Architectural Testing

ANSI/AAMA/NWWDA 101/I.S.2-97
TEST REPORT

Rendered to:

CMI ARCHITECTURAL PRODUCTS, INC.

SERIES/MODEL: 278-SSG Awning Window
PRODUCT TYPE: Structurally Glazed Vent

Title	Summary of Results
Rating	AP-C70 60 x 34
Air Infiltration	0.06 cfm/ft^2
Water Resistance Test Pressure	10.5 psf
Uniform Load Deflection Test Pressure	±70.0 psf
Uniform Load Structural Test Pressure	±105.0 psf
Forced Entry Resistance	Grade 40

Reference should be made to ATI Report No. 62662.02-201-44 for complete test specimen description and data.

849 Western Avenue North
St. Paul, MN 55117
phone: 651-636-3835
fax: 651-636-3843
www.archtest.com

Architectural Testing

ANSI/AAMA/NWWDA 101/I.S.2-97 TEST REPORT

Rendered to:

CMI ARCHITECTURAL PRODUCTS, INC.
2800 Freeway Boulevard
Minneapolis, Minnesota 55430

Report No.:	62662.02-201-44
Test Date:	02/02/06
Report Date:	03/19/07
Expiration Date:	02/02/10

Project Summary: Architectural Testing, Inc. (ATI) was contracted by CMI Architectural Products, Inc to perform testing on a Series 278-SSG Awning, Structurally Glazed Awning window. The sample tested successfully met the performance requirements for an AP-C70 60 x 34 rating. Test specimen description and results are reported herein.

Test Specification: The test specimen was evaluated in accordance with ANSI/AAMA/NWWDA 101/I.S.2-97, *Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.*

Test Specimen Description:

Series/Model: 278-SSG Awning

Product Type: Structurally Glazed Awning

Overall Size: 5' 0" wide by 2' 8" high

Sash Size: 4' 11-5-9/16" wide by 2' 7-9/16" high

Overall Area: 13.4 ft^2

Finish: All aluminum was anodized.

849 Western Avenue North
St. Paul, MN 55117
phone: 651-636-3835
fax: 651-636-3843
www.archtest.com

Test Specimen Description: (Continued)

Glazing Details: The unit was glazed with 1" insulated glass comprised of two 1/4" tempered sheets separated by a stainless steel spacer. The glass was set from the exterior against a structural glazing tape and sealed on the interior and exterior with structural adhesive.

Weatherstripping:

Description	Quantity	Location
1/4" EPDM blade seal	1 Row	Sash perimeter
3/16" hollow poly-vinyl bulb	2 Rows	Sash perimeter

Frame Construction: The frame was comprised of extruded aluminum that was miter-cut, secured with a staked corner key and sealed with silicone.

Sash Construction: The sash was comprised of extruded aluminum that was miter-cut, secured with a staked corner key and sealed with silicone.

Hardware:

Description	Quantity	Location
Stainless steel snubber	1	Midspan of frame head
Four-bar hinges	2	Jambs
Lock handles	2	Sill, 16" from each jamb

Installation: The frame was installed within an aluminum clad wood test buck. The 0.125" extruded aluminum cladding was secured to the buck with #8 by 1" screws spaced 2" from each corner and 18" on center on the head and sill and 2" and midspan on the jambs. The aluminum cladding was sealed to the buck with silicone.

The window frame was installed within the test buck with #8 by 2" screws spaced 3" from each end and 13" on center on the head and sill, and 3" and 11" on center on the jambs.

Test Results:

The results are tabulated as follows:

Paragraph	Title of Test - Test Method	Results	Allowed
2.1.2	Air Infiltration per ASTM E 283		
	1.57 psf (25 mph)	0.06 cfm/ft^2	0.30 cfm/ft^2 max.
	6.24 psf (50 mph)	0.12 cfm/ft^2	--

Note #1: The tested specimen meets (or exceeds) the performance levels specified in ANSI/AAMA/NWWDA 101/I.S.2-97 for air infiltration.

2.1.3	Water Resistance per ASTM E 547 and E 331	See Note #2
2.1.4.1	Uniform Load Deflection per ASTM E 330	See Note #2
2.1.4.2	Uniform Load Structural per ASTM E 330	See Note #2

Note #2: The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance".

2.1.8	Forced Entry Resistance per ASTM F 588		
	Type: B	Grade: 40	
	Lock Manipulation Test	No entry	No entry
	Tests B1 through B3	No entry	No entry
	Lock Manipulation Test	No entry	No entry
2.2.4.5.2	Sash Torsion Test @30 lbf	0.19"	1.84"

Optional Performance

4.3	Water Resistance per ASTM E 547 and E 331		
	10.5 psf	No leakage	No leakage

Test Results: (Continued)

Paragraph	Title of Test - Test Method	Results	Allowed
	Optional Performance: (Continued)		
4.4.1	Uniform Load Deflection per ASTM E 330 (Deflections reported were taken on the sash stile) (Loads were held for 60 seconds)		
	70.0 psf (positive)	0.02"	See Note #2
	70.0 psf (negative)	0.01"	See Note #2

Note #2: The Uniform Load Deflection test is not a requirement of ANSI/AAMA/NWWDA 101/I.S.2-97 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

4.4.2	Uniform Load Structural per ASTM E 330 (Permanent sets reported were taken on the sash stile) (Loads were held for 10 seconds)		
	105.0 psf (positive)	0.02"	0.12" max.
	105.0 psf (negative)	0.01"	0.12" max.

Detailed drawings, representative samples of the test specimen, and a copy of this report will be retained by ATI for a period of four years from the original test date. The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above referenced specification. This report does not constitute certification of this product, which may only be granted by the certification program administrator. This report may not be reproduced, except in full, without the approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC:

Digitally Signed by: Eric Schoenthaler

Eric J. Schoenthaler
Project Manager

Digitally Signed by: Daniel A. Johnson

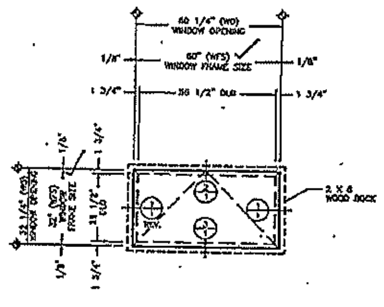
Daniel A. Johnson
Director of Regional Operations

EJS:mb

Attachments (pages):
Appendix-A: Drawing (1)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	03/19/07	N/A	Original report issue



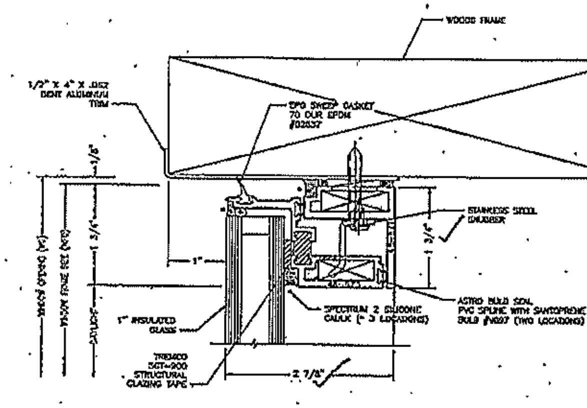
TEST UNIT ELEVATION
SCALE: 1/2"=1'-0"

WINDOW HARDWARE SCHEDULE

276-SSG AWNING WINDOW SUPPLIED BY AND FABRICATED BY CMI

2 EA. AND 3016SS12 4-BAR HINGE ASSEMBLIES
2 EA. TRUTH 2839 ANGLE BASE CAM HANDLES
1 EA. S.S. SASH SNUBBER

GLASS
1" INSULATED GLASS UNIT
1/4" CLEAR, TEMPERED PLATE
1/2" ATMOSPHERIC AIR SPACE
1/4" CLEAR, TEMPERED PLATE
SILICONE PERIMETER SEAL
GLASS SIZE: 56 13/16" x 30 13/16"



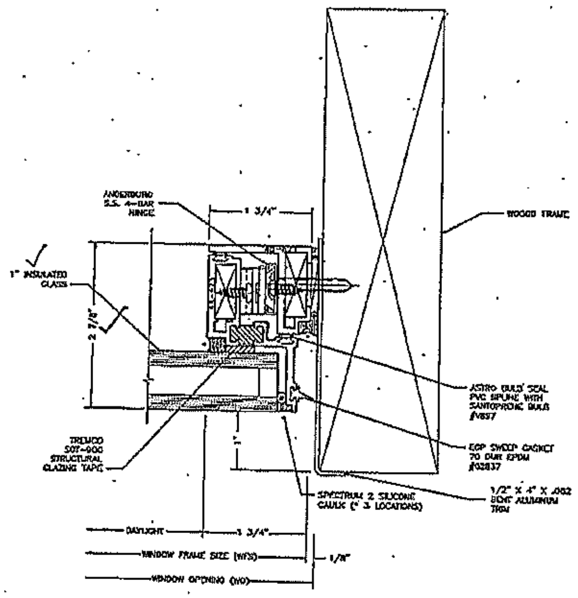
2 HEAD
SCALE: (1=1)

Architectural Testing

Test sample complies with these details. Deviations are noted.

Report# 62662

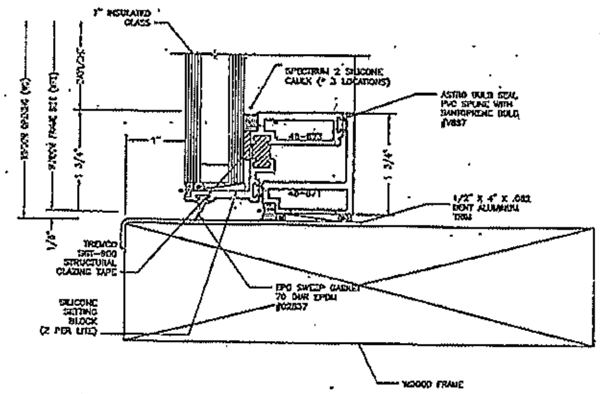
Date 2-2-06 Tech [illegible]



1 JAMB
SCALE: (1=1)

TEST FORMAT

1. ALL TESTING SHALL BE IN ACCORDANCE WITH AAMA 101-88 HEAVY COMMERCIAL WINDOW TESTING.
2. TESTING SHALL BE GRADUATED TO DETERMINE THE MAXIMUM PERFORMANCE CAPACITY AND RATING OF THE WINDOW BEGINNING WITH HC-60.
3. AIR INFILTRATION SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM E283.
4. WATER PENETRATION SHALL BE CONDUCTED IN ACCORDANCE WITH E331.
5. STRUCTURAL PERFORMANCE SHALL BE TESTED IN ACCORDANCE WITH 330.
6. TESTING SHALL ALSO INCLUDE TORSION LOAD TEST & VERTICAL DEFLECTION TEST.



3 SILL
SCALE: (1=1)

CMI Architectural

CMI-ARCHITECTURAL PRODUCTS, INC.
606 4TH STREET SE (?)
[illegible]
TELEPHONE [illegible]
FAX [illegible]

THIS DRAWING IS INTENDED FOR THE SOLE USE OF DETAIL... [illegible]

PROJECT: 276SSG-AWNING
PERFORMANCE TEST
ARCHITECT:
GENERAL CONTRACTOR:

REVISIONS		
SYM.	INT'L.	DATE

DATE CHANGE: 6-23-05
DRAWN BY: BCM (?)
PO#:
SCALE: AS NOTED
PROJECT MGR.: GARY GEIGLER (?)
CMI S.O.#:
SHEET: 1