Architectural Testing

ASTM E 90 SOUND TRANSMISSION LOSS TEST REPORT

Rendered to:

SIMTEK™ FENCE

SERIES/MODEL: Simtek 8-Foot Wall

TYPE: Privacy Fence

Summary of Test Results			
Data File No.	**Description (Nominal Dimensions)**	**STC**	**OITC**
89608.01	Simtek 8-foot wall, simulated rock wall, 8' by 8' privacy fence section	26	20

Reference should be made to Architectural Testing, Inc. Report No. 89608.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

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ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

SIMTEK™ FENCE
1330 West 400 North
Orem, Utah 84057

Report No:	89608.01-113-11
Test Date:	03/03/09
Report Date:	03/10/09
Expiration Date:	03/03/13

Test Sample Identification:

Series/Model: Simtek 8-Foot Wall

Type: Privacy Fence

Overall Size: 96" by 96"

Material: Polyethylene

Pattern: Simulated Rock Wall

Project Scope: Architectural Testing, Inc. was contracted by SimTek™ Fence to conduct a sound transmission loss test on a Series/Model Simtek 8-foot wall, privacy fence. A summary of the results is listed in the Test Results section and the complete test data is included as Appendix B of this report. The sample was provided by the client.

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.

Sample Installation: Sound transmission loss tests were initially performed on a filler wall that was designed to test 96" by 96" specimens. The filler wall achieved an STC rating of 68.

The 96" by 96" plug was removed from the filler wall assembly. The privacy fence was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the privacy fence to the test opening on both sides. The interior side of the privacy fence, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing.

Test Procedure: The sound transmission loss test consisted of the following measurements: One background noise sound pressure level and five sound absorption measurements were conducted at each of the five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms, at each of the five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.

Sample Descriptions: A polyethylene fence section measuring 96" by 96" was tested. SimTek™ Fence provided all test materials, and the test specimen did not arrive assembled. Two horizontal sections were installed between two end posts.

Each horizontal section was 89-7/8" wide by 48" high and approximately 2" thick. Both horizontal sections were hollow-molded polyethylene with an 18 gauge thick, 1-1/2" by 1-1/2" hollow steel stiffener in the top and bottom rails.

The two polyethylene end posts were a nominal 5" by 5" by 96", C-channel shape. Each post was filled with recycled polyethylene and had a 14 gauge, 2" by 3" hollow steel reinforcement channel. The vertical sections were stacked and inserted into both C-channel shaped end posts.

Comments: The weight of the sample was 188 lbs. The client did not supply drawings on the Series/Model Simtek 8-foot wall, privacy fence. The test specimen was returned per the client's request. Photographs of the test specimen are included in Appendix C.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the sound transmission loss test results on the Series/Model Simtek 8-foot wall, privacy fence is listed below.

Summary of Test Results			
Data File No.	**Description (Nominal Dimensions)**	**STC**	**OITC**
89608.01	Simtek 8-foot wall, simulated rock wall, 8' by 8' privacy fence section	26	20

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

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

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:jmcs

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: Photographs (1)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	03/10/09	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	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003245
Receive Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003249
Source Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003248
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002816
Noise Source	Delta Electronics	SNG-1	Two, uncorrelated "Pink" noise signals	Y002181
Equalizer	Rane	RPE228	Programmable EQ	Y002180
Power Amplifiers	Renkus-Heinz	P2000	Two Amplifiers	Y002179 Y001779
Receive Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	Two Loudspeakers	Y001784 Y001785
Source Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	Two 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 Test Results

SOUND TRANSMISSION LOSS

ASTM E 90

Architectural Testing

ATI No.	89608.01	**Date**	03/03/09
Client	SimTek™ Fence		
Specimen	Series/Model: Simtek 8-foot wall, simulated rock wall, 8' by 8' privacy fence section		
Specimen Area	64.00 Sq Ft		
Filler Area	76.00 Sq Ft		
Operator	Kurt Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	71.2	70.9	71.7	71.1	71.8	71.2
RH %	44.1	44.6	45.1	44.3	42.9	44.5

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
80	40.3	55.5	83.9	70.8	47.1	14	2.04	0	32.6
100	39.3	50.6	87.9	74.3	47.9	15	2.27	0	32.5
125	41.5	51.7	91.8	77.4	55.1	15	2.01	0	39.0
160	39.3	56.3	94.5	80.8	55.3	14	1.22	0	40.4
200	38.3	57.5	98.6	84.5	54.5	15	0.60	1	39.1
250	36.8	63.6	99.1	85.0	57.0	14	0.96	5	42.1
315	36.1	69.1	98.0	81.1	57.5	17	0.78	5	40.1
400	34.4	74.6	97.6	78.7	62.5	18	0.81	7	43.6
500	34.0	69.5	99.1	77.2	66.0	22	0.36	4	43.7
630	32.2	65.0	101.8	76.3	67.0	25	0.45	2	40.8
800	35.2	63.5	101.2	72.0	70.6	29	0.38	0	40.6
1000	32.7	65.5	100.9	69.2	74.0	32	0.26	0	41.7
1250	32.4	72.7	104.0	71.3	75.3	32	0.53	0	42.4
1600	30.1	77.1	110.0	78.3	74.1	31	0.47	0	42.5
2000	21.2	83.3	105.3	74.0	72.3	30	0.22	0	41.3
2500	10.9	98.8	103.7	72.6	74.6	29	0.22	1	44.7
3150	11.6	114.4	104.3	73.2	80.2	29	0.44	1	50.9
4000	9.5	137.9	103.2	69.8	83.2	30	0.33	0	52.4
5000	7.8	176.6	101.4	64.8	86.2	32	0.46	0	53.3

STC Rating =	**26**	*(Sound Transmission Class)*
Deficiencies =	**26**	*(Number of deficiencies versus contour curve)*
OITC Rating =	**20**	*(Outdoor/Indoor Transmission Class)*

Notes:

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

2) Transmission loss coefficient differences less than 6 indicate the lower limit of the transmission loss for this specimen. These cells are highlighted red.

3) Transmission loss coefficient differences between 6 and 15 indicate there has been a filler wall correction applied. These cells are highlighted green.

4) Receive Room levels less than 5dB above the Background levels are highlighted in yellow.

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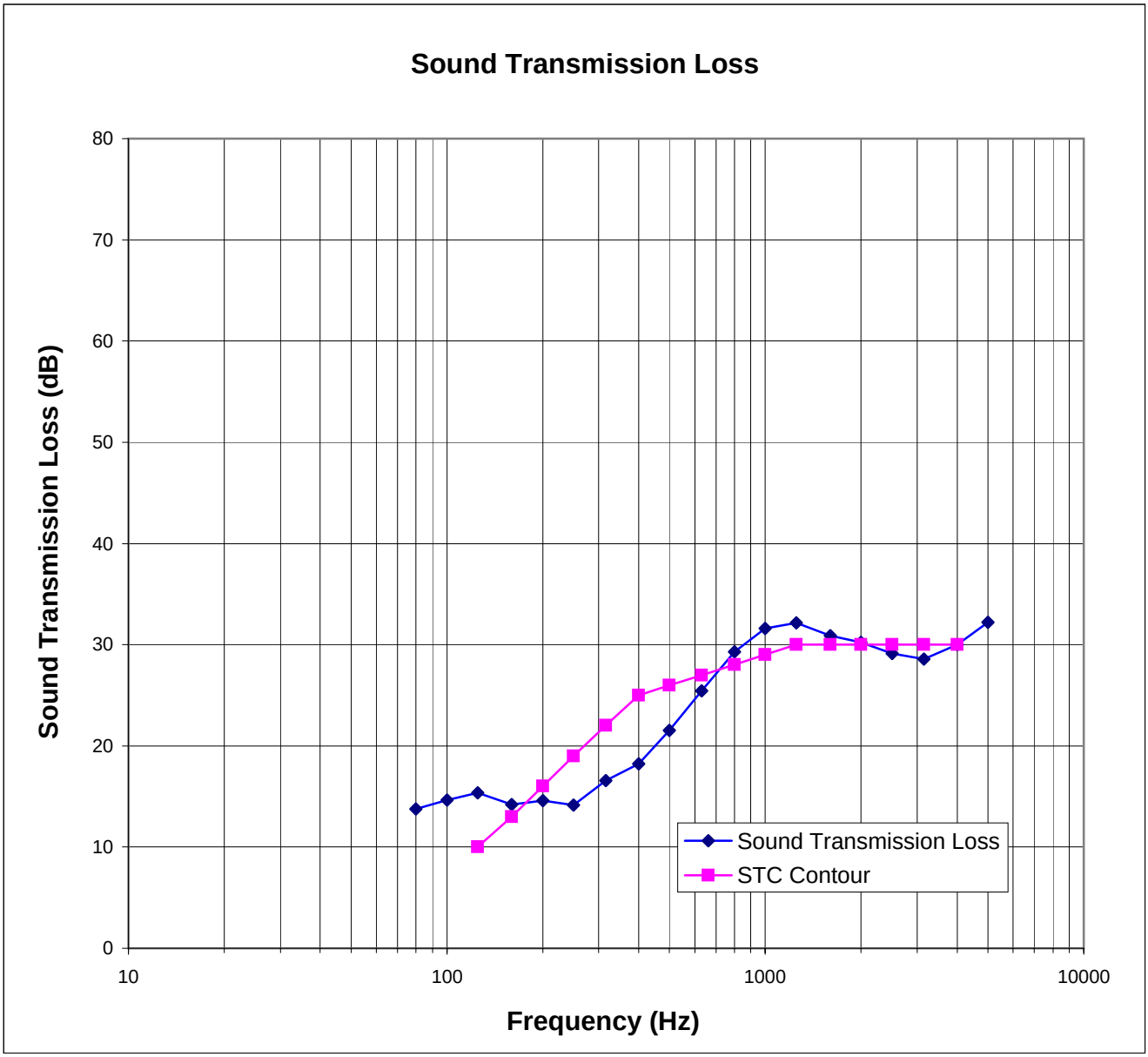
ATI No.	89608.01	**Date**	03/03/09
Client	SimTek™ Fence		
Specimen	Series/Model: Simtek 8-foot wall, simulated rock wall, 8' by 8' privacy fence section		

Specimen Area	64.00 Sq Ft
Filler Area	76.00 Sq Ft
Operator	Kurt Golden



ACCREDITED

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

Appendix C

Photographs

Receive Room View of Installed Specimen

Source Room View of Installed Specimen