

**ARCHITECTURAL
TESTING INC.**

130 Derry Court • York, PA 17402-8406
web www.testinc.com • Facsimile 717-764-1120 • Telephone 717-764-7700

OK FOR 120

5-10 x 5-0 TWIN
(QUALIFIES 30x5-0)

STRUCTURAL TEST REPORT SUMMARY

Rendered to:

MI HOME PRODUCTS, INC.

SERIES/MODEL: 650

TYPE: Twin Aluminum Single Hung Window

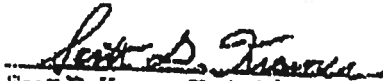
CONTINUOUS HEAD & SILL

Title of Test	Results
Overall Design Pressure	35.0 psf
Operating Force	18 lb max
Air Infiltration	0.20 cfm/ft ²
Water Resistance	5.25 psf
Structural Test Pressure	70.5 psf
De-glazing	Passed
Forced Entry Resistance	Grade 10

2 DP 47

Reference should be made to Report No. 01-36060.01 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.


Scott D. Kramer, Technician

SDK:alb

Laboratories in Pennsylvania, Minnesota & California

ARCHITECTURAL TESTING INC.

130 Derry Court • York, PA 17402-9405
web www.testali.com • Facsimile 717-764-4129 • Telephone 717-764-7700

STRUCTURAL TEST REPORT

Rendered to:

MI HOME PRODUCTS, INC.
650 West Market Street
P.O. Box 370
Gratz, Pennsylvania 17030-0370

Report No: 01-36060.01

Test Date: 11/04/99

Report Date: 11/29/99

Expiration Date: 11/04/03

Project Summary: Architectural Testing, Inc. (ATI) was contracted to perform tests on a Series/Model 650, twin aluminum single hung window at MI Home Products' test facility in Elizabethville, Pennsylvania. Test specimen description and results are reported herein.

Test Specification: The test specimen was evaluated in accordance with the following:

ASTM E 283-91, *Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen*

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

ASTM E 547-96, *Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential*

Test Specimen Description:

Series/Model: 650

Type: Twin Aluminum Single Hung Window

Overall Size: 5' 10-1/4" wide by 5' 0" high

Active Size (2): 2' 8-3/4" wide by 2' 6-1/4" high

Fixed Daylight Opening Size (2): 2' 6-1/4" wide by 2' 3" high

Screen Size (2): 2' 7-3/4" wide by 2' 4-1/4" high

Laboratories in Pennsylvania, Minnesota & California

Test Specimen Description: (Continued)

Finish: All aluminum was painted white.

Glazing Details: Both the active sash and fixed lites utilized 5/8" thick insulating glass fabricated from two sheets of 3/32" thick clear annealed glass and a desiccant filled metal spacer system. The active sash were channel glazed with a flexible wedge gasket. The fixed lites were interior glazed, back bedded with single sided adhesive foam tape and held-in-place with PVC snap-in glazing beads.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.270" backed by 0.190" high polypile with center fin	1 Row	Fixed meeting stile
3/8" high vinyl wrapped foam bulb	1 Row	Bottom rail
0.187" backed by 0.250" high polypile with center fin	2 Rows	Stiles
1/4" high polypile dust plug	2 Rows	Ends of bottom rail, top of each stile

Frame Construction: Frame was constructed of extruded aluminum members and all corners were coped, butted, sealed, and fastened with two screws per corner. The fixed meeting rail was attached to the jambs with a plastic clip and two screws per end.

Mullion Construction: The mullion was constructed of an extruded aluminum member. It was fastened to the head and sill with four screws per end. All screw heads were sealed as well as the butt joint at the sill.

Sash Construction: The sash were constructed of extruded aluminum members and all corners were coped, butted, and fastened with one screw per corner.

Screen Construction: The screen was constructed of rolled aluminum members and the corners were keyed. The screen mesh was held-in-place with a flexible spline.

Test Specimen Description: (Continued)**Hardware:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Plastic tilt latches	4	Ends of interior meeting rail
Metal pivot bars	4	Ends of the bottom rails
Metal sweep lock	2	Midspan of interior meeting rail
Metal keeper	2	Midspan of fixed meeting rail
Sash stops	4	One per jamb
Block and tackle balance system	4	One per jamb
Spring loaded latch pins	2	6" from ends of screen top rail

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Sloped sill	1	Sill
1/4" wide by 3/16" high weepslot	4	Ends of exterior vertical sill leg

Installation: The test unit was installed into the 2" x 8" nominal Spruce-Pine-Fir #2 wood test buck utilizing the integral nailing fin and 1" roofing nails. Five per top, bottom, and sides of the nail fin were evenly spaced. The nail fin was bedded in a silicone sealant.

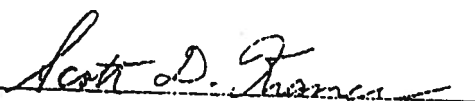
Test Results:

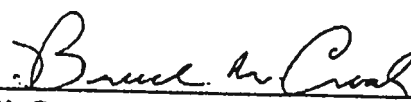
The results are tabulated as follows:

<u>Title of Test - Test Method</u>	<u>Results</u>
Air Infiltration per ASTM E 283	
@ 0.56 psf (15 mph)	0.15 cfm/ft ²
@ 1.57 psf (25 mph)	0.29 cfm/ft ²
Water Resistance per ASTM E 547 (with and without screen)	
WTP = 5.25 psf	No leakage
Uniform Load Structural (Measurements reported were taken on the meeting rail) (load held for 33 seconds)	
@ 47.0 psf (exterior)	0.010"
@ 47.0 psf (interior)	0.015"
Uniform Load Structural (Measurements reported were taken on the meeting rail) (load held for 10 seconds)	
@ 70.5 psf (exterior)	0.060"
@ 70.5 psf (interior)	0.040"

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. 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.

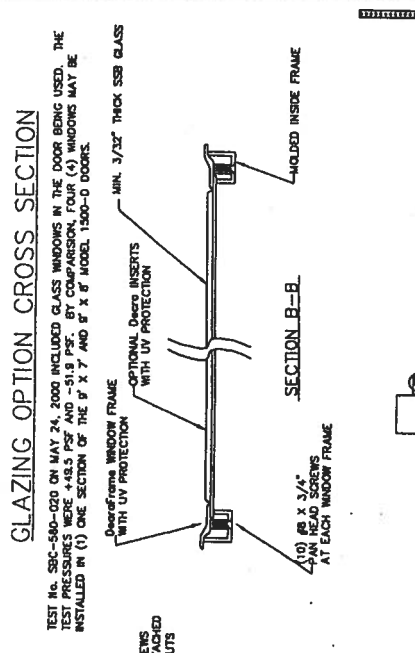
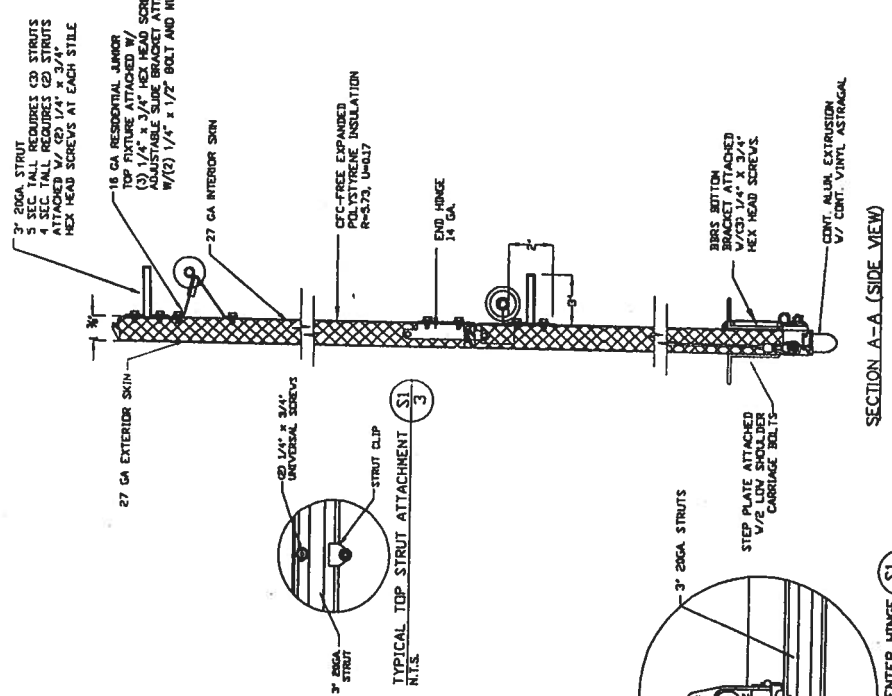
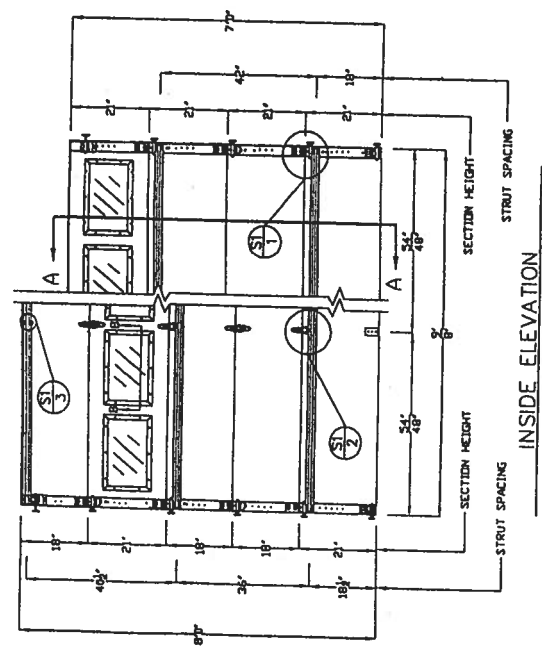
For ARCHITECTURAL TESTING, INC:


Scott D. Kramer
Technician


Bruce W. Croak
Project Manager

SDK:nlb
01-36060.01

4x7 WGR



GLAZING OPTION CROSS SECTION

TEST No. SEC-500-020 ON MAY 24, 2000 INCLUDED GLASS WINDOWS IN THE DOOR BEING USED. THE TEST PRESSURES WERE +43.5 PSF AND -51.9 PSF. BY COMPARISON, FOUR (4) WINDOWS MAY BE INSTALLED IN (1) ONE SECTION OF THE 8' X 7' AND 8' X 8' MODEL 1500-D DOORS.

BUILDING PLANS EXAMINER
FOR REVIEWED FOR
ATTACHED TO COMPLIANCE
TRACK SLIDE DOOR APPLIANCE
KEEP THIS PLAN ON JOB

MAY 17 2001

Building & zoning Inspector UWF-Jax, FL
Tommy Lawrence
Examiner Signature
License No. 10001520

TRACK CONFIGURATION FOR 6'6" UP TO 8' TALL DOORS

A	B	C	E
6'-6" 10"	38"	78"	
7'-0" 10"	38"	78"	
7'-6" 10"	34"	58"	82"
8'-0" 10"	34"	58"	88"

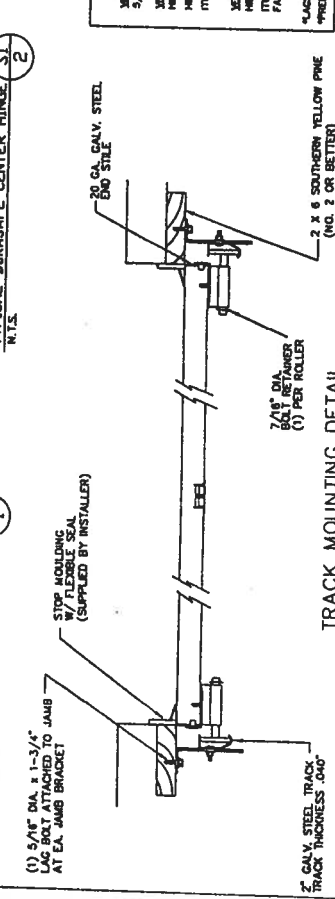
Specifications and Notes:
1. DOORS AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND TESTED TO MEET THE FOLLOWING REQUIREMENTS:
2. DOOR SECTIONS SHALL BE 27 GA. GALV. STEEL WITH 1/2" O.C. CORRUGATION.
3. ROLLED FORMED LIGHT COMMERCIAL QUALITY, C-40 GALVANIZATION.
4. DOORS UP TO 7'0" HIGH CONSIST OF (1) SECTION AS SHOWN.
5. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER FOR WIND LOADS BASED ON THE FOLLOWING PARAMETERS:
6. THE METHOD OF TESTING WAS IN SUBSTANTIAL COMPLIANCE WITH THE PROCEDURE DESCRIBED IN ASTM E330-96, AND THE PRESSURES SHOWN ON THE DRAWINGS WERE CALCULATED USING THE FOLLOWING PARAMETERS:
A. BASIC WIND SPEED OF 100 MPH
B. DOOR CAN BE RETALLED WITH 2 FEET OF DOORS WITH 25' MEAN ROOF HEIGHT AT ANY SLOPE
C. USE FACTOR OF 1.0
E. EXPOSURE RATING OF C

Amart
MODEL #1500-D WeatherGuard
TEST LOADS
MAX. WIND SPEED 100 MPH
MAX. WIND PRESSURE 43.5 PSF
MAX. WIND SUCTION 51.9 PSF
MAX. WIND FORCE 100 PSF

WOOD JAMB ATTACHMENT TO STRUCTURE
RATED FOR 100 MPH FASTEST-MILE BASIC WIND SPEEDS

METAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE
5/8" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 24" O.C.
METAL JAMB ATTACHMENT TO CONCRETE
H.E.B. WIRE BOLT 3/4" X 4" STARTING 6" FROM ENDS THEN 24" O.C.
H.E.B. SLEEVE ANCHOR 3/4" X 2-3/4" STARTING 6" FROM ENDS THEN 24" O.C.
ITW/HANSET RED HEAD 3/4" X 3" STARTING 6" FROM ENDS THEN 24" O.C.
METAL JAMB ATTACHMENT TO C-80 BULGE
H.E.B. SLEEVE ANCHOR 3/4" X 2-3/4" STARTING 6" FROM ENDS THEN 24" O.C.
ITW/HANSET TAPCON 1/4" X 2-3/4" STARTING 6" FROM ENDS USE PAGES OF FASTENERS (OF APART) AT 24" O.C.

*LARS AND BOLTS CAN BE COUNTERSUNK TO PROVIDE A FLUSH MOUNTING SURFACE.
PREPARATION OF WOOD JAMBS BY OTHERS



SECTION A-A (SIDE VIEW)
TYPICAL TOP STRUT ATTACHMENT N.T.S.
TYPICAL DURASAFE CENTER HINGE N.T.S.
TYPICAL DURASAFE END HINGE N.T.S.

GLAZING OPTION CROSS SECTION

TEST No. SBC-500-011 ON OCTOBER 12, 1995 ENCLOSED GLASS WINDOWS IN THE DOOR BEING USED. THE TEST PRESSURES WERE +34.4 PSF AND -54.7 PSF. BY COMPARISON, EIGHT (8) WINDOWS MAY BE INSTALLED IN (1) ONE SECTION OF THE 16' X 7' AND 16' X 8' MODEL 600 AND 500 DOORS.

MIN. 3/32" THICK SSB GLASS

OPTIONAL DOWNS INSERTS WITH UV PROTECTION

DOWN FRAME WINDOW FRAME WITH UV PROTECTION

SECTION B-B

1/10" Ø 3/4" JAMB HEAD SCREWS AT EACH WINDOW FRAME

SPACE TRACKS AT THIS LOCATION W/ (4) 1/4"-20 TRACK SPACE BOLTS & NUTS SECURE TO JAMB WITH (3) 5/16" DIA. x 1-3/4" LAG BOLTS

13 GA. GALV. STEEL JAMB BRACKETS ATTACHED W/ (1) 1/4"-20 TRACK SPACE BOLT & NUT

BUILDING PLANS EXAMINED

REVIEWED FOR CODE COMPLIANCE

KEEP THIS PLAN ON JOB

MAY 17 2001

CONY TAYLOR, INC.

License No. 110001570

4/20/01

MAX 302 16' x 7'

ORDER LOADS +25.6 PSF -54.3 PSF

TEST LOADS +25.6 PSF -54.3 PSF

AMARANTH

MODEL #600 STRATFORD

MODEL #500 HERITAGE III

DATE OF BIRTH DATE OF DEATH

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25 GA. W/ 1/4" RIB RISK SKIN ATTACHED W/ (2) 5/16" x 1-3/4" LAG BOLTS PER BRACKET

ADJUSTABLE SLIDING BRACKET ATTACHED W/ (2) 1/4" x 1-1/2" BOLT & NUT PER BRACKET

3" x 20 GA. STRUTS PER SECTION ATTACHED WITH 1/4" x 3/4" HEX HEAD UNIV. SCREWS AT ALL CENTER STILES ATTACHED WITH (1) 1/4" x 3/4" HEX HEAD UNIV. SCREW AND (1) 5/16" x 1-3/4" LAG BOLT PER END STILE

14 GA. GALV. STEEL JAMB BRACKETS ATTACHED W/ (1) 1/4" x 3/4" HEX HEAD SCREWS AND W/ (2) 5/16" x 1-3/4" LAG BOLTS PER ROLLER HINGE

88-100 BOTTOM BRACKET ATTACHED W/ (1) 1/4" x 3/4" HEX HEAD SCREW AND (1) 5/16" x 1-3/4" LAG BOLT PER ROLLER HINGE

CONV. ALUM. EXTRUSION W/ CONT. WHIL. ASTRAL

SECTION A-A (SIDE VIEW)

TRACK CONFIGURATION FOR 6'6" UP TO 8' TALL DOORS

JAMB BRACKET LOCATIONS

6'-6" 4' 21-1/2" 39" 57" 70" 76"

7'-0" 4' 21-1/2" 42" 63" 72" 82"

7'-6" 4' 18" 36" 54" 72" 82"

8'-0" 4' 21-1/2" 39" 57" 70" 76"

8'-6" 4' 21-1/2" 39" 57" 70" 76"

9'-0" 4' 21-1/2" 39" 57" 70" 76"

9'-6" 4' 21-1/2" 39" 57" 70" 76"

10'-0" 4' 21-1/2" 39" 57" 70" 76"

10'-6" 4' 21-1/2" 39" 57" 70" 76"

11'-0" 4' 21-1/2" 39" 57" 70" 76"

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14'-6" 4' 21-1/2" 39" 57" 70" 76"

15'-0" 4' 21-1/2" 39" 57" 70" 76"

15'-6" 4' 21-1/2" 39" 57" 70" 76"

16'-0" 4' 21-1/2" 39" 57" 70" 76"

16'-6" 4' 21-1/2" 39" 57" 70" 76"

17'-0" 4' 21-1/2" 39" 57" 70" 76"

17'-6" 4' 21-1/2" 39" 57" 70" 76"

18'-0" 4' 21-1/2" 39" 57" 70" 76"

INSIDE ELEVATION

SECTION HEIGHT

STRUT SPACING

37'-1/4"

25'-3/8"

25'-3/8"

25'-3/8"

25'-3/8"

25'-3/8"

25'-3/8"

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25'-3/8"

25'-3/8"

25'-3/8"

25'-3/8"

HINGE CONNECTION

NTS

3" x 20 GA. STRUT

HEX HEAD UNIV. SCREWS

(2) 1/4" x 3/4"

HEX HEAD UNIV. SCREWS

(4) 1/4" x 3/4"

HEX HEAD UNIV. SCREWS

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HEX HEAD UNIV. SCREWS

(4) 1/4" x 3/4"

HEX HEAD UNIV. SCREWS

(2) 1/4" x 3/4"

ROLLER BRACKET (TYP)

NTS

1-1/2" DIA. x 1-3/4" LAG BOLT ATTACHED TO JAMB AT EA. JAMB BRACKET

STOP MOLDING W/ FLEXIBLE SEAL (SUPPLIED BY INSTALLER)

1-1/2" x 2-5/8" x 20-1/2" 1-1/2" x 2-5/8" x 20-1/2"

20 GA. GALV. STEEL END STILE

7/8" Ø ROLLER RETAINER (1) PER ROLLER

2 X 6 SOUTHERN YELLOW PINE (NO. 2 OR BETTER)

TRACK MOUNTING DETAIL

2" GALV. STEEL TRACK TRACK THICKNESS 0.05"

1-1/2" x 2-5/8" x 20-1/2" 1-1/2" x 2-5/8" x 20-1/2"

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