

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

Rendered to:

SOUTHERN CROSS BUILDING PRODUCTS, LLC

SERIES/MODEL: Green E-Board™

TYPE: Wall/Backer Board

Summary of Test Results			
ATI Data File No.	Sample Description	STC	OITC
79158.01	Green E-Board™ 1/2" wall/backer board	31	27

Reference should be made to Architectural Testing, Inc. Report No. 79158.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

SOUTHERN CROSS BUILDING PRODUCTS, LLC
3461 High Ridge Road
Boynton Beach, Florida 33426

Report No: 79158.01-113-11
Test Date: 12/14/07
Report Date: 12/20/07
Expiration Date: 12/14/11

Test Sample Identification:

Series/Model: Green E-Board™

Type: 1/2" Wall/Backer Board

Overall Size: 96" by 96"

Project Scope: Architectural Testing, Inc. was contracted by Southern Cross Building Products, LLC to conduct a sound transmission loss test on a Series/Model Green E-Board™, wall/backer board. 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.*

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" and 96" by 120" specimens. The filler wall achieved an STC rating of 69.

The 96" by 96" plug was removed from the filler wall assembly. The wall/backer board was installed in the test opening onto 2" by 4" wood studs. The studs were spaced 48" apart both horizontally and vertically to form a grid in the test opening. The panels were fastened using 1-5/8" drywall screws every 24". Duct seal was used to seal the perimeter of the wall/backer board to the test opening. The seams of the backer board were sealed with acoustical sealant and duct tape. The interior side of the wall/backer board, 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:

Series/Model: Green E-Board™

Sample Overall Size: 96" by 96"

Material Type	Panel Dimensions	Quantity Used	Measured Thickness	Average Weight (lbs / Ft ²)	Density (lbs. / Ft ³)
Wall/Backer board	48" by 48"	4	0.494"	2.72	66.07

Comments: The panels were arranged to form a 96" by 96" sample. The weight of the sample was 174.08 lbs. The client did not supply drawings on the Series/Model Green E-Board™, wall/backer board. The wall/backer board was disassembled, and the components will be retained by Architectural Testing, Inc. for four years. Photographs of the test specimen are included in Appendix C.

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

Summary of Test Results			
ATI Data File No.	Sample Description	STC	OITC
79158.01	Green E-Board™ 1/2" wall/backer board	31	27

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

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

For ARCHITECTURAL TESTING, INC:


Brandon C. Ward
Technician - Acoustical Testing

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

BCW:alb

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)

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

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	12/20/07	N/A	Original Report Issue

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	Y002929
Receive Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003246
Source Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003245
Receive Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003249
Source Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003248
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002816
Noise Source	Delta Electronics	SNG-1	Two, non-coherelated "Pink" noise signals	Y002181
Equalizer	Rane	RPE228	Programmable EQ	Y002180
Power Amplifiers	Renkus-Heinz	P2000	2 - Amplifiers	Y002179 Y001779
Receive Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y001784 Y001785
Source Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y002649 Y002650

Test Chamber:

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

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

Appendix B
Complete Test Results



SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing


ATI No.	79158.01	Date	12/14/07
Client	Southern Cross Building Products, LLC		
Specimen	Green E-Board™ 1/2" Wall/Backer Board		
Specimen Area	64.00 Sq Ft		
Filler Area	76.00 Sq Ft		
Operator	Brandon Ward-DP		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	75.5	74.9	72.5	75.5	74.9	74.6
RH %	44.6	45.4	44.2	44.6	59.1	44.7

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Deficiencies	Trans Coef Diff
80	39.6	47.3	86.0	67.0	39.0	20	2.12	0	17.9
100	41.0	50.8	88.5	70.2	42.8	19	2.46	0	22.7
125	40.4	52.2	94.0	70.5	53.4	24	3.52	0	28.2
160	44.5	48.9	95.2	75.6	52.7	21	1.88	0	31.2
200	44.1	46.0	101.0	79.1	54.2	23	0.77	0	30.1
250	39.1	56.2	101.1	79.1	55.9	23	1.17	1	32.6
315	34.7	58.6	99.9	73.9	57.3	26	1.14	1	30.2
400	33.4	61.4	99.4	72.1	63.3	27	1.11	3	35.1
500	33.1	60.1	101.3	71.8	66.3	30	0.40	1	35.8
630	28.5	56.9	103.9	73.4	69.0	31	0.91	1	37.2
800	29.1	60.0	102.9	70.7	72.9	32	0.24	1	39.8
1000	27.9	62.6	102.6	69.1	76.7	34	0.59	0	42.4
1250	27.9	68.4	105.7	70.7	78.4	35	0.30	0	42.9
1600	24.1	71.4	111.8	76.5	77.2	35	0.52	0	41.7
2000	17.5	76.4	107.6	75.1	75.7	32	0.31	3	43.2
2500	11.9	90.2	106.0	76.4	77.7	28	0.21	7	48.9
3150	11.3	104.5	106.9	74.5	87.1	30	0.39	5	56.1
4000	10.5	126.9	105.6	68.5	90.7	34	0.36	1	55.9
5000	10.0	165.7	104.1	62.3	90.8	38	0.61	0	52.5

STC Rating = 31 *(Sound Transmission Class)*
Deficiencies = 24 *(Number of deficiencies versus contour curve)*
OITC Rating = 27 *(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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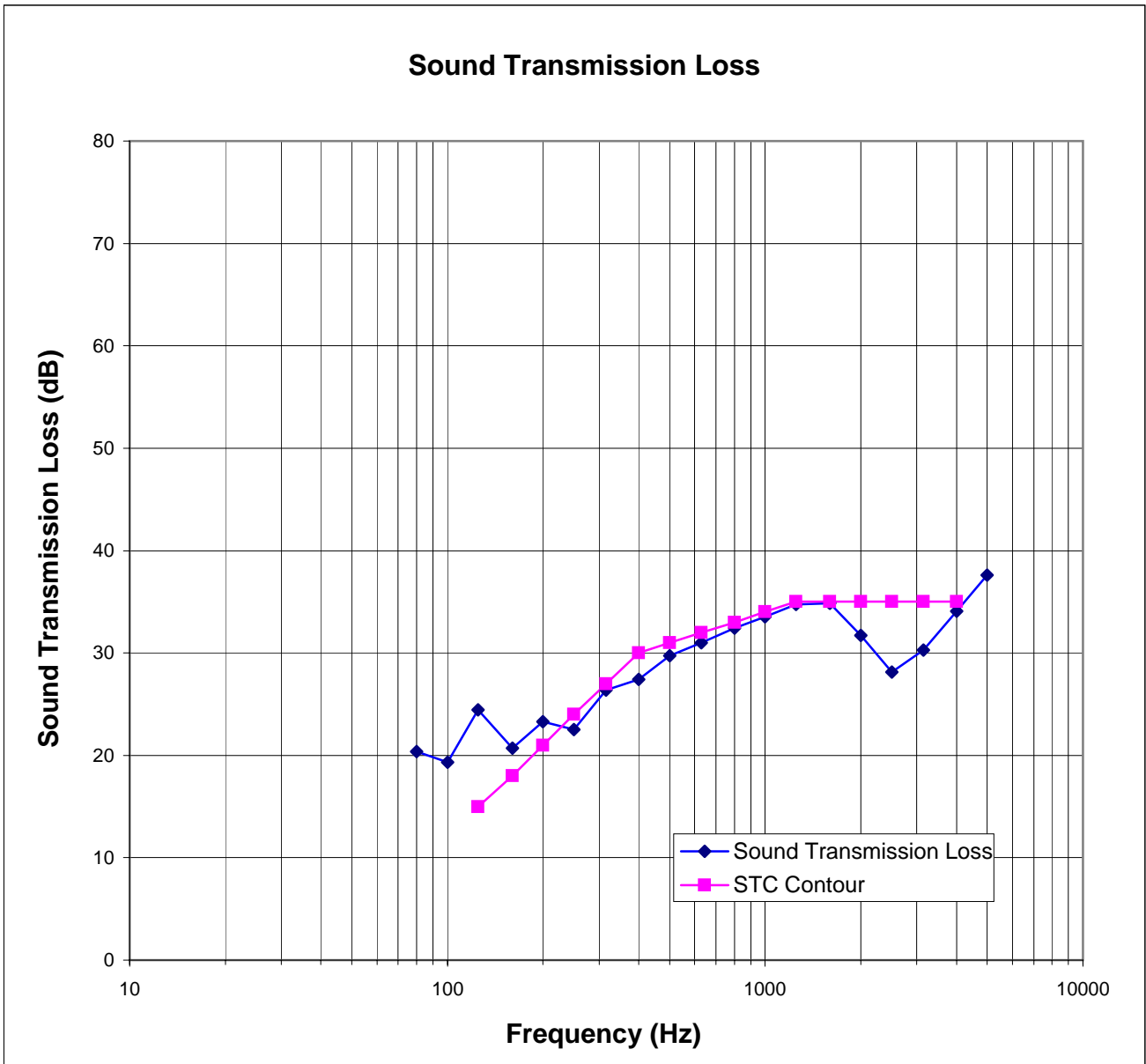


Architectural Testing

ATI No. 79158.01
Client Southern Cross Building Products, LLC
Specimen Green E-Board™ 1/2" Wall/Backer Board

Date 12/14/07

Specimen Area 64.00 Sq Ft
Filler Area 76.00 Sq Ft
Operator Brandon Ward-DP



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Appendix C

Photographs



Receive Side of Sample Installed in Test Chamber



Source Side of Sample Installed in Test Chamber