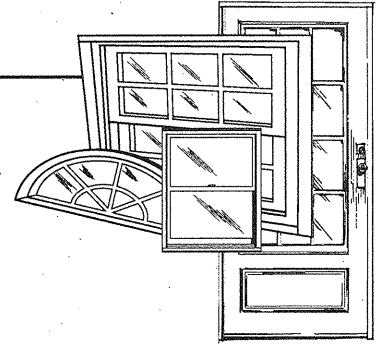


CERTIFIED TESTING LABORATORIES

Architectural Division • 7252 Narcoossee Rd. • Orlando, FL 32822
(407) 384-7744 • Fax (407) 384-7751
Web Site: www.ctlarch.com
E-mail: ctlarch.com



Report CTLA-744W-B
Report Date: November 15, 2001

STRUCTURAL PERFORMANCE TEST REPORT

Client: MI HOME PRODUCTS
650 WEST MARKET STREET
P.O. BOX 370 GRATZ, PA. 17030-0370

Product Type and Series: Model 470 HP Aluminum Sliding Glass Door SGD-R40 (144" x 80")
Actual Structural Pressure D/P + 40 psf = Structural Test Pressure 60 psf
Actual Structural Pressure D/P - 40 psf = Structural Test Pressure 60 psf

Test Specification: AAMA/NWWDA 101/I.S. 2-97, "Voluntary Specification for Aluminum, Vinyl (PVC) Wood Windows and Glass Doors".

Test Specimen

Frame: The extruded aluminum main frame measured 143.75"x 80.25" overall. Coped and butted corner construction secured with two (2) #8 x .750", PH., pan head, SMS each corner. (Two (2) panel track.)

Configuration: OXO as viewed from the exterior left to right.

Panels: Two (2) fixed panels and one (1) active panel in center, measuring 48.25" x 78.5". One (1) astragal fixed panel left of center measuring 48.75" x 78.5". One (1) fixed panel right of center measuring 47.5" x 78.5" Clear lite opening for each measured 45"x 75". Coped and butted corner construction secured with one (1) #8x .75" Pan head, S.M.S. fastener at each corner.

Weatherstripping:	<u>Quantity</u>	<u>Description</u>	<u>Location</u>
	Three (3) strips	Woolpile with integral plastic fin .170" high	Each Frame head/ left and right jambs
	Two (2) strips	Woolpile .300" high	Active panel bottom rail
	Two (2) strips	Woolpile with integral plastic fin .170" high	Inactive interlock panel stile
	One (1) strip	Woolpile .300" high	Threshold

Hardware & Location:

<u>Quantity</u>	<u>Description</u>	<u>Location</u>
One (1)	Single steel roller assembly in steel housing	Active panel bottom rail each corner
One (1)	Flush mount mortise lock	Active panel lock stile midspan
One (1)	Metallic keeper	Astragal panel lock stile midspan
One (1)	Panel stop	Left jamb

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- Glazing:** 5/32" Clear tempered glass, channel or marine glazed with vinyl wrap around glazing gasket.
- Sealant:** A silicone type sealant was used to seal the main frame to the wooden test buck (interior & exterior). A narrow joint/ silicone type sealant was used at each frame corner.
- Weep System:** Two (2) weep notches located on frame sill .750" from each jamb.
- Reinforcements:** One (1) aluminum C- Bar measuring 3" x 1.421" x .250" located on active panel left stile. Secured with seven (7) #8 x .500" P.H., flat head fasteners. One (1) aluminum L shaped bracket measuring .125" x 1.500" x 2.250" located on frame head secured with #8 x .75", P.H., pan head, S.M.S. fasteners.
- Additional Description:** N/A
- Installation:**
Head: Fourteen (14) #8 x 1.50" P.H., pan head, S.M.S. were used in two (2) parallel rows of seven (7). Measuring from left jamb 3.75", 28", 52", 73", 95.75", 115" and 139.75".
Sill: Seven (7) #8 x 1.25" P.H., flat head, S.M.S. were used on sill. Measuring from left jamb 5.75", 24", 48", 70", 95", 116" and 137.75".
Jamb: Eight (8) #8 x 1.25", P.H., S.S., S.M.S. were used in two (2) parallel rows of four (4). Measuring from head 3.5", 38", 42" and 74.5".
- Surface Finish:** Mill
- Comment:** Nominal 2 mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results

Performance Test Results

<u>Paragraph No.</u>	<u>Title of Test</u>	<u>Method</u> ASTM E283-91	<u>Measured</u>	<u>Allowed</u>
2.1.2	Air Infiltration @ 1.57 psf This test specimen exceeds performance levels specified in AAMA/NWWDA 101/I.S-97. Results reflected in two (2) decimals at the clients request.		.24 cfm/ft ²	.34 cfm/ft ²
2.1.3/4.3	Water Resistance 5.0gph/ft WTP= 5.25 psf Unit tested with and without insect screen.	ASTM E547-93 Four (4) five (5) minute cycles	No Entry	No Entry
		ASTM E 331-93 One (1) fifteen (15) minute cycle	No Entry	No Entry
2.1.3/4.3	Water Resistance 5.0gph/ft WTP= 6 psf Unit tested with and without insect screen.	ASTM E547-93 Four (4) five (5) minute cycles	No Entry	No Entry
		ASTM E 331-93 One (1) fifteen (15) minute cycle	No Entry	No Entry

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2.1.4.2/4.4.2	Uniform Load Structural Permanent Deformation @ 60 psf Positive @ 60 psf Negative	ASTM E330-90 Ten (10) second loading	.069" .271"	.314" .314"
2.1.8	Forced Entry Resistance Test A Test B Test C Test D, E & F Test G	AAMA 1303.5-76	.0" .0" .0" .0" .0"	1/2" 1/2" 1/2" 1/2" 1/2"
2.2.19.5.1	Operating Force Active Panel	AAMA/NWWDA 101/I.S-97 Measured to open/to keep in motion 15 lbs. 12 lbs.		Allowable to open/to keep in motion 30 lbs. 20 lbs.
2.2.19.5.2	Deglazing Top Rail 70 lbs. Bottom Rail 70 lbs. Lead Stile 50 lbs. Interlock Stile 50 lbs.	ASTM E987-88	.017"= .015"= .020"= .022"=	3.4% <100% 3.0% <100% 4.0% <100% 4.4% <100%

Test Date: August 4, 2001

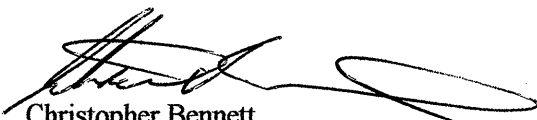
Test Completion Date: August 4, 2001

Remarks: Detailed drawings were available for laboratory records and comparison to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by CTL for a period of four (4) years. The results obtained apply only to the specimen tested.

This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Certified Testing Laboratories assumes that all information provided by the clients is accurate and that the physical and chemical properties of the components are as stated by the manufacturer.

Certified Testing Laboratories, Inc.


Christopher Bennett
Lab Manager
Architectural Division

cc: M. I. Home Products (2)
A.L.I. (2)
Ramesh Patel P.E. (1)
File (1)


Ramesh Patel P.E.
11/20/01