Architectural Testing

ASTM C 423 SOUND ABSORPTION
TEST REPORT

Rendered to:

FABRI TRAK SYSTEMS, INC.

SERIES/MODEL: Fabri Trak System

TYPE: Upholstered Panel

Summary of Test Results								
Sample ID Number & Sample Description	**1/3 Octave Sound Absorption at the Octave Band Frequencies (Sabines per ft²)**						**NRC**	**SAA**
	125	**250**	**500**	**1000**	**2000**	**4000**		
99787.01A Series/Model Fabri Trak System, upholstered panel with a Guilford FR 701 polyester fabric facing	0.13	0.30	0.81	0.94	0.98	1.00	0.75	0.76
99787.01B Series/Model Fabri Trak System, upholstered panel without fabric facing	0.06	0.31	0.75	0.92	0.95	1.00	0.75	0.72

Reference should be made to Architectural Testing, Inc. Report No. 99787.01-113-11 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:

FABRI TRAK SYSTEMS, INC.
2553 Route 130, Suite 2
Cranbury, New Jersey 08512

Report No:	99787.01-113-11
Test Date:	04/12/10
Report Date:	04/21/10
Expiration Date:	04/12/14

Test Sample Identification:

Series/Model: Fabri Trak System

Type: Upholstered Panel

Overall Size: 8' by 9'

Project Summary: Architectural Testing, Inc. was contracted by Fabri *Trak* Systems, Inc. to conduct a sound absorption test on a Series/Model Fabri Trak System, upholstered panel. 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 test was conducted in accordance with the following:

ASTM C 423-09a, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*.

ASTM E 795-05, *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*.

Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM C 423. The microphone was calibrated before conducting the sound absorption test. The test equipment and test chamber descriptions are listed in Appendix A.

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Test Procedure: 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 placed directly against the test surface (floor) of the reverberation room with the absorptive side exposed to the sound field. The perimeter of the sample was sealed to the floor with aluminum angles and duct tape. 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:

Material Description*	Average Thickness (inches)	Average Density (pcf)	Average Weight (psf)
Guilford FR 701 polyester fabric	0.032	23.3	0.062
1" Thick fiberglass board	0.972	6.2	0.502
5/8" Gypsum wallboard	0.636	43.5	2.304

Test Sample A Construction*: The test sample was comprised of an upholstered 8' by 9' panel system assembled from two 4' by 9' panels and was laid directly on the reverberation room floor with specimen edges covered, comprising a total of 72 square feet. A simulated wall construction consisted of 1" Fabri Trak® (FR extruded vinyl locking-channel frame) along the perimeter of each, 4' wide by 9' long, panel, that was mounted by staples onto 5/8" thick gypsum wallboard. The assembly was fitted with 1" thick, 6 pcf density fiberglass board flush with the edge of the vinyl channels (i.e. Fabri Trak®). The fabric facing consisted of Guilford FR 701 100% polyester fabric stretched over the system and retained by the vinyl locking-channel frame (i.e. Fabri Trak®). The total weight of the sample was approximately 205 lbs.

Test Sample B Construction*: The test sample was comprised of an upholstered 8' by 9' panel system assembled from two 4' by 9' panels and was laid directly on the reverberation room floor with specimen edges covered, comprising a total of 72 square feet. A simulated wall construction consisted of 1" Fabri Trak® (FR extruded vinyl locking-channel frame) along the perimeter of each, 4' wide by 9' long, panel that was mounted by staples onto 5/8" thick gypsum wallboard. The assembly was fitted with 1" thick, 6 pcf density fiberglass board flush with the edge of the vinyl channels (i.e. Fabri Trak®). The total weight of the sample without fabric was 200 lbs.

** -As described by the client*

Comments: The sample test setup was photographed with a digital camera, and the pictures are included in Appendix C. The client did not supply drawings on the Series/Model Fabri Trak System, upholstered panel. The test specimen was returned per the client's request.

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

Summary of Test Results								
Sample ID Number & Sample Description	**1/3 Octave Sound Absorption at the Octave Band Frequencies (Sabines per ft²)**						**NRC**	**SAA**
	125	**250**	**500**	**1000**	**2000**	**4000**		
99787.01A Series/Model Fabri Trak System, upholstered panel with a Guilford FR 701 polyester fabric facing	0.13	0.30	0.81	0.94	0.98	1.00	0.75	0.76
99787.01B Series/Model Fabri Trak System, upholstered panel without fabric facing	0.06	0.31	0.75	0.92	0.95	1.00	0.75	0.72

The complete test results are listed in Appendix B. The acoustical chamber is qualified down to 80 hertz. Data provided below this frequency is for reference only.

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 (4)
- Appendix-C: Photographs (1)

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Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	04/21/10	N/A	Original Report Issue

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Last Calibrated
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	Y002929	01/02/08*
Data Acquisition Unit	Agilent Technologies	34970A	Data Acquisition Unit	62211	07/29/09
Receive Room Microphone	G.R.A.S.	40AR	12.7 mm, Pressure type, condenser microphone	Y003246	08/18/09
Receive Room Preamp	G.R.A.S.	26AK	12.7 mm Preamplifier	Y003249	08/08/09
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002816	02/18/10
Noise Source	Delta Electronics	SNG-1	Two, Uncorrelated "Pink" noise signals	Y002181	N/A
Equalizer	Rane	RPE228	Programmable EQ	Y002180	N/A
Power Amplifiers	Renkus-Heinz	P2000	Two, Amplifiers	Y002179 Y001779	N/A
Receive Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	Two, Loudspeakers	Y001784 Y001785	N/A
Receiving Room Environmental Indicator	Vaisala	HMW60Y	Temperature / Humidity Indicator	Y002653	08/23/09
Weather Station	Davis Instruments	6150C	Laboratory Barometric Pressure, Temperature, and Humidity	Y003257	04/08/10

**- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.*

Test Chamber:

	Volume	Description
Receiving Room	234 m^3	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

N/A-Non Applicable

Appendix B

Complete Test Results

Architectural Testing

SOUND ABSORPTION

ASTM C 423-09a

ATI No.	99787.01A		
Client	Fabri Trak Systems, Inc.		
Specimen	Fabri Trak System, upholstered panel with a Guilford FR 701 polyester fabric facing		
Specimen Area	72.00 Sq Ft	**Mounting**	Type A
Operator	Kurt Golden		

	Empty Room	Full Room	Barometric Pressure
Date	4/12/10	4/12/10	1019.7 mb
Temp F	72.4	72.8	
RH %	39.7	40.1	

Freq (Hz)	Empty Room Absorption (Sabines)	Uncert	Full Room Absorption (Sabines)	Uncert	Absorption Coefficient (Sabines/Sq.Ft.)	Uncertainty
50	42.36	0.617	44.60	0.236	0.03	0.009
63	43.62	0.206	47.78	0.337	0.06	0.005
80	49.30	0.113	51.75	0.089	0.03	0.002
100	58.06	0.497	54.69	0.374	0.00	0.009
125	48.97	0.288	57.97	0.452	0.13	0.007
160	45.39	0.011	53.67	0.334	0.12	0.005
200	48.96	0.159	60.35	0.099	0.16	0.003
250	48.37	0.015	69.81	0.035	0.30	0.001
315	49.46	0.301	83.42	0.100	0.47	0.004
400	52.95	0.181	96.02	0.210	0.60	0.004
500	50.01	0.280	108.22	0.041	0.81	0.004
630	47.69	0.142	109.82	0.424	0.86	0.006
800	48.21	0.010	112.23	0.357	0.89	0.005
1000	48.77	0.019	116.49	0.193	0.94	0.003
1250	51.91	0.066	127.26	0.298	1.05	0.004
1600	51.47	0.022	123.97	0.087	1.01	0.001
2000	51.87	0.040	122.43	0.031	0.98	0.001
2500	54.86	0.078	126.90	0.502	1.00	0.007
3150	58.33	0.059	130.18	0.161	1.00	0.002
4000	57.62	0.095	129.40	0.121	1.00	0.002
5000	65.23	0.208	138.12	0.142	1.01	0.003
6300	62.27	0.061	138.22	0.198	1.05	0.003
8000	57.34	0.265	130.14	0.096	1.01	0.004

NRC Rating = 0.75
SAA Rating = 0.76

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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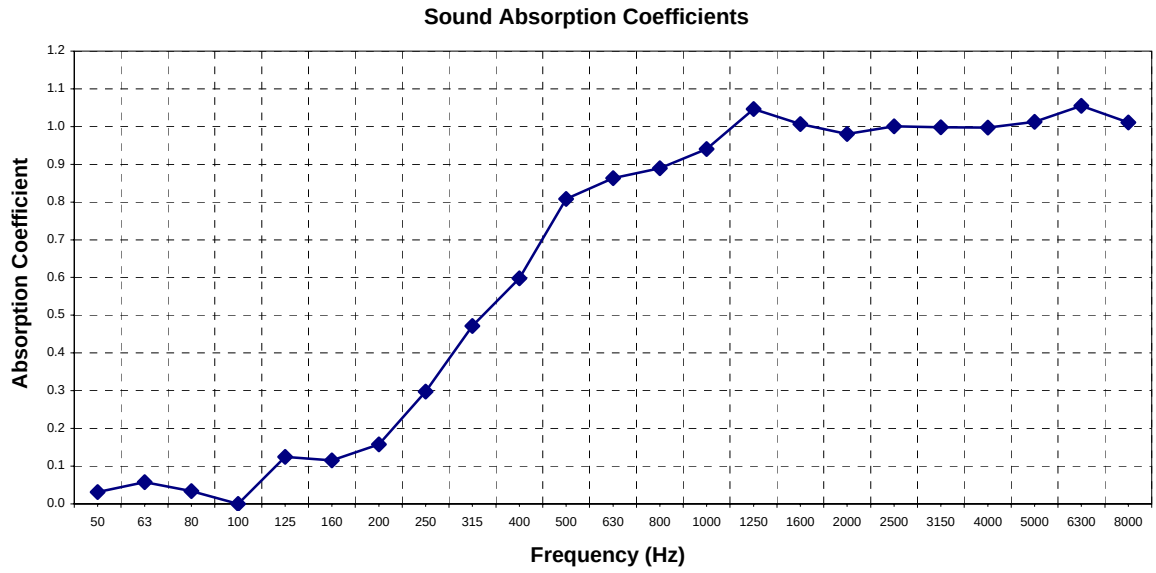
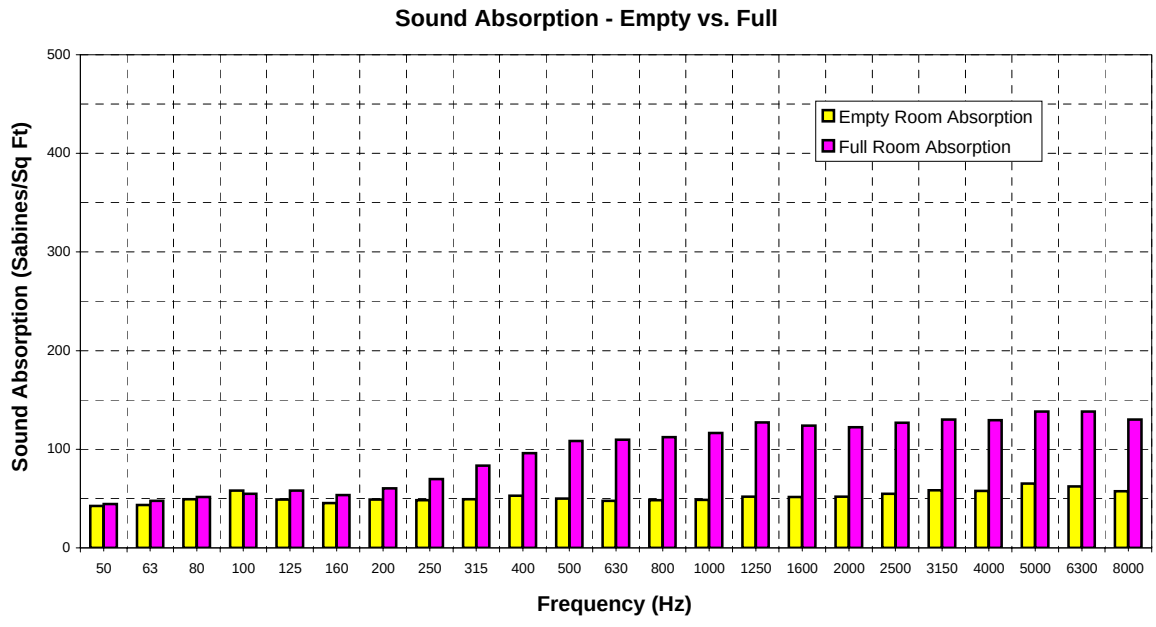
Architectural Testing

ATI No.	99787.01A	**Date**	04/12/10
Client	Fabri Trak Systems, Inc.		
Specimen	Fabri Trak System, upholstered panel with a Guilford FR 701 polyester fabric facing		
Specimen Area	72.00 Sq Ft	**Mounting**	Type A
Operator	Kurt Golden		





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Architectural Testing

SOUND ABSORPTION
ASTM C 423-09a

ATI No.	99787.01B
Client	Fabri Trak Systems, Inc.
Specimen	Fabri Trak System, upholstered panel without fabric facing
Specimen Area	72.00 Sq Ft
Mounting	Type A
Operator	Kurt Golden

	Empty Room	Full Room	Barometric Pressure
Date	4/12/10	4/12/10	1019.5 mb
Temp F	72.4	73.2	
RH %	39.7	40.5	

Freq (Hz)	Empty Room Absorption (Sabines)	Uncert	Full Room Absorption (Sabines)	Uncert	Absorption Coefficient (Sabines/Sq.Ft.)	Uncertainty
50	42.36	0.617	45.65	0.657	0.05	0.013
63	43.62	0.206	45.37	0.802	0.02	0.011
80	49.30	0.113	50.38	0.207	0.02	0.003
100	58.06	0.497	54.78	0.708	0.00	0.012
125	48.97	0.288	53.10	0.159	0.06	0.005
160	45.39	0.011	50.76	0.017	0.07	0.000
200	48.96	0.159	58.44	0.367	0.13	0.006
250	48.37	0.015	70.57	0.386	0.31	0.005
315	49.46	0.301	79.64	0.378	0.42	0.007
400	52.95	0.181	92.06	0.521	0.54	0.008
500	50.01	0.280	104.20	0.252	0.75	0.005
630	47.69	0.142	104.77	0.151	0.79	0.003
800	48.21	0.010	110.05	0.489	0.86	0.007
1000	48.77	0.019	114.92	0.003	0.92	0.000
1250	51.91	0.066	122.49	0.256	0.98	0.004
1600	51.47	0.022	122.23	0.070	0.98	0.001
2000	51.87	0.040	119.91	0.151	0.95	0.002
2500	54.87	0.078	124.36	0.441	0.97	0.006
3150	58.33	0.059	131.14	0.538	1.01	0.008
4000	57.62	0.095	129.35	0.342	1.00	0.005
5000	65.24	0.208	137.49	0.062	1.00	0.003
6300	62.27	0.061	137.85	0.021	1.05	0.001
8000	57.35	0.265	130.74	0.289	1.02	0.005

NRC Rating = 0.75
SAA Rating = 0.72

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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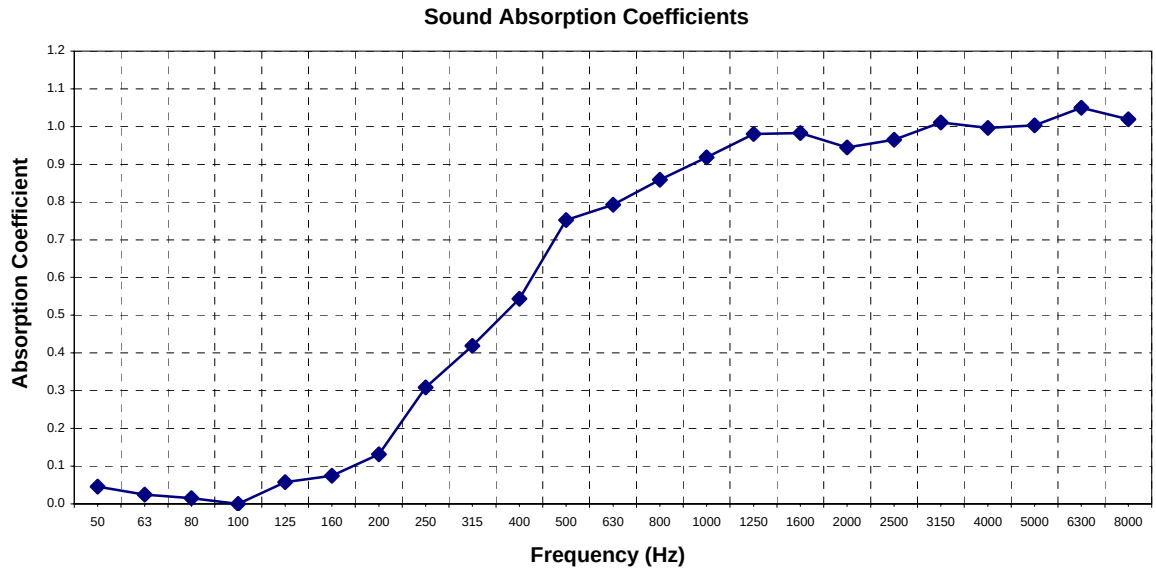
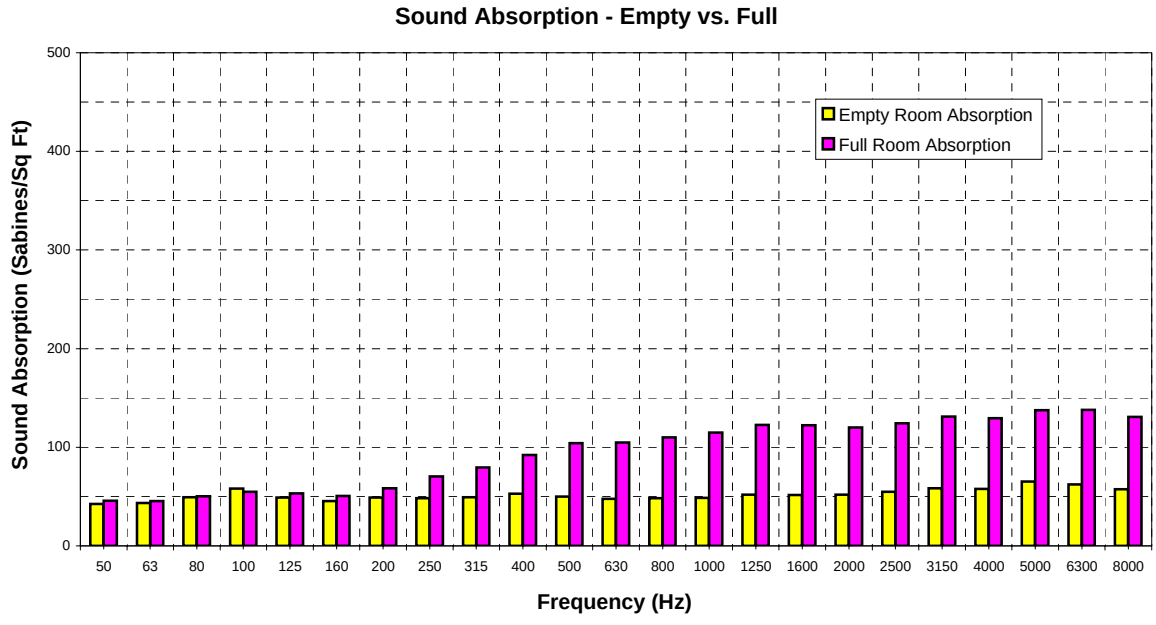
Architectural Testing

ATI No.	99787.01B	**Date**	04/12/10
Client	Fabri Trak Systems, Inc.		
Specimen	Fabri Trak System, upholstered panel without fabric facing		
Specimen Area	72.00 Sq Ft	**Mounting**	Type A
Operator	Kurt Golden		





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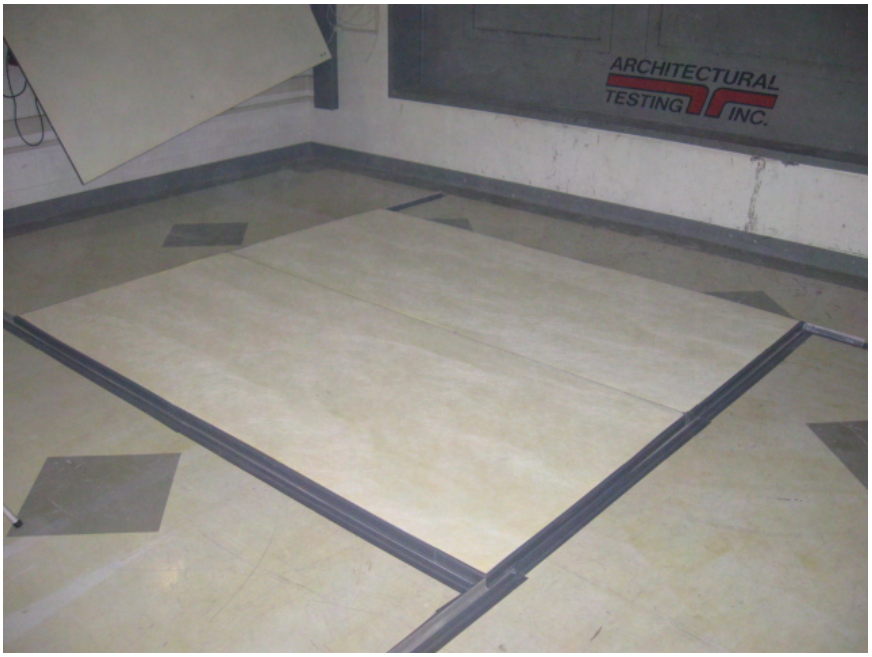
Appendix C

Photographs

View of Installed Specimen with Guilford FR 701 Fabric



View of Installed Specimen without Fabric