



**AAMA 1801 SOUND TRANSMISSION LOSS
TEST REPORT**

Rendered to:

MI WINDOWS AND DOORS, INC.

SERIES/MODEL: 910/3910

TYPE: Vinyl Patio Door

Summary of Test Results					
ATI Data File No.	Glazing Option	Operating Force	Air Infiltration	STC	OITC
57672.01A	3/4" IG (1/8" Tempered Exterior, 7/16" Air Space, 3/16" Tempered Interior) Glass temperature was 72.0°F	Pass	Pass	29	24
57672.01B	3/4" IG (1/8" Tempered Exterior, 3/8" Air Space, 1/4" Laminated Interior) Glass temperature was 73.0°F	Pass	Pass	31	27

Reference should be made to ATI Report No. 57672.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.



ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

MI WINDOWS AND DOORS, INC.
P.O. Box 370
Gratz, Pennsylvania 17030

Report No: 57672.01-113-11
Test Date: 05/18/05
Report Date: 05/26/05
Expiration Date: 05/18/09

Test Sample Identification:

Series/Model: 910/3910

Type: Vinyl Patio Door

Performance Class: Residential

Overall Size: 72" by 80"

Glazing Option A: 3/4" IG (1/8" Tempered Exterior, 7/16" Air Space, 3/16" Tempered Interior)

Glazing Option B: 3/4" IG (1/8" Tempered exterior, 3/8" air space, 1/4" Laminated interior)

Project Scope: Architectural Testing, Inc. (ATI) was contracted by MI Windows and Doors, Inc. to conduct operating force, air leakage, and sound transmission loss tests on a Series/Model 910/3910, vinyl patio door. A summary of the results is listed in the Test Results section and the complete test data is included as Appendix B of this report.

Test Methods: The acoustical test was conducted in accordance with the following:

AAMA 1801-97, *Acoustical Rating of Windows, Doors, and Glazed Wall Sections.*

ASTM E 1425-91 (Re-approved 1999), *Standard Practice for Determining the Acoustical Performance of Exterior Windows and Doors.*

ASTM E 90-04, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.*

ASTM E 413-04, *Classification for Rating Sound Insulation.*

ASTM E 1332-90 (Re-approved 2003), *Standard Classification for Determination of Outdoor-Indoor Transmission Class.*

ASTM E 283-04, *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.*

ASTM E 2235-04, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods.*

ASTM E 2068-00, *Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.*

Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM E 90. The microphones were calibrated before conducting sound transmission loss tests. The test equipment and test chamber descriptions are listed in Appendix A.

Sample Installation:

Sound transmission loss tests were initially performed on a filler wall that was designed to test 3' 4" by 7' 2" and 6' 8" by 7' 2" test specimens. The filler wall achieved an STC rating of 64.

A filler wall reducing element (STC 64) was used to reduce the test opening size to 72" wide by 80" high. The reducing element consisted of a double 2x4 wood stud wall construction with two layers of 5/8" drywall on both sides. The stud cavities in the wall were insulated with two layers of R-13 fiberglass insulation. The vinyl patio door was placed on a foam isolation pad in the new test opening. Duct seal was used to seal the perimeter of the test specimen to the test opening on both sides. The interior side of the door frame, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing. The panel was opened and closed at least five times prior to testing.

Test Procedure:

Operating Force Test - The Type B method, which utilizes a force gage, was used to determine the breakaway and operating forces required to open and close the panel.

Air Leakage Test - The vinyl patio door was closed and locked for this test. A negative pressure of 1.57 psf was applied inside the chamber that was placed around the interior side of the door frame. The total air leakage and extraneous air leakage measurements were used to calculate the specimen air leakage. Barometric pressure corrections were applied to the air leakage calculations.

Sound Transmission Loss Test - The vinyl patio door was also closed and locked for this test. One background noise sound pressure level and five sound absorption measurements were conducted at each of the five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms at each of the five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.

Sample Descriptions:

Frame Construction:

		Frame
Size		72" by 80"
Thickness		4-3/4"
CORNERS		Mitered
	Fasteners	Welds
	Seal Method	None
MATERIAL		Vinyl
	Reinforcement	Steel, located in fixed stile
	Thermal Break Material	N/A
Daylight Opening Size		32-1/4" by 73"

Sample Descriptions: (Continued)

Panel Construction:

	Active Panel
Size	36-7/8" by 77-3/4"
Thickness	1-3/8"
CORNERS	Mitered
Fasteners	Welds
Seal Method	None
MATERIAL	Vinyl
Reinforcement	Steel, located in stiles
Thermal Break Material	N/A
Daylight Opening Size	32-1/8" by 73"

Glazing Option A:

Measured Overall Insulation Glass Unit Thickness	0.753"
Spacer Type	Steel U-shaped

	Exterior Sheet	Gap	Interior Sheet
MEASURED THICKNESS	0.123"	0.448"	0.182"
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Tempered	Air*	Tempered
LAMINATE MATERIAL	N/A	N/A	N/A

GLAZING METHOD	Exterior
GLAZING MATERIAL	Double-sided adhesive foam tape
GLAZING BEAD MATERIAL	Vinyl

Sample Descriptions: (Continued)

Glazing Option B:

Measured Overall Insulation Glass Unit Thickness	0.751"
Spacer Type	Aluminum Reinforced Butyl

	Exterior Sheet	Gap	Interior Sheet
MEASURED THICKNESS	0.122"	0.394"	0.103"-0.030"-0.103"
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Tempered	Air*	Laminate
LAMINATE MATERIAL	N/A	N/A	PVB

GLAZING METHOD	Exterior
GLAZING MATERIAL	Double-sided adhesive foam tape
GLAZING BEAD MATERIAL	Vinyl

Components:

	TYPE	QUANTITY	LOCATION
WEATHERSTRIP			
	0.187" by 0.190" Polypile with center fin	1 Row	Active meeting stile
	0.187" by 0.250" Polypile with center fin	1 Row	Head, sill, jambs
HARDWARE			
	Roller assembly	2	Active bottom rail
	Metal handle/lock assembly	1	Lock stile
	Metal lock keeper	1	Keeper jamb
DRAINAGE			
	1/2" by 1/8" weep slot	4	Head and sill face
	3/4" by 1/4" weep slot	12	Head and sill hollows
	5/8" by 1/4" weep slot	14	Active top and bottom rails, sill (towards fixed lite)

* - Stated per Client/Manufacturer N/A-Non Applicable

Comments: The total sample weight of glazing option A was 189 lbs. The total sample weight of glazing option B was 214 lbs. The design drawings (included in Appendix C) supplied by the client, accurately describe the Series/Model 910/3910, vinyl patio door. The dimensions on the drawings that are circled and/or checked were verified against the test specimen. The vinyl patio door was disassembled, and the components will be retained by ATI for four years. Photographs of the test specimen are included in Appendix D.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the operating force, air leakage, and sound transmission loss test results on the Series/Model 910/3910, vinyl patio door is listed below.

ATI Data File No.	Glazing Option	* Operating Force Pass/Fail	** Air Leakage Pass/Fail	STC	OITC
57672.01A	3/4" IG (1/8" tempered exterior, 7/16" air space, 3/16" tempered interior) Glass temperature was 72.0°F	Pass	Pass	29	24
57672.01B	3/4" IG (1/8" tempered exterior, 3/8" air space, 1/4" laminated interior) Glass temperature was 73.0°F	Pass	Pass	31	27

* The maximum allowable operating force, according to AAMA/NWWDA 101/I.S.2-97, is 30 lbf to open, 20 lbf to keep in motion for Residential performance class, Vinyl patio doors.

** The maximum allowable air leakage rate, according to AAMA/NWWDA 101/I.S.2-97, is 0.30 cfm/ft² when the test pressure is 1.57 psf for Residential performance class, Vinyl patio doors.

The complete test results are listed in Appendix B. Flanking limit tests and reference specimen tests are available upon request.

This report is prepared for the convenience of our customer and endeavors to provide accurate and timely project information. It contains a summary of observations made by a qualified representative of Architectural Testing, Inc. The results of this report apply only to the specimen that was tested. The statements made herein do not constitute approval, disapproval, certification or acceptance of performance or materials.

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. This report shall not be reproduced, except in full, without written approval by Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC:



Digitally Signed by: Benjamin W. Green

Benjamin W. Green
Technician - Acoustical Testing



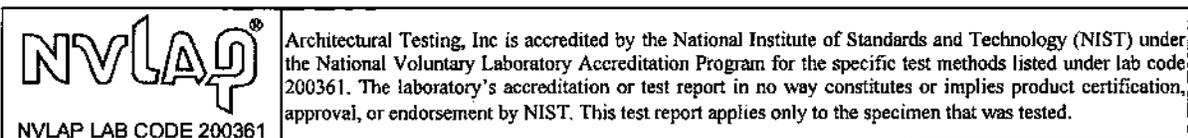
Digitally Signed by: Todd D. Kister

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

BWG:dnb

Attachments (pages):

- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (8)
- Appendix-C: Drawings (22)
- Appendix-D: Photographs (2)



Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	05/26/05	N/A	Original test report