Architectural Testing

PERFORMANCE TEST REPORT

Rendered to:

CMI ARCHITECTURAL PRODUCTS, INC.

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

Title	Summary of Results
Air Infiltration	0.06 cfm/ft^2
Water Resistance Test Pressure	10.50 psf
Uniform Load Deflection Test Pressure	±70.0 psf
Uniform Load Structural Test Pressure	±105.0 psf
Forced Entry Resistance	Grade 10

Reference should be made to ATI Report No. 62662.01-201-44 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

PERFORMANCE TEST REPORT

Rendered to:

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

Report No.:	62662.01-201-44
Test Date:	02/02/06
Report Date:	03/15/07
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. Test specimen description and results are reported herein.

Test Method(s): The test specimen was evaluated in accordance with the following:

ASTM E 283-99, *Test Method for Determining Rate of Airflow Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen*

ASTM E 330-97e1, *Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference*

ASTM E 331-00, *Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference*

ASTM E 547-00, *Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Difference*

ASTM F 588-97, *Test Methods for Resistance of Window Assemblies to Forced Entry Excluding Gazing*

Test Specimen Description:

Series/Model: 278-SSG Awning

Product Type: Structurally Glazed Awning

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

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Test Specimen Description: (Continued)

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.

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:

Test Method	Title of Test	Results
ASTM E 283	Air Infiltration	
	1.57 psf (25 mph)	0.06 cfm/ft^2
	6.24 psf (50 mph)	0.12 cfm/ft^2
ASTM E 547 and 331	Water Resistance	
	10.50 psf	No leakage
ASTM E 330	Uniform Load Deflection	
	(Deflections reported were taken on the sash stile)	
	(Loads were held for 60 seconds)	
	70.0 psf (positive)	0.02"
	70.0 psf (negative)	0.01"
ASTM E 330	Uniform Load Structural	
	(Permanent sets reported were taken on the sash stile)	
	(Loads were held for 10 seconds)	
	105.0 psf (positive)	0.02"
	105.0 psf (negative)	0.01"
ASTM F 588	Forced Entry Resistance	
	Type: B Grade: 10	
	Lock Manipulation Test	No entry
	Tests B1 through B3	No entry
	Lock Manipulation Test	No entry

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. This report is the exclusive property of the client so named herein and is applicable to the sample tested. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory. This report may not be reproduced, except in full, without 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

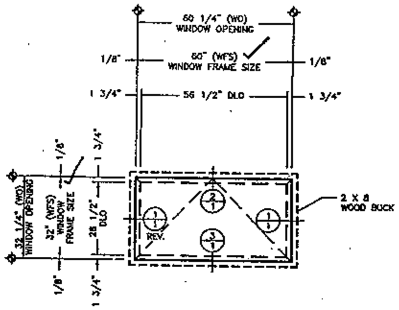
EJS:mb
Attachment(s):
Appendix A: Drawings (1)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	03/15/07	N/A	Original report issue.

Appendix A

Drawings



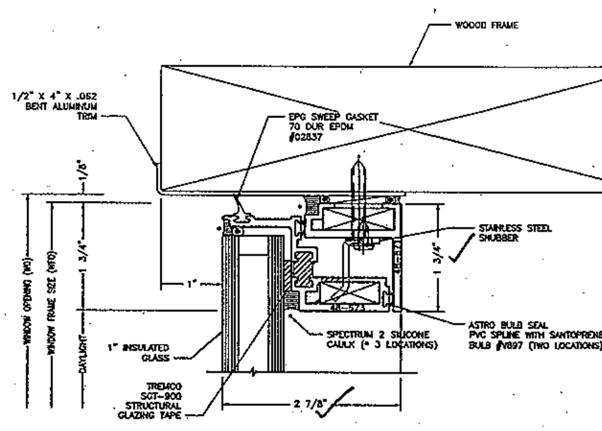
TEST UNIT ELEVATION 1" GLAZING
SCALE 1/2"=1'-0"

WINDOW HARDWARE SCHEDULE

278-SSG AWNING WINDOW SUPPLIED BY AND FABRICATED BY CMI

2 EA. AND 3015S12 4-BAR HINGE ASSEMBLIES
2 EA. TRUTH 2539 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: 58 15/16" x 30 15/16"


WOOD FRAME
1/2" X 4" X .062
BENT ALUMINUM
TRIM
EPG SWEEP GASKET
70 DUR EPDM
#02837
STAINLESS STEEL
SNUBBER
1 3/4"
1"
1/8"
1" INSULATED
GLASS
SPECTRUM 2 SILICONE
CAULK (* 3 LOCATIONS)
ASTRO BULB SEAL
PVC SPLINE WITH SANTOPRENE
BULB #V897 (TWO LOCATIONS)
TREMCO
SGT-900
STRUCTURAL
GLAZING TAPE
2 7/8"
WINDOW OPENING (WO)
WINDOW FRAME SIZE (WFS)
DAYLIGHT

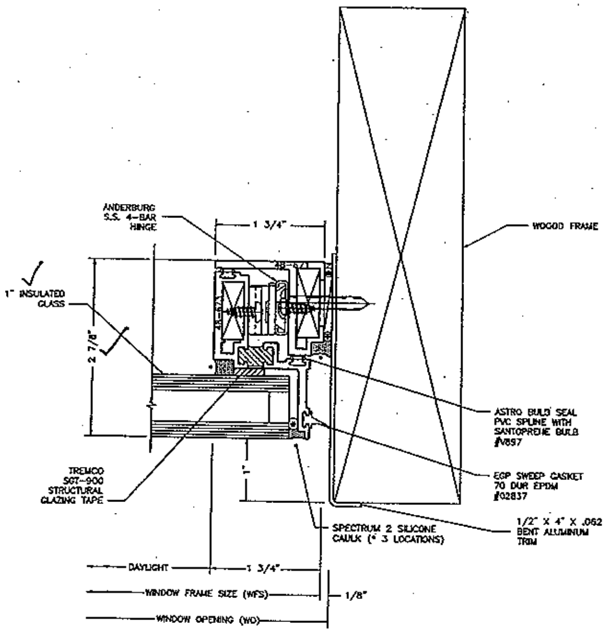
2/1 HEAD
SCALE (1=1)

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 62662

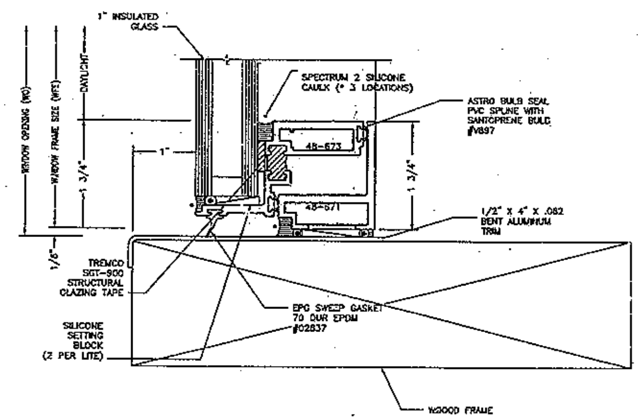
Date 2-2-06 Tech [illegible]


ANDERBURG
S.S. 4-BAR
HINGE
1 3/4"
1" INSULATED
GLASS
2 7/8"
WOOD FRAME
ASTRO BULB SEAL
PVC SPLINE WITH
SANTOPRENE BULB
#V897
EGP SWEEP GASKET
70 DUR EPDM
#02837
TREMCO
SGT-900
STRUCTURAL
GLAZING TAPE
SPECTRUM 2 SILICONE
CAULK (* 3 LOCATIONS)
1/2" X 4" X .062
BENT ALUMINUM
TRIM
DAYLIGHT
WINDOW FRAME SIZE (WFS)
WINDOW OPENING (WO)
1/8"

1/1 JAMB
SCALE (1=1)

TEST FORMAT

1. ALL TESTING SHALL BE IN ACCORDANCE WITH AAMA 101-80 HEAVY COMMERCIAL WINDOW TESTING.
2. TESTING SHALL BE GRADUATED TO DETERMINE THE MAXIMUM PERFORMANCE CAPACITY AND RATING OF THE WINDOW BEGINING 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 TORTION LOAD TEST & VERTICAL DEFLECTION TEST.


1" INSULATED
GLASS
SPECTRUM 2 SILICONE
CAULK (* 3 LOCATIONS)
ASTRO BULB SEAL
PVC SPLINE WITH
SANTOPRENE BULB
#V897
1 3/4"
1"
1/2" X 4" X .062
BENT ALUMINUM
TRIM
TREMCO
SGT-900
STRUCTURAL
GLAZING TAPE
SILICONE
SETTING
BLOCK
(2 PER LITE)
EPG SWEEP GASKET
70 DUR EPDM
#02837
WOOD FRAME
WINDOW OPENING (WO)
WINDOW FRAME SIZE (WFS)
DAYLIGHT

3/1 SILL
SCALE (1=1)

CMI Architectural

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TELEPHONE (605)854-3328
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PROJECT: 278SSG-AWNING PERFORMANCE TEST

ARCHITECT: GARY GEIGLER

GLAZING CONTRACTOR:

REVISIONS

SYM.	INT'L.	DATE

DATE DRAWN: 8-23-05

DRAWN BY: SCM

PO#:

SCALE: AS NOTED

PROJECT MGR.: GARY GEIGLER

CMI S.O.#:

SHEET: 1