

**ASTM E 90 SOUND TRANSMISSION LOSS
TEST REPORT**

Rendered to:

VEKA, INC.

SERIES/MODEL: DH 56WW

TYPE: Double Hung Window

Summary of Test Results			
ATI Data File No.	Glazing Option (Nominal Dimensions)	STC	OITC
79521.01A	1" IG (1/4" laminated exterior, 5/8" air space, 1/8" annealed interior) Glass temperature - 73F	34	26
79521.01B	1" IG (1/8" annealed, 3/4" air space, 1/8" annealed)	29	22

Reference should be made to ATI Report No. 79521.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

VEKA, INC.
100 Veka Drive
P.O. Box 250
Fombell, Pennsylvania 16123-0250

Report No: 79521.01-113-11
Test Date: 12/27/07
And: 12/28/07
Report Date: 01/09/08
Expiration Date: 12/28/11

Test Sample Identification:

Series/Model: DH 56WW

Type: Double Hung Window

Overall Size: 47" by 59"

Glazing Option A (Nominal Dimensions): 1" IG (1/4" Laminated Exterior, 5/8" Air Space, 1/8" Annealed Interior)

Glazing Option B (Nominal Dimensions): 1" IG (1/8" Annealed, 3/4" Air Space, 1/8" Annealed)

Project Scope: Architectural Testing, Inc. was contracted by Veka, Inc. to conduct a sound transmission loss test on a Series/Model DH 56WW, double hung window. 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. The samples were provided by the client.

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

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

Test Equipment: The equipment used to conduct this test meets the requirements of ASTM E 90. The microphones were calibrated before conducting the sound transmission loss test. 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 48" by 72" and 72" by 48" test specimens. The filler wall achieved an STC rating of 64.

A filler wall reducing element was used to reduce the test opening size to 47-1/2" wide by 59-1/2" 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 window was placed on a foam isolation pad in the new test opening. Duct seal was used to seal the perimeter of the window to the test opening 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 around the test specimen prior to testing. The sash were opened and closed at least five times prior to testing.

Test Procedure: The window was closed and locked for this test. The sound transmission loss test consisted of the following measurements: 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		47" by 59"
Thickness		3-7/8"
Corners		Mitered
	Fasteners	Welds
	Seal Method	None
Material		Vinyl
	Reinforcement	None
	Thermal Break Material	N/A

Sash Construction:

		Bottom Sash	Top Sash
Size		44-1/2" by 29-1/2"	43-1/2" by 28-1/2"
Thickness		1-1/2"	1-1/2"
Corners		Mitered	Mitered
	Fasteners	Welds	Welds
	Seal Method	None	None
Material		Vinyl	Vinyl
	Reinforcement	Aluminum located in meeting rail	None
	Thermal Break Material	N/A	N/A
Daylight Opening Size		40-3/4" by 25-5/8"	40-3/4" by 25-5/8"

Sample Descriptions: (Continued)

Glazing Option A:

Measured Overall Insulation Glass Unit Thickness		0.992"
Spacer Type	Steel U-Shape	

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.102", 0.041", 0.102"	0.627"	0.120"
Muntin Pattern	N/A	N/A	N/A
Material	Laminated	Air*	Annealed
Laminate Material	PVB	N/A	N/A

Glazing Method	Exterior
Glazing Material	Double-sided adhesive foam tape
Glazing Bead Material	Vinyl

Glazing Option B:

Measured Overall Insulation Glass Unit Thickness		1.006"
Spacer Type	Steel U-Shape	

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.115"	0.767"	0.124"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Annealed / Low E
Laminate Material	N/A	N/A	N/A

Glazing Method	Interior
Glazing Material	Double-sided adhesive foam tape
Glazing Bead Material	Vinyl

* - Stated per client/mannufacturer, N/A-non applicable

Sample Descriptions: (Continued)

Components:

TYPE	QUANTITY	LOCATION
Weatherstrip		
0.187" by 0.230" Poly pile with center fin	1 Row	Head and sill, bottom rail, keeper rail and screen side of keeper rail
0.187" by 0.230" Poly pile with center fin	2 Rows	Stiles, top rail, lock rail
3/8" Kerf mounted foam filled bulb gasket with 1/8" leaf	1 Row	Bottom rail
Hardware		
Constant force balance	4	Jambs
Cam lock with tilt latch	2	Lock rail
Keeper	2	Keeper rail
Tilt bar	4	Bottom corners of sash
Tilt latch	2	Top corners of top sash
Child safety lock	2	Top sash stiles
Drainage		
Sloped sill	1	Sill
3/4" Weep notch	2	Sill

Comments: The window frame had 3/4" open cell foam around the perimeter, except the sill. The weight of the sample with glazing option A was 76 lbs. The weight of the sample with glazing option B was 94 lbs. The client did not supply drawings on the Series/Model DH 56WW, double hung window. The window was disassembled, and the components will be retained by Architectural Testing, Inc. for four years. Photographs of the test specimen are included in Appendix C.

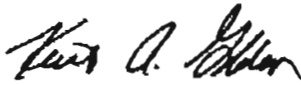
Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the sound transmission loss test results on the Series/Model DH 56WW, double hung window is listed below.

ATI Data File No.	Glazing Option (Nominal Dimensions)	STC	OITC
79521.01A	1" IG (1/4" laminated exterior, 5/8" air space, 1/8" annealed interior) Glass temperature - 73F	34	26
79521.01B	1" IG (1/8" annealed, 3/4" air space, 1/8" annealed)	29	22

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

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire. Results obtained are tested values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC:



Digitally Signed by: Kurt A. Golden

Kurt A. Golden
Senior Technician - Acoustical Testing



Digitally Signed by: Todd D. Kister

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

KAG:cre

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (4)
- Appendix-C: Photographs (1)



ACCREDITED

Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (IAS) under the specific test methods listed under lab code TL-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS. This test report applies only to the specimen that was tested.

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	004112
Receive Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003246
Source Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003245
Receive Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003249
Source Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003248
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002816
Noise Source	Delta Electronics	SNG-1	Two, non-coherelated "Pink" noise signals	Y002181
Equalizer	Rane	RPE228	Programmable EQ	Y002180
Power Amplifiers	Renkus-Heinz	P2000	2 - Amplifiers	Y002179 Y001779
Receive Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y001784 Y001785
Source Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y002649 Y002650

Test Chamber:

	Volume	Description
Receiving Room	8291.3 ft ³ (234 m ³)	Rotating vane and stationary diffusers. Temperature and humidity controlled. Isolation pads under the floor.
Source Room	7296.3 ft ³ (206.6 m ³)	Stationary diffusers only. Temperature and humidity controlled.

	Maximum Size	Description
TL Test Opening	14 ft wide by 10 ft high	Vibration break between source and receive rooms.



SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing


ATI No.	79521.01A	Date	12/27/07
Client	Veka, Inc.		
Specimen	Series/Model DH 56WW, double hung window with 1" IG (1/4" laminated exterior , 5/8" air space, 1/8" annealed interior), Glass temperature 73F		
Specimen Area	19.26 Sq Ft		
Filler Area	120.74 Sq Ft		
Operator	Kurt A Golden - KS		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	75.2	74.7	74.3	75.1	71.8	74.8
RH %	42.6	43.6	45.3	42.8	62.9	43.6

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Deficiencies	Trans Coef Diff
80	41.8	50.1	86.2	62.8	36.1	20	4.93	0	8.9
100	36.7	52.8	88.4	64.3	39.3	20	3.11	0	11.7
125	37.9	49.2	93.8	66.1	45.7	24	2.99	0	14.1
160	39.7	51.1	95.1	65.7	45.8	25	0.69	0	12.6
200	38.4	56.3	99.6	79.4	48.9	16	0.98	8	25.4
250	36.0	54.6	100.5	74.4	51.4	22	1.79	5	21.8
315	33.3	62.1	99.4	69.2	54.0	25	1.11	5	20.9
400	32.1	59.5	99.3	66.4	57.4	28	0.97	5	21.3
500	32.4	57.2	100.9	63.8	60.4	32	0.40	2	20.0
630	35.1	59.3	103.5	63.1	65.4	35	0.63	0	22.0
800	31.6	59.5	103.2	60.8	68.4	38	0.33	0	20.8
1000	27.2	63.3	102.4	59.2	72.1	38	0.48	0	26.1
1250	27.5	67.6	105.8	60.6	77.8	40	0.47	0	30.2
1600	29.9	69.7	111.8	67.0	82.9	39	0.40	0	35.7
2000	30.7	75.4	107.7	62.1	82.2	40	0.40	0	34.5
2500	26.3	88.4	106.4	59.4	77.7	40	0.41	0	29.4
3150	19.2	106.8	106.9	59.1	80.1	40	0.56	0	31.8
4000	19.5	126.9	105.8	59.3	82.2	38	0.19	0	35.8
5000	18.2	167.5	104.3	53.5	80.8	41	0.52	0	31.4

STC Rating = 34 (Sound Transmission Class)
Deficiencies = 25 (Number of deficiencies versus contour curve)
OITC Rating = 26 (Outdoor/Indoor Transmission Class)

Note: The acoustical chambers are qualified for measurements down to 80 hertz.
Data reported below 80 hertz is for reference only.

	Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (IAS) under the specific test methods listed under lab code TT-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS. This test report applies only to the specimen that was tested.
---	--



Architectural Testing

ATI No. 79521.01A

Date 12/27/07

Client Veka, Inc.

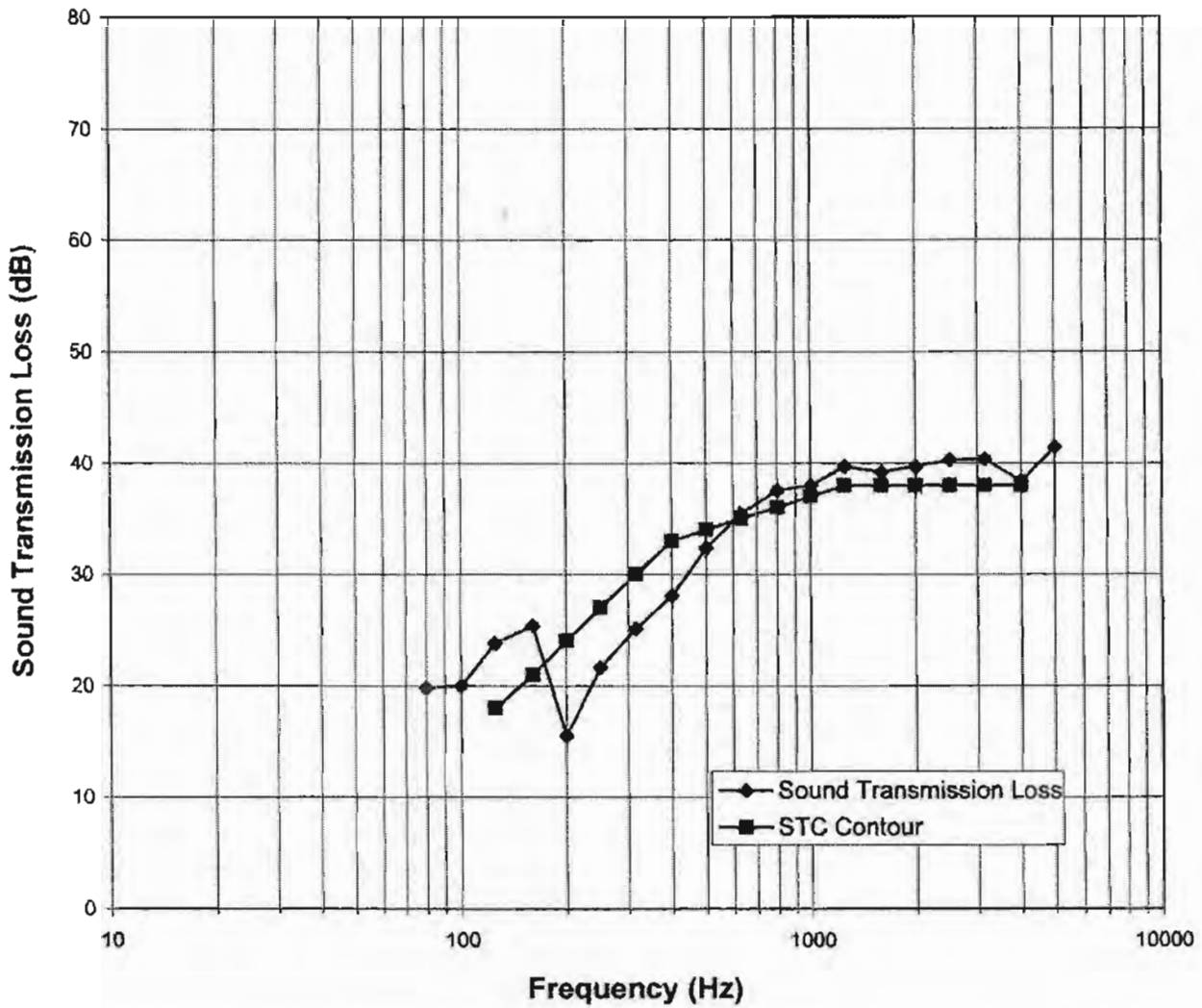
Specimen Series/Model DH 56WW, double hung window with 1" IG (1/4" laminated exterior , 5/8" air space, 1/8" annealed interior), Glass temperature 73F

Specimen Area 19.26 Sq Ft

Filler Area 120.74 Sq Ft

Operator Kurt A Golden - KS

Sound Transmission Loss



Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (IAS) under the specific test methods listed under lab code TL-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS. This test report applies only to the specimen that was tested.



SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing


ATI No.	79521.01B	Date	12/28/07
Client	Veka, Inc.		
Specimen	Series/Model DH 56WW, double hung window with 1" IG (1/8" annealed, 3/4" air space, 1/8" annealed)		
Specimen Area	19.26 Sq Ft		
Filler Area	120.74 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.3	74.4	73.6	74.1	71.8	74.1
RH %	45.3	45.2	42.2	45.4	62.9	44.5

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Deficiencies	Trans Coef Diff
80	40.3	48.9	86.0	65.8	36.1	17	4.26	0	11.9
100	37.8	57.4	88.0	65.5	39.3	18	3.69	0	13.6
125	37.7	51.5	93.3	68.4	45.7	21	2.75	0	17.1
160	39.0	46.1	94.8	70.2	45.8	21	0.51	0	16.9
200	38.0	55.7	99.3	82.3	48.9	12	0.78	7	28.6
250	34.6	56.0	100.2	81.8	51.4	14	1.78	8	29.6
315	30.9	59.4	99.3	75.0	54.0	19	1.23	6	26.6
400	28.8	60.7	99.0	71.5	57.4	23	0.83	5	26.8
500	27.5	60.0	100.6	67.9	60.4	28	0.27	1	24.7
630	23.5	60.1	103.2	67.2	65.4	31	0.71	0	26.4
800	24.1	59.5	102.9	63.3	66.4	35	0.35	0	23.7
1000	22.3	63.0	102.1	61.1	72.1	36	0.46	0	28.2
1250	21.6	66.5	105.7	61.6	77.8	39	0.43	0	31.2
1600	17.5	73.0	111.5	68.1	82.9	38	0.26	0	37.3
2000	12.7	77.1	107.5	62.6	82.2	39	0.48	0	35.4
2500	5.8	88.8	106.1	59.0	77.7	40	0.31	0	29.3
3150	6.2	105.4	106.8	61.5	80.1	38	0.26	0	34.2
4000	6.4	127.6	105.4	65.9	82.2	31	0.30	2	42.9
5000	6.5	166.8	103.9	58.7	80.8	36	0.61	0	37.1

STC Rating = 29 (Sound Transmission Class)
Deficiencies = 29 (Number of deficiencies versus contour curve)
OITC Rating = 22 (Outdoor/Indoor Transmission Class)

Note: The acoustical chambers are qualified for measurements down to 80 hertz.
 Data reported below 80 hertz is for reference only.

 ACCREDITED	Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (IAS) under the specific test methods listed under lab code TL-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS. This test report applies only to the specimen that was tested.
--	--



Architectural Testing

ATI No. 79521.01B

Date 12/28/07

Client Veka, Inc.

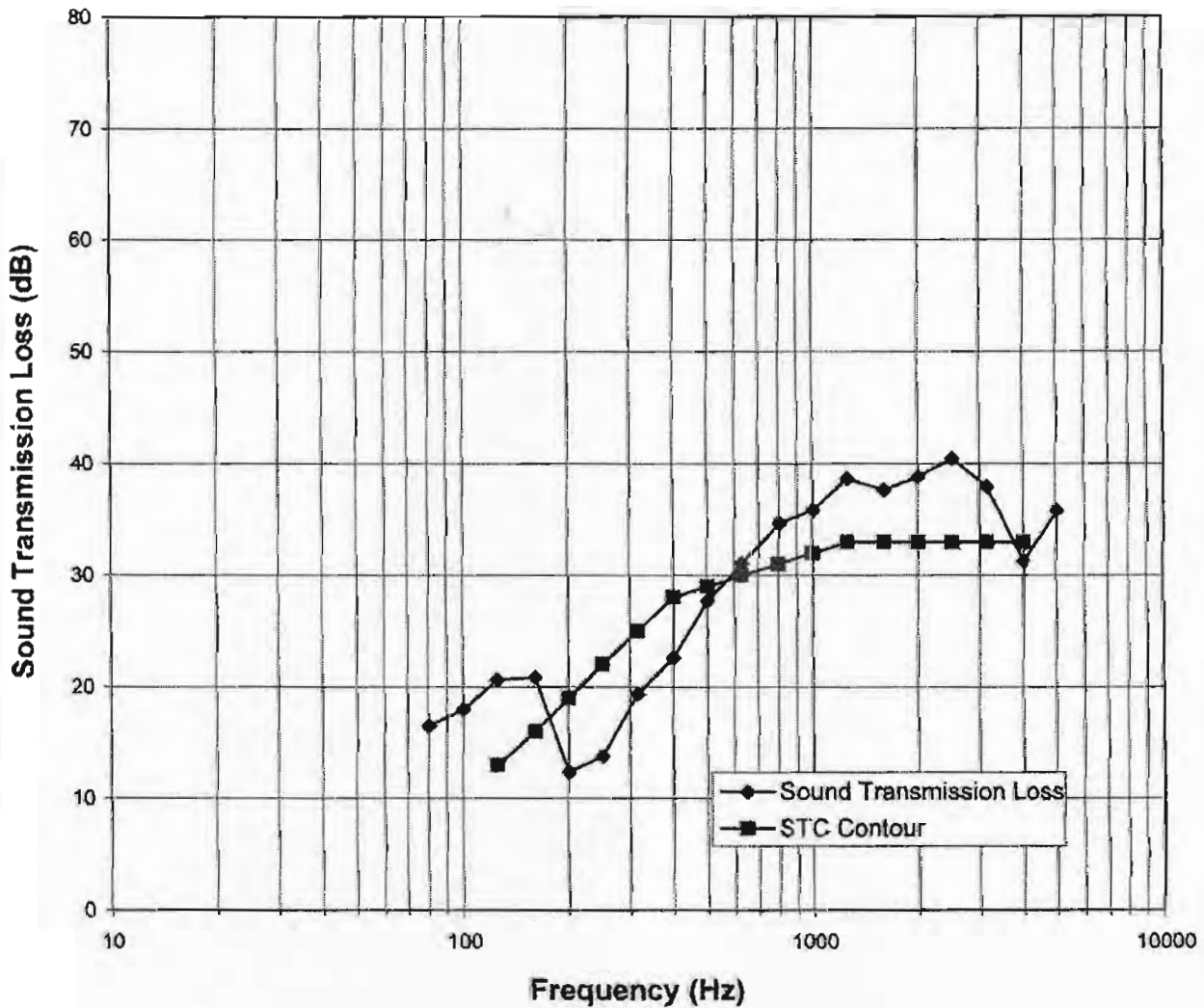
Specimen Series/Model DH 56WW, double hung window with 1" IG (1/8" annealed, 3/4" air space, 1/8" annealed)

Specimen Area 19.26 Sq Ft

Filler Area 120.74 Sq Ft

Operator Kurt A. Golden

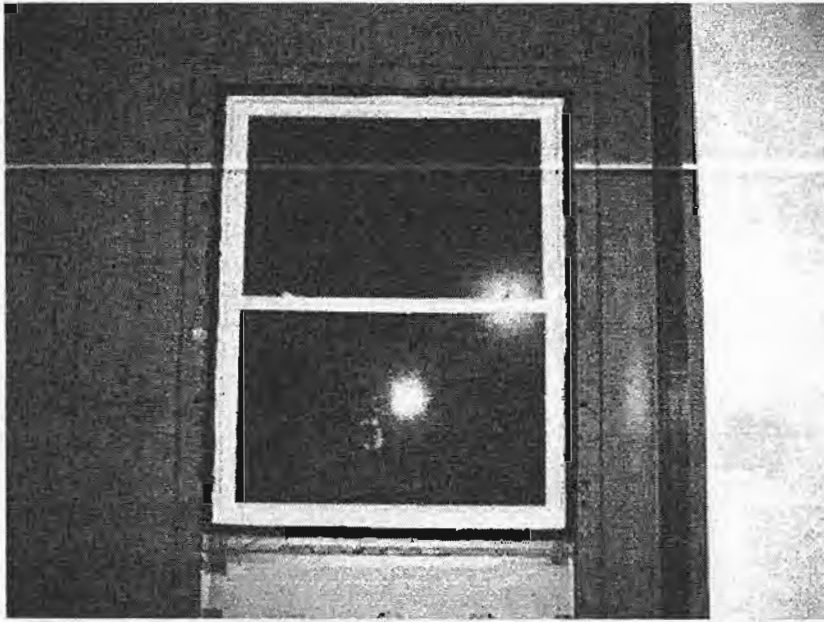
Sound Transmission Loss



Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (IAS) under the specific test methods listed under lab code TL-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS. This test report applies only to the specimen that was tested.

Appendix C

Photographs



Receive Room View of Installed Specimen



Source Room View of Installed Specimen



January 9, 2008

Ms. Kelly McDonald
National Accreditation and Management Institute, Inc.
11870 Merchants Walk, Suite 202
Newport News, Virginia 23606

RE: Test Report Submittal for Certification

Dear Ms. McDonald:

We have submitted the following report for certification on behalf of our client:

<u>Report No.</u>	<u>Client</u>	<u>Series/Model</u>	<u>Certification Program</u>
75481.02-501-47	Superseal Manufacturing Company, Inc.	1100 Series ULTRA	NAMI

I have also enclosed a validated set of the Bill of Materials, Assembly drawings, and Part drawings for each product type. If you need any additional information or I can be of additional assistance, please contact me.

ARCHITECTURAL TESTING, INC.

Joseph E. Allison/sld

Digitally Signed for: Joseph E. Allison by Sandy L. DiCaro

Joseph E. Allison
Senior Technician

JEA:sld

cc: 75481

Joseph Vespa, Superseal Manufacturing Company, Inc.