

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

Rendered to:

ACOUSTIBLOK, INC.

WALL ASSEMBLY: #1

**TYPE: Standard 8" Hollow Block Wall
With Single Stud Wall Construction**

SOUND ISOLATION MATERIAL: Acoustiblok®

Summary of Test Results			
ATI Data File No.	Description	STC	OITC
69219.01	Standard 8" hollow block wall, 1/2" air space, single metal stud wall construction, Acoustiblok® Sound Isolation Material, with single layer 5/8" gypsum board and one layer of 4" mineral wool insulation	71	58

Reference should be made to ATI Report No. 69219.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

ACOUSTIBLOK, INC.
6900 Interbay Boulevard
Tampa, Florida 33616

Report No: 69219.01-113-11
Test Date: 01/19/07
Report Date: 01/29/07
Expiration Date: 01/19/11

Test Sample Identification:

Type: Standard 8" hollow block wall with single stud wall construction

Sound Isolation Material: Acoustiblok®

Wallboard: Single layer of 5/8" gypsum board on source side

Insulation: 4" Thermafiber® Sound Attenuation Fire Blankets

Overall Size: 14' by 10'

Project Scope: Architectural Testing, Inc. (ATI) was contracted by Acoustiblok, Inc. to conduct a sound transmission loss test on a standard 8" hollow block wall with single stud wall construction. 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 tests were 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 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.

Test Procedure: The sound transmission loss test was conducted in accordance with the ASTM E 90 test method. 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:

The standard 8" hollow block wall with single stud wall construction was fabricated in the 168" wide by 120" high test opening of a steel test frame. A 1/2" plywood perimeter was fastened to the steel test frame with 3" long TEK screws and isolation washers. The plywood perimeter was sealed with acoustic caulk and had a 1/2" wide vibration brake filled with silicone caulk in the center of the test frame. The 8" block wall was constructed 1/2" from being flush with the receive room with the perimeter sealed with acoustic caulk on both sides. The wall was allowed to cure at least 28 days prior to testing. The materials used in the construction are described in the Construction Materials section listed below.

The stud wall was constructed on the source room side of the block wall. The top and bottom plates were fastened to the plywood perimeter with a 1/2" gap between the block wall, using 1/2" wood screws with isolation washers. The steel studs on both walls were attached 24" on center to the top and bottom plates with 1/4" self-tapping screws.

The 4" Thermafiber® Sound Attenuation Fire Blankets were placed into the stud cavities.

The Acoustiblok® Sound Isolation Material was attached to the source room side of the studs, horizontally every 18" on center using self tapping wafer head screws. No screws were used at either the top and bottom tracks on either wall. The Acoustiblok® Sound Isolation Material was overlapped 1" with a 3/8" bead of Acoustiblok® Acoustical Sound Sealant applied to the full length of all overlapped areas. Acoustigrip® AGT60 tape was applied to all seams.

The 5/8" wallboard material was attached to the studs, covering the Acoustiblok® Sound Isolation Material, and fastened with 1-1/4" drywall screws spaced 24" on center. No screws were used at either the top and bottom tracks on both walls. The joints between the wallboard panels were sealed with acoustic caulk and duct tape. All screw heads were sealed with duct tape. A 3/8" gap existed between the wallboard material and the test frame around the entire perimeter of the wall specimen on both sides. This gap was sealed with duct seal.

Sample Descriptions: (Continued)

Construction Materials:

Stud Material	Nominal Dimensions	Stud Spacing	Quantity Used	Average Weight (lbs / lineal ft.)
25 gage (0.020"), steel	3-1/2" by 120"	24" on center	8	0.33
Top and Bottom Plate Material		Nominal Dimensions	Quantity Used	Average Weight (lbs / lineal ft.)
25 gage (0.020"), steel runner track		3-1/2" by 168"	2	0.33
Sound Isolation Material		Nominal Dimensions	Quantity Used	Average Weight (lbs / sq. ft.)
Acoustiblok® Sound Isolation Material 16oz (0.093")		168" by 120"	1	0.98
Source Room Wallboard		Nominal Dimensions	Quantity Used	Average Weight (lbs / sq. ft.)
FIRECODE®-CORE, Type X, Gypsum board		5/8" by 48" by 120"	3-1/2	2.34
Cavity Insulation Type		Nominal Dimensions	Number of Layers	Average Weight (lbs / sq. ft.)
Thermafiber® Sound Attenuation Fire Blankets		4" by 24" by 48"	1	0.83
Wall Material		Nominal Dimensions	Quantity Used	Average Weight (lbs / sq. ft.)
Standard 8" Block Wall		7-5/8" by 7-5/8" by 15-1/2"	157.5	36.0
Total Wall Construction Weight (lbs)			5725.24	
Total Wall Construction Weight (lbs / sq. ft.)			40.89	

Comments: The acoustical chambers are qualified for measurements down to 80 hertz. Data reported below 80 hertz is for reference only. The gypsum board panels were conditioned at a relative humidity of 65% to 70% for at least 24 hours in a conditioning chamber and/or the reverberation chambers. Drawings of the test sample are located in Appendix C. Photographs of the test sample are located 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 sound transmission loss test results on the wall construction is listed below.

ATI Data File No.	Sample Description	STC	OITC
69219.01	Standard 8" hollow block wall, 1/2" air space, single metal stud wall construction, Acoutiblok® sound isolation material, with single layer 5/8" gypsum board and one layer of 4" mineral wool insulation	71	58

The complete test results are listed in Appendix B. Data on 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:


Kurt A. Golden
Senior Technician - Acoustical Testing

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

KAG:crc

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

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

 NVLAP LAB CODE 200361	Architectural Testing, Inc is accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program for the specific test methods listed under lab code 200361. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by NIST. This test report applies only to the specimen that was tested.
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Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	01/29/07	N/A	Original Report Issue

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	Y002929
Receive Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003246
Source Room Microphone	ACO Pacific	7047	1/2", pressure type, condenser microphone	Y002820
Receive Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003250
Source Room Preamp	ACO Pacific	4012	1/2" preamplifier	Y002185
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.

Appendix B
Complete Sound Transmission Loss Test Results



SOUND TRANSMISSION LOSS

ASTM E90


Architectural Testing

ATI No.	69219.01	Date	01/19/07
Client	Acoustiblok, Inc.		
Specimen	Wall Assembly # 1 - low frequency test, Standard 8" hollow block wall with single stud wall construction		
Specimen Area	140.00 Sq Ft		
Filler Area	0.00 Sq Ft		
Operator	Benjamin W. Green		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	71.0	71.3	70.6	71.2	0.0	71.0
RH %	64.9	64.4	62.1	62.9	0.0	63.6

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
25	37.5	50.8	106.6	72.7	0.0	38	7.35	0	0.0
31.5	44.6	65.0	109.2	83.0	0.0	30	3.93	0	0.0
40	46.9	73.5	118.0	88.9	0.0	32	3.37	0	0.0
50	39.2	74.0	111.7	78.9	0.0	36	5.60	0	0.0
63	37.8	71.2	109.4	72.8	0.0	39	3.53	0	0.0
80	36.3	73.9	103.0	63.0	0.0	43	2.79	0	0.0
100	37.6	58.2	101.6	58.8	0.0	47	4.32	0	0.0
125	36.2	59.6	105.8	57.9	0.0	52	3.40	3	0.0
160	40.6	64.6	107.0	57.5	0.0	53	0.99	5	0.0
200	39.9	66.4	110.2	60.7	0.0	53	1.26	8	0.0
250	32.9	70.1	112.1	57.7	0.0	57	1.41	7	0.0
315	31.7	75.6	114.4	52.4	0.0	65	1.07	2	0.0
400	30.2	77.3	114.7	48.8	0.0	68	0.50	2	0.0
500	29.2	82.0	115.9	46.5	0.0	72	0.83	0	0.0
630	24.1	76.9	115.8	44.0	0.0	74	0.53	0	0.0
800	25.3	86.0	115.5	41.8	0.0	76	0.55	0	0.0
1000	22.8	89.4	113.4	36.9	0.0	78	0.48	0	0.0
1250	23.4	95.4	114.2	31.8	0.0	84	0.55	0	0.0
1600	18.0	96.7	117.9	30.1	0.0	89	0.54	0	0.0
2000	13.4	106.7	111.4	22.9	0.0	90	0.95	0	0.0
2500	5.3	115.4	109.6	20.0	0.0	90	0.99	0	0.0
3150	6.2	138.6	110.7	17.5	0.0	93	1.07	0	0.0
4000	6.1	165.4	109.5	14.7	0.0	94	0.98	0	0.0
5000	6.6	208.2	108.3	14.0	0.0	93	0.82	0	0.0
6300	7.5	256.6	106.4	14.3	0.0	89	0.58	0	0.0
8000	8.1	301.8	103.6	14.6	0.0	86	1.18	0	0.0

STC Rating 71 (*Sound Transmission Class*)
Deficiencies 27 (*Number of deficiencies versus contour curve*)
OITC Rating 58 (*Outdoor/Indoor Transmission Class*)

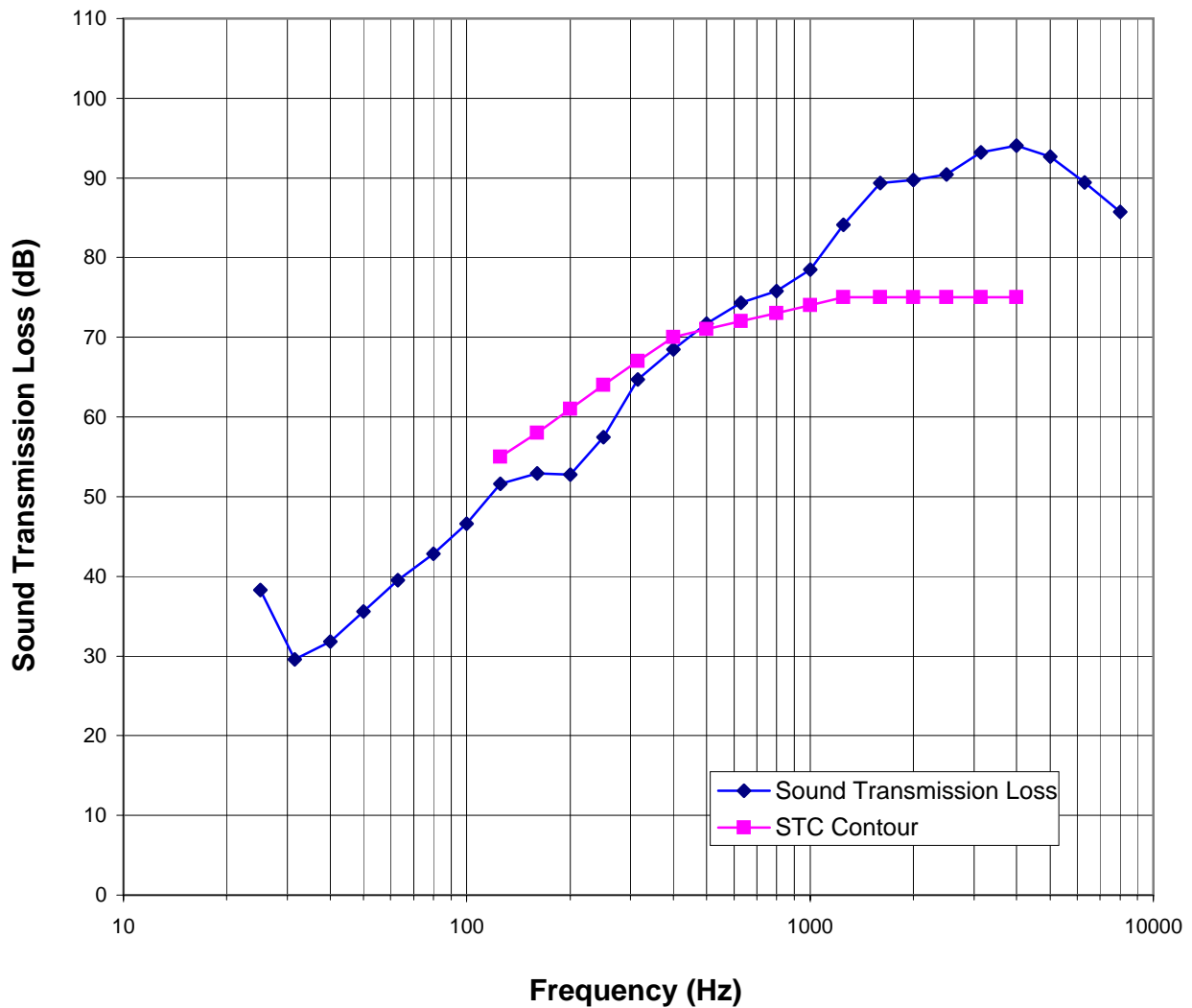
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Architectural Testing

ATI No. 69219.01 Date 01/19/07
Client Acoustiblok, Inc.
Specimen Wall Assembly # 1 - low frequency test, Standard 8" hollow block wall with single stud wall construction
Specimen Area 140.00 Sq Ft
Filler Area 0.00 Sq Ft
Operator Benjamin W. Green

Sound Transmission Loss



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Appendix C
Design Drawings

Assembly # 1

Standard 8" Hollow Block Wall

1/2"
Air Gap

3 1/2" Steel Stud Wall 24" oc
w/ 3" Johns Manville MinWool-1200
4" Thermafiber Sound Attenuation Fire Blankets

Acoustiblok 16oz

5/8" Gypsum Board



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 69219.01-113-11
Date 1/9/07 Tech K6.

Appendix D
Photographs



View of Specimen Installed in Receive Room



View of Specimen Installed in Source Room



View of Acoustiblok® Added to Metal Studs



View of Acoustiblok® with Acoustigrip® Tape at Seams