

**ASTM C 423 SOUND ABSORPTION  
TEST REPORT**

**Rendered to:**

**FABRI TRAK SYSTEMS, INC.**

**SERIES/MODEL: 1/2" FABRI TACK™**

**TYPE: Acoustic Core Material with  
Guilford of Maine FR 701 Fabric**

<b>Summary of Test Results</b>								
<b>Sample ID Number &amp; Sample Description</b>	<b>1/3 Octave Sound Absorption Coefficients at the Octave Band Frequencies</b>						<b>NRC</b>	<b>SAA</b>
	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>		
B6698.01B Series/Model 1/2" FABRI TACK™, Acoustic Core Material with Guilford of Maine FR 701 Fabric	0.04	0.10	0.41	0.72	0.88	0.98	0.55	0.53

Reference should be made to Architectural Testing, Inc. Report No. B6698.02-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

## ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

FABRI TRAK SYSTEMS, INC.  
111 West Park Drive  
Mt. Laurel, New Jersey 08054

Report No: B6698.02-113-11  
Revision 1: 07/09/15  
Test Date: 01/31/12  
Report Date: 02/17/12  
Record Retention End Date: 02/17/16

### **Test Sample Identification:**

**Series/Model:** 1/2" FABRI TACK™

**Type:** Acoustic Core Material with Guilford of Maine FR 701 Fabric

**Overall Size:** 2.43 m by 2.74 m (8.00' by 9.00')

**Project Summary:** Architectural Testing, Inc. was contracted by FABRI TRAK SYSTEMS, Inc. to conduct a sound absorption test on a Series/Model 1/2" FABRI TACK™, acoustic core material with Guilford of Maine FR 701 fabric. 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.

**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 Guilford of Maine FR 701 fabric side facing up. A 1/2" height aluminum angle was used around the perimeter of the sample. The aluminum angle was then sealed to the sample and floor with 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		Average Density		Average Weight	
	mm	inches	kg/m <sup>3</sup>	pcf	kg/m <sup>2</sup>	psf
FR 701 Fabric	0.76 mm	0.03 inches	310.79 kg/m <sup>3</sup>	19.40 pcf	0.29 kg/m <sup>2</sup>	0.06 psf
Fiberglass	12.95 mm	0.51 inches	173.02 kg/m <sup>3</sup>	10.80 pcf	2.25 kg/m <sup>2</sup>	0.46 psf

The test sample consisted of four, 1.22 m by 1.37 m (48" by 54") panels, which were arranged to produce a 2.43 m by 2.74 m (8.00' by 9.00') sample. The total weight of the sample was 16.81 kg (37.08 lbs). The sample test setup was photographed with a digital camera, and the pictures are included in Appendix C.

**Comments:** The client did not supply drawings on the Series/Model 1/2" FABRI TACK™, acoustic core material with Guilford of Maine FR 701 fabric. The specimen was disassembled, and the components will be retained by Architectural Testing for four years.

**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 Coefficients at the Octave Band Frequencies						NRC	SAA
	125	250	500	1000	2000	4000		
B6698.01B Series/Model 1/2" FABRI TACK™, Acoustic Core Material with Guilford of Maine FR 701 Fabric	0.04	0.10	0.41	0.72	0.88	0.98	0.55	0.53

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. 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:

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Eric A. Thompson  
Technician - Acoustical Testing


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Todd D. Kister  
Laboratory Supervisor - Acoustical Testing

ET: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)

	<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	02/17/12	N/A	Original Report Issue
1	07/09/15	Cover, Pages 1, 2 and 3, Appendix B	Changed Series/Model from FABRI BOARD to Fabri Tack™

## Appendix A

### Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Analyzer	Hewlett Packard	HP35670A	Real time analyzer	Y002929	06/14/11 *
Data Acquisition Unit	Agilent	34970A	Data Acquisition Unit	62211	07/13/11
Receive Room Microphone	GRAS	40 AR	1/2" Microphone	Y003246	08/22/11
Source Room Microphone	GRAS	40 AR	1/2" Microphone	Y003245	08/22/11
Receive Room Preamplifier	GRAS	26 AK	1/2" Preamplifier	Y003249	08/22/11
Source Room Preamplifier	GRAS	26 AK	1/2" Preamplifier	Y003248	08/22/11
Microphone Calibrator	Bruel & Kjaer	Type 4228	Pistonphone Calibrator	Y002816	02/17/11
Noise Source	Delta Electronics	SNG-1	Noise Generator	Y002181	N/A
Equalizer	Rane	RPE 228	Programmable Equalizer	Y002180	N/A
Power Amplifiers	Crown	Xti 2000	Two, Amplifiers	005769 005770	N/A
Receive Room Loudspeakers	Renkus-Heinz Inc.	Trap Jr./9	Two, Loudspeakers	Y001784 Y001785	N/A
Source Room Loudspeakers	Renkus-Heinz Inc.	Trap Jr./9	Two, Loudspeakers	Y002649 Y002650	N/A
Receive Room Environmental Indicator	Vaisala	HMW60Y	Temperature and Humidity Sensor	Y002653	03/01/11
Source Room Environmental Indicator	Vaisala	HMW60Y	Temperature and Humidity Sensor	005066	09/07/11
Weather Station	Davis Instruments	VantagePRO 6150C	Weather Station	Y003257	05/16/11

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

### Test Chamber:

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

	Maximum Size	Description
TL Test Opening	4.27 m (14 ft) wide by 3.05 m (10 ft) high	Vibration break between source and receive rooms

N/A-Non Applicable

**Appendix B**  
**Complete Test Results**



**SOUND ABSORPTION**  
ASTM C 423-09a

**Architectural Testing**

<b>ATI No.</b>	B6698.01B		
<b>Client</b>	Fabri Trak Systems, Inc.		
<b>Specimen</b>	Series/Model: 1/2" Fabri Tack™, Acoustic Core Material with Guilford of Maine FR 701 Fabric		
<b>Specimen Area</b>	6.68 Square Meters	<b>Mounting</b>	Type A
<b>Operator</b>	Eric Thompson		

	<b>Empty Room</b>	<b>Full Room</b>	<b>Barometric Pressure</b>
<b>Date</b>	1/31/12	1/31/12	1007.9 mb
<b>Temp C</b>	22.5	23.0	
<b>RH %</b>	45.1	50.1	

<b>Freq</b> (Hz)	<b>Empty Room</b> <b>Absorption</b> (Square Meters)	<b>Uncert</b>	<b>Full Room</b> <b>Absorption</b> (Square Meters)	<b>Uncert</b>	<b>Absorption</b> <b>Coefficient</b>	<b>Uncertainty</b>
50	3.79	0.003	4.08	0.178	0.04	0.002
63	3.98	0.741	4.04	1.464	0.01	0.023
80	4.59	0.646	4.56	0.080	0.00	0.009
100	5.23	0.131	5.05	0.541	0.00	0.008
125	4.81	0.248	5.08	0.127	0.04	0.004
160	4.53	0.043	4.68	0.016	0.02	0.001
200	4.41	0.012	4.68	0.011	0.04	0.000
250	4.68	0.014	5.37	0.126	0.10	0.002
315	4.78	0.028	5.81	0.022	0.15	0.000
400	4.84	0.180	6.59	0.266	0.26	0.004
500	4.90	0.061	7.62	0.138	0.41	0.002
630	4.62	0.040	7.98	0.141	0.50	0.002
800	4.61	0.057	9.01	0.027	0.66	0.001
1000	4.73	0.012	9.55	0.013	0.72	0.000
1250	5.04	0.024	10.84	0.189	0.87	0.003
1600	4.99	0.159	10.57	0.298	0.83	0.005
2000	4.79	0.068	10.65	0.286	0.88	0.004
2500	4.96	0.104	11.06	0.314	0.91	0.005
3150	5.20	0.168	11.51	0.277	0.94	0.004
4000	5.11	0.091	11.62	0.270	0.98	0.004
5000	5.56	0.076	12.22	0.246	1.00	0.004
6300	4.90	0.129	12.18	0.298	1.09	0.005
8000	3.54	0.382	10.37	0.289	1.02	0.007

<b>NRC Rating =</b>	0.55
<b>SAA Rating =</b>	0.53

**Note:** The acoustical chambers are qualified for measurements down to 80 hertz.  
Data reported below 80 hertz is for reference only.

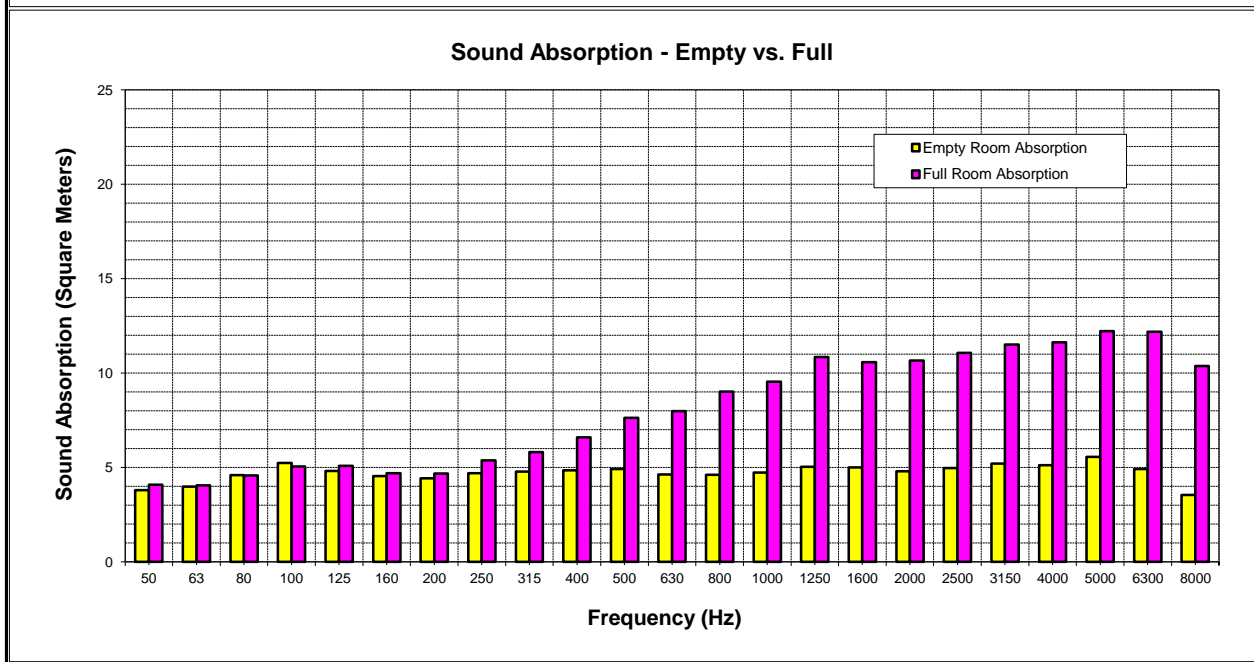
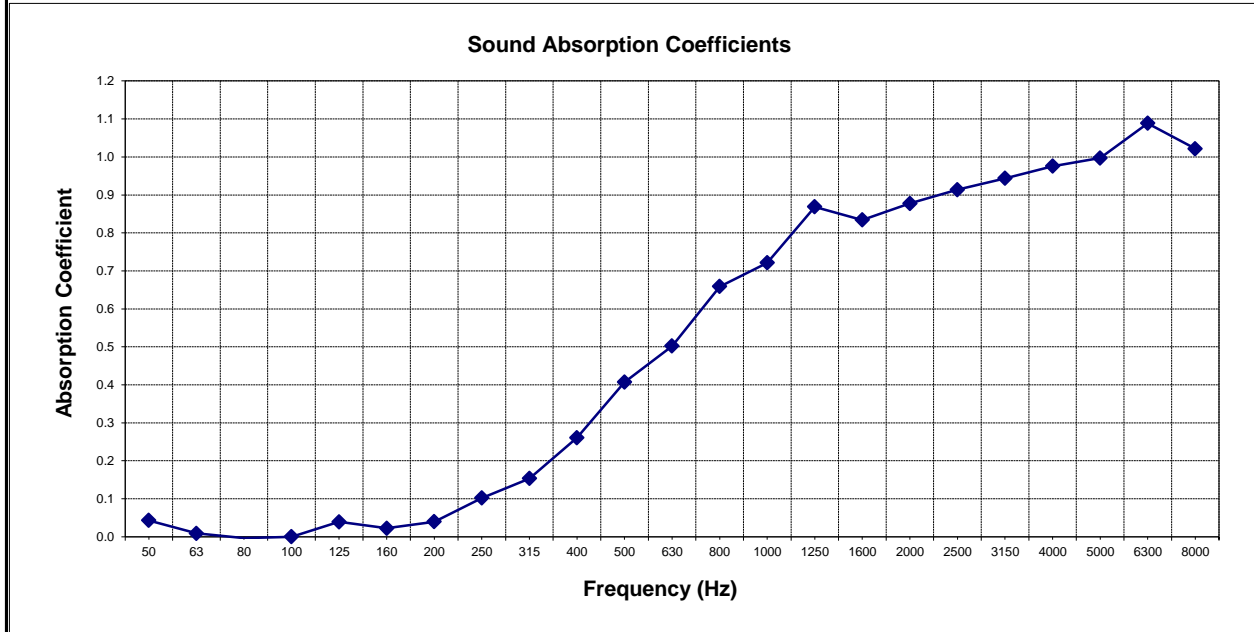
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## Architectural Testing

<b>ATI No.</b>	B6698.01B	<b>Date</b>	01/31/12
<b>Client</b>	Fabri Trak Systems, Inc.		
	Series/Model: 1/2" Fabri Tack™, Acoustic Core Material with Guilford of Maine FR		
<b>Specimen</b>	701 Fabric		
<b>Specimen Area</b>	6.68 Square Meters	<b>Mounting</b>	Type A
<b>Operator</b>	Eric Thompson		



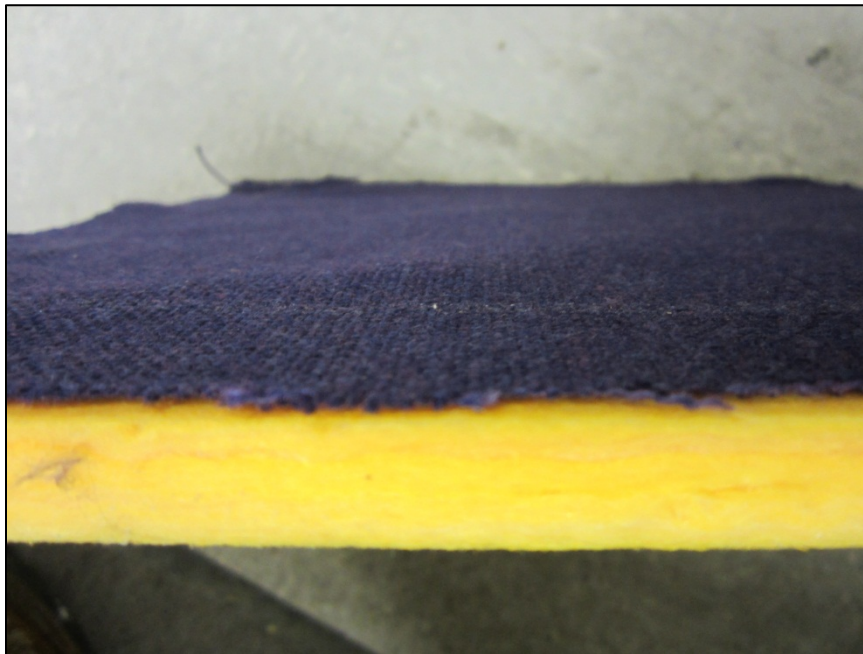
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**Appendix C**

**Photographs**



**Receive Room View of Installed Specimen**



**Cross Cut View of Installed Specimen**