

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

MI HOME PRODUCTS, INC.

SERIES/MODEL: 3500

TYPE: Single Hung Window with Two Glazing Options

Report No:	01-43450.01
Test Date:	01/09/03
Report Date:	01/30/03
Expiration Date:	01/09/07



Architectural Testing

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

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

Report No: 01-43450.01
Test Date: 01/09/03
Report Date: 01/30/03
Expiration Date: 01/09/07

Test Sample Identification:

Series/Model: 3500

Type: Single Hung Window

Overall Size: 44.00" x 59.75"

Glazing Option 1: 7/8" IG (3/32" Annealed, 11/16" Air Space, 3/32" Annealed)

Glazing Option 2: 7/8" IG (3/16" Annealed, 9/16" Air Space, 1/8" Annealed)

Project Scope: Architectural Testing, Inc. (ATI) was contracted by MI Home Products, Inc. to conduct air leakage and sound transmission loss tests on a Series/Model 3500, single hung window. A summary of the results is listed in the Test Results section and the complete test data is included as Appendix C of this report.

Test Methods: The acoustical tests were 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 90-02, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.*

ASTM E 413-87 (Re-approved 1999), *Classification for Rating Sound Insulation.*

ASTM E 1332-90 (Re-approved 1998), *Standard Classification for Determination of Outdoor-Indoor Transmission Class.*

ASTM E 283-91 (Re-approved 1999), *Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.*

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Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM E 90-02. The microphones were calibrated before conducting sound transmission loss tests. The test equipment and test chamber descriptions are listed in Appendix A.

Test Procedure:

Sound transmission loss tests were initially performed on a filler wall that was designed to test 4' 0" by 6' 0" and 6' 0" by 4' 0" specimens. The filler wall achieved an STC rating of 63.

The 4' 0" by 6' 0" plug was removed from the filler wall. A filler wall, reducing element was used to reduce the test opening size from 4' 0" by 6' 0" to 44.50" by 60.50". The reducing element consisted of a double row of 2" x 4" wood studs with two layers of 5/8" type "X" Gypsum board on both sides. The stud cavities were insulated with fiberglass. A dense neoprene gasket and duct seal was used to seal the reducing element to the inside perimeter of the filler wall opening. The single hung window was then installed in the reducing element, test opening. Duct seal was used to seal the perimeter of the window on both sides. The interior side of the window 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 before the 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	Sash
Size	44.00" x 59.75"	42.00" x 29.00"
CORNERS	Mitered	Mitered
Fasteners	Welds	Welds
Seal Method	None	None
MATERIAL	VI	VH
Thermal Break Material	None	None
GLAZING METHOD	Interior Glazed Fixed Daylight Opening Size: 40.00" x 26.50"	Interior Glazed Daylight Opening Size: 39.19" x 26.31"

Sample Descriptions: (Continued)**Option 1 Glazing: (Sheet #1 is Exterior Sheet)**

	Sheet #1	Gap #1	Sheet #2
MEASURED THICKNESS	0.087"	0.691"	0.087"
EMISSIVITY COATING	N/A	N/A	N/A
COATING SURFACE	N/A	N/A	N/A
SPACER/SEALANT	N/A	S4	N/A
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Annealed	Air*	Annealed

Option 2 Glazing: (Sheet #1 is Exterior Sheet)

	Sheet #1	Gap #1	Sheet #2
MEASURED THICKNESS	0.182"	0.596"	0.122"
EMISSIVITY COATING	N/A	N/A	N/A
COATING SURFACE	N/A	N/A	N/A
SPACER/SEALANT	N/A	S4	N/A
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Annealed	Air*	Annealed

Sample Descriptions: (Continued)

Components:

TYPE	QUANTITY	LOCATION
WEATHERSTRIP		
0.19" Diameter foam filled bulb gasket	1 Row	Bottom rail
0.13" Diameter foam filled bulb gasket	1 Row	Fixed meeting rail
0.187" x 0.250" Polypile with center fin	1 Row	Sill and active meeting rail
0.187" x 0.250" Polypile with center fin	2 Rows	Stiles of vent
HARDWARE		
Metal lock keeper	2	Fixed meeting rail
Plastic tilt latch	2	Top rail of sash
Metal cam lock	2	Vent meeting rail
Metal tilt bar	2	Bottom rail of sash
Constant force balance system	2	Jambs
DRAINAGE		
0.50" x 0.13" Weepslot	4	2 on sill, 2 on bottom rail
0.50" x 0.19" Weepslot	4	2 on sill, 2 on bottom rail
1" x 0.13" Weepslot	2	Sill

* - Stated per Client/Manufacturer NA-Non Applicable See Appendix B for Description Codes

Comments: The weight of the specimen with glazing Option 1 was 53.0 lbs. The weight of the specimen with glazing Option 2 was 79.0 lbs. The design drawings (included in Appendix D) supplied by the client, accurately describe the Series/Model 3500, single hung window. The dimensions on the drawings that are circled and/or checked were verified against the test specimen. The single hung window was disassembled, and the components will be retained by ATI for four years.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413-87 (Re-approved 1999). The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332-90 (Re-approved 1998). A summary of the air leakage and sound transmission loss test results on the single hung window is listed below.

ATI Job File No.	Sample Description	Air Leakage Pass/Fail	STC	OITC
01-43450.01A	Series/Model 3500, single hung window with 7/8" IG (3/32" Annealed, 11/16" Air Space, 3/32" Annealed)	Pass	26	20
01-43450.01B	Series/Model 3500, single hung window with 7/8" IG (3/16" Annealed, 9/16" Air Space, 1/8" Annealed)	Pass	32	25

The complete test results are listed in Appendix C.

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 specimens that were 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. 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.

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