



**AAMA/WDMA/CSA 101/LS.2/A440-05
TEST REPORT**

Rendered to:

ALUMIL US

**SERIES/MODEL: M300 Falcon
PRODUCT TYPE: Aluminum Horizontal Sliding Window (XO)**

Title	Summary of Results
Primary Product Designator	HS-C30 1956 x 2518 (77 x 99)
Design Pressure	1440 Pa (30.09 psf)
Operating Force (in motion)	27 N (6 lbf)
Air Infiltration	0.61 L/s/m ² (0.12 cfm/ft ²)
Water Penetration Resistance Test Pressure	220 Pa (4.60 psf)
Uniform Load Structural Test Pressure	±2160 Pa (±45.14 psf)
Forced Entry Resistance	Grade 10

Test Completion Date: 11/30/07

Reference must be made to Report No. 76238.03-109-18, dated 01/29/08 for complete test specimen description and data.

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AAMA/WDMA/CSA 101/I.S.2/A440-05 TEST REPORT

Rendered to:

ALUMIL US
19-41 46th Street
Astoria, New York 11105

Report No.: 76238.03-109-18
Test Dates: 11/29/07
Through: 11/30/07
Report Date: 01/29/08
Expiration Date: 11/30/11

Project Summary: Architectural Testing, Inc. was contracted by Alumil US to perform testing on a Series/Model M300 Falcon, aluminum horizontal sliding window (XO) window. The sample tested successfully met the performance requirements for an HS-C30 1956 x 2518 (77 x 99) rating. Test specimen description and results are reported herein. The sample was provided by the client.

Test Specification: The test specimen was evaluated in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*.

Test Specimen Description:

Series/Model: M300 Falcon

Product Type: Aluminum Horizontal Sliding Window (XO)

Overall Size: 1956 mm (77") wide by 2518 mm (99-1/8") high

Panel Size: 1257 mm (49-1/2") wide by 1911 mm (75-1/4") high

Fixed Day Light Opening Size: 1035 mm (40-3/4") wide by 1689 mm (66-1/2") high

Overall Area: 5.0 m² (53.2 ft²)

Test Specimen Description: (Continued)

Finish: All aluminum was painted.

Frame Construction: The frame was constructed of thermally improved, strutted, extruded aluminum members with mitered, sealed, keyed and staked corners. The corners were secured with an aluminum key and sealed with silicone. The operable panel track utilized a nylon stop 2" from the jamb. The nylon stop was secured to the sill with a #10 x 2-1/2" long screw through the top of the stop into the still and a 1/4" thick 1-1/2" long rod through the sill. The head utilized a 0.04" thick roll-formed aluminum rain guard. The rain guard was secured to the head with #6 x 3/4" long screws spaced 8" on center through the guard into the head.

Panel Construction: The panel was constructed of thermally improved, strutted, extruded aluminum members with mitered, sealed, keyed and staked corners. The corners were sealed with silicone and staked with injection molded nylon corners and aluminum corner keys. The fixed meeting stile utilized an extruded aluminum tension mounted cap and a mechanically fastened nylon injection molded interlock. The interlock was secured to the fixed meeting stile with #6 x 3/4" long screws spaced 8" on center through the stile into the interlock. All panels were set onto 7/8" high by 1-5/8" wide 0.08" thick extruded aluminum blocks. The fixed panel was secured to the jamb with two #8 x 3-1/2" long screws through the jamb into the panel.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.270" backed by 0.210" high polypile	2 Rows	Fixed and interior meeting stiles
0.270" backed by 0.210" high polypile	1 Row	Head and sill
0.270" backed by 1/4" high hollow rubber bulb with fin	2 Rows	Fixed and operable panel, top and bottom rails and jamb stiles
1-1/4" by 1-3/4" by 0.210" high polypile dust plug	1	Bottom of operable panel beneath meeting stile

Glazing Details: The unit was glazed with a 1" thick insulating glass comprised of two sheets of 1/4" thick clear annealed glass and a roll-formed aluminum spacer system. The glass was set from the exterior against a 1/8" backed by 1/2" high triple fin rubber gasket and was secured with an extruded aluminum snap-in glazing bead with a 1/8" backed by 1" wide rubber fin against the glass.

Test Specimen Description: (Continued)

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1-3/8" wide by 1/4" high weepslot with cover	3	8" from each end and midspan of sill face draining interior hollow
1-1/8" wide by 1/4" high weepslot	3	8" from each end of sill and midspan draining sill track

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Half turn handle operator	1	36" from bottom rail of lock stile
Die cast lock with adjacent keeper	2	16" from head and sill on lock jamb of operable panel
Roller assembly	2	2" from ends of bottom rail of operable panel
Nylon strap	1	2" from end of sill

Reinforcement: No reinforcement was utilized.

Installation: The unit was installed into a Spruce-Pine-Fir wood buck. The unit was secured with #10 x 2" long pan head screws, located 8" from corners and midspan through all frame members into the buck. The exterior perimeter was sealed with silicone.

Test Results: The temperature during testing was 17°C (62°F). The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.1	Operating Force per ASTM E 2068		
	Initiate motion	27 N (6 lbf)	Report Only
	Maintain motion	27 N (6 lbf)	115 N (25 lbf)
	Locks	9 N (2 lab)	100 N (22.5 lbf)

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.2.1	Air Leakage Resistance per ASTM E 283 75 Pa (1.6 psf)	0.61 L/s/m ² (0.12 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.

Note #1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-05 for air leakage resistance.

5.3.3.2	Water Penetration Resistance per ASTM E 547 220 Pa (4.60 psf)	No leakage	No leakage
5.3.4.2	Uniform Load Deflection per ASTM E 330 (Deflections were taken on the meeting stile) (Loads were held for 52 seconds) 1440 Pa (30.09 psf) (positive) 1440 Pa (30.09 psf) (negative)	3.1 mm (0.12") 4.3 mm (0.17")	See Note #2 See Note #2

Note #2: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-05 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

5.3.4.3	Uniform Load Structural per ASTM E 330 (Permanent sets were taken on the meeting stile) (Loads were held for 10 seconds) 2160 Pa (45.14 psf) (positive) 2160 Pa (45.14 psf) (negative)	<0.25 mm (<0.01") 0.25 mm (0.01")	5.8 mm (0.23") max. 5.8 mm (0.23") max.
5.3.5	Forced Entry Resistance per ASTM F 588		
	Type: A	Grade: 10	
	Disassembly Test	No entry	No entry
	Test A1 through A7	No entry	No entry
	Sash/Panel Manipulation Test	No entry	No entry
	Lock Hardware Manipulation Test	No entry	No entry

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.6.3	Deglazing Test In operating direction - 320 N (70 lbf)		
	Lock stile	5.3 mm (0.21")	11.4 mm (0.45")
	Meeting stile	5.3 mm (0.21")	11.4 mm (0.45")
	In remaining direction - 230 N (50 lbf)		
	Top rail	4.1 mm (0.16")	11.4 mm (0.45")
	Bottom rail	3.8 mm (0.15")	11.4 mm (0.45")

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.

Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein.

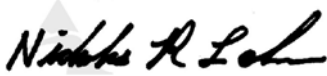
List of Official Observers:

<u>Name</u>	<u>Company</u>
George Donios	Alumil US
Michael D. Stremmel, P.E.	Architectural Testing, Inc.
Nicholas R. Loughran	Architectural Testing, Inc.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen can be made. 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 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: Nicholas R. Loughran

Nicholas R. Loughran
Technician



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Michael D. Stremmel, P.E.
Senior Project Engineer

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