Intertek | Architectural Testing

TEST REPORT

Report No.: G8626.01-525-44

Rendered to:

CT International Aluminum Corp
Elmhurst, New York

PRODUCT TYPE: Casement Window
SERIES/MODEL: 2500

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	CW-PG95-C
Design Pressure	±4548.62 Pa (±95.00 psf)
Air Infiltration	0.25 L/s/m² (0.05 cfm/ft²)
Water Penetration Resistance Test Pressure	575 Pa (12.00 psf)

Test Completion Date: 04/03/2017

Reference must be made to Report No. G8626.01-525-44, dated 04/17/17 for complete test specimen description and detailed test results.

1.0 Report Issued To: CT International Aluminum Corp
5235 74th Street
Elmhurst, New York 11373

2.0 Test Laboratory: Architectural Testing, Inc.
145 Sherwood Avenue
Farmingdale, New York 11735
631-815-1900

3.0 Project Summary:

3.1 Product Type: Casement Window

3.2 Series/Model: 2500

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 **CW-PG95-C (24" x 61")** rating.

3.4 Test Dates: 03/03/2017 - 04/03/2017

3.5 Test Record Retention End Date: All test records for this report will be retained until April 03, 2021.

3.6 Test Location: Intertek-ATI test facility in Farmingdale, NY. Calibration of test equipment was performed by Architectural Testing in accordance with AAMA 205-14 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories".

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(s) reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix D. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
Craig Ginsberg	Architectural Testing, Inc.

4.0 Test Specification(s):

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

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 1.0 m^2 (10.7 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	610	24	1550	61
Sash	552	21.75	1467	57.75

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Head, jamb and sill	Aluminum	Extrusion with pour in thermal break

	Joinery Type	**Detail**
All corners	Miter	Two corner keys per corner crimped and epoxied

5.3 Sash Construction:

Sash Member	**Material**	**Description**
Rails/stiles	Aluminum	Extrustion with pour in thermal break

	Joinery Type	**Detail**
All corners	Miter	Two corner keys per corner crimped and epoxied

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
Rubber bulb	4 rows	Window frame
Rubber bulb	4 rows	Vent frame
Hinges draft plug	2 pieces	Hinges
Rubber bulb for internal glazing gasket	4 rows	Glazing beads

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 box tube accommodating a 194mm air space	Annealed 3.2mm (1/8") pane	Annealed 3.2mm (1/8") pane	Interior glaze with butyl tape on the exterior leg and a rubber bulb gasket on the interior glazing bead side.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Vent	1	435 x 1349	17-1/8 x 53-1/8	12.7mm (0.5")

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weeps	¼" circular hole	4	Top of sill with two located in the inner track and two located in the outer track
Weeps	½" wide notches	4	On top of sill connecting inner and outer track to outer most place
Weeps	½" x ¼" weep slot	2	Under sill in caulk joint centered at 6.5" from either side of unit
Sash weeps	¼" holes	2	Bottom face of bottom sash rail centered at 4-3/8" from either end of sash

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Crank handle with arm	1	Sill 3.5" from center of handle set to right side of unit when viewed from the interior
Hinges	2	4" from top and bottom of sash
Latches	2	15.5" from top and bottom of unit

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 3/8" shim space. The exterior perimeter of the window was sealed with duct sealant. Unit is installed with a double blind stop to all sides except for the sill.

7.0 Test Results: The temperature during testing was 21.7°C (71°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 17.8 N (4 lbf) Maintain motion: 4.4 N (1 lbf) Latches: 13.3 N (3 lbf)	Report Only 45 N (10 lbf) max. Report Only	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.25 L/s/m² (0.05 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
Air Leakage, Exfiltration per ASTM E 283 at 300 Pa (6.27 psf)	0.45 L/s/m² (0.09 cfm/ft²)	Optional.	1
Water Penetration, per ASTM E 547 and ASTM E 331 at 575 Pa (12.00 psf)	Pass	No leakage	2
Water Penetration, per ASTM E 547 and ASTM E 331 at 575 Pa (12.00 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at locking stile +4550 Pa (+95.00 psf) -4550 Pa (-95.00 psf)	 0.25 mm (0.01") -0.25 mm (-0.01")	 No breakage No breakage	
Uniform Load Structural, per ASTM E 330 taken at locking stile +6823 Pa (+142.50 psf) -6823 Pa (-142.50 psf)	 0.25 mm (0.01") -0.51 mm (-0.02")	 0.3% of L=0.09" 0.3% of L=0.09"	
Forced Entry Resistance, per ASTM F 588 Grade: 10	Pass	No entry	

7.0 Test Results: (Continued)

Sash Vertical Deflection 270 N (60 lbf)	0.01"	2% of sash width=0.44"	
Distributed Load 55 lbf	Pass	No damage	

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

Note 2: Without insect screen.

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.

Craig Ginsberg M.M.E
Laboratory Manager

Frank Pennisi
Director of Fenestration

CG:jlc/fp

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Alteration Addendum (1)
- Appendix-B: Location of Air Seal (1)
- Appendix-C: Photographs (1)
- Appendix-D: Drawings (1)

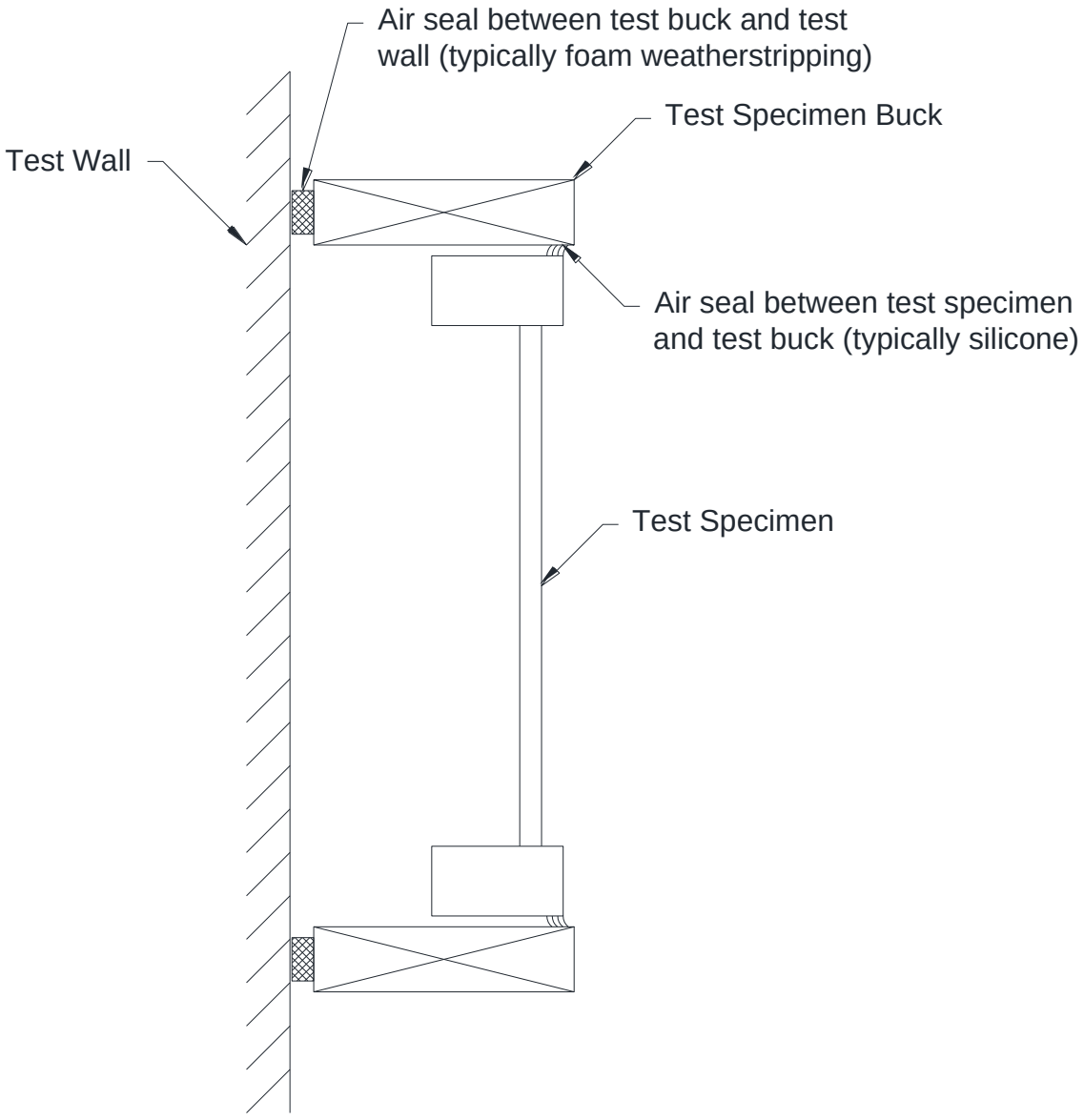
Appendix A

Alteration Addendum

***Note**: No alterations were required.*

Appendix B

Location of Air Seal: The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



Appendix C
Photographs

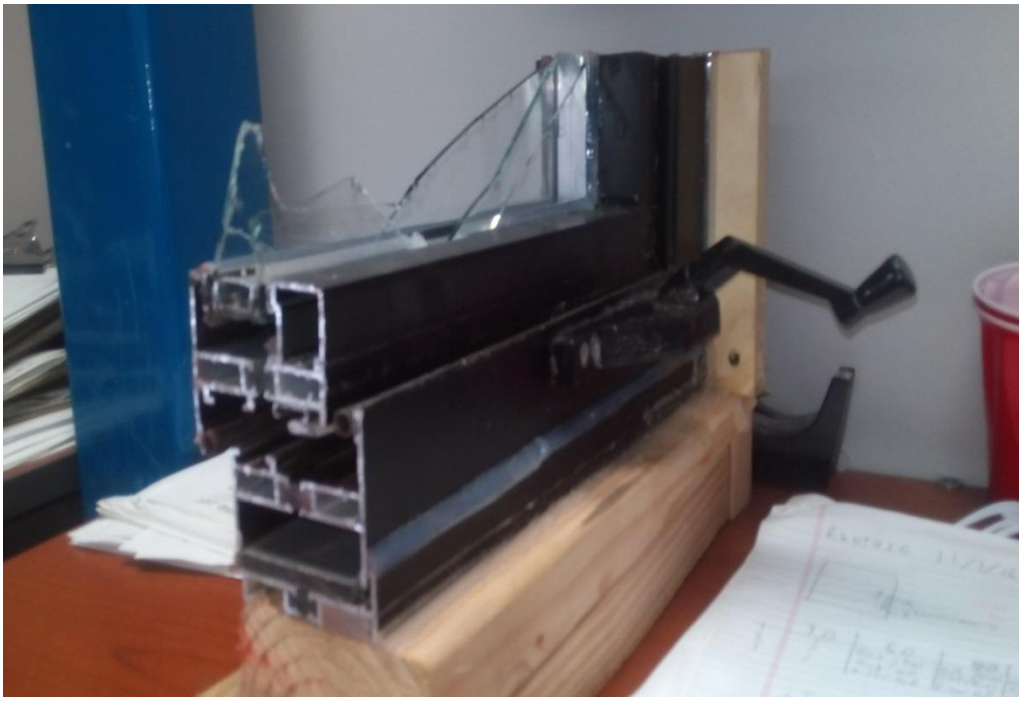


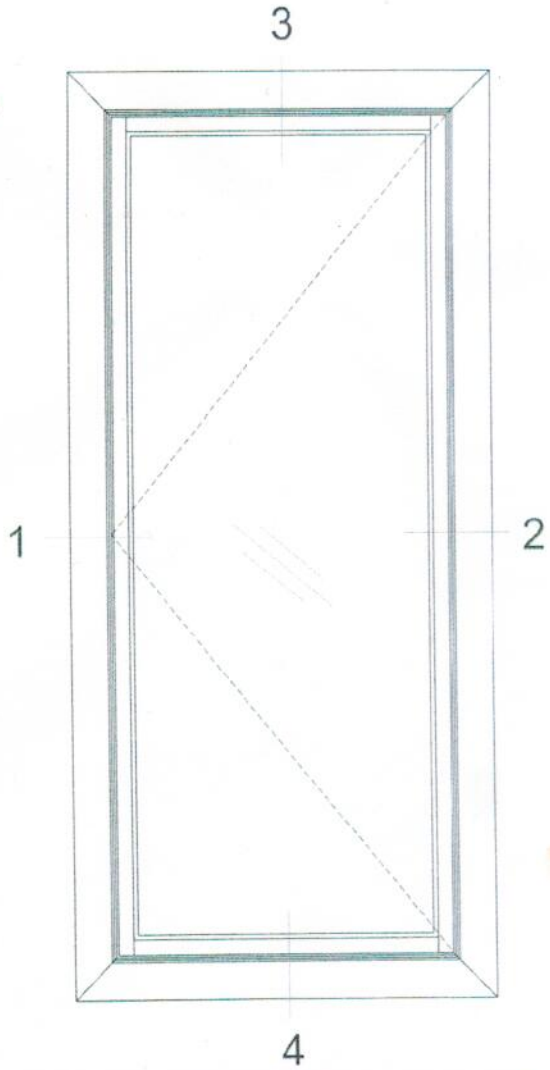
Photo No. 1
Specimen Sample

Appendix D

Drawings

MT GROUP
TEST SPECIMEN COMPLIES
WITH THESE DETAILS
ANY DEVIATION IS NOTED
REPORT NO. G8626.01-525-44
TEST DATE: 11/2/16

2500 CASEMENT OUT-SWING WINDOW BILL OF MATERIALS				
ITEM #	DESCRIPTION	Q'ty	PART #	DWG #
1	WINDOW FRAME	4	2501	1,2,3,&4
2	MOULDING	4	2024	1,2,3,&4
3	SASH	4	2502R	1,2,3,&4



Swing Out Casement