

ACOUSTICAL TEST REPORT

Rendered to:

FABRI TRAK SYSTEMS, INC.

TYPE: Base Wall, Wall Partition and Fabri Block with a Fabri Trak System on Both Sides

Report No: 01-47633.01
Test Date: 10/23/03
Report Date: 11/05/03
Expiration Date: 10/23/07



ACOUSTICAL TEST REPORT

Rendered to:

FABRI TRAK SYSTEMS, INC. 11 Russell Avenue South River, New Jersey 08882

> Report No: 01-47633.01 Test Date: 10/23/03 Report Date: 11/05/03 Expiration Date: 10/23/07

Test Sample Identification:

Type: Base Wall, Wall Partition and Fabri Block with a Fabri Trak System on both sides

Overall Size: 8' x 8'

Project Summary: Architectural Testing, Inc. (ATI) was contracted by FABRI TRAK SYSTEMS, INC. to conduct a transmission loss and sound absorption test on a Base Wall, Wall Partition and Fabri Block with a Fabri Trak System 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 test was conducted in accordance with the following:

ASTM E 90-02, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.

ASTM E 413-87 (Re-approved 1999), Classification for Rating Sound Insulation.

ASTM E 1332-90 (Re-approved 1998), Standard Classification for Determination of Outdoor-Indoor Transmission Class.

ASTM C 423-02, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

ASTM E 795-00, Standard Practices for Mounting Test Specimens During Sound Absorption Tests.



Test Equipment: The equipment, used to conduct these tests, meets the requirements of ASTM E 90-02 and ASTM C 423-02. The microphones were calibrated before conducting the sound transmission loss and sound absorption tests. The test equipment and test chamber descriptions are listed in Appendix A.

Test Procedure for Transmission Loss:

Sound transmission loss tests were initially performed on a filler wall consisting of a double stud wall constructed with 2" x 4" wood studs spaced 16" on center. Two layers of 5/8" type "X" Gypsum board were fastened to the source side of the filler wall. Two layers of 5/8" type "X" Gypsum board were fastened to the receive side of the filler wall. The cavity was filled with R-19 fiberglass insulation. The perimeter and seams were sealed with acoustical sealant. A sound transmission loss test was then conducted on the filler wall. The filler wall achieved an STC rating of 61. The filler wall plug was removed. The test specimen was installed and sealed on both sides with duct seal. The interior face of the sample, 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 before the test.

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.

Test Procedure for Sound Absorption:

The sound absorption of the reverberation chamber was measured before the test specimen was installed. This measurement shall be referred to as the empty room test. For the Type "A" mounting, the test specimen was installed vertically inside the filler wall opening with the fabric faced side exposed to the sound field. The perimeter of the sample was sealed to the wall surface with duct seal. The sound absorption test was then re-run. The absorption measurement with the specimen inside the chamber shall be referred to as the full room test.

For the empty and full room tests, ten decay measurements were conducted at each of the five microphone positions. The sound absorption test was conducted at 1/3 octave band frequencies ranging from 80 to 5000 hertz. The air temperature and relative humidity conditions were monitored and recorded during the empty and full room measurements.



Sample Description:

A base wall partition was constructed with 3-5/8", 24 gauge galvanized metal track and studs on 16" centers. Each side was covered with one layer of 1/2" drywall, screwed, spackled, and taped. The surface received one coat of primer. The total weight of the wall partition was 224.0 lbs.

The Fabri Block Vinyl was adhered to the receive side drywall using contact adhesive. The seams were butted and caulked.

The Fabri Trak had a 1" profile and was screwed or stapled to the wnyl surface penetrating the wall. A perimeter load track was applied around the wall and a mid-wall back was installed vertically at the center point of the wall creating two 4' wide x 8' high panels, minus a 4" space at the floor where a vinyl cove base is installed with a cove base adhesive to the Fabri Block. A layer of 6 lbs density fiberglass was installed with staples to the vinyl backer. FR 701 Fabric was then stretched and installed into the top load track system. This was repeated on the source side of the sample as well.

A sound absorption test was performed after changing the receive side fabric from FR-107 to AcoustiartTM Fabric.

The sample test set-up was photographed with a digital camera and the pictures are included in Appendix C.

Comments: The area used for calculating transmission loss and sound absorption was 64.0 sq/ft., which was the entire system. Sound absorption test results for the absorptive area only (61.33 sq/ft) were also calculated. The total weight of the sample was 335.0 lbs. The client did not supply drawings on the Wall Partition and Fabri Block with a Fabri Trak System on both sides. The specimen was returned per the client's request.

Test Results: A summary of the sound absorption tests are listed below:

Sound Absorption:

Sample ID Number and	1/3 Octave Band Absorption Coefficients						NRC	SAA
Sample Description	125	250	500	1000	2000	4000		51111
01-47630.01A Base Wall, Base Line Wall Partition	0.23	0.04	0.03	0.03	0.06	0.06	0.05	0.06
01-47633.01B Base Wall, Wall Partition and Fabri Block with a Fabri Trak System with the Acoustiart TM Fabric (64 sq/ft)	0.18	0.25	0.83	1.03	0.97	0.94	0.75	0.78
01-47633.01B1 Base Wall, Wall Partition and Fabri Block with a Fabri Trak System with the Acoustiart TM Fabric (61.33 sq/ft)	0.19	0.27	0.87	1.08	1.02	0.98	0.80	0.82



Sound Transmission Loss:

ATI Job File No.	Sample Description	STC	OITC
01-47630.01A	Base Wall, Base Line Wall Partition	37	24
01-47633.01A	Base Wall, Wall Partition and Fabri Block with a Fabri Trak System (FR 701) on both sides	47	31

The complete test results are listed in Appendix B.

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. 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:

2.5.2.7

Kurt A. Golden Technician - Acoustical Testing

KAG:vlm 01-47633.01 Digitally Signed by: Todd D. Kister

Todd D. Kister

Laboratory Supervisor - Acoustical Testing

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DOCUMENT CONTROL ADDENDUM #01-47633.00

Current Issue Date: 11/05/03

Report No.: 01-47633.01

Requested by: Buzz Wilson, FABRI TRAK SYSTEMS, INC.

Purpose: Sound transmission loss and sound absorption test report on a Base Wall, Wall Partition and Fabri Block with a Fabri Trak System on both sides.

Issued Date: 11/05/03

Comments:



Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	Y002929
Receive Room Microphone	ACO Pacific	7047	1/2", pressure type, condenser microphone	Y001775
Source Room Microphone	ACO Pacific	7047	1/2", pressure type, condenser microphone	Y002757
Receive Room Preamp	ACO Pacific	4012	1/2" preamplifier	Y002185
Source Room Preamp	ACO Pacific	4012 1/2" preamplifier		Y002756
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002186
Noise Source	Delta Electronics SNG		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 (234m ³)	Rotating vane and stationary diffusers. Temperature and humidity controlled. Isolation pads under the floor.
Source Room	7296.3 ft ³ (206.6m ³)	Stationary diffusers only. Temperature and humidity controlled.

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



Appendix B Complete Sound Absorption Test Results



SOUND ABSORPTION ASTM C423

Architectural Testing

ATI No. 01-47630.01A

Client Artistic Wall Solutions

Specimen Base Wall, base line wall partition

Specimen Area 64.00 Sq Ft Mounting Type A Wall mount

Operator Kurt A. Golden

 Empty Room
 Full Room

 Date
 22-Oct-03
 22-Oct-03

T---- F 70.2 70.1

 Temp F
 70.2
 70.1

 RH %
 66.1
 65.3

RH %	66.1		05.5		4.	
	Empty Room		Full Room		Absorption	11
Freq	Absorption	Uncert	Absorption	Uncert	Coefficient	Uncertainty
(Hz)	(Sabines)		(Sabines)		(Sabines/Sq.Ft.)	
50		0.158	44.23	0.392	0.04	0.007
63	41.06	0.441	52.31	0.282	0.18	0.008
80		0.005	52.59	1.040	0.18	0.016
100	47.24	0.155	55.84	0.465	0.13	0.008
125		0.308	59.60	0.121	0.23	0.005
160		0.311	53.57	0.244	0.15	0.006
200		0.191	54.45	0.140	0.11	0.004
250	i e	0.083	49.30	0.034	0.04	0.001
315		0.073	50.23	0.350	0.06	0.006
400		0.139	52.93	0.012	0.06	0.002
500		0.003	50.56	0.057	0.03	0.001
630		0.058	52.76	0.081	0.06	0.002
800		0.094	55.73	0.032	0.03	0.002
1000		0.048	59.85	0.171	0.03	0.003
1250		0.073	66.24	0.075	0.04	0.002
1600		0.084	70.86	0.032	0.05	0.001
2000		0.132	76.83	0.148	0.06	0.003
2500	85.20	0.051	90.94	0.046	0.09	0.001
3150	I .	0.140	110.87	0.073	0.09	0.002
4000	130.40	0.155	134.26	0.458	0.06	0.008
5000		0.050	176.96	0.138	0.10	0.002
6300	225.82	0.019	232.94	0.259	0.11	0.004
8000	307.37	0.023	312.69	0.156	0.08	0.002
10000)		<u> </u>		<u> </u>	
Evact NR	C Rating	0.042				

Exact NRC Rating 0.042 Exact SAA Rating 0.056

NRC Rating 0.05 SAA Rating 0.06

RVLAP





ATI No.

01-47630.01A

Date

10/22/2003

Client

Artistic Wall Solutions

Specimen Area

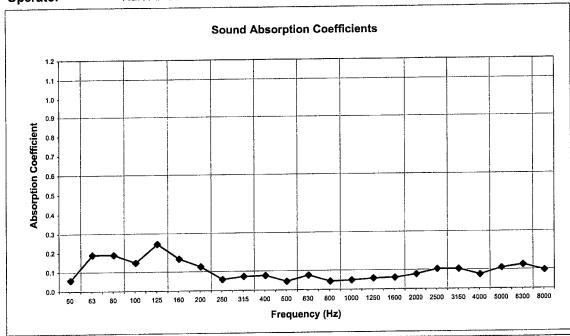
Base Wall, base line wall partition

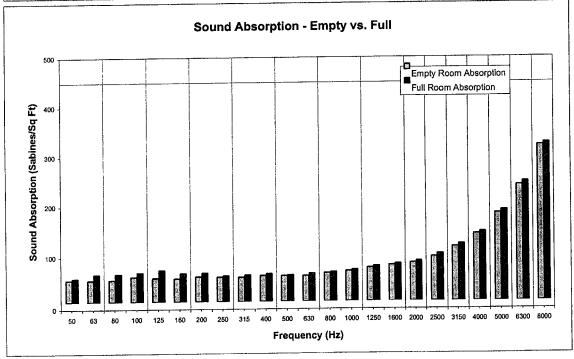
64.00 Sq Ft

Mounting Type A Wall mount

Operator

Kurt A. Golden







SOUND TRANSMISSION LOSS

ASTM E90

10/23/03

Architectural Testing

Date 01-47633.01A ATI No.

FABRI TRAK SYSTEMS, INC. Client

Base Wall, wall partition with Fabri Block with a 1" Fabri Track System on both sides) Specimen

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

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	69.6	69.5	69.8	69.6	81.3	69.6
RH %	64.3	64.5	65.8	64.3	58.5	64.7

	Bkgrd	Absorp	Source	Receive	Filler	Specimen	95% Conf	No. of Defici-	Trans Coef
Freq	SPL	(Sabines	SPL	SPL	TL	TL (ID)			Diff
(Hz)	(dB)	/Sq Ft)	(dB)	(dB)	(dB)	(dB)	Limit	encies	
80	33.8	60.0	82.7	67.7	31.6	15	2.12	0	15.5
100	38.0	59.7	86.1	69.2	38.1	17	2.59	0	20.1
125	34.9	54.7	91.8	66.9	41.6	26	2.36	5	15.3
160	42.8	54.4	95.5	68.7	43.1	28	1.33	6	14.7
200	43.0	58.4	100.4	66.7	44.9	34	1.08	3	10.2
250	35.2	62.8	101.7	67.2	47.2	35	0.66	5	11.9
315	32.2	72.1	99.7	61.0	51.9	38	1.23	5	13.0
400		83.9	98.5	54.2	54.8	43	0.78	3	11.0
	28.4	91.6	99.2	47.7	59.6	51	0.49	0	8.9
500	21.4	102.2	102.1	44.4	62.8	57	0.44	0	6.5
630		102.2	103.2	42.4	66.0	60	0.41	0	6.7
800	21.8	118.8	103.2	39.5	69.6	62	0.25	0	8.0
1000	19.2	1	103.0	38.0	72.6	64	0.44	0	8.3
1250	19.6	125.7	104.4	40.3	71.2	66	0.58	0	5.4
1600	14.6	134.0	1	38.9	68.0	66	0.41	0	3.0
2000	10.0	139.7	106.6	1	1	65	0.18	Ō	2.8
2500		149.9	105.3	37.4	67.8	69	0.10	Ö	5.0
3150	7.7	169.8	105.7	33.6	73.6	1 1	0.34	0	9.3
4000	7.7	197.5	104.8	31.0	79.0	69		0	9.6
5000	7.7	243.8	103.3	25.4	82.4	73	0.85		3.0

47 (Sound Transmission Class) **STC Rating**

27 (Number of deficiencies versus contour curve) **Deficiencies**

31 (Outdoor/Indoor Transmission Class) **OITC Rating**





ATI No.

01-47633.01A

Date

10/23/03

Client

FABRI TRAK SYSTEMS, INC.

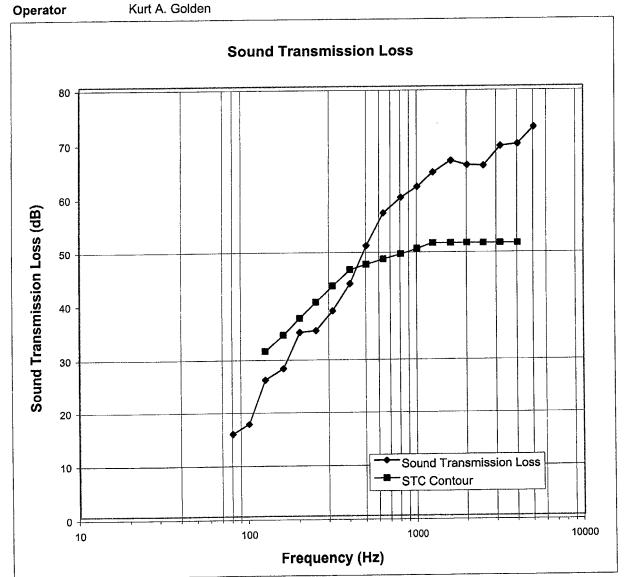
Specimen

Base Wall, wall partition with Fabri Block with a 1" Fabri Track System on both sides)

Specimen Area

Filler Area

64.00 Sq Ft 76.00 Sq Ft







SOUND ABSORPTION ASTM C423

Architectural Testing

ATI No. 01-47633.01B

Client FABRI TRAK SYSTEMS, INC.

Specimen Base Wall, Fabri Block and Fabri Trak System w/ Acoustiart rec.side

Specimen Area 64.00 Sq Ft Mounting Type A

Operator Kurt A. Golden

Empty Room Full Room

Date 23-Oct-03 23-Oct-03

Temp F 69.6 69.6 RH % 66.5 66.5

	Empty Room		Full Room		Absorption	
Freq	Absorption	Uncert	Absorption	Uncert	Coefficient	Uncertainty
(Hz)	(Sabines)		(Sabines)		(Sabines/Sq.Ft.)	
50	39.38	0.149	45.83	0.037	0.10	0.002
63	41.64	0.213	54.44	0.212	0.20	0.005
80	44.64	0.030	57.12	0.514	0.20	0.008
100	45.93	0.417	57.30	0.190	0.18	0.007
125	42.27	0.358	54.02	0.028	0.18	0.006
160	42.25	0.108	51.78	0.226	0.15	0.004
200	47.14	0.025	59.42	0.475	0.19	0.007
250	46.10	0.006	62.36	0.053	0.25	0.001
315	47.65	0.020	75.49	0.096	0.44	0.002
400	48.41	0.275	92.22	0.161	0.68	0.005
500	47.89	0.177	100.97	0.032	0.83	0.003
630	49.61	0.082	113.62	0.180	1.00	0.003
800	52.45	0.024	118.27	0.020	1.03	0.000
1000	55.83	0.152	121.96	0.061	1.03	0.003
1250	63.48	0.101	127.75	0.148	1.00	0.003
1600	67.98	0.063	131.97	0.333	1.00	0.005
2000	72.40	0.167	134.70	0.007	0.97	0.003
2500		0.014	148.84	0.097	0.98	0.002
3150		0.084	165.43	0.026	0.95	0.001
4000		0.242	189.28	0.402	0.94	0.007
5000	170.62	0.037	231.18	0.057	0.95	0.001
6300	225.51	0.019	286.37	0.262	0.95	0.004
8000	305.04	0.663	367.16	0.031	0.97	0.010
10000						

Exact NRC Rating 0.773 Exact SAA Rating 0.784

NRC Rating 0.75 SAA Rating 0.78







ATI No.

01-47633.01B

Date

37917.64

Client

FABRI TRAK SYSTEMS, INC.

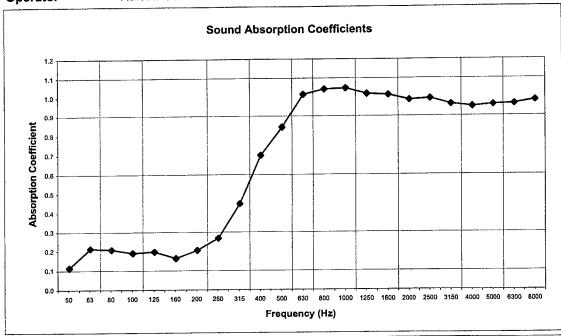
Specimen

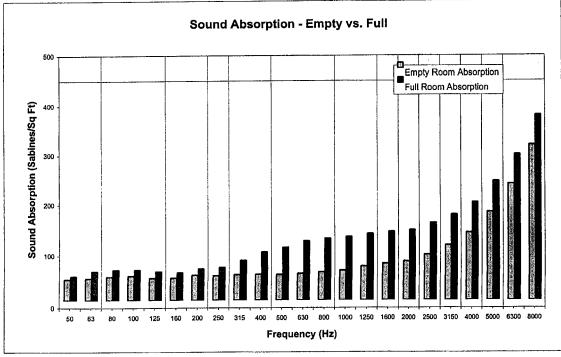
Base Wall, Fabri Block and Fabri Trak System w/ Acoustiart rec.side

Specimen Area 64.00 Sq Ft

Mounting Type A

Operator Kurt A. Golden







SOUND ABSORPTION ASTM C423

Architectural Testing

ATI No. 01-47633.01B1

Client FABRI TRAK SYSTEMS, INC.

Specimen Base Wall, Fabri Block and Fabri Trak System w/ Acoustiart rec.side

Specimen Area 61.33 Sq Ft Mounting Type A

Operator Kurt A. Golden

Empty Room Full Room

Date 23-Oct-03 23-Oct-03

 Temp F
 69.6
 69.6

 RH %
 66.5
 66.5

Empty Room			Full Room		Absorption	
Freq	Absorption	Uncert	Absorption	Uncert	Coefficient	Uncertainty
(Hz)	(Sabines)		(Sabines)		(Sabines/Sq.Ft.)	
50	39.38	0.149	45.83	0.037	0.11	0.003
63	41.64	0.213	54.44	0.212	0.21	0.005
80	44.64	0.030	57.12	0.514	0.20	0.008
100		0.417	57.30	0.190	0.19	0.007
125		0.358	54.02	0.028	0.19	0.006
160		0.108	51.78	0.226	0.16	0.004
200		0.025	59.42	0.475	0.20	0.008
250	46.10	0.006	62.36	0.053	0.27	0.001
315		0.020	75.49	0.096	0.45	0.002
400		0.275	92.22	0.161	0.71	0.005
500	l .	0.177	100.97	0.032	0.87	0.003
630		0.082	113.62	0.180	1.04	0.003
800		0.024	118.27	0.020	1.07	0.001
1000	l .	0.152	121.96	0.061	1.08	0.003
1250	B .	0.101	127.75	0.148	1.05	0.003
1600	l.	0.063	131.97	0.333	1.04	0.006
2000		0.167	134.70	0.007	1.02	0.003
2500		0.014	148.84	0.097	1.02	0.002
3150		0.084	165.43	0.026	0.99	0.001
4000		0.242	189.28	0.402	0.98	0.008
5000		0.037	231.18	0.057	0.99	0.001
6300		0.019	286.37	0.262	0.99	0.004
8000		0.663	367.16	0.031	1.01	0.011
10000						<u> </u>

Exact NRC Rating 0.806 Exact SAA Rating 0.819

NRC Rating 0.80 SAA Rating 0.82

NVLAP





ATI No.

01-47633.01B1

Date

10/23/03

Client

FABRI TRAK SYSTEMS, INC.

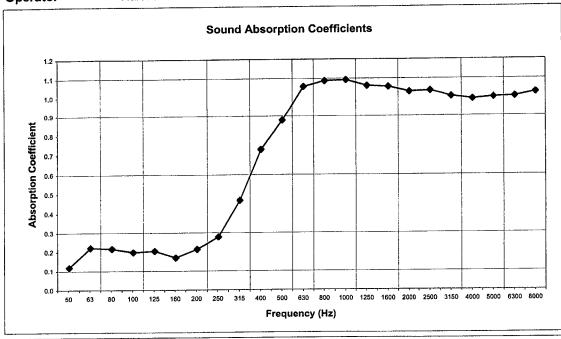
Specimen Area

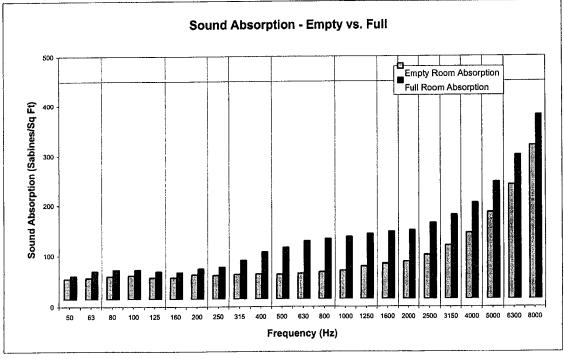
Base Wall, Fabri Block and Fabri Trak System w/ Acoustiart rec.side

en Area 61.33 Sq Ft

Mounting Type A

Operator Kurt A. Golden

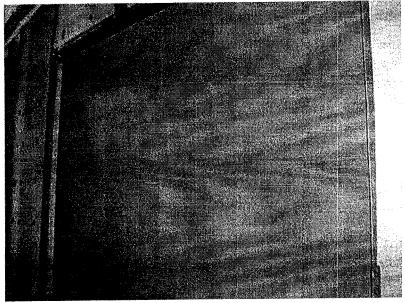






Appendix C

Photographs

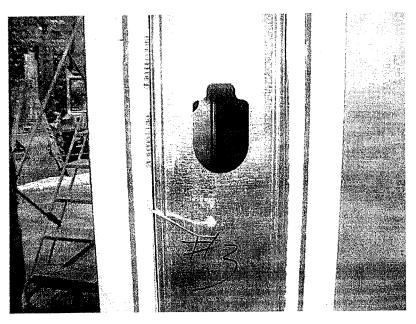


FR 701 Fabric

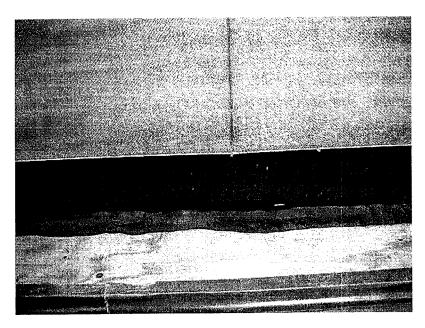


AcoustiartTM Fabric



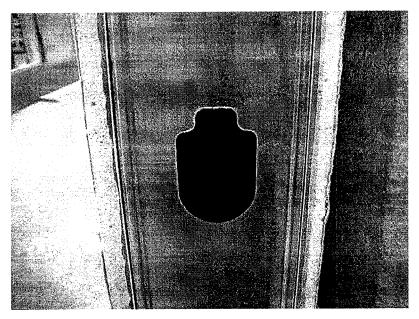


Side View of Wall No. 3 with Fabri Trak Systems



Bottom of Wall No. 3 Showing the 4" of Cove Base





Side View of the Base Line Wall Partition