x 5/16" Phillips flat head screws.

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

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Test Report No.: C9429.01-301-44
Report Date: 01/20/14
Revision 1 Date: 01/23/14
Record Retention End Date: 07/23/17
Page 5 of 7

6.0 Installation:

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

Location	Anchor Description	Anchor Location
Nail fin	1/4" x 2" Phillips flat head screw	2-1/2" from each corner, spaced 9" - 16" on center.

7.0 Test Results: The temperature during testing was 21°C (69°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force , per ASTM E 2068 Awning	Initiate motion: 95 N (21.3 lbf) Maintain motion: 76 N (17.0 lbf) Locks: 17 N (3.8 lbf)	N/A 135 N (30.3 lbf) max. 100 N (22.5 lbf) max.	
Operating Force , per ASTM E 2068 Hopper	Initiate motion: 36 N (8.0 lbf) Maintain motion: 76 N (17.0 lbf) Locks: 12 N (2.8 lbf)	N/A 135 N (30.3 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage , Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.00 L/s/m ² (0.00 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration , per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	2

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Test Report No.: C9429.01-301-44
 Report Date: 01/20/14
 Revision 1 Date: 01/23/14
 Record Retention End Date: 07/23/17
 Page 6 of 7

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Uniform Load Deflection, per ASTM E 330			
<u>Awning lock rail</u>			
+2520 Pa (+52.63 psf)	1.6 mm (0.07")	6.8 mm (0.27") max.	
-2520 Pa (-52.63 psf)	1.7 mm (0.08")	6.8 mm (0.27") max.	
<u>Awning lock horizontal mullion</u>			
+2520 Pa (+52.63 psf)	2.3 mm (0.13")	6.6 mm (0.26") max.	
-2520 Pa (-52.63 psf)	3.4 mm (0.18")	6.6 mm (0.26") max.	
<u>Hopper lock horizontal mullion</u>			
+2520 Pa (+52.63 psf)	2.4 mm (0.08")	6.6 mm (0.26") max.	
-2520 Pa (-52.63 psf)	2.1 mm (0.11")	6.6 mm (0.26") max.	
<u>Hopper hinge rail</u>			
+2520 Pa (+52.63 psf)	1.2 mm (0.04")	6.8 mm (0.27") max.	
-2520 Pa (-52.63 psf)	1.0 mm (0.04")	6.8 mm (0.27") max.	3, 4, 5
Uniform Load Structural, per ASTM E 330			
<u>Awning lock rail</u>			
+3600 Pa (+75.19 psf)	0.2 mm (0.01")	3.6 mm (0.14") max.	
-3600 Pa (-75.19 psf)	0.0 mm (0.00")	3.6 mm (0.14") max.	
<u>Awning lock horizontal mullion</u>			
+3600 Pa (+75.19 psf)	0.2 mm (0.01")	3.5 mm (0.14") max.	
-3600 Pa (-75.19 psf)	0.0 mm (0.00")	3.5 mm (0.14") max.	
<u>Hopper lock horizontal mullion</u>			
+3600 Pa (+75.19 psf)	0.0 mm (0.00")	3.5 mm (0.14") max.	
-3600 Pa (-75.19 psf)	0.0 mm (0.00")	3.5 mm (0.14") max.	
<u>Hopper hinge rail</u>			
+3600 Pa (+75.19 psf)	0.0 mm (0.00")	3.6 mm (0.14") max.	
-3600 Pa (-75.19 psf)	0.0 mm (0.00")	3.6 mm (0.14") max.	4, 5
Forced Entry Resistance, per ASTM F 588, Type B, Grade 10 and per CAWM-301, Type II			
Awning	Pass		
Hopper	Pass	No entry	
Awning, Hopper, Projected Hardware Load Test			
Awning, 140 N (31.5 lbf)	5.3 mm (0.21")	33.4 mm (1.31") max.	
Hopper, 140 N (31.5 lbf)	2.3 mm (0.09")	29.4 mm (1.16") max.	

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Test Report No.: C9429.01-301-44
 Report Date: 01/20/14
 Revision 1 Date: 01/23/14
 Record Retention End Date: 07/23/17
 Page 7 of 7

7.0 Test Results: (Continued)

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/LS2/A440 for air leakage resistance.

Note 2: Without insect screen.

Note 3: The deflections are not limited for the product designation shown according to AAMA/WDMA/CSA 101/LS2/A440-05. The deflection limits reported are applicable to the product designation shown per AAMA/WDMA/CSA 101/LS2/A440-08.

Note 4: Loads were held for 10 seconds.

Note 5: 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.

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.

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For ARCHITECTURAL TESTING, Inc.


 Digitally Signed by: David Douglass
 David Douglass
 Project Manager

DD: rns

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

Appendix-A: Alteration Addendum (1)

Appendix-B: Drawings (7)

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TEST REPORT

Report No.: C9426.01-301-44

Rendered to:
ALL WEATHER ARCHITECTURAL ALUMINUM
Vacaville, California

PRODUCT TYPE: Thermally Broken Aluminum Combination
Double Fixed Over Double Awning Window

SERIES/MODEL: 5000 Series

SPECIFICATION: AAMA/WDMA/CSA 101/1.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*
AND
AAMA/WDMA/CSA 101/1.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*.

Title	Summary of Results
Primary Product Designators, AAMA/WDMA/CSA 101/1.S.2/A440-08	Class C – PG35: Size Tested 2426 x 1625 (96 x 64) – Type AP AND Class LC – PG50: Size Tested 2426 x 1625 (96 x 64) – Type AP
Primary Product Designator, AAMA/WDMA/CSA 101/1.S.2/A440-05	AP – C50 2426 x 1625 (96 x 64)
Air Infiltration	0.04 L/s/m ² (0.01 cfm/ft ²)
Water Leakage Test Pressure	360 Pa (7.52 psf)
Design Pressure	±2400 Pa (±50.13 psf)

Test Completion Date: 06/21/2013

Reference must be made to Report No. C9426.01-301-44, dated 01/17/14 for complete test specimen description and detailed test results.



Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 1 of 9

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

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
559-233-8705

3.0 Project Summary:

3.1 Product Type: Combination Double Fixed Over Double Awning Window

3.2 Series/Model: 5000 Series

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for multiple ratings.

For AAMA/WDMA/CSA 101/1.S.2/A440-08:

Class C – PG35: Size Tested 2426 x 1625 (96 x 64) – Type AP

Class LC – PG50: Size Tested 2426 x 1625 (96 x 64) – Type AP

For AAMA/WDMA/CSA 101/1.S.2/A440-05:

AP – C50 2426 x 1625 (96 x 64)

3.4 Test Dates: 06/18/2013 – 06/21/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until June 21, 2017.

3.6 Test Location: Architectural Testing, Inc. test facility in Fresno, California.

3.7 Test Sample Source: The test specimen was provided by the client.

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:

Name	Company
Seamus Porter	All Weather Architectural Aluminum
Jeff Osugi	Architectural Testing, Inc.
Jarod Hardman	Architectural Testing, Inc.
David Douglass	Architectural Testing, Inc.

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Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 2 of 9

4.0 Test Specifications:

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

AAMA/WDMA/CSA 101/LS.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 3.94 m ² (42.4 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	2426	95-1/2	1625	64
Awning Panels (2)	1188	46-3/4	803	31-5/8

5.2 Frame Construction:

Frame Member	Material	Description
Head and Sill	Aluminum	Extruded aluminum with poured and debridged thermal break.
Jamb	Aluminum	Extruded aluminum with poured and debridged thermal break.
Mullions	Aluminum	Extruded aluminum with poured and debridged thermal break; horizontal mullions integrated fixed lite and active panel; vertical mullion utilized 2-piece construction.

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Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 3 of 9

5.0 Test Specimen Description: (Continued)

5.2 Frame Construction: (Continued)

	Joinery Type	Detail
Frame corners	Mitered	Joints were sealed with seam sealer and joined with welds exterior of the thermal break.
Vertical mullion halves	Slip-fit	Slip-fit vertical mullion halves were fastened together with #8 square drive flat head screws cut flush with the opposite exposed surface at 1-3/4" long, and spaced 4" to 8" from each end and each mullion joint.
Horizontal mullions	Coped	Mullion ends were coped and tabs were staked through slots at each jamb and welded through slots at each vertical mullion; sealed with seam sealer.
Vertical mullion	Coped	Mullion ends were coped and tabs were staked through slots at the head and sill; sealed with seam sealer.

5.3 Panel Construction:

Panel/Member	Material	Description
Rails and stiles	Aluminum	Extruded aluminum with poured and debridged thermal break

	Joinery Type	Detail
All Panel Corners	Miter	Joined with aluminum corner keys crimped in place; sealed with seam sealer.

5.4 Weatherstripping:

Description	Quantity	Location
Hollow bulb vinyl	1 row	Interior face of panel.
Hollow bulb vinyl	1 row	Exterior face of frame and mullions.

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Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 4 of 9

5.0 Test Specimen Description: (Continued)

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

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Aluminum	1/8" clear annealed	1/8" clear annealed	Glazing was set from the exterior onto 3/8" wide double-sided foam tape sealed at the corners with silicone; secured using a snap-fit glazing bead with a rubber gasket against the glass.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Active panels	2	1075 x 690	42-5/16 x 27-3/16	5/8"
Fixed lites	2	1135 x 747	44-11/16 x 29-7/16	5/8"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep notch	11/16" x 1/8"	4	Exterior glazing track of horizontal mullion at fixed lites, 1" from each corner.
Weep notch	5/8" x 1/8"	4	Exterior glazing track leg of bottom rails, 1-3/8" from each corner.
Weep notch	5/8" x 1/8"	4	Exterior sill leg, 3/4" from each jamb and each vertical mullion.
Weep notch	7/16" x 1/8"	1	Exterior sill leg, midspan at the vertical mullion.

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Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 5 of 9

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Locking handle assembly	4	Each jamb and vertical mullion, spaced 4" from the sill, each secured with two 10-24 x 5/16" Phillips pan head screws.
Roto-operator assembly	2	Midspan of each panel; sealed and attached to sill using four 10-24 x 5/8" Phillips flat head screws; and attached to bottom rails with four #10 x 7/16" square-drive pan head self-drilling screws.
Multi arm hinge assembly	4	Attached using five #10 x 7/16" square-drive pan head self-drilling screws on each stile and four #10 x 5/8" square-drive pan head self-drilling screws on each vertical mullion and jamb.

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

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

Location	Anchor Description	Anchor Location
Nail fin	1/4" x 2" Phillips flat head screw	2-1/4" from each corner and spaced 11" - 16" on center.

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Test Report No.: C9426.01-301-44
 Report Date: 01/17/14
 Record Retention End Date: 06/21/17
 Page 6 of 9

7.0 Test Results: The temperature during testing was 19°C (66°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 9 N (2.0 lbf) Maintain motion: 21 N (4.7 lbf) Locks: 31 N (7.0 lbf)	70 N (15.7 lbf) max. 45 N (10.1 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.18 L/s/m ² (0.04 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	2
Uniform Load Deflection, per ASTM E 330	N/A	N/A	2
Uniform Load Structural, per ASTM E 330	N/A	N/A	2
Forced Entry Resistance, per ASTM F 588, Type B, Grade 10 and per CAWM-301, Type II	Pass	No entry	
Awning, Hopper, Projected Hardware Load Test 140 N (31.5 lbf)	0.5 mm (0.02")	36.5 mm (1.44") max.	

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Test Report No.: C9426.01-301-44
 Report Date: 01/17/14
 Record Retention End Date: 06/21/17
 Page 7 of 9

7.0 Test Results: (Continued)

Optional Performance			
Title of Test	Results	Allowed	Note
Water Penetration, per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	3
Uniform Load Deflection, per ASTM E 330 <u>Bottom rail</u> +1680 Pa (+35.09 psf) -1680 Pa (-35.09 psf) <u>Vertical mullion</u> +1680 Pa (+35.09 psf) -1680 Pa (-35.09 psf)	1.2 mm (0.05") 4.4 mm (0.18") 7.7 mm (0.30") 7.2 mm (0.28")	6.8 mm (0.27") 6.8 mm (0.27") 9.1 mm (0.36") 9.1 mm (0.36")	4, 5, 6
Uniform Load Structural, per ASTM E 330 <u>Bottom Rail</u> +2520 Pa (+52.63 psf) -2520 Pa (-52.63 psf) <u>Vertical mullion</u> +2520 Pa (+52.63 psf) -2520 Pa (-52.63 psf)	0.0 mm (0.00") 0.2 mm (0.01") 0.3 mm (0.01") 0.0 mm (0.00")	3.6 mm (0.14") max 3.6 mm (0.14") max 4.8 mm (0.19") max 4.8 mm (0.19") max	4, 5

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Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 8 of 9

7.0 Test Results: (Continued)

Optional Performance (Continued)			
Title of Test	Results	Allowed	Note
Uniform Load Deflection, per ASTM E 330			
Bottom Rail			
+2520 Pa (+52.63 psf)	1.2 mm (0.04")		
-2520 Pa (-52.63 psf)	1.2 mm (0.04")		
Vertical mullion			
+2520 Pa (+52.63 psf)	11.6 mm (0.45")		
-2520 Pa (-52.63 psf)	11.0 mm (0.43")	N/A	4, 5, 6
Uniform Load Structural, per ASTM E 330			
Bottom Rail			
+3600 Pa (+75.19 psf)	0.1 mm (0.01")	3.6 mm (0.14") max	
-3600 Pa (-75.19 psf)	0.1 mm (0.01")	3.6 mm (0.14") max	
Vertical mullion			
+3600 Pa (+75.19 psf)	0.5 mm (0.02")	4.8 mm (0.19") max	
-3600 Pa (-75.19 psf)	0.5 mm (0.02")	4.8 mm (0.19") max	4, 5, 7

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/LS2/A440 for air leakage resistance.

Note 2: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 3: Without insect screen.

Note 4: Loads were held for 10 seconds.

Note 5: 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.

Note 6: The deflections reported are not limited by AAMA/WDMA/CSA 101/LS2/A440 for this product designation. This deflection data is reported for special code compliance and information only.

Note 7: When different allowable limits are specified for multiple product designations or specifications, the limits reported are the more restrictive.

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Test Report No.: C9426.01-301-44
Report Date: 01/17/14
Record Retention End Date: 06/21/17
Page 9 of 9

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For ARCHITECTURAL TESTING, Inc.


Digitally Signed by: David Douglass
David Douglass
Project Manager


Digitally Signed by: Leaton Kirk
Leaton Kirk
Director - Regional Operations

DD: ms

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Drawings (8)

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TEST REPORT

Report No.: C9424.01-301-44

Rendered to:

ALL WEATHER ARCHITECTURAL ALUMINUM
Vacaville, California

SERIES/MODEL: 5000 Series

PRODUCT TYPE: Thermally Broken Aluminum X0XX Casement Combination Window

SPECIFICATION: AAMA/WDMA/CSA 101/1.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*
AND
AAMA/WDMA/CSA 101/1.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

Title	Summary of Results
Primary Product Designator, AAMA/WDMA/CSA 101/1.S.2/A440-08	Class C - PG50: Size Tested 3251 x 1510 (128 x 60) - Type C
Primary Product Designator, AAMA/WDMA/CSA 101/1.S.2/A440-05	C - C50 3251 x 1510 (128 x 60)
Design Pressure	±2400 Pa (±50.13 psf)
Air Infiltration	<0.1 L/s/m ² (<0.01 cfm/ft ²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 06/21/2013

Reference must be made to Report No. C9424.01-301-44 dated 01/21/14 for complete test specimen description and detailed test results.



Test Report No.: C9424.01-301-44
Report Date: 01/21/14
Record Retention End Date: 06/21/17
Page 1 of 7

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

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
559-233-8705

3.0 Project Summary:

3.1 Series/Model: 5000 Series

3.2 Product Type: Thermally Broken Aluminum
X0XX Casement Combination Window

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for an AAMA/WDMA/CSA 101/1.S.2/A440-08 rating of **Class C - PG50: Size Tested 3251 x 1510 (128 x 60) - Type C**, and an AAMA/WDMA/CSA 101/1.S.2/A440-05 rating of **C - C50 3251 x 1510 (128 x 60)**.

3.4 Test Dates: 06/17/2013 - 06/21/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until June 21, 2017.

3.6 Test Location: Architectural Testing, Inc. test facility in Fresno, California.

3.7 Test Sample Source: The test specimen was provided by the client.

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:

Name	Company
Seamus Porter	All Weather Architectural Aluminum
Jay Ratliff	Architectural Testing, Inc.
Jeff Osugi	Architectural Testing, Inc.
David Douglass	Architectural Testing, Inc.

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Test Report No.: C9424.01-301-44
Report Date: 01/21/14
Record Retention End Date: 06/21/17
Page 3 of 7

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
Hollow bulb vinyl	1 row	Active panel stiles and rails.
Hollow bulb vinyl	1 row	Frame at panel opening perimeter.

5.5 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	1/8" clear annealed	1/8" clear annealed	Glazing was set from the exterior onto 3/8" wide double-sided foam tape sealed at the corners with silicone; secured using a snap-fit glazing bead with a rubber gasket against the glass.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Panels	3	695 x 1386	27-3/8 x 54-9/16	5/8"
Fixed	1	752 x 1441	29-5/8 x 56-3/4	5/8"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep Notch	7/16" x 1/8"	2	Sill exterior leg at fixed lite, 7/8" from each corner.
Weep Notch	7/16" x 1/8"	6	Sill exterior leg at vent openings, 7/8" from each corner.
Weep Notch	7/16" x 1/8"	6	Bottom rail exterior glazing track leg, 7/8" from each corner.
Weatherstripping	1" Gap	6	Bottom rail, 1" from each corner.
Weatherstripping	1/4" Gap	6	Stiles, 1" from each top corner.

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Test Report No.: C9424.01-301-44
Report Date: 01/21/14
Record Retention End Date: 06/21/17
Page 4 of 7

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Locking handle assembly	6	14" from each end of lock stiles; each attached with two #10-24 x 5/8" Phillips flat head screws.
Strike plate	6	Opposite locks; each attached to vertical lock mullion with two #10-24 x 5/16" Phillips flat head screws.
Multi-arm hinge assembly	6	Attached using five #10 x 7/16" square-drive self-drilling pan head screws in the top and bottom rails, and four #10 x 5/8" square-drive self-drilling pan head screws in the frame.

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

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

Location	Anchor Description	Anchor Location
Nail fin	1/4" x 2" Phillips flat head screw	1-1/2" from each corner and spaced 8-1/2" - 13" on center.

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Test Report No.: C9424.01-301-44
 Report Date: 01/21/14
 Record Retention End Date: 06/21/17
 Page 5 of 7

7.0 Test Results: The temperature during testing was 21°C (69°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068			
<u>Initiate motion</u>	85 N (19.0 lbf)	Report Only	
<u>Maintain motion</u>	46 N (10.3 lbf)	100 N (22.5 lbf) max.	
<u>Locks</u>	20 N (4.5 lbf)	100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m² (<0.01 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	3
Forced Entry Resistance, per ASTM F 588, Type B, Grade 10 and per CAWM-301, Type II	Pass	No entry	
Sash Vertical Deflection Test 270 N (60.7 lbf)	<0.1 mm (<0.01")	16.1 mm (0.64") max.	
Distributed Load Test 300 psf (6.27 psf)	No damage	No damage	
Optional Performance			
Water Penetration, per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330			
<u>Hinge Style</u>			
-2520 Pa (-52.63 psf)	2.9 mm (0.12")	8.6 mm (0.34")	
+2520 Pa (+52.63 psf)	1.1 mm (0.05")	8.6 mm (0.34")	
<u>Lock-to-Fixed Mullion</u>			
-2520 Pa (-52.63 psf)	7.4 mm (0.29")	8.4 mm (0.33")	
+2520 Pa (+52.63 psf)	5.0 mm (0.20")	8.4 mm (0.33")	
<u>Fixed-to-Hinge Mullion</u>			
-2520 Pa (-52.63 psf)	5.1 mm (0.20")	8.4 mm (0.33")	
+2520 Pa (+52.63 psf)	5.0 mm (0.20")	8.4 mm (0.33")	
<u>Lock-to-Lock Mullion</u>			
-2520 Pa (-52.63 psf)	7.4 mm (0.29")	8.4 mm (0.33")	
+2520 Pa (+52.63 psf)	3.9 mm (0.16")	8.4 mm (0.33")	4, 5, 6

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Test Report No.: C9424.01-301-44
 Report Date: 01/21/14
 Record Retention End Date: 06/21/17
 Page 6 of 7

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance (Continued)			
Uniform Load Structural, per ASTM E 330			
<u>Hinge Style</u>			
-3600 Pa (-75.19 psf)	0.1 mm (0.01")	4.5 mm (0.18")	
+3600 Pa (+75.19 psf)	0.0 mm (0.00")	4.5 mm (0.18")	
<u>Lock-to-Fixed Mullion</u>			
-3600 Pa (-75.19 psf)	0.0 mm (0.00")	4.4 mm (0.17")	
+3600 Pa (+75.19 psf)	0.3 mm (0.01")	4.4 mm (0.17")	
<u>Fixed-to-Hinge Mullion</u>			
-3600 Pa (-75.19 psf)	0.3 mm (0.01")	4.4 mm (0.17")	
+3600 Pa (+75.19 psf)	0.0 mm (0.00")	4.4 mm (0.17")	
<u>Lock-to-Lock Mullion</u>			
-3600 Pa (-75.19 psf)	0.6 mm (0.03")	4.4 mm (0.17")	
+3600 Pa (+75.19 psf)	0.0 mm (0.00")	4.4 mm (0.17")	5, 6

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/LS2/A440 for air leakage resistance.

Note 2: Without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: The allowable limits reported are the more restrictive according to either AAMA/WDMA/CSA 101/LS2/A440-05 or AAMA/WDMA/CSA 101/LS2/A440-08, for the respective product designations given. The data reported may also be used for special code compliance and informational purposes.

Note 5: Loads were held for 10 seconds.

Note 6: 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.

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Test Report No.: C9424.01-301-44
Report Date: 01/21/14
Record Retention End Date: 06/21/17
Page 7 of 7

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For ARCHITECTURAL TESTING, Inc.



Digitally Signed by: David Douglass
David Douglass
Project Manager



Digitally Signed by: Leaton Kirk
Leaton Kirk
Director - Regional Operations

DD: ms

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Drawings (7)

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