



**ASTM C 423 SOUND ABSORPTION
TEST REPORT**

Rendered to:

FABRI TRAK SYSTEMS, INC.

**SERIES/MODEL: 1/2" FabriTack™
Tackable Acoustical Core with Felt Fabric**

TYPE: Absorptive Panels

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		
E4307.01 Series/Model 1/2" FabriTack™ Tackable Acoustical Core, absorptive panels	0.05	0.25	0.72	0.96	0.98	1.02	0.75	0.74

Reference should be made to Architectural Testing, Inc. Report No. E4307.01-113-11 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: E4307.01-113-11
Test Date: 01/12/15
Report Date: 02/02/15

Test Sample Identification:

Series/Model: 1/2" FabriTack™ Tackable Acoustical Core with Felt Fabric

Type: Absorptive Panels

Overall Size: 2.44 m by 2.57 m (8.00' by 8.41')

Project Summary: Architectural Testing, Inc. was contracted by Fabri Trak Systems, Inc. to conduct a sound absorption test on a Series/Model 1/2" FabriTack™ Tackable Acoustical Core, absorptive panels. 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 (2012), *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 F-20 mounting, the test specimen was supported with 3/4" shims and placed on top of the test surface (floor) of the reverberation room with the absorptive side exposed to the sound field. 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.

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the area of the sample in m². The Sound Absorption Coefficient is dimensionless.

The Noise Reduction Coefficient (NRC) rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000 and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

Sample Description:

Material Description	Average Thickness		Average Density		Average Weight	
	mm	in	kg/m ³	pcf	kg/m ²	psf
Felt	3.43 mm	0.14"	260.81 kg/m ³	16.28 pcf	0.91 kg/m ²	0.19 psf
Fiberglass	10.26 mm	0.40"	120.15 kg/m ³	7.50 pcf	1.21 kg/m ²	0.25 psf
Tack Board	3.07 mm	0.12"	256.32 kg/m ³	16.00 pcf	0.80 kg/m ²	0.16 psf

The test sample consisted of two, 1.22 m by 1.19 m (48" by 47") panels and two, 1.22 m by 1.37 m (48" by 54") panels, which were arranged to produce a 2.44 m by 2.57 m (8' by 8'-5") sample. The total weight of the sample was 18.14 kg (40 lbs). Photographs of the sample test setup are included in Appendix C.

Comments: The client did not supply report drawings on the Series/Model 1/2" FabriTack™ Tackable Acoustical Core, absorptive panels. 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 at the Octave Band Frequencies						NRC	SAA
	125	250	500	1000	2000	4000		
E4307.01 Series/Model 1/2" FabriTack™ Tackable Acoustical Core, absorptive panels	0.05	0.25	0.72	0.96	0.98	1.02	0.75	0.74

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.

Architectural Testing will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Architectural Testing for the entire test record retention period. The test record retention period ends four years after the test date.

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:

Eric A. Thompson
Technician - Acoustical Testing

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

EAT: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

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	02/02/15	N/A	Original Report Issue

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	Data Acquisition card	65127	04/14 *
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	11/14
Receive Room Environmental Indicator	Vaisala	HMW92	Temperature Humidity Sensor	64286	06/14
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	65105	04/14

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

Test Chamber:

	Volume	Description
Receive Room	234 m ³ (8291.3 ft ³)	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

N/A-Non Applicable



E4307.01-113-11

Appendix B
Complete Test Results



SOUND ABSORPTION
ASTM C 423

Test Date	01/12/15	
ATI No.	E4307.01	
Client	Fabri Trak Systems, Inc.	
Specimen	Series/Model: 1/2" FabriTack™ Tackable Acoustical Core with Felt Fabric	
Operator	EAT	
Sample Area	6.26 m ²	
Mounting Type	F20	
	Empty	Full
Temp C	21	22
RH %	47	46
B.P. (mb)	1011	

Freq (Hz)	Empty Room Absorption (m²)	Uncertainty	Full Room Absorption (m²)	Uncertainty	Absorption Coefficient	Relative Uncertainty
80	4.24	0.898	4.49	0.672	0.04	0.179
100	4.54	0.479	4.69	0.432	0.02	0.103
125	4.35	0.239	4.63	0.340	0.05	0.066
160	4.10	0.197	4.50	0.213	0.06	0.046
200	4.07	0.146	5.02	0.074	0.15	0.026
250	4.46	0.101	6.02	0.078	0.25	0.020
315	4.91	0.046	7.45	0.060	0.41	0.012
400	5.03	0.048	8.67	0.052	0.58	0.011
500	5.08	0.047	9.61	0.249	0.72	0.041
630	4.68	0.027	10.06	0.037	0.86	0.007
800	4.71	0.034	10.52	0.031	0.93	0.007
1000	4.78	0.031	10.80	0.022	0.96	0.006
1250	5.31	0.010	11.40	0.028	0.97	0.005
1600	5.29	0.005	11.45	0.021	0.98	0.003
2000	5.13	0.019	11.29	0.028	0.98	0.005
2500	5.29	0.004	11.90	0.132	1.06	0.021
3150	5.74	0.010	12.06	0.008	1.01	0.002
4000	5.85	0.010	12.22	0.004	1.02	0.002
5000	6.16	0.013	12.50	0.004	1.01	0.002

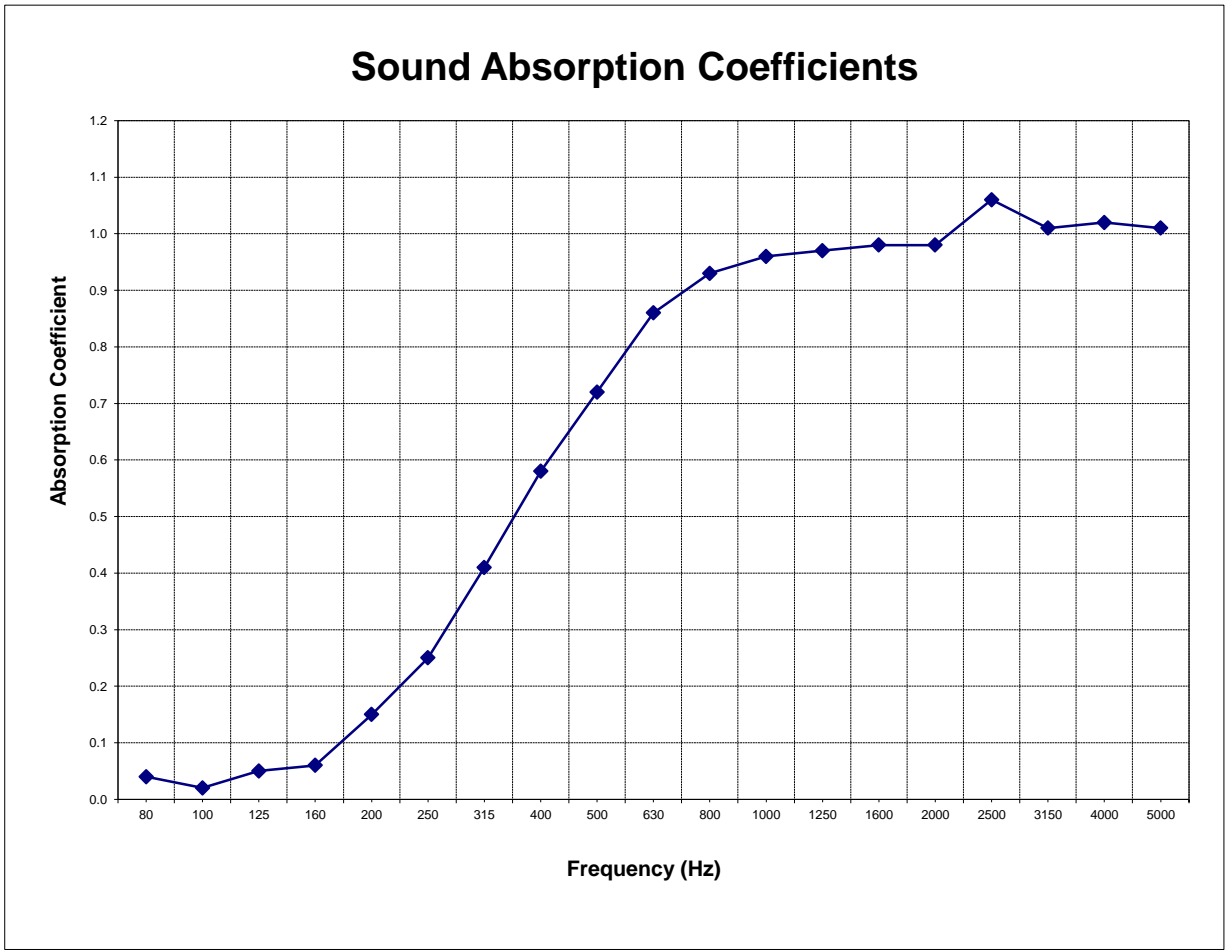
NRC Rating **0.75** *(Noise Reduction Coefficient)*
SAA Rating **0.74** *(Sound Absorption Average)*

- Notes:
- 1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.
 - 2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

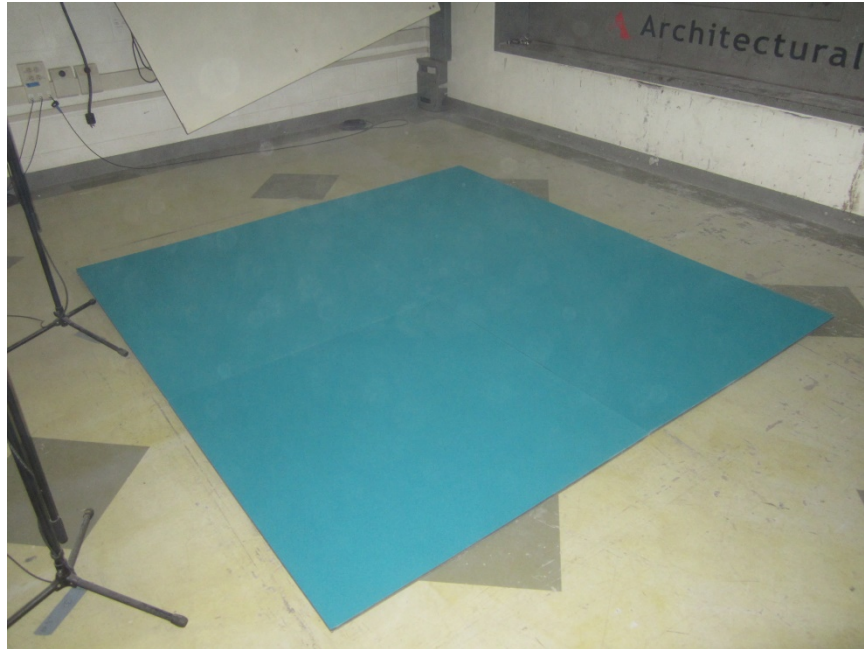


SOUND ABSORPTION ASTM C 423

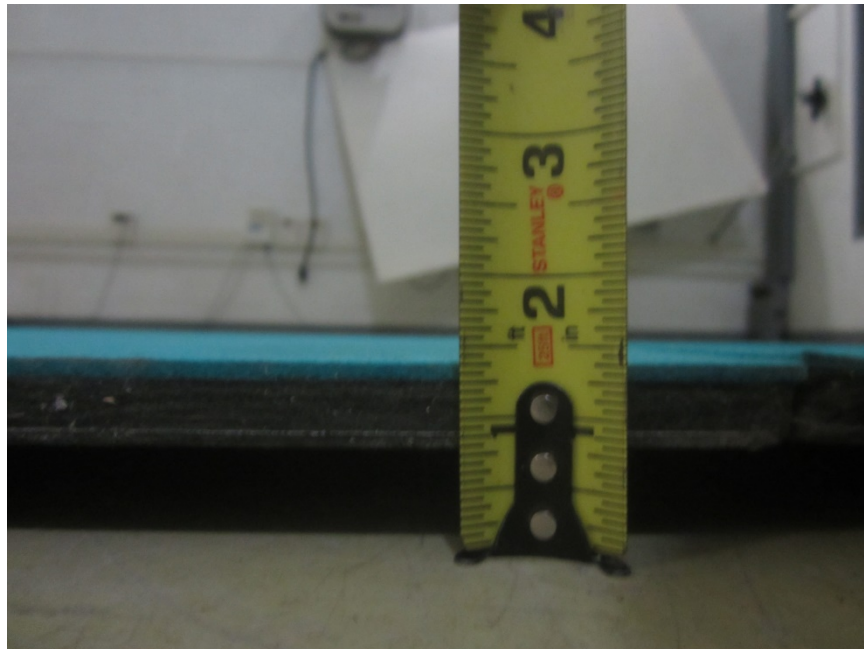
Test Date	01/12/15	
ATI No.	E4307.01	
Client	Fabri Trak Systems, Inc.	
Specimen	Series/Model: 1/2" FabriTack™ Tackable Acoustical Core with Felt Fabric	
Operator	EAT	
Sample Area	6.26 m ²	
Mounting Type	F20	
	Empty	Full
Temp C	21.0	21.7
RH %	47	46
B.P. (mb)	1011	



Appendix C
Photographs



Top View of Installed Specimen



Side View of Installed Specimen