

**AAMA/NWWDA 101/L.S.2-97
TEST REPORT SUMMARY**

Rendered to:

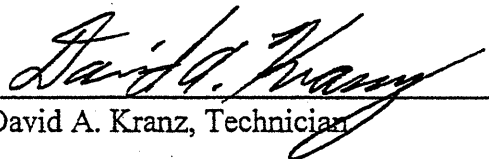
FOUR SEASONS SUNROOMS

**SERIES/MODEL: Thermal Door
TYPE: Aluminum Patio Door
RATING: SGD-R20 73 x 80**

Title of Test	Results
Overall Design Pressure	20 psf
Operating Force	9 lb max.
Air Infiltration	0.25 cfm/ft ²
Water Resistance	3.0 psf
Structural Test Pressure	52.5 psf
Deglazing	Passed
Forced Entry Resistance	Grade 10

Reference should be made to Report No. 01-35845.01 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.


David A. Kranz, Technician

DAK:dln

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

Rendered to:

FOUR SEASONS SUNROOMS
5005 Veterans Memorial Highway
Holbrook, New York 11741

Report No: 01-35845.01
Test Dates: 10/08/99
Thru: 11/11/99
Report Date: 11/12/99
Expiration Date: 10/08/03

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Four Seasons Sunrooms to conduct performance testing on their thermally broken aluminum gliding patio door (XO). The door was tested in accordance with AAMA/NWWDA 101/I.S.2-97 and met the performance requirements for an SGD-R20 73 x 80 rating.

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

Test Specimen Description:

Series/Model: Thermal Patio Door

Type: Aluminum Patio Door (OX)

Overall Size: 6' 0-1/2" wide by 6' 8" high

Active Panel Size: 2' 11-1/2" wide by 6' 6-3/16" high

Screen Size: 2' 11-1/2" wide by 6' 6-7/8" high

Finish: Bronze aluminum

Glazing Details: 7/8" insulating glass units comprised of two lites of DS (0.125") thick tempered glass with 5/8" metal spacer. Both panels were "marine" glazed.

Installation: The door was installed into a 2" x 10" wood buck constructed of treated #2 grade pine. The jambs and head were secured 10" from each end and at the center using #8 x 2" drywall screws through pre-drilled holes. The exterior perimeter was sealed using silicone.

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

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.270" backed by 0.240" high pile with center fin	2 Rows	Frame center parting stop, interior and exterior face
0.270" backed by 0.240" high pile with center fin	1 Row	Frame perimeter of interior leg

Reinforcement: No reinforcement was used.

Frame Construction: The frame corners were coped, butted and secured through the head and sill using two #8 x 1" screws per corner. A rigid vinyl parting stop was snapped over the interior frame perimeter to bridge the thermal break. The sill parting stop utilized an integral fixed panel receptor. A poured and debridged thermal break was utilized. An aluminum snap-in threshold was used adjacent to the fixed panel. The fixed panel was secured to the jamb 6" off each end with two 1/2" x 5/8" x 3" long aluminum angle brackets, fastened using four 1/2" tek screws per bracket. The fixed meeting stile was secured to the head using a 3" x 1" x 1-1/4" wide aluminum angle, fastened with two 1/2" tek screws per side.

Panel Construction: Both panels were marine glazed and fastened using one #8 x 2" screw per corner through the stiles into bosses. Each panel used a poured and debridged thermal break. A rigid vinyl insert bridged the panel exterior perimeters.

Screen Construction: The screen is constructed of extruded aluminum (bronze). Corners were mitered and secured with aluminum corner keys. Two metal adjustable rollers per rail, located 6" from each end. The fiber screen mesh was secured using a flexible vinyl spline. A rubber bug stop was used along the meeting stile.

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Steel dual rollers	2	Active panel bottom rail, 4" off end
Adjustable reach-out lock and handle set	1	Center of locking stile
Lock keeper	1	Interior face of locking jamb
Bumper stop	1	Frame head active panel pocket at jamb
Rigid vinyl dust plug	2	Fixed panel interlock, one per end

Test Specimen Description:**Drainage:**

1" by 1/2" weephole	8	Each panel rail, one per end of rigid vinyl rail insert
1" wide by 3/16" high weephole	2	Through the exterior face of the aluminum threshold, 6-1/2" off each end
3/4" wide by 1/4" high weephole	2	Center leg of snap-in aluminum threshold, one per end

Test Results:

The results are tabulated as follows:

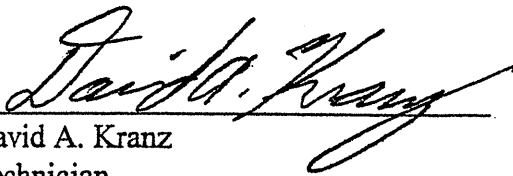
<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
2.2.19.5.1	Operating Force		
	Open	17 lbs	30 lbs max.
	In motion	9 lbs	20 lbs max.
2.1.2	Air Infiltration per ASTM E 283 (See Note #1) @ 1.56 psf (25 mph)	0.25 cfm/ft ²	0.3 cfm/ft ² max.
<i>Note #1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/NWWDA 101/LS. 2-97 for air infiltration.</i>			
2.1.3	Water Resistance per ASTM E 547-96 (with and without screen) WTP = 2.86 psf	No leakage	No leakage
2.1.4.2	Uniform Load Structural per ASTM E 330-97 Meeting Stile		
	@ +22.5 psf (exterior)	0.020"	0.308" max.
	@ -22.5 psf (interior)	0.080"	0.308" max.

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
2.2.19.5.2	Deglazing Test per ASTM E 987 In operating direction at 70 lbs		
	Meeting stile	0.016"/3.13%	0.500"/100%
	Handle stile	0.0"/0%	0.500"/100%
	In remaining direction at 50 lbs		
	Top rail	0.0"/0%	0.500"/100%
	Bottom rail	0.0"/0%	0.500"/100%
2.1.8	Forced Entry Resistance per ASTM F 842-97		
	Lock Manipulation Test	No entrance	No entrance
	Static Load and Locking Device Strength Resistance Test		
	Tests A1 thru A6	No entrance	No entrance
	Lock Manipulation Test	No entrance	No entrance
	Load Identification: Grade 10 for Type A door assembly		
<u>Optional Performance</u>			
4.3	Water Resistance per ASTM E 547-96 (with and without screen) WTP = 3.0 psf	No leakage	No leakage
4.4.2	Uniform Load Structural per ASTM E 330-97		
	@ +30.0 psf (exterior)	0.050"	0.308" max.
	@ -30.0 psf (interior)	0.080"	0.308" max.
Remedial Work: A 3" x 1" x 1-1/4" wide aluminum angle was added to the fixed meeting stile at the sill and fastened with two 1/2" tek screws per side.			
4.4.2	Uniform Load Structural per ASTM E 330-97		
	@ +52.5 psf (exterior)	0.050"	0.308" max.
	@ -52.5 psf (interior)	0.140"	0.308" max.

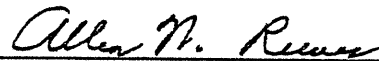
Detailed drawings, representative samples of the test specimen, and a copy of this report will be retained by ATI for a period of four years. The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above referenced specification. This report does not constitute certification of this product which may only be granted by the certification program administrator.

For ARCHITECTURAL TESTING, INC:



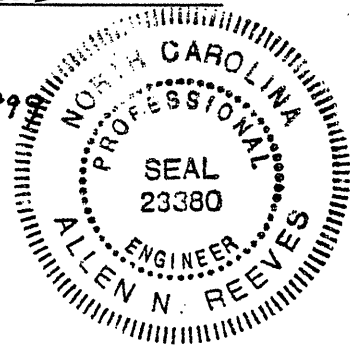
David A. Kranz
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01-35845.01



Allen N. Reeves, P.E.
Director of Engineering

16 NOVEMBER 1998



DOCUMENT CONTROL ADDENDUM #01-35845.00

Current Issue Date: 11/12/99

Report No.: 01-35845.01

Requested by: Joe Esposito, Four Seasons Sunrooms

Purpose: AAMA/NWWDA 101/I.S.2-97 testing on Series/Model Thermal Patio Door.

Issued Date: 11/12/99

Comments: Copies to be sent to John Smith at Associated Laboratories, Inc. for certification.

North Carolina P. E. seal required on report.