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SECTION 2

ACOUSTIBLOK SOUND REDUCTION WALL ASSEMBLIES

- Acoustiblok Wall Test Overview
- STC85 Rated CMU and Metal Stud Assembly
- STC71 Rated CMU and Metal Stud Assembly
- STC66 Rated Double Metal Stud Assembly
- STC61 Rated Double Wood Stud Assembly
- STC57 Rated Single Metal Stud Assembly
- STC57 Rated Staggered Wood Stud Assembly
- STC53 Rated Single Metal Stud Assembly

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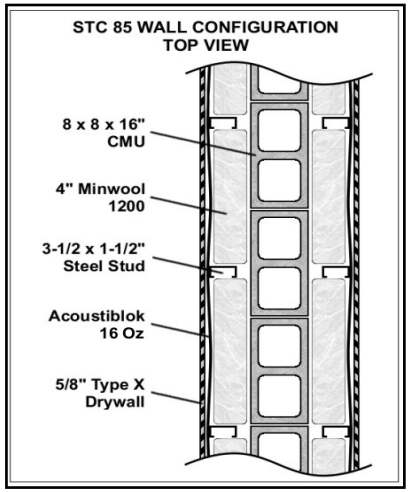
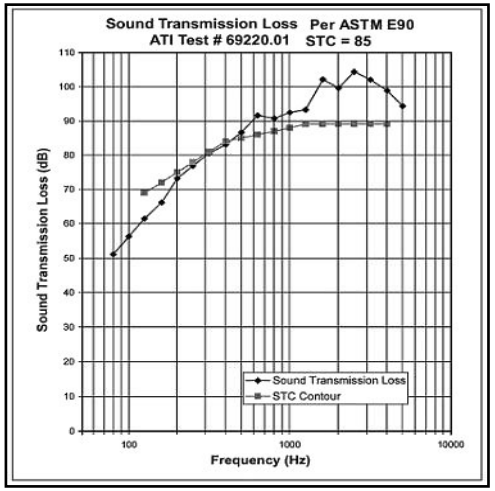
Acoustiblok Sound Isolation Material Independently Tested Wall Assemblies





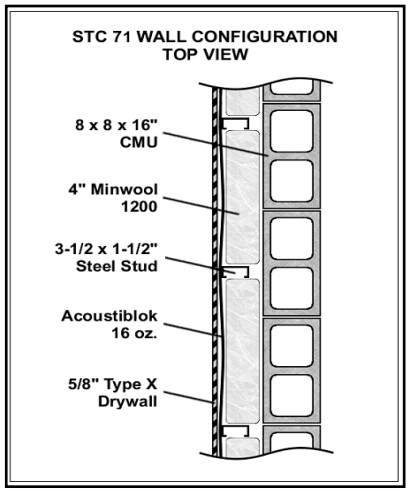
STC 85 Wall Assembly

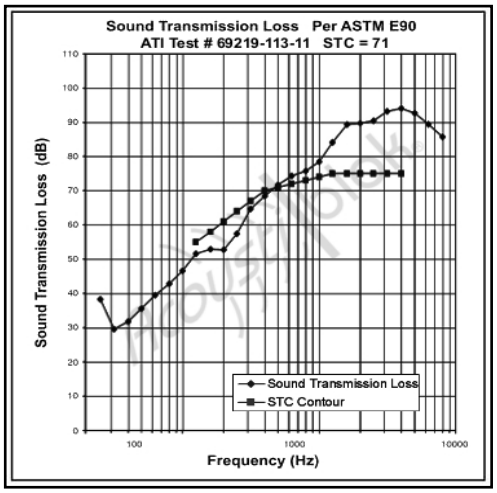
Architectural Testing, Inc. -Test # 69220.01-113-11
Weight: 45.79lb/ft^2 (223.547kg/m$^{2)}$ Thickness: 17.5" (44.45cm)

Assembly Construction: Standard 8" (20.32cm) hollow block, 25 ga. steel studs 24" (61cm) o.c. spaced 1/2" (1.27cm) from block, with 4" (10.16cm) Thermafiber S.A.F.B. insulation, 16 oz. (453.59g) Acoustiblok, 5/8" (1.59cm) Type X gypsum board, on both sides of the block wall.

Independently Tested Sound Transmission Loss Reference								
Frequency	25hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	35 dB	49 dB	60 dB	76 dB	88 dB	92 dB	97 dB	93 dB

R_w and STC ratings vary marginally in the equation R_w = .98STC + 1.1; however, they remain generally identical





STC 71 Wall Assembly

Architectural Testing, Inc. -Test # 69219.01-113-11
Weight: 40.89lb/ft^2 (199.625kg/m^2) Thickness: 12.75" (32.385cm)

Assembly Construction: Standard 8" (20.32cm) hollow block, 25 ga. steel studs 24" (61cm) o.c. spaced 1/2" (1.27cm) from block, with 4" (10.16cm) Thermafiber S.A.F.B. insulation, 16 oz. (453.59g) Acoustiblok, 5/8" (1.59cm) Type X gypsum board, only one side of the block wall.

Independently Tested Sound Transmission Loss Reference								
Frequency	25hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	38 dB	43 dB	52 dB	57 dB	72 dB	78 dB	90 dB	93 dB

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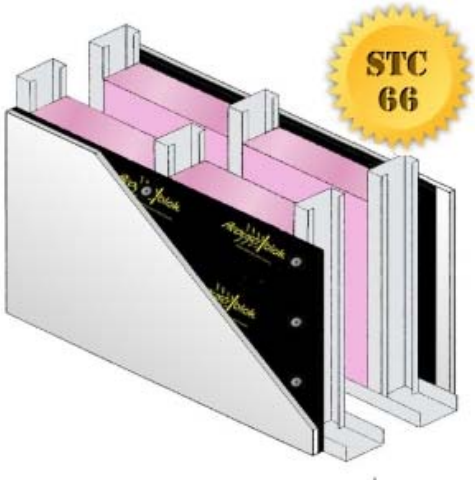
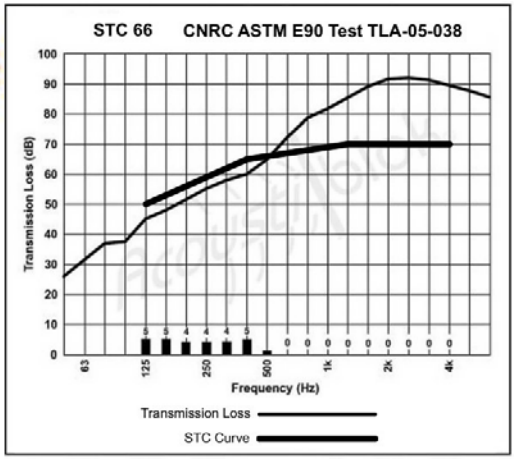




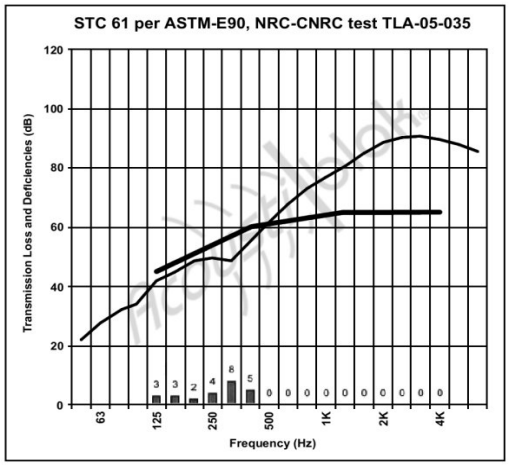
STC 66 Wall Assembly

NRC-IRC -Test # TLA-05-038
Weight: 7.69lb/ft^2 (37.55kg/m2) Thickness: 11in (27.94cm)

Assembly Construction: 25 ga. steel studs 24” (61cm) o.c., 2 1/2” (6.35cm) air space between walls, 6" (15.24) R-21.5 glass fiber batt, 16 oz. (453.59g) Acoustiblok, 5/8” (1.59cm) Type X gypsum board.

Independently Tested Sound Transmission Loss Reference								
Frequency	50hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	26 dB	37dB	45 dB	55 dB	65 dB	82 dB	92 dB	88 dB

R_w and STC ratings vary marginally in the equation R_w = .98STC + 1.1; however, they remain generally identical



STC 61 Wall Assembly

NRC-IRC -Test # TLA-05-035
Weight: 6.824lb/ft^2 (33.32kg/m^2) Thickness: 9.75in (24.765cm)

Assembly Construction: wood studs 24” (61cm) o.c., 1” (2.54cm) air space between walls, glass fiber batt, 16 oz. (453.59g) Acoustiblok, 5/8” (1.59cm) Type X gypsum board.

Independently Tested Sound Transmission Loss Reference								
Frequency	50hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	22 dB	32 dB	42 dB	50 dB	62 dB	77 dB	90 dB	88 dB

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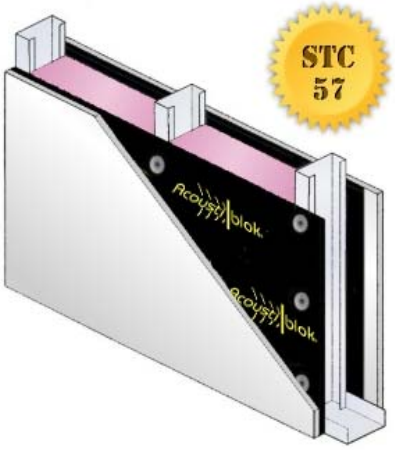
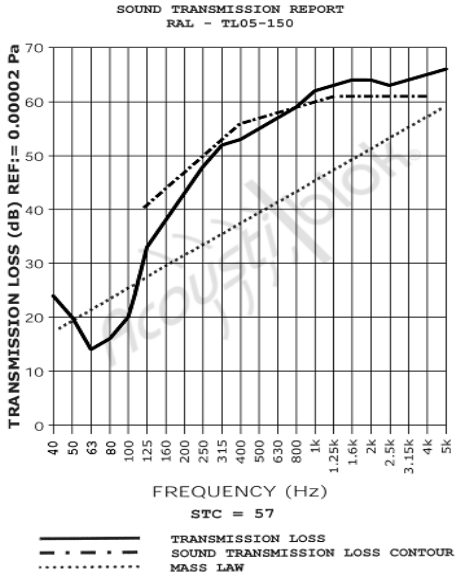




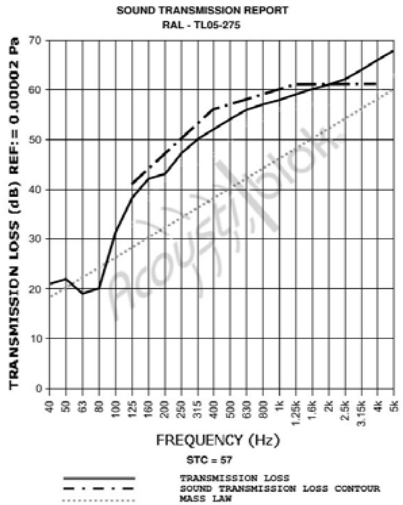
STC 57 Wall Assembly

Riverbank Acoustical Laboratory -Test # TL-05-150
Weight: 7.5lb/ft^2 (36.6kg/m^2) Thickness: 5.125in (13cm)

Assembly Construction: 20 ga. steel studs 24” (61cm) o.c., 3 1/2" (8.89cm) R-13 glass fiber batt, 2 layers - 16 oz. (453.59g) Acoustiblok, 5/8” (1.59cm) Type X gypsum board.
.

Independently Tested Sound Transmission Loss Reference								
Frequency	40hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	24 dB	16 dB	33 dB	48 dB	55 dB	62 dB	63 dB	66 dB

R_w and STC ratings vary marginally in the equation R_w = .98STC + 1.1; however, they remain generally identical



STC 57 Wall Assembly

Riverbank Acoustical Laboratory -Test # TL-04-275
Weight: 8.1lb/ft^2 (39.6kg/m^2) Thickness: 6.75in (17.1cm)

Assembly Construction: wood studs 16” (40.64cm) o.c. staggered 8” (20.32cm) o.c., 3 1/2” (8.89cm) glass fiber batt, 16 oz. (453.59g) Acoustiblok, 5/8” (1.59cm) Type X gypsum board.

Independently Tested Sound Transmission Loss Reference								
Frequency	40hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	21 dB	20 dB	38 dB	47 dB	54 dB	58 dB	62 dB	68 dB

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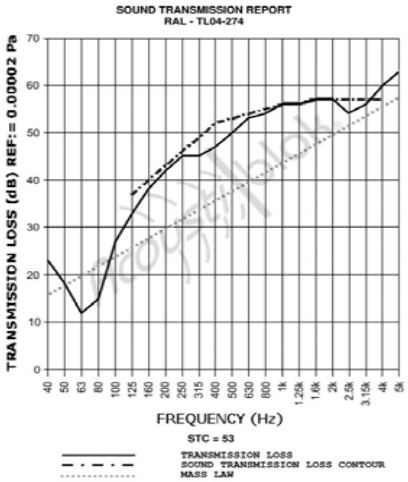


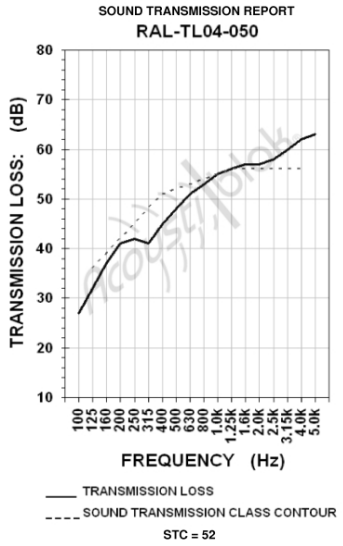
STC 53 Wall Assembly

Riverbank Acoustical Laboratory -Test # TL-04-274
Weight: 6lb/ft^2 (29.2kg/m^2) Thickness: 4.875in (12.4cm)

Assembly Construction: metal studs 24" (61cm) o.c., 3 1/2" (8.89cm) R-13 glass fiber batt, 16 oz. (453.59g) Acoustiblok, 5/8" (1.59cm) Type X gypsum board.

Independently Tested Sound Transmission Loss Reference								
Frequency	40hz	80hz	125hz	250hz	500hz	1000hz	2500hz	5000hz
T.L.	23 dB	15 dB	33 dB	45 dB	50 dB	56 dB	54 dB	63 dB

R_w and STC ratings vary marginally in the equation R_w = .98STC + 1.1; however, they remain generally identical



STC 52 Wall Assembly

Riverbank Acoustical Laboratory -Test # TL-04-050
Weight: 6.8lb/ft^2 (33.3kg/m^2) Thickness: 5in (12.7cm)

Assembly Construction: 2"x4" (5cm,10cm) wood studs 24" (40.64cm) o.c. 3 1/2" (8.89cm) glass fiber batt, 16 oz. (453.59g) Acoustiblok, 5/8" (1.59cm) Type X gypsum board.

Independently Tested Sound Transmission Loss Reference								
Frequency	100hz	160hz	250hz	500hz	800hz	1000hz	2500hz	5000hz
T.L.	27 dB	37 dB	42 dB	48 dB	53 dB	55 dB	58 dB	63 dB

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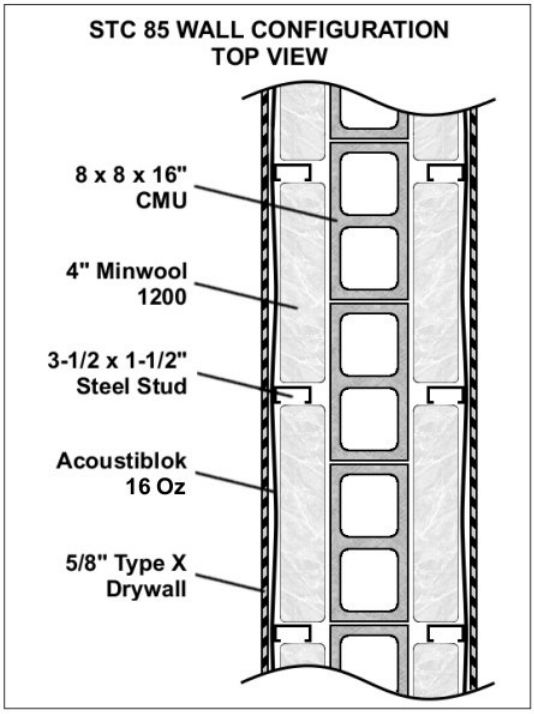
STC85 Rated Acoustiblok® Double Steel Stud and Block Wall: Acoustical Test Overview

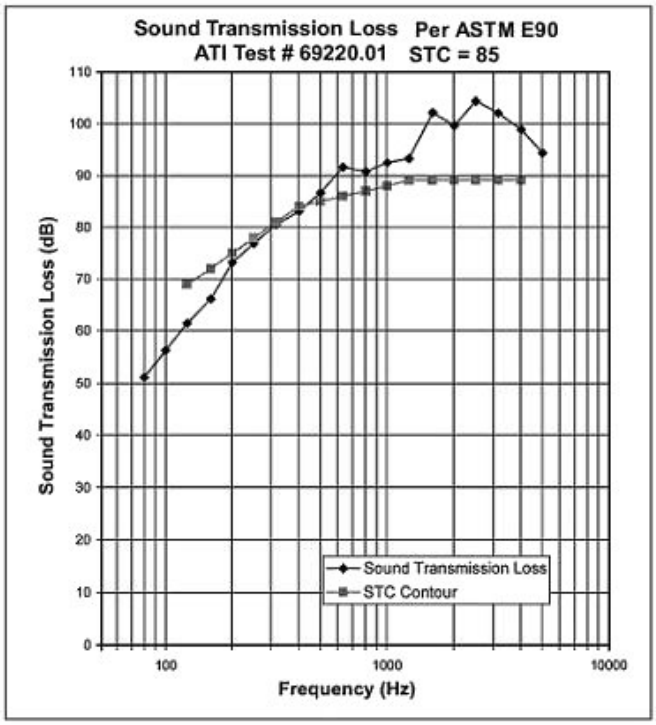


The acoustical laboratory at Architectural Testing Inc. recorded a remarkable **STC of 85** for this wall design. This is a noise reduction well in excess of 99% to human hearing.

"We have never tested a wall design configuration that achieved a rating this high," stated Kurt Golden, test administrator at Architectural Testing, Inc., York, Penn..

The tested assembly: 8 x 16" concrete block, steel 2x4 studs spaced 1/2" from the block, with 4" Thermafiber insulation and Acoustiblok under the drywall, on both sides of the block wall.

For applications where extreme high performance sound isolation is a requirement, this configuration with Acoustiblok is the most practical and economical option in the market.



SOUND TRANSMISSION CLASS (STC) is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels adequately. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.

STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. To estimate high and low frequency performance, consult the Sound Transmission Loss graph included in STC test reports. STC does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall - Impact Insulation Class (IIC) measure transmitted impact noise, and are specified for floor/ceiling assemblies only.

Architectural Testing

ASTM E 90 SOUND TRANSMISSION LOSS TEST REPORT

Rendered to:

ACOUSTIBLOK, INC.

WALL ASSEMBLY: #2

TYPE: Standard 8" Hollow Block Wall With Single Stud Wall Construction On Both Sides

SOUND ISOLATION MATERIAL: Acoustiblok®

Summary of Test Results			
ATI Data File No.	**Description**	**STC**	**OITC**
69220.01	Standard ASTME 90 test on a Standard 8" hollow block wall with; 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 (on both sides)	85	68
69220.01A	Low frequency test performed on a Standard 8" hollow block wall with; 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 (on both sides)	84	66

Reference should be made to ATI Report No. 69220.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

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Architectural Testing

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

ACOUSTIBLOK, INC.
6900 Interbay Boulevard
Tampa, Florida 33616

Report No:	69220.01-113-11
Test Dates:	01/03/07
And:	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 on both sides

Sound Isolation Material: Acoustiblok®

Wallboard: Single layer of 5/8" gypsum board

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 on both sides. 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.*

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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 on both sides 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 walls were constructed on the source and receiving room side of the block wall. On the receive room side, top and bottom plates were placed on 3/8" neoprene foam against the test chamber opening. They were fastened to the edge of the plywood perimeter of the test frame with 1-1/4" drywall screws creating a 1/2" gap between the plates and block wall. The source room 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 of both walls.

The Acoustiblok® Sound Isolation Material was attached to all 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, and 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 of both walls, 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	16	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"	4	0.33

Sound Isolation Material	Nominal Dimensions	Quantity Used	Average Weight (lbs / sq. ft.)
Acoustiblok® Sound Isolation Material 16oz (0.093")	168" by 120"	2	0.98
Receive 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
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"	2	1.32
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)	6410.48
Total Wall Construction Weight (lbs / sq. ft.)	45.79

Comments: After the first transmission loss test was performed, the wall system was dismantled except for the 8" block wall. For the Low Frequency transmission loss test, same wall construction used for the first test was build at a later date using the same 8" block wall. The Low Frequency test consisted of a standard ASTM E 90 test with the addition of a subwoofer speaker to achieve data down to 25hertz. 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
69220.01	Standard ASTME 90 test on a Standard 8" hollow block wall with; 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 (on both sides)	85	68
69220.01A	Low frequency test performed on a Standard 8" hollow block wall with; 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 (on both sides)	84	66

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:

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: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.

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.

Architectural Testing

SOUND TRANSMISSION LOSS

ASTM E90

ATI No.	69220.01	**Date**	01/03/07
Client	Acoustiblok, Inc.		
Specimen	Wall Assembly #2, Standard 8" hollow block wall with single stud wall construction on both sides		
Specimen Area	140.00 Sq Ft		
Filler Area	0.00 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.0	74.2	73.3	74.0	0.0	73.9
RH %	64.0	63.8	62.4	64.1	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 Defici-encies	Trans Coef Diff
80	33.9	54.0	92.4	45.5	0.0	51	1.90	0	0.0
100	34.7	54.9	100.2	48.0	0.0	56	3.04	0	0.0
125	41.2	54.1	104.9	47.6	0.0	61	3.14	8	0.0
160	38.8	56.6	106.4	44.2	0.0	66	0.98	6	0.0
200	38.8	55.4	111.8	42.6	0.0	73	0.69	2	0.0
250	34.8	54.9	111.6	38.7	0.0	77	0.80	1	0.0
315	31.7	60.5	110.5	33.6	0.0	81	0.49	0	0.0
400	29.4	60.0	111.3	31.8	0.0	83	0.84	1	0.0
500	28.7	61.1	114.1	31.0	0.0	87	0.65	0	0.0
630	23.1	60.8	113.5	25.5	0.0	92	0.44	0	0.0
800	23.9	62.4	112.7	25.5	0.0	91	0.57	0	0.0
1000	21.4	64.7	112.6	23.5	0.0	92	0.49	0	0.0
1250	22.0	69.7	114.1	23.9	0.0	93	0.56	0	0.0
1600	16.7	73.6	119.1	19.8	0.0	102	0.64	0	0.0
2000	13.4	79.3	111.7	14.5	0.0	100	0.39	0	0.0
2500	5.0	92.6	108.9	6.4	0.0	104	0.32	0	0.0
3150	6.1	107.1	109.4	8.6	0.0	102	0.20	0	0.0
4000	6.0	130.1	107.1	8.6	0.0	99	0.44	0	0.0
5000	6.6	170.4	103.6	8.5	0.0	94	0.27	0	0.0

STC Rating =	**85**	*(Sound Transmission Class)*
Deficiencies =	**18**	*(Number of deficiencies versus contour curve)*
OITC Rating =	**68**	*(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.*

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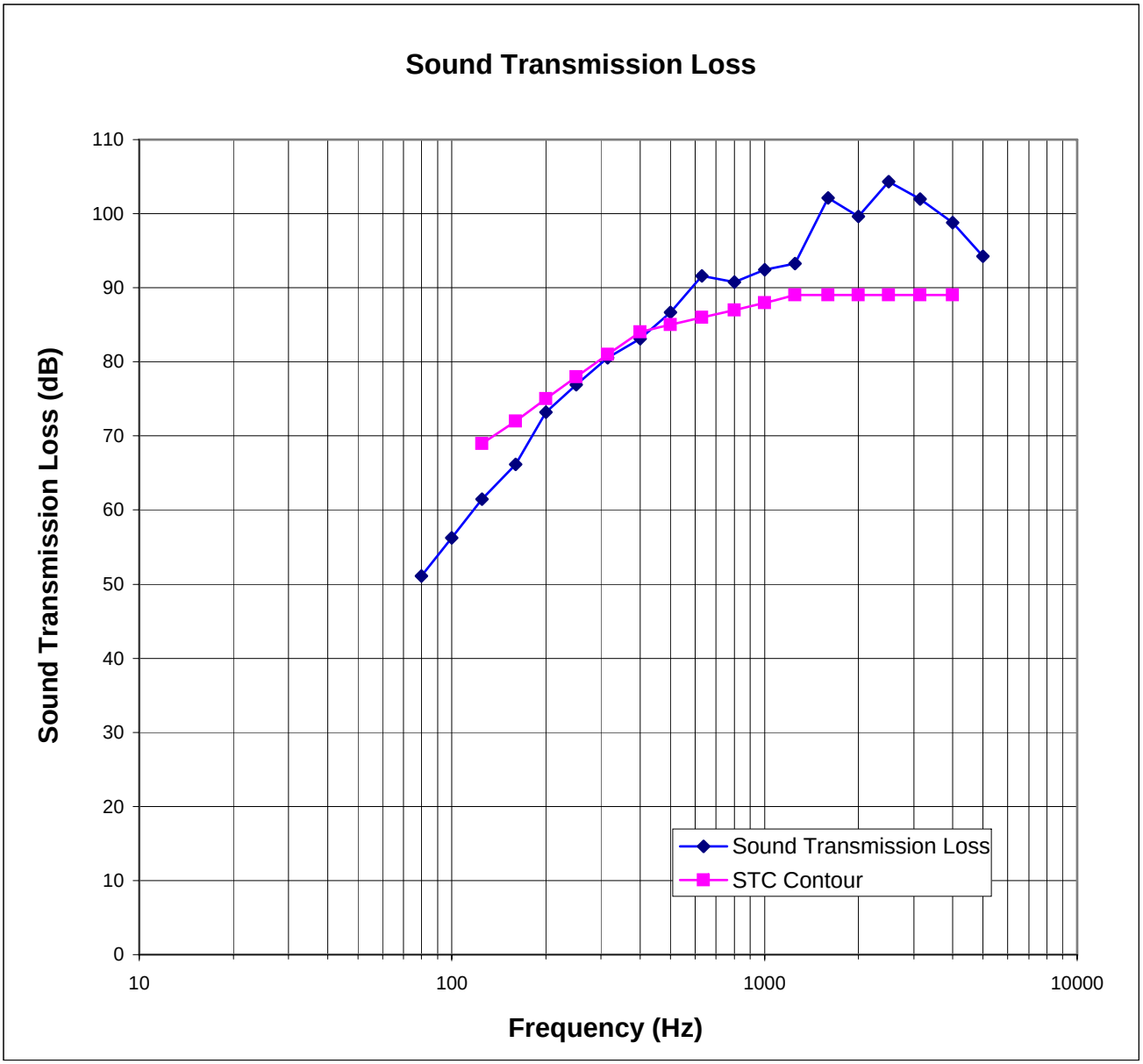
Architectural Testing

ATI No.	69220.01	**Date**	01/03/07
Client	Acoustiblok, Inc.		
Specimen	Wall Assembly #2, Standard 8" hollow block wall with single stud wall construction on both sides		
Specimen Area	140.00 Sq Ft		
Filler Area	0.00 Sq Ft		
Operator	Kurt A. Golden		



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SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing

ATI No.	69220.01A	**Date**	01/19/07
Client	Acoustiblok, Inc.		
Specimen	Wall Assembly # 2 - low frequency test, Standard 8" hollow block wall with single stud wall construction on both sides		
Specimen Area	140.00 Sq Ft		
Filler Area	0.00 Sq Ft		
Operator			

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	71.2	71.4	70.6	71.0	0.0	71.1
RH %	65.6	63.6	63.2	65.9	0.0	64.6

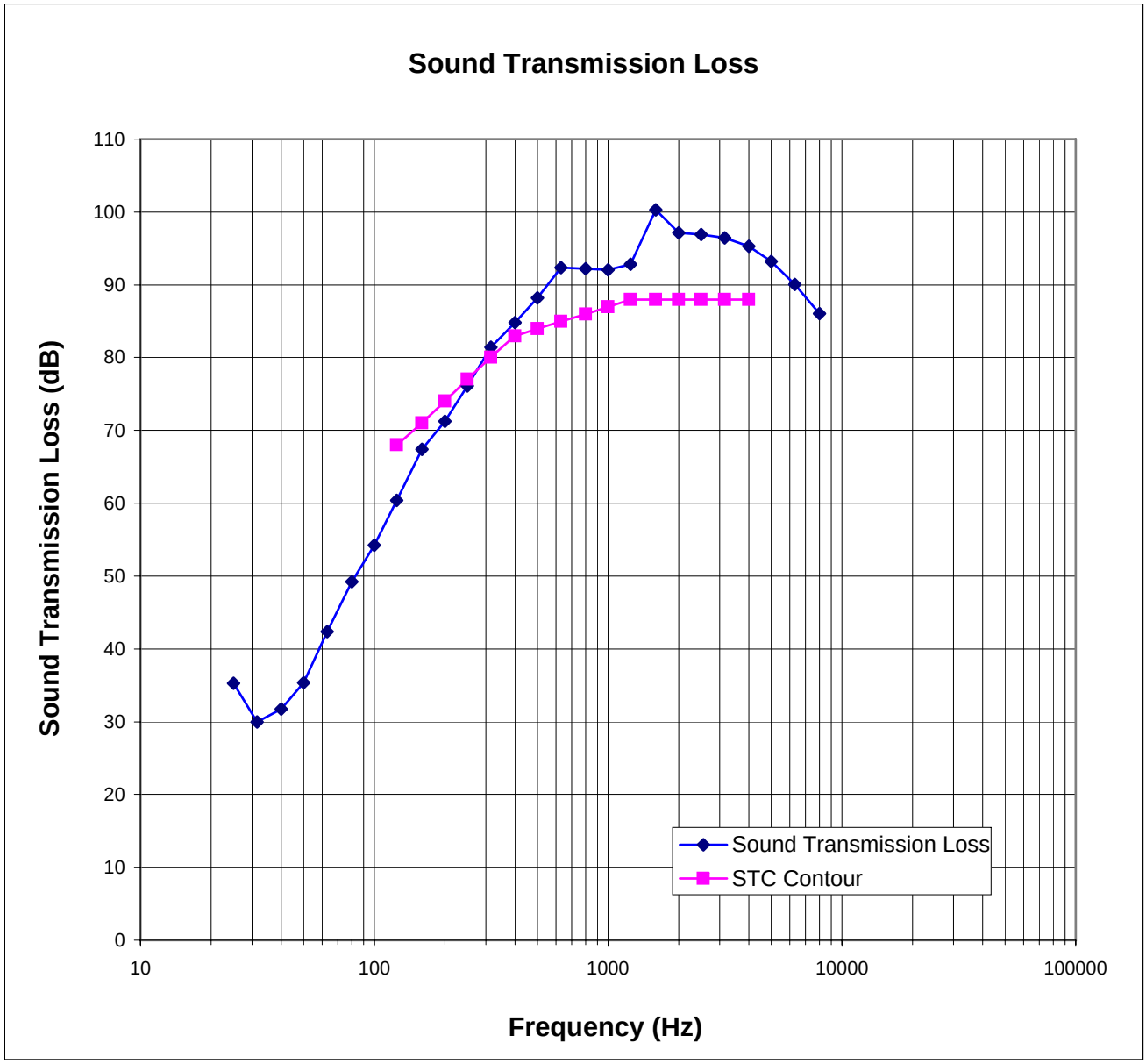
Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
25	40.9	72.6	106.3	73.9	0.0	35	5.45	0	0.0
31.5	49.0	84.8	108.9	81.1	0.0	30	2.85	0	0.0
40	49.1	106.8	118.1	87.5	0.0	32	2.58	0	0.0
50	37.1	126.4	111.2	76.2	0.0	35	5.32	0	0.0
63	38.5	96.5	108.3	67.6	0.0	42	2.70	0	0.0
80	41.0	73.5	101.7	55.3	0.0	49	2.77	0	0.0
100	43.1	54.6	100.6	50.5	0.0	54	4.22	0	0.0
125	45.5	56.3	105.4	48.9	0.0	60	3.31	8	0.0
160	38.5	53.8	107.2	44.0	0.0	67	1.11	4	0.0
200	38.3	52.3	110.2	43.2	0.0	71	2.60	3	0.0
250	33.8	63.4	112.3	39.6	0.0	76	1.90	1	0.0
315	30.5	67.4	114.5	36.3	0.0	81	1.67	0	0.0
400	28.9	68.1	114.8	33.1	0.0	85	1.37	0	0.0
500	27.6	69.1	116.2	31.1	0.0	88	1.42	0	0.0
630	23.0	68.6	116.2	27.0	0.0	92	1.40	0	0.0
800	23.8	71.5	115.8	26.5	0.0	92	1.08	0	0.0
1000	21.8	75.2	113.9	24.5	0.0	92	0.85	0	0.0
1250	21.6	79.7	114.4	24.1	0.0	93	0.80	0	0.0
1600	16.2	83.6	118.1	20.0	0.0	100	0.67	0	0.0
2000	12.3	92.2	111.8	16.4	0.0	97	0.99	0	0.0
2500	5.8	105.2	109.8	14.1	0.0	97	1.38	0	0.0
3150	6.3	125.3	110.6	14.6	0.0	96	0.97	0	0.0
4000	6.5	148.8	109.5	13.9	0.0	95	0.41	0	0.0
5000	7.2	189.6	108.4	13.9	0.0	93	0.46	0	0.0
6300	7.7	238.0	106.7	14.3	0.0	90	0.67	0	0.0
8000	8.2	299.6	103.8	14.5	0.0	86	1.00	0	0.0

STC Rating	84	*(Sound Transmission Class)*
Deficiencies	16	*(Number of deficiencies versus contour curve)*
OITC Rating	66	*(Outdoor/Indoor Transmission Class)*

NVLAP LAB CODE 200361

Architectural Testing

ATI No.	69220.01A	**Date**	01/19/07
Client	Acoustiblok, Inc.		
Specimen	Wall Assembly # 2 - low frequency test, Standard 8" hollow block wall with single stud wall construction on both sides		
Specimen Area	140.00 Sq Ft		
Filler Area	0.00 Sq Ft		
Operator			



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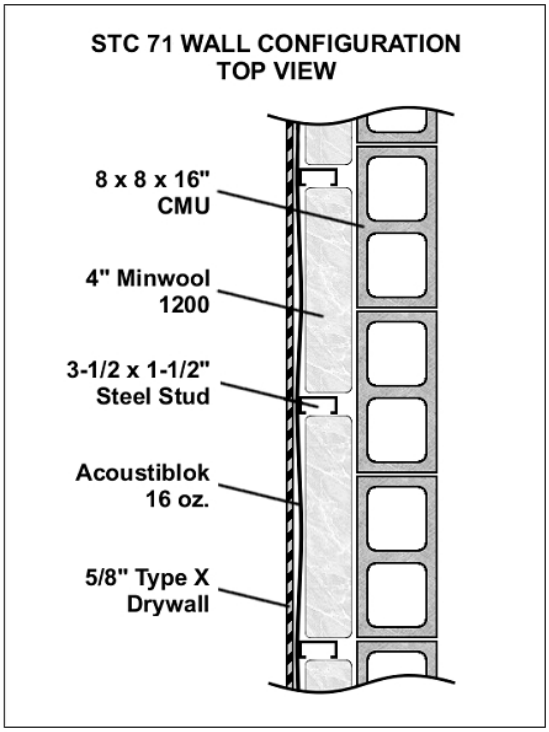
STC71 Rated Acoustiblok® Steel Stud and Block Wall: Acoustical Test Overview



The acoustical laboratory at Architectural Testing Inc. recorded a remarkable STC of 71 for this wall design. This is a noise reduction in excess of 98% to human hearing.

"Both the STC 71 and 85 ratings for Acoustiblok exceed the testing capabilities of most laboratories," - Kurt Golden, test administrator at Architectural Testing, Inc., York, Penn..

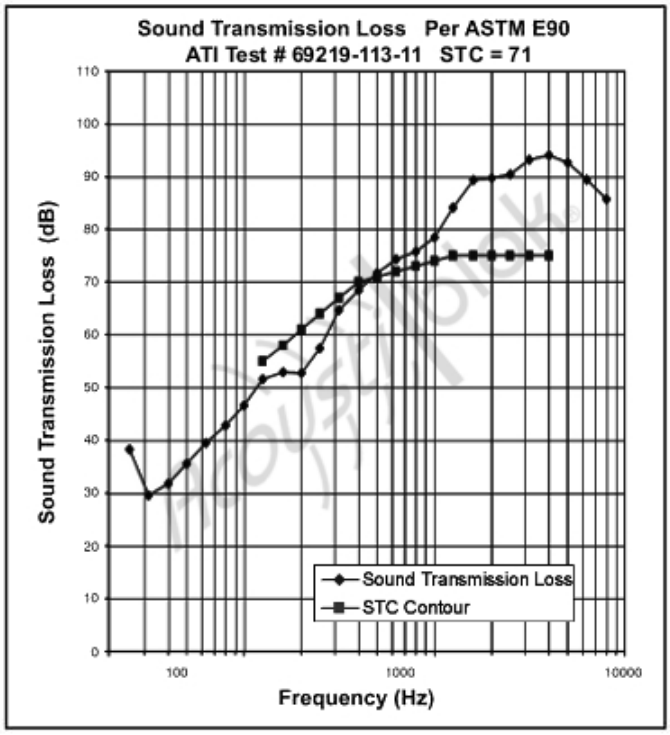
The tested assembly: 8 x 16" concrete block, steel 2x4 studs spaced 1/2" from the block, with 4" Thermafiber insulation, and Acoustiblok under the drywall.

For applications where exceptional performance in sound isolation is a requirement, specify this Acoustiblok configuration as the most practical and economical option in the market.

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels adequately. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.



STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. To estimate high and low frequency performance, consult the Sound Transmission Loss graph included in STC test reports. STC does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall - Impact Insulation Class (IIC) measure transmitted impact noise, and are specified for floor/ceiling assemblies only.

Architectural Testing

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, Acoutiblok® 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.

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Architectural Testing

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.

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fax: 717-764-4129
www.archtest.com

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:

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: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)

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.

Architectural Testing

SOUND TRANSMISSION LOSS

ASTM E90

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

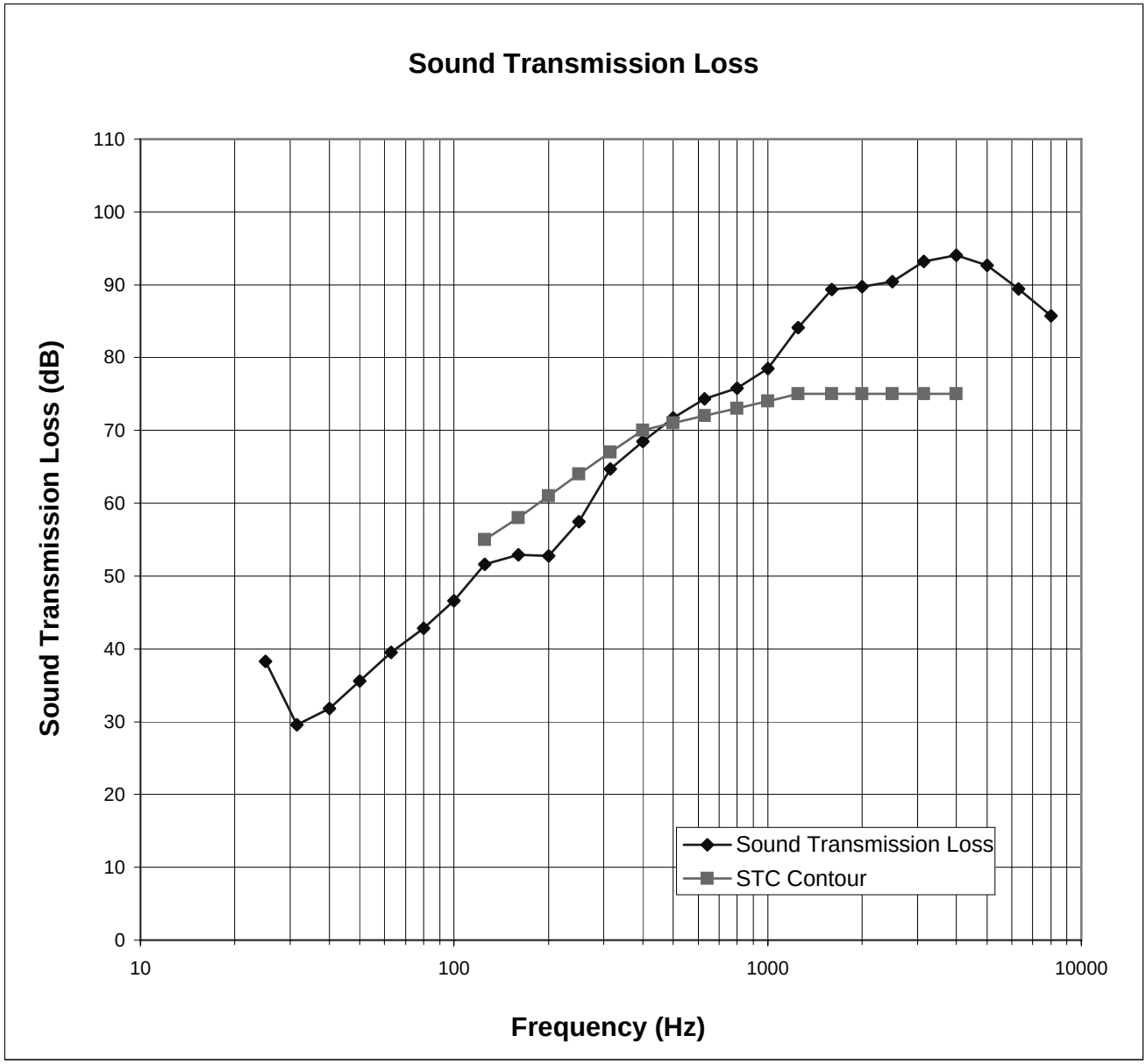
Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
25	37.5	50.8	106.6	72.7	0.0	38	7.35	0	0.0
31.5	44.6	65.0	109.2	83.0	0.0	30	3.93	0	0.0
40	46.9	73.5	118.0	88.9	0.0	32	3.37	0	0.0
50	39.2	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)*

NVLAP LAB CODE 200361

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		



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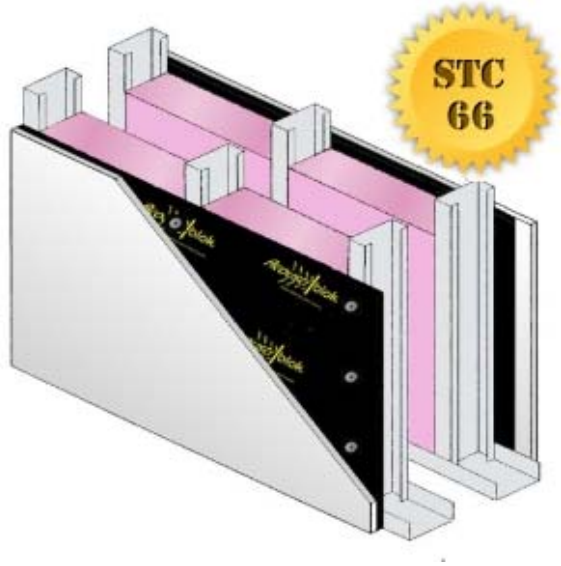
sales@acoustiblok.com

STC66 Rated Acoustiblok® Double Steel Stud Wall: Acoustical Test Overview



The conventional solution for building a wall that will block high intensity sound effectively - engine noise, band practice, etc. - is to use high mass materials such as sand filled concrete blocks. Acoustiblok provides lighter, more adaptable solutions with lower impact on net design and construction costs.

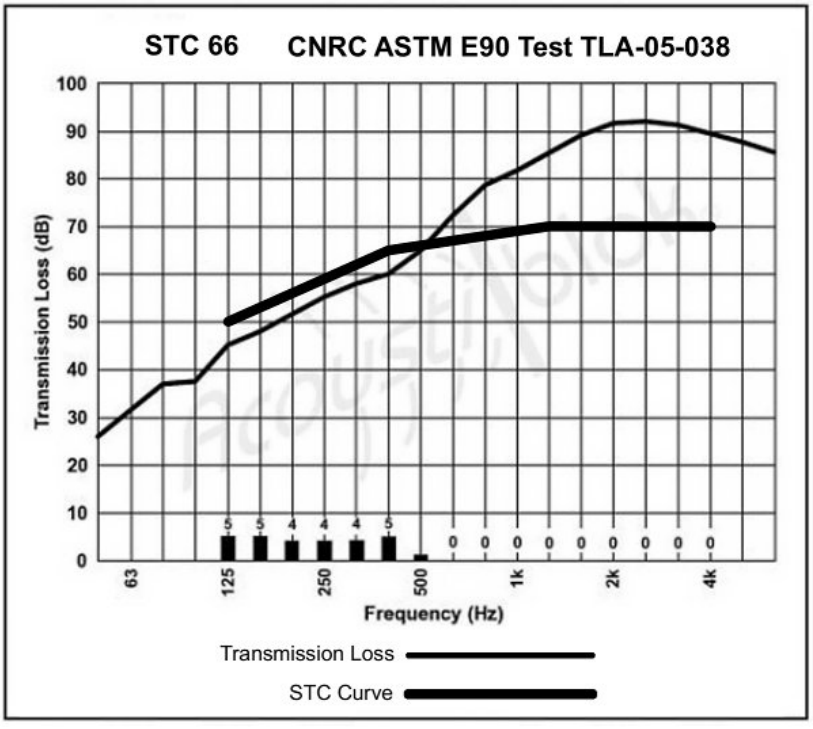
The National Research Council of Canada tested the partition wall assembly shown at left and found it has a remarkable Sound Transmission Class of 66

The tested assembly: 5/8" gypsum board with caulked seams installed with drywall screws 24" o/c, 1-1/2" x 3-1/2" steel studs spaced 24" o/c, 1 layer of 16 oz. Acoustiblok under drywall on both sides. Stud rows spaced for 2 1/2" air gap, and a total of 6" fiberglass batts installed as shown. Total wall thickness is 11".

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.



STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. STC measures sound blocking for airborne noise source only; it does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall.

Airborne Sound Transmission Loss Measurements Performed on One Wall Assembly for Acoustiblok Inc.

Author

N.L. Brunette

Quality Assurance

Dr. J.D. Quirt
Group Leader

Approved

Dr. M.R. Atif
Director, Indoor Environment

Report No: B3431.3
Report Date: October 6, 2005
Contract No: B3431
Reference: Agreement dated June 23, 2005
Program: Indoor Environment

3 pages
Copy No. 1 of 4 copies

Client: Acoustiblok

Specimen: Wall assembly with Acoustiblok 16

Specimen ID: B3431-3W

Construction Dates: August 2-8th, 2005

Test Specimen:

The wall had two rows of steel studs; on each exterior face was a layer of Acoustiblok 16 covered with a layer of gypsum board. The 38 x 89 mm steel studs were spaced at 610 mm on center with an air space of 64 mm between the two rows of studs. The 152 mm thick, R21.5 glass fibre batts, were installed in the cavities of the two rows of steel studs. The Acoustiblok 16 was attached vertically to the steel studs with tin roof caps as washers and 19 mm wafer head self tapping screws spaced at 610 mm on center. The Acoustiblok 16 on each side comprised two pieces of 2.4 m long by 1.4 m wide by 2.5 mm thick and one piece 2.4 m long by 1.0 m wide by 2.5 mm thick. The joints of the Acoustiblok 16 were overlapped by 25 mm, caulked with Acoustiblok sound sealant and covered with a metal tape. The type X, 16 mm thick gypsum boards were installed horizontally with 41 mm long, type S drywall screws spaced at 610 mm on center along the edges and in the field. All the gypsum board joints were caulked with Acoustiblok sound sealant and covered with a metal tape.

Specimen Properties

Element	Actual Thickness (mm)	Surface weight (kg/m²)	Mass (kg)
Gypsum Board		10.75	95.9
Acoustiblok		4.99	44.5
Steel Studs		1.45	12.9
Glass Fibre Batts		1.59	14.2
Air		-	-
Glass Fibre Batts		1.58	14.1
Steel Studs		1.45	12.9
Acoustiblok		4.99	44.5
Gypsum Board		10.75	95.9
Total	279		334.9

Test Specimen Installation:

During the measurements, the test specimen was mounted in the IRC acoustical wall test opening which measures approximately 3.66 m x 2.44 m.

The perimeter of the specimen was sealed on both sides with caulking and then covered with a metal tape.

The area used for the calculation of the airborne sound transmission loss was 8.92 m².

Airborne sound transmission loss measurements were conducted in accordance with the requirements of ASTM E90-04, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements".

Client: Acoustiblok

Specimen ID: B3431-3W

Test ID: TLA-05-038

Tested: 09-Aug-05

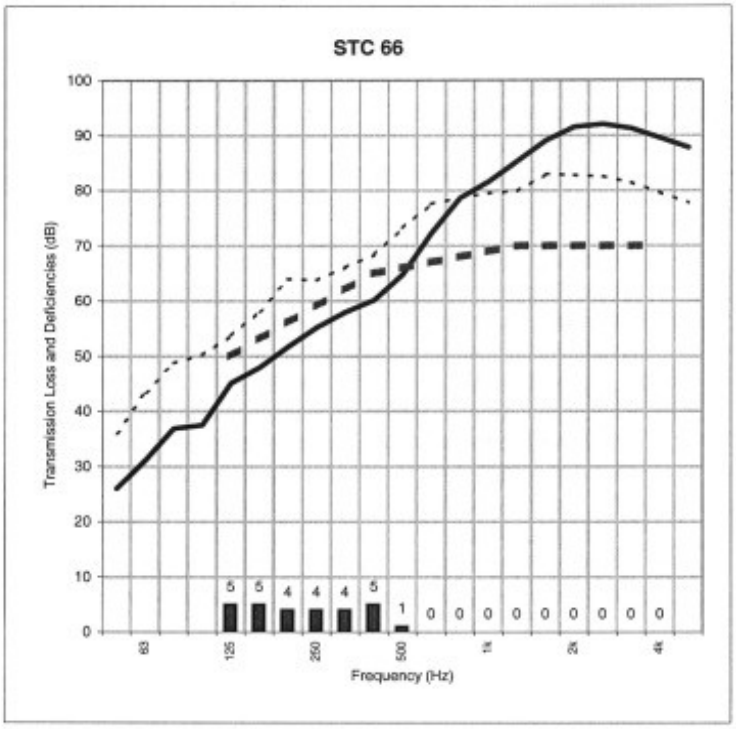
Small Room Volume: 138 m^3

Large Room Volume: 250 m^3

Measured Temperature and Relative Humidity During

	Temperature, °C		Humidtity %	
Room	Min	Max	Min	Max
Small	22.0	22.1	67.0	67.6
Large	22.6	22.7	62.1	62.3

Frequency (Hz)	Airborne Sound Transmission Loss (dB)	95% Confidence Limits
50	26 c	
63	31	
80	37	± 3.5
100	37	± 3.5
125	45	± 2.1
160	48	± 1.2
200	52	± 1.3
250	55	± 0.8
315	58	± 0.7
400	60	± 0.7
500	65	± 0.5
630	72	± 0.8
800	79	± 0.5
1000	82 c	± 0.5
1250	85 c	± 0.4
1600	89 *	± 0.3
2000	92 *	± 0.3
2500	92 *	± 0.4
3150	91 *	± 0.3
4000	90 *	± 0.4
5000	88 *	± 0.5
Sound Transmission Class (STC) = 66		



In the graph:
Solid line is the measured sound transmission loss for this specimen. Dashed line is the STC contour fitted to the measured values according to ASTM E413-04. The dotted line is 10 dB below the flanking limit established for this facility. For any frequency where measured transmission loss is above the dotted line, the reported value is potentially limited by vibration transmission via laboratory surfaces, and the true value may be higher than that measured.

Bars at bottom of graph show deficiencies. At each frequency the difference between the shifted reference contour value and the measured data is calculated. Only deficiencies, that is, where the measured data are less than the reference contour, are counted in the fitting procedure for the STC, defined in ASTM E413.

In the table:
Values marked "c" indicate that the measured background level was between 5 dB and 10 dB below the combined receiving room level and background level. The reported values have been corrected according to the procedure outlined in ASTM E90-04.

Values marked "*" indicate that the measured background level was less than 5 dB below the combined receiving room level and background level. The reported values provide an estimate of the lower limit of airborne sound transmission loss.

The results reported above apply only to the specific sample submitted for measurement. No responsibility is assumed for performance of any other specimen.

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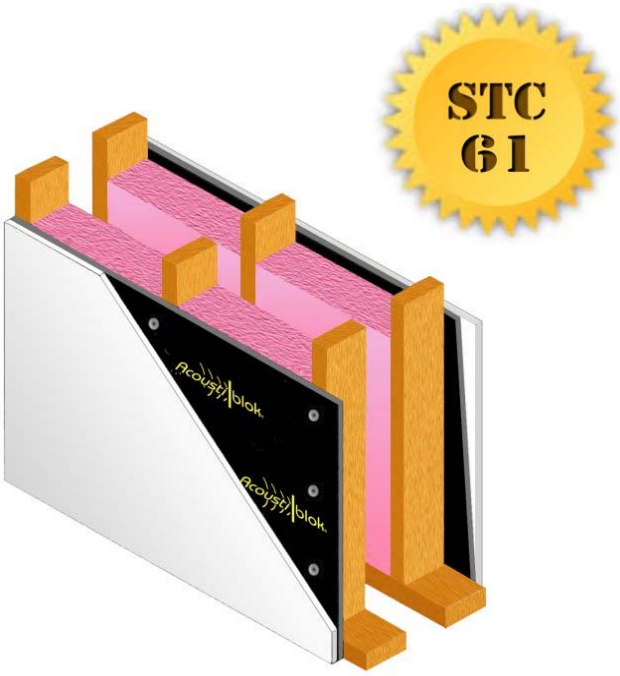
STC61 Rated Acoustiblok® Double Wood Stud Wall: Acoustical Test Overview



The conventional solution for building a wall that will block high intensity sound effectively - engine noise, band practice, etc. - is to use high mass materials such as sand filled concrete blocks. Acoustiblok provides lighter, more adaptable solutions with lower impact on net design and construction costs.

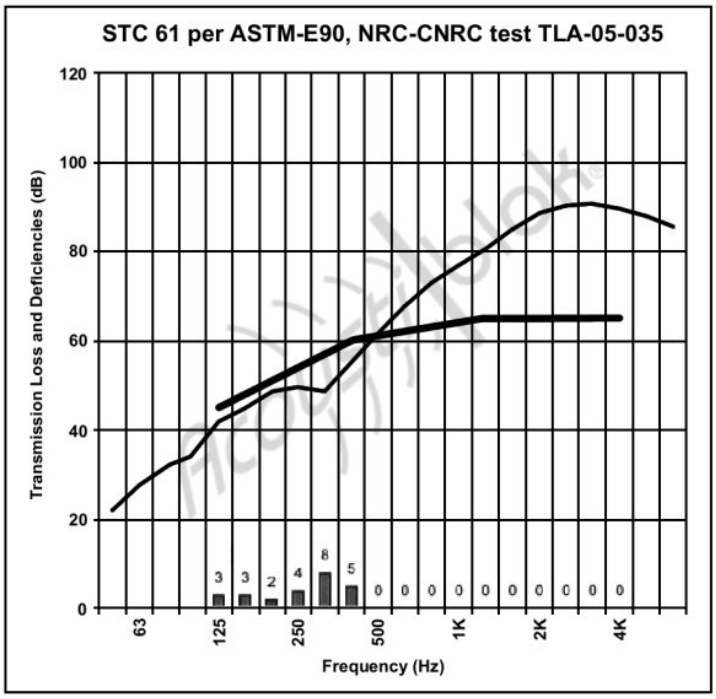
The National Research Council of Canada tested the partition wall assembly shown at left and found it has a remarkable Sound Transmission Class of 61, an approximate 96% reduction in audible sound.

The tested assembly: 5/8" gypsum board with caulked seams installed with drywall screws 24" o/c on 1-5/8" x 3-5/8" wood studs spaced 24" o.c. 1 layer of 16 oz. Acoustiblok under drywall both sides. Stud rows spaced for 1" air gap, and 3-1/2" fiberglass batts installed as shown. Wall thickness is 9 3/4".

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.



STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. STC measures sound blocking for airborne noise source only; it does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall - Impact Insulation Class (IIC) measure transmitted impact noise, and are specified for floor/ceiling assemblies only.

Airborne Sound Transmission Loss Measurements Performed on One Wall Assembly for Acoustiblok Inc.

Author

N.L. Brunette

Quality Assurance

Dr. J.D. Quirt
Group Leader

Approved

Dr. M.R. Atif
Director, Indoor Environment

Report No: B3431.1
Report Date: October 6, 2005
Contract No: B3431
Reference: Agreement dated June 23, 2005
Program: Indoor Environment

3 pages
Copy No. 4 of 4 copies

Client: Acoustiblok

Specimen: Wall assembly with Acoustiblok 16

Specimen ID: B3431-1W

Construction Dates: 20th to 26th of July

Test Specimen:

Perimeter and joints of specimen have been caulked using Acoutiblok sound sealant and taped. Drywall is installed horizontally and screws are spaced at 610 mm oc. Acoustiblok was installed vertically joints were overlaped then caulked with the acoustiblok sound sealant caulking and acoustigrip tape was placed over joints. Bostich 25mm diameter caps and 25mm staples were used to secure the acoustiblok in place. Acoustiblok was stapled every 610mm oc to studs.

Weights of Specimen Elements:

Element	Thickness (mm)	Surface weight (kg/m²)	Mass (kg)
Gypsum Board	16	10.75	95.9
Acoustiblok	2.5	4.99	44.5
Wood Studs	92	-	40.6
Glass Fibre Batts	90	0.93	8.3
Air	25.4	-	
Glass Fibre Batts	90	0.91	8.1
Wood Studs	92	-	39.3
Acoustiblok	2.5	4.99	44.5
Gypsum Board	16	10.75	95.9
Total	246.4		377.1

Test Specimen Installation:

During the measurements, the test specimen was mounted in the IRC acoustical wall test opening which measures 3.66 m x 2.44 m.

The perimeter of the specimen was sealed on both sides with caulking and then covered with a metal tape.

The area used for the calculation of the airborne sound transmission loss was 8.92 m².

Airborne sound transmission loss measurements were conducted in accordance with the requirements of ASTM E90-04, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements".

Client: Acoustiblok

Specimen ID: B3431-1W

Test ID: TLA-05-035

Tested: 27-Jul-05

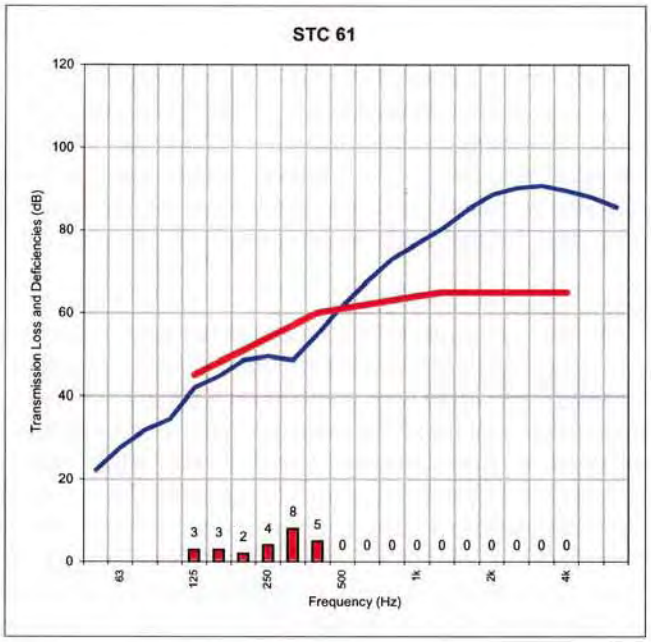
Small Room Volume: 138 m3

Large Room Volume: 250 m3

Measured Temperature and Relative Humidity During

	Temperature, C°		Humidtity %	
Room	Min	Max	Min	Max
Small	21.9	21.9	68.2	68.7
Large	21.6	21.6	66.7	67.7

Frequency (Hz)	Airborne Sound Transmission Loss (dB)	95% Confidence Limits
50	22	
63	28	
80	32	± 3.5
100	34	± 3.8
125	42	± 2.4
160	45	± 1.4
200	49	± 1.4
250	50	± 0.7
315	49	± 0.8
400	55	± 0.6
500	62	± 0.7
630	68	± 0.5
800	73	± 0.4
1000	77	± 0.5
1250	80 c	± 0.5
1600	85 c	± 0.6
2000	88 *	± 0.6
2500	90 *	± 0.6
3150	91 *	± 0.5
4000	89 *	± 0.5
5000	88 *	± 0.5
Sound Transmission Class (STC) = 61		



Solid line is the measured sound transmission loss for this specimen. Dashed line is the STC contour fitted to the measured values according to ASTM E413-04.

Bars at bottom of graph show deficiencies. At each frequency the difference between the shifted reference contour value and the measured data is calculated. Only deficiencies, that is, where the measured data are less than the reference contour, are counted in the fitting procedure for the STC, defined in ASTM E413.

Values marked "c" indicate that the measured background level was between 5 dB and 10 dB below the combined receiving room level and background level. The reported values have been corrected according to the procedure outlined in ASTM E90-04.

Values marked "*" indicate that the measured background level was less than 5 dB below the combined receiving room level and background level. The reported values provide an estimate of the lower limit of airborne sound transmission loss or impact transmission.

The results reported above apply only to the specific sample submitted for measurement. No responsibility is assumed for performance of any other specimen.

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STC57 Rated Steel Stud Wall with Two Layers of Acoustiblok®: Acoustical Test Overview

This very high performance sound blocking interior wall using two layers of 16 oz Acoustiblok adds only 1/4" of overall thickness and 2 lbs/SqFt to a conventional steel stud and gypsum board partition. This is an example of the economy available using Acoustiblok material instead of older construction techniques: To achieve an STC 57 rating in the past would have required a thicker wall and massive materials.

Riverbank Acoustical Laboratory rated this partition at STC 57, a noise reduction to human hearing of over 95%.

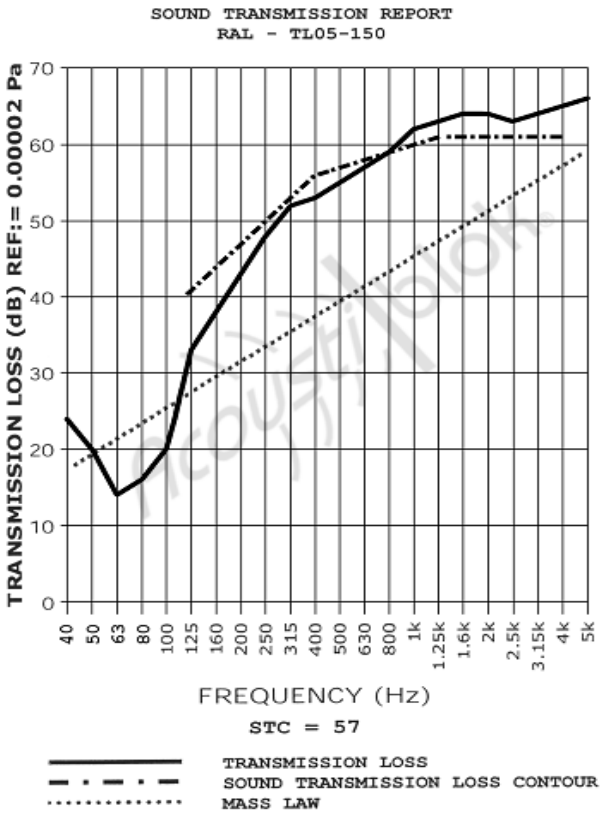
Construction details: 20 ga. 3-5/8" steel studs 24" o.c., R-13 fiberglass insulation, 16 oz Acoustiblok attached to the studs with screws and tin caps 24" o/c, and 5/8" type X gypsum board drywall. Partition is 5-1/8" thick. Joints taped and caulked as appropriate to create a uniformly airtight seal.

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.

STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. STC measures sound blocking for airborne noise source only; it does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall.



RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

Alion Science and Technology

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TEST REPORT

FOR: Acoustiblok
Tampa, FL

Sound Transmission Loss Test
RAL™-TL05-150

ON: Insulated Steel Stud Wall with 16 oz. Acoustiblok and 5/8 Inch Gypsum Board Each Side

CONDUCTED: 15 July 2005

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-04 and E413-04, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated as insulated steel stud wall with 16 oz. Acoustiblok and 5/8 inch gypsum board each side. The overall dimensions of the specimen as measured were 4.27 m (168 in.) wide by 2.74 m (108 in.) high and 130 mm (5.125 in.) thick. The specimen was installed by the manufacturer directly into the laboratory's 2.74 m (9 ft) by 4.27 m (14 ft) wood-lined steel frame and was sealed on the periphery (both sides) with a dense mastic.

The description of the specimen was as follows: The wall consisted of 92 mm (3.625 in.) 20 gauge steel studs with 89 mm (3.5 in.) fiberglass insulation, 16 oz. Acoustiblok and a single layer of 15.9 mm (0.625 in.) thick Type X gypsum board on each side. A verified manufacturer's detailed drawing is maintained on file. A more detailed description of the wall assembly appears in the sections below.

Floor and Ceiling Runners: The two 92 mm (3.625 in.) wide 20 gauge 4.26 m (168 in.) long steel runners were attached to floor and ceiling with 41 mm (1.625 in) type S bugle head drywall screws 610 mm (24 in.) on centers.

Studs: The six 92 mm (3.625 in.) wide 20 gauge 2.73 m (107.5 in.) long steel studs were spaced on 610 mm (24 in.) centers. The runners and the end studs were attached to the frame with 41 mm (1-5/8 in.) long bugle head drywall screws spaced on 610 mm (24 in.) centers. The studs were attached to the top and bottom runners on both sides with 13 mm (0.5 in.) long S-12 pan head screws.

Insulation: The seven cavities formed by the runners and studs were lined with unfaced R-13 fiberglass insulation measuring 76 mm (3.5 in.) thick and 610 mm (24 in.) wide.

Acoustiblok Barrier, Sealant and Tape: On both sides of the wall a single layer of 2.5 mm (0.10 in.) thick 16 oz. Acoustiblok mass loaded barrier was applied horizontally across the studs and attached using 13 mm (0.5 in.) long S-12 screws and tin cap disks at 610 mm (24 in.) on center. The horizontal joint was caulked using Acoustiblok Acoustical Sound Sealant and covered with Acoustiblok adhesive tape.

Gypsum Wallboard: A single layer of 15.9 mm (5/8 in.) Type 'X' gypsum board was applied to studs vertically on both sides of the wall. They were attached to the studs through the barrier with 32 mm (1.25 in.) long Type S bugle head drywall screws at 610 mm (24 in.) on centers. Acoustical sealant was applied to the test frame perimeter prior to installation of the gypsum board. All joints and screw heads were sealed using tape and all purpose joint compound.

The weight of the specimen as measured was 428.6 kg (945 lbs.), an average of 36.6 kg/m^2 (7.5 lbs/ft^2). The transmission area used in the calculations was 11.7 m^2 (126 ft^2). The source and receiving room temperatures at the time of the test were 25±3°C (78±3°F) and 50±2% relative humidity. The source and receive reverberation room volumes were 178 m^3 (6,298 ft^3) and 177 m^3 (6,255 ft^3), respectively.

RIVERBANK ACOUSTICAL LABORATORIES

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TEST REPORT

Acoustiblok — RAL™-TL05-150

15 July 2005 —

TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data is within the limits set by the ASTM Standard E90-04.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	19	1.04		800	59	0.12	
125	33	0.54	8	1000	62	0.13	
160	38	0.35	6	1250	63	0.16	
200	43	0.40	4	1600	64	0.14	
250	48	0.38	2	2000	64	0.09	
315	52	0.48	1	2500	63	0.10	
400	53	0.30	3	3150	64	0.09	
500	55	0.28	2	4000	65	0.07	
630	57	0.23	1	5000	66	0.06	

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 27)
STC = SOUND TRANSMISSION CLASS

Tested by Marc Sciaky
Marc Sciaky
Senior Technician

Approved by David L. Moyer
David L. Moyer
Laboratory Manager

RiverbankAcoustical
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FOR: Acoustiblok
Tampa, FL

ON: Insulated Steel Stud Wall with 16 oz. Acoustiblok and 5/8 Inch Gypsum Board Each Side

CONDUCTED: 15 July 2005

SUBJECT: Additional Frequency Data for Transmission Loss Testing

As requested by the client, transmission loss (TL) values were calculated at additional test frequencies. Although the measurements were made in accordance with the procedures described in ASTM E90-04, they do not qualify as part of the standard. Since the results are representative of the test environment only, they are unofficial and intended for research and development guidelines rather than for commercial purposes. The transmission loss values at the additional frequencies were as follows:

RAL-TL05-150

1/3 Octave Center Frequency (Hz)	Sound Transmission Loss (dB)
40	24
50	20
63	14
80	16
6300	67
8000	68
10000	69

Submitted by David L. Moyer
David L. Moyer KS
Laboratory Manager

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Alion Science and Technology

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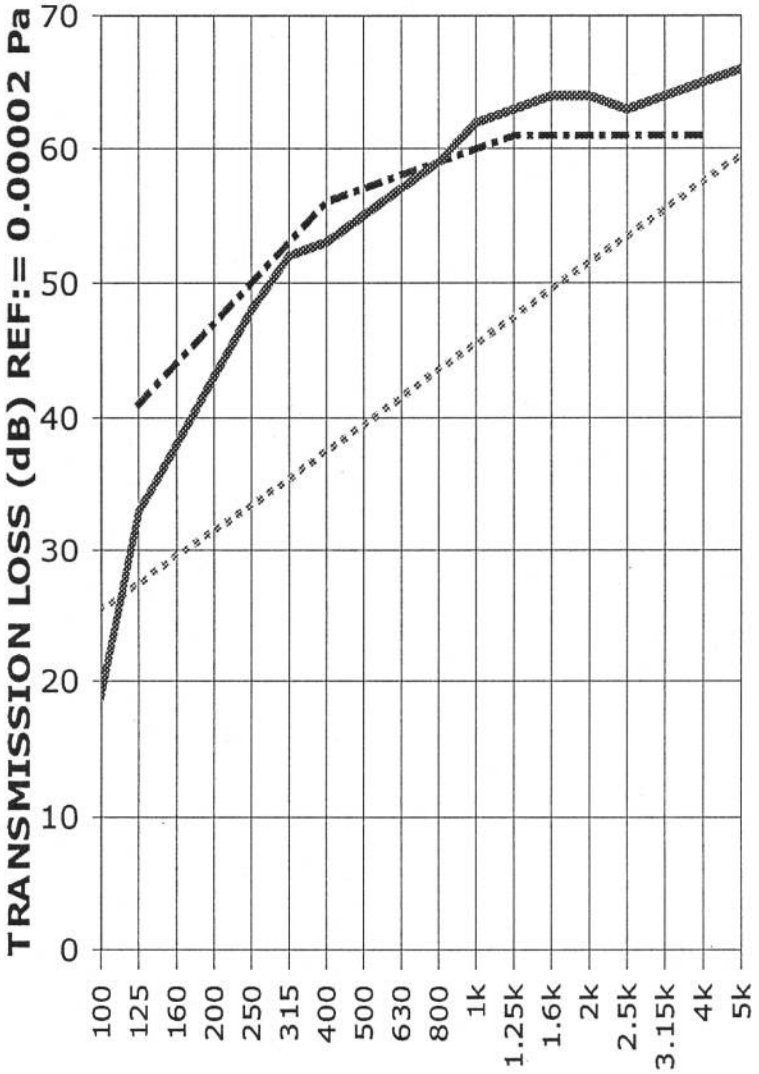
TEST REPORT

SOUND TRANSMISSION REPORT
RAL - TL05-150



STC = 57

TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR
MASS LAW

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STC57 Rated Acoustiblok® Staggered Stud Wall: Acoustical Test Overview

Riverbank Acoustical Laboratories rated this wall assembly with an STC (Sound Transmission Class) of 57. See report graph below. Note the high performance sound blocking at the lowest measured frequencies, a unique feature of Acoustiblok. Note the high performance of this assembly in blocking the lowest noise frequencies, otherwise difficult or impossible to control.

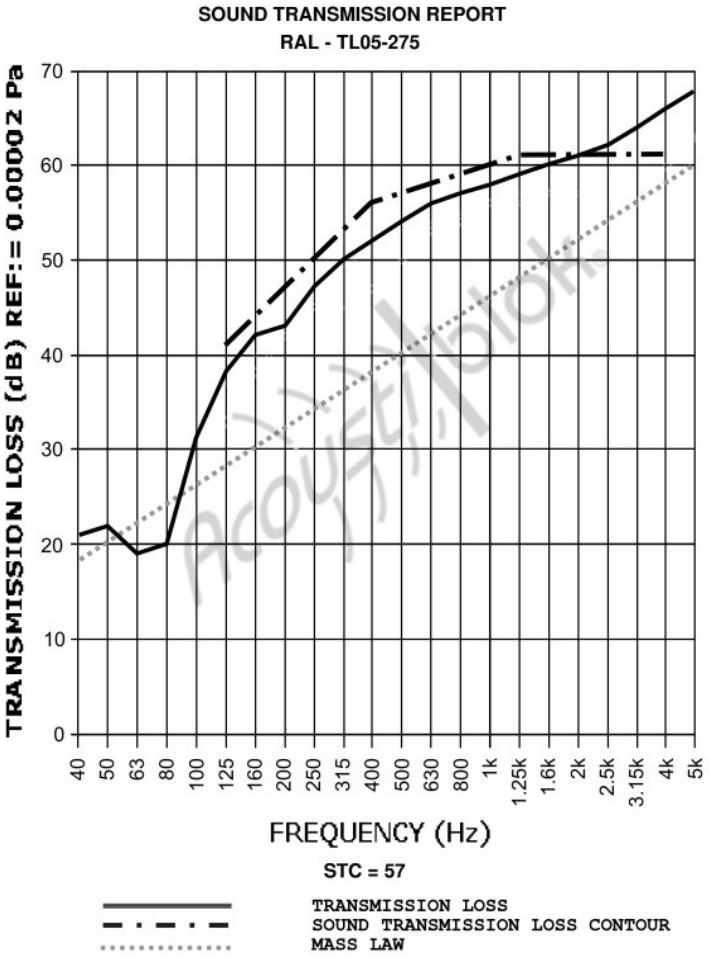
The tested assembly: 5/8" gypsum screwed 24" on center, wood 2x4 stud 16" on center staggered 8" on center, 16 oz. Acoustiblok stapled 24" on center; 2" x 6" plates top/bottom; insulation 3½" batts.

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. STC measures sound blocking for airborne noise source only; it does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.



RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
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Alion Science and Technology

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TEST REPORT

FOR: Acoustiblok
Tampa, FL

Sound Transmission Loss Test
RAL™-TL04-275

ON: Panel WSSS804

CONDUCTED: 31 August 2004

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-02 and E413-87, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as panel WSSS804. The overall dimensions of the specimen as measured were 1.21 m (47.5 in.) wide by 2.43 m (95.5 in.) high and 171 mm (6.75 in.) thick. The specimen was placed directly in the laboratory's 1.22 m (4 ft) by 2.44 m (8 ft) test opening and was sealed on the periphery (both sides) with dense mastic.

The manufacturer's description as provided by a drawing was as follows: Panel WSSS804 consisted of wood 2x4 stud 16" on center staggered 8" on center; 5/8 " gypsum screwed 24" on center both side; 16 oz. Acoustiblok stapled 24" on center; 2x6 plates top/bottom; insulation 3½" batts, 15" wide, paper on inside. A manufacturer's drawing is maintained on file. A visual inspection verified the manufacturer's description of the specimen.

The weight of the specimen as measured was 115.9 kg (255.5 lbs.), an average of 39.6 kg/m^2 (8.1 lbs/ft^2). The transmission area used in the calculations was 2.9 m^2 (31.5 ft^2). The source and receiving room temperatures at the time of the test were 23±1ºC (73±2ºF) and 51±1% relative humidity. The source and receive reverberation room volumes were 178 m^3 (6,297 ft^3) and 131 m^3 (4,648 ft^3), respectively.

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Alion Science and Technology

630/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

TEST REPORT

Acoustiblok — RAL™-TL04-275

31 August 2004 —

TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data is within the limits set by the ASTM Standard E90-02.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	31	0.73		800	57	0.18	2
125	38	0.52	3	1000	58	0.20	2
160	42	0.55	2	1250	59	0.12	2
200	43	0.56	4	1600	60	0.14	1
250	47	0.50	3	2000	61	0.13	
315	50	0.52	3	2500	62	0.10	
400	52	0.29	4	3150	64	0.11	
500	54	0.28	3	4000	66	0.14	
630	56	0.25	2	5000	68	0.10	

STC=57

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 31)
STC = SOUND TRANSMISSION CLASS

Tested by_____ Approved by_____

Marc Sciaky
Senior Technician

David L. Moyer
Laboratory Manager

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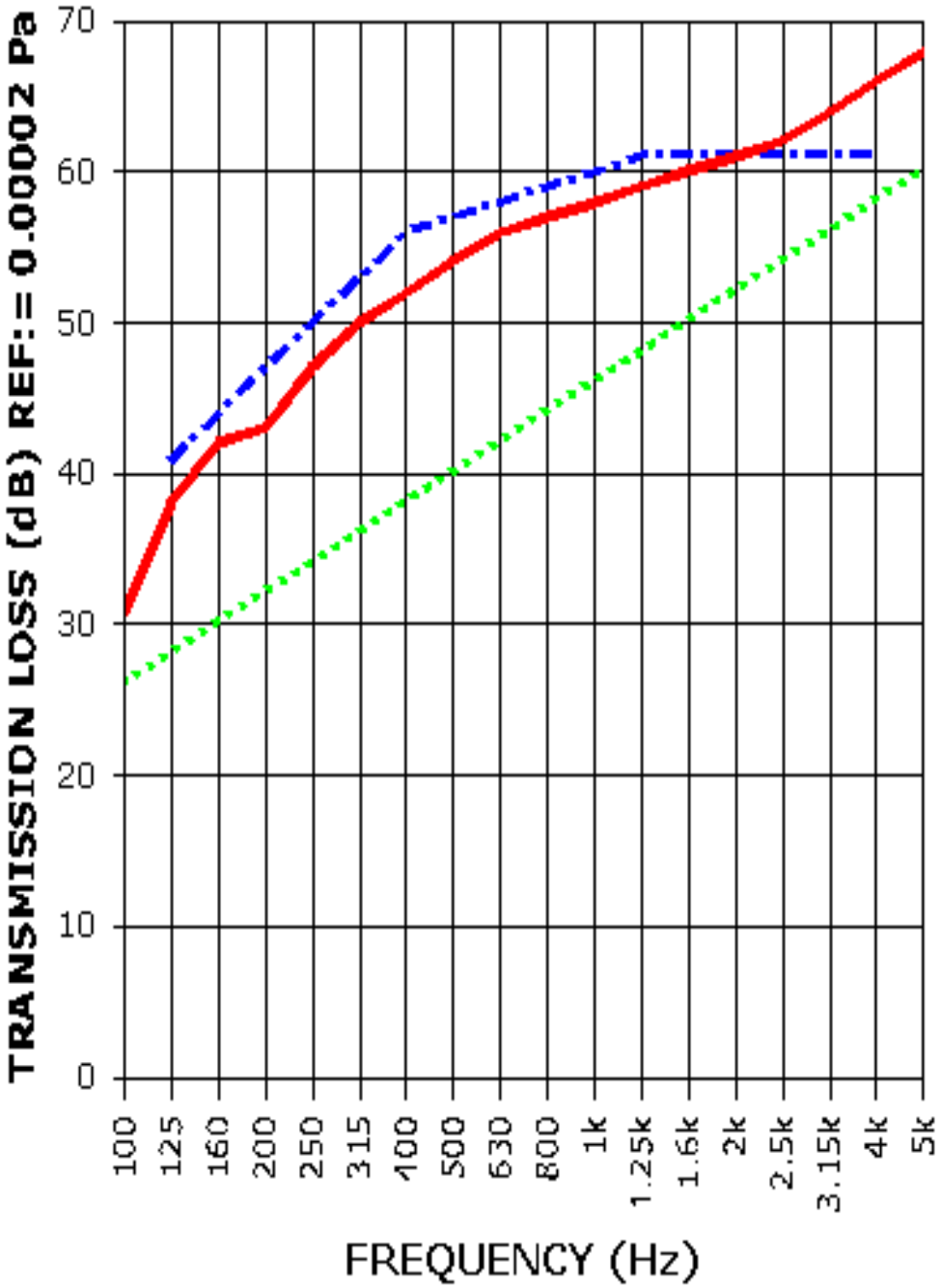
TEST REPORT

SOUND TRANSMISSION REPORT
RAL - TL05-275



STC = 57

TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR
MASS LAW

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STC53 Rated Acoustiblok® Steel Stud Wall: Acoustical Test Overview

Riverbank Acoustical Laboratories rated this wall assembly with an STC (Sound Transmission Class) of 53.

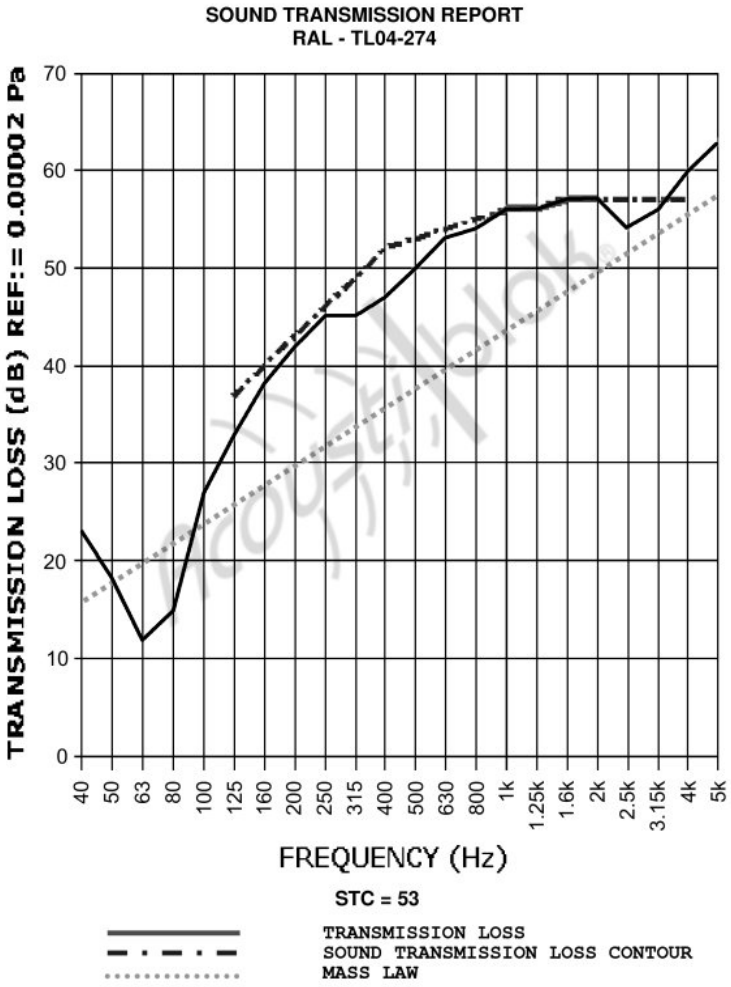
The tested assembly: 5/8" gypsum screwed 24" on center, 3 1/2" metal studs 24" on center, 3½" thick R13 insulation; 16 oz. Acoustiblok, and 5/8" gypsum screwed 24" on center. All outside joints caulked.

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. STC measures sound blocking for airborne noise source only; it does not indicate how well a partition can block impact noise (objects striking the far side of the wall), or directly transmitted noise such as machinery mounted on the far side of the wall.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.



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TEST REPORT

FOR: Acoustiblok
Tampa, FL

Sound Transmission Loss Test
RAL™-TL04-274

ON: Panel WSMSAB802

CONDUCTED: 31 August 2004

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-02 and E413-87, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as panel WSMSAB802. The overall dimensions of the specimen as measured were 1.21 m (47.5 in.) wide by 2.43 m (95.5 in.) high and 124 mm (4.875 in.) thick. The specimen was placed directly in the laboratory's 1.22 m (4 ft) by 2.44 m (8 ft) test opening and was sealed on the periphery (both sides) with dense mastic.

The manufacturer's description as provided by a drawing was as follows: Panel WSMSAB802 consisted of 3½" metal stud 24" on center; 5/8 " gypsum screwed 24" on center edges, 5/8" gypsum screwed 24" on center in field; 3½" thick R13 insulation; 16 oz. Acoustiblok; caulk all outside joint. A manufacturer's drawing is maintained on file. A visual inspection verified the manufacturer's description of the specimen.

The weight of the specimen as measured was 85.3 kg (188 lbs.), an average of 29.2 kg/m^2 (6 bs/ft^2). The transmission area used in the calculations was 2.9 m^2 (31.5 ft^2). The source and receiving room temperatures at the time of the test were 23±1ºC (73±2ºF) and 51±2% relative humidity. The source and receive reverberation room volumes were 178 m^3 (6,297 ft^3) and 131 m^3 (4,648 ft^3), respectively.

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TEST REPORT

Acoustiblok

RAL™-TL04-274

31 August 2004

TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data is within the limits set by the ASTM Standard E90-02.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	27	0.68		800	54	0.16	1
125	33	0.92	4	1000	56	0.16	
160	38	0.38	2	1250	56	0.10	1
200	42	0.55	1	1600	57	0.15	
250	45	0.37	1	2000	57	0.13	
315	45	0.37	4	2500	54	0.10	3
400	47	0.29	5	3150	56	0.10	1
500	50	0.27	3	4000	60	0.12	
630	53	0.26	1	5000	63	0.15	

STC=53

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 27)
STC = SOUND TRANSMISSION CLASS

Tested by_____ Approved by_____

Marc Sciaky
Senior Technician

David L. Moyer
Laboratory Manager

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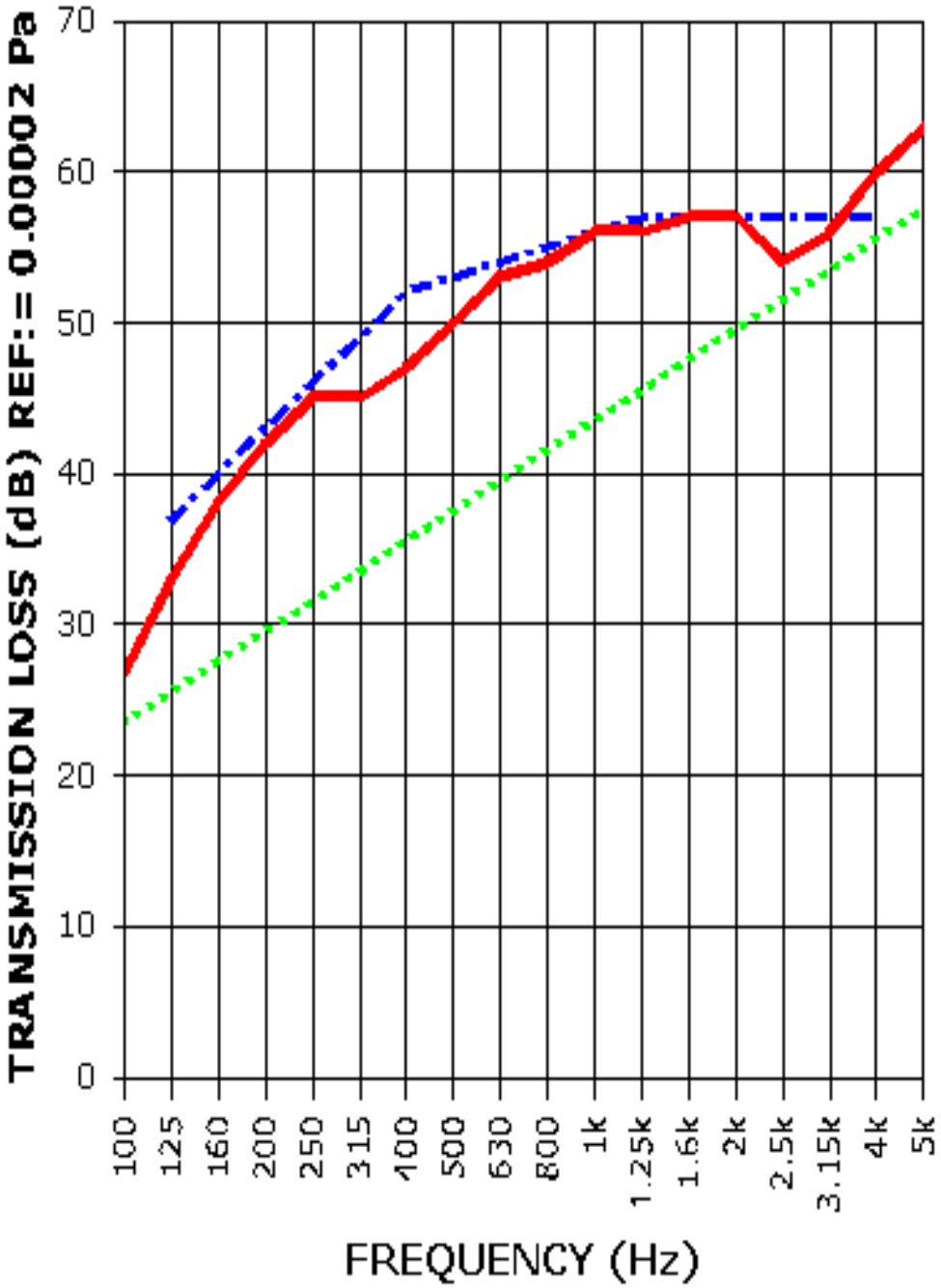
TEST REPORT

SOUND TRANSMISSION REPORT
RAL - TL04-274



STC = 53

TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR
MASS LAW

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STC52 Rated Acoustiblok® Wood Stud Wall: Acoustical Test Overview

Riverbank Acoustical Laboratories rates this wall configuration with an STC (sound transmission class) of 52. See report graph below.

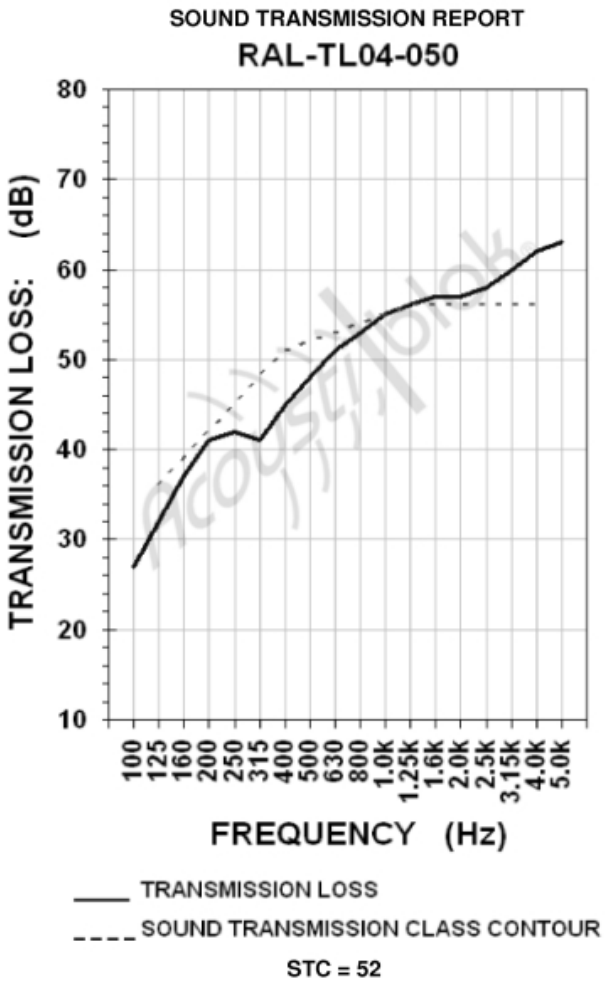
The tested assembly: 2" x 4" wood top and bottom plate and studs covered on both sides with a single layer of 16 mm (0.625 in.) thick gypsum board. The gypsum board was attached using 6d nails at 12" o.c.. The wood studs were spaced on 24" centers. The wall section was filled with 3" thick fiberglass insulation. A single layer of 16 oz. Acoustiblok was attached to the studs.

SOUND TRANSMISSION CLASS is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech, and block noise that interferes with human speech. A high STC number may not indicate a partition that is effective in blocking very low or very high pitched sound. STC measures sound blocking for airborne noise source only; it does not indicate how well a partition can block impact noise (objects striking the far side of the partition), or directly transmitted noise such as machinery mounted on the far side of the wall.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the tested partition.



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TEST REPORT

FOR: Acoustiblok
Tampa, FL

Sound Transmission Loss Test
RAL™-TL04-050

ON: WSAB-129 Wood Stud Wall Section

CONDUCTED: 4 March 2004

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-02 and E413-87, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the client as WSAB-129 wood stud wall section. The overall dimensions of the specimen as measured were 1.21 m (47.5 in.) wide by 2.43 m (95.5 in.) high and 127 mm (5 in.) thick. The specimen was placed directly in the laboratory's 1.22 m (4 ft) by 2.44 m (8 ft) test opening and was sealed on the periphery (both sides) with a dense mastic.

The manufacturer's description as provided by a drawing was as follows: The panel was constructed with a two-by-four wood top and bottom plate and studs covered on both sides with a single layer of 16 mm (0.625 in.) thick gypsum board. The gypsum board was attached using 6d nails at 305 mm (12 in.) on center. The wood studs were spaced on nominal 610 mm (24 in.) centers. The receive side cavity was filled with 76 mm (3 in.) thick fiberglass. A single layer of Acoustiblok 16 oz. barrier material was attached to the studs on the source side. A visual inspection verified the manufacturer's description of the specimen.

The weight of the specimen as measured was 97.3 kg (214.5 lbs.), an average of 33.3 kg/m^2 (6.8 lbs/ft^2). The transmission area used in the calculations was 2.9 m^2 (31.5 ft^2). The source and receiving room temperatures at the time of the test were 23±1ºC (74±1ºF) and 63% relative humidity. The source and receive reverberation room volumes were 178 m^3 (6298 ft^3) and 134 m^3 (4748 ft^3), respectively.

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TEST REPORT

Acoustiblok — RAL™-TL04-050

4 March 2004 —

TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data is within the limits set by the ASTM Standard E90-02.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	27	1.01		800	53	0.17	1
125	32	0.95	4	1000	55	0.18	
160	37	0.49	2	1250	56	0.16	
200	41	0.09		1600	57	0.13	
250	42	0.49	3	2000	57	0.09	
315	41	0.45	7	2500	58	0.09	
400	45	0.31	6	3150	60	0.07	
500	48	0.21	4	4000	62	0.07	
630	51	0.22	2	5000	63	0.04	

STC=52

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 30)
STC = SOUND TRANSMISSION CLASS

Tested by_____ Approved by_____

Marc Sciaky
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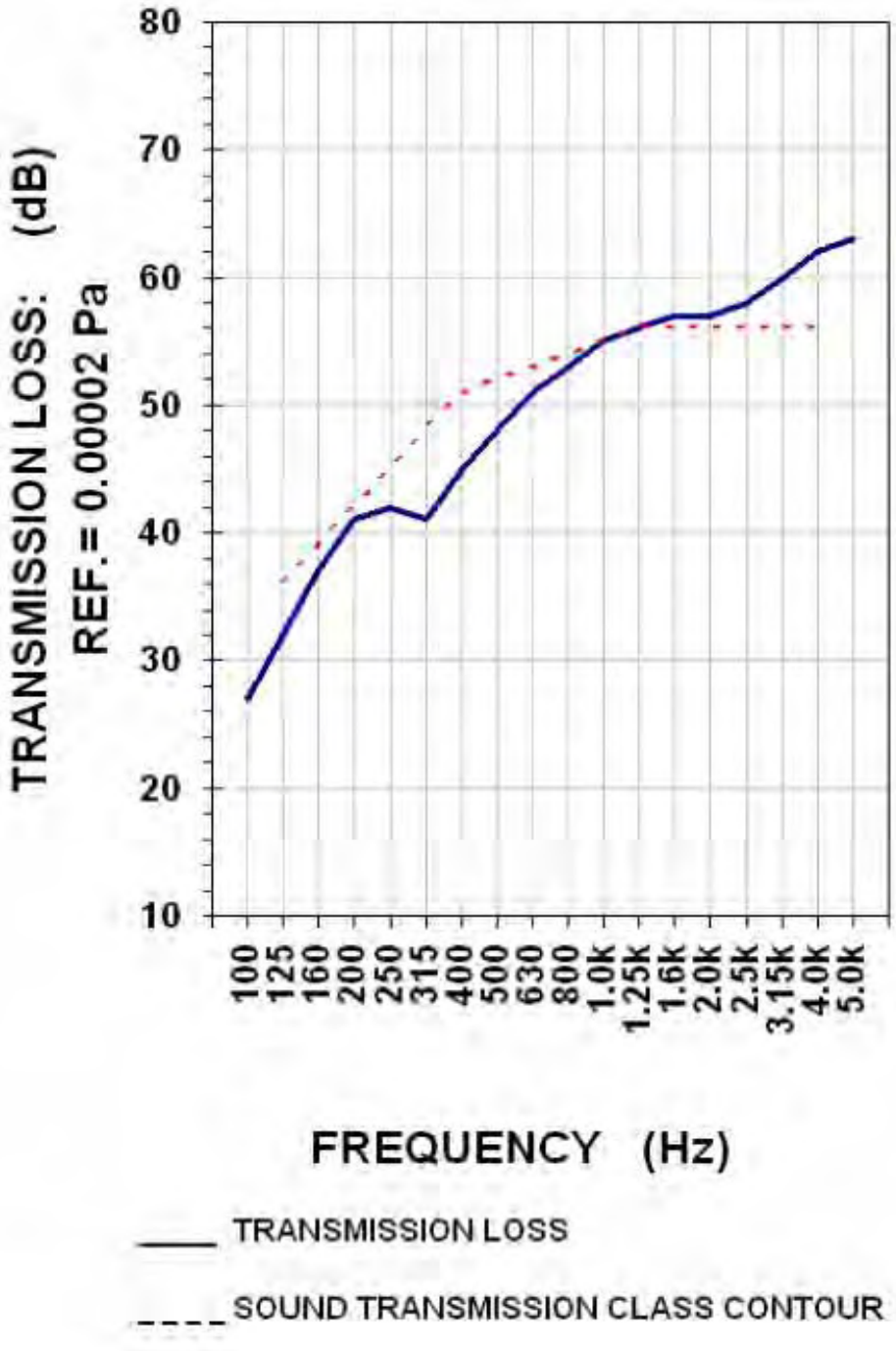
TEST REPORT

SOUND TRANSMISSION REPORT

RAL-TL04-050



STC = 52