

# FABRITRAK SYSTEMS, INC. ACOUSTICAL PERFORMANCE TEST REPORT

**SCOPE OF WORK**

ASTM C423 SOUND ABSORPTION TESTING ON A  
TERRACORE POLY®, ACOUSTICAL PANEL

**REPORT NUMBER**

J8679.03-113-11-R0

**TEST DATE**

07/03/19

**ISSUE DATE**

07/26/19

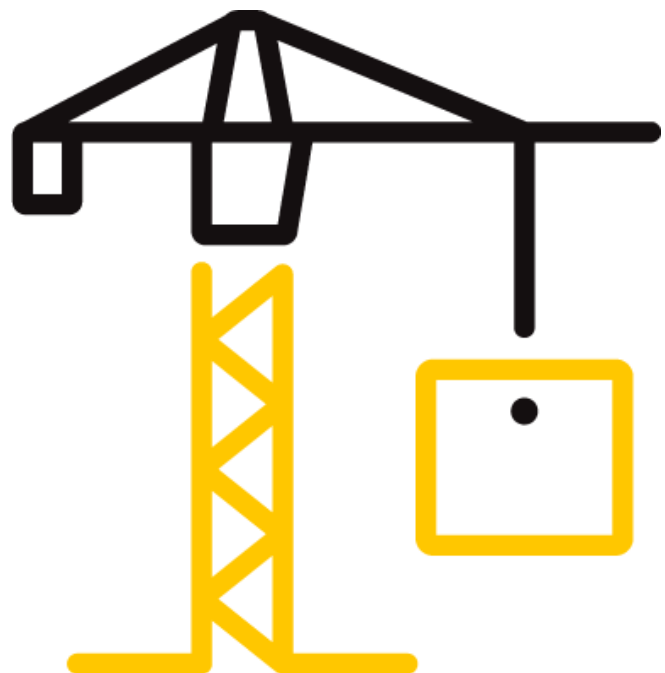
**PAGES**

13

**DOCUMENT CONTROL NUMBER**

RT-R-AMER-Test-2755 (01/24/19)

© 2017 INTERTEK



## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### REPORT ISSUED TO

#### FABRITRAK SYSTEMS, INC.

111 West Park Drive

Mount Laurel, New Jersey 08054

### SECTION 1

#### SCOPE

Intertek Building & Construction (B&C) was contracted by FabriTrak Systems, Inc. to perform a sound absorption test. Results obtained are tested values and were secured by using the designated test methods. The complete test data is included herein. The client provided the test specimen. All measurements were conducted in the HT test chambers at Intertek B&C located in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

<b>COMPLETED BY:</b>	Zachary P. Golden	<b>REVIEWED BY:</b>	Kurt A. Golden
<b>TITLE:</b>	Technician Team Leader Acoustical Testing	<b>TITLE:</b>	Project Lead Acoustical Testing
<b>SIGNATURE:</b>		<b>SIGNATURE:</b>	
<b>DATE:</b>	07/26/19	<b>DATE:</b>	07/26/19

ZPG:jmcs

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



**TEST REPORT FOR FABRITRAK SYSTEMS, INC.**

Report No.: J8679.03-113-11-R0

Date: 07/26/19

**SECTION 2**

**SUMMARY OF TEST RESULTS**

<b>SERIES/MODEL</b>	TerraCore Poly®							
<b>SAMPLE TYPE</b>	Acoustical panel							
<b>MOUNTING TYPE</b>	A							
<b>DATA FILE NO.</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>		
J8679.02A	0.23	0.61	0.96	1.03	0.99	1.02	0.90	0.90

<b>SERIES/MODEL</b>	TerraCore Poly®							
<b>SAMPLE TYPE</b>	Acoustical panel							
<b>MOUNTING TYPE</b>	E-400							
<b>DATA FILE NO.</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>		
J8679.02B	0.87	1.07	0.92	1.03	1.02	1.03	1.00	1.03

**SECTION 3**

**TEST METHODS**

The specimens were evaluated in accordance with the following:

**ASTM C423-17**, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

**ASTM E795-16**, *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### SECTION 4

#### SPECIMEN MOUNTING

##### OPTION J8679.02A

For the Type A mounting, the test specimen was placed directly against the floor of the reverberation room with the absorptive side facing the sound field. The perimeter of the specimen was sealed to the floor with plywood and duct tape.

##### OPTION J8679.02B

For the Type E-400 mounting, the specimen was placed on the Type E test assembly so that the absorptive face of specimen was suspended 400 mm above the floor of the reverberation room. The perimeter of the specimen was sealed to the test assembly with duct tape. The perimeter of the test assembly was sealed to the floor with duct tape.

### SECTION 5

#### EQUIPMENT

The equipment listed below meets the requirements of the test methods stated in Section 3 of this report.

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65125*	05/18
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65126*	05/18
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	63763-3*	04/18
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	01/19
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64915	01/19
Microphone Calibrator	Norsonic	1251	Acoustical Calibrator	Y002919	04/19

\*- 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>	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### SECTION 6

#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Zachary P. Golden	Intertek B&C

### SECTION 7

#### TEST PROCEDURE

The sensitivity of the microphones was checked before measurements were conducted. Empty room sound absorption measurements were conducted before the specimen was installed. Full room sound absorption measurements were conducted after the specimen was installed.

For the empty and full room measurements, ten decay measurements were conducted at each of the five microphone positions. Data was obtained 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 measurements.

Intertek B&C will store samples of test specimens for four years.

### SECTION 8

#### TEST CALCULATIONS

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the area of the sample in m<sup>2</sup>. 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.

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### SECTION 9

#### TEST SPECIMEN DESCRIPTION

<b>SERIES/MODEL</b>	TerraCore Poly®
<b>SAMPLE TYPE</b>	Acoustical panel
<b>NOMINAL THICKNESS</b>	2"
<b>MOUNTING TYPES</b>	A and E-400

Four, 0.61 m by 1.22 m (24" by 48"), panels were arranged to produce the 2.44 m by 2.74 m (96" by 108") test specimen. The total weight of the specimen was 21.77 kg (48 lbs).

DESCRIPTION	MEASURED THICKNESS	DENSITY	WEIGHT
100% Polyester	49.83 mm	65.40 kg/m <sup>3</sup>	3.27 kg/m <sup>2</sup>
	1.962"	4.08 lbs/ft <sup>3</sup>	0.67 lbs/ft <sup>2</sup>

Photographs are included in Section 11.

The client did not supply a report drawing of the test specimen.

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### SECTION 10

#### TEST RESULTS

##### J8679.02A DATA

<b>TECHNICIAN</b>	Zachary Golden	
<b>SPECIMEN AREA</b>	6.69 m <sup>2</sup>	
<b>MOUNTING TYPE</b>	A	
	<b>EMPTY</b>	<b>FULL</b>
<b>TEMP °C</b>	23.3	23.0
<b>RH %</b>	43	44
<b>B.P. (mb)</b>	983	983

FREQ (Hz)	EMPTY ROOM ABSORPTION (m <sup>2</sup> )	UNCERTAINTY	FULL ROOM ABSORPTION (m <sup>2</sup> )	UNCERTAINTY	ABSORPTION COEFFICIENT	RELATIVE UNCERTAINTY
80	5.32	0.748	5.72	0.706	0.06	0.154
100	5.23	0.584	5.70	0.455	0.07	0.111
125	5.40	0.798	6.94	0.270	0.23	0.126
160	5.11	0.208	7.24	0.068	0.32	0.033
200	4.67	0.167	7.73	0.092	0.46	0.028
250	5.07	0.095	9.14	0.035	0.61	0.015
315	5.32	0.112	10.45	0.056	0.77	0.019
400	5.41	0.033	11.25	0.040	0.87	0.008
500	5.54	0.079	11.95	0.119	0.96	0.021
630	5.11	0.022	11.97	0.012	1.03	0.004
800	5.15	0.027	12.03	0.026	1.03	0.006
1000	5.19	0.018	12.06	0.007	1.03	0.003
1250	5.50	0.020	12.29	0.015	1.02	0.004
1600	5.52	0.011	12.30	0.008	1.01	0.002
2000	5.49	0.016	12.08	0.035	0.99	0.006
2500	5.77	0.010	12.82	0.103	1.05	0.015
3150	6.14	0.010	12.90	0.011	1.01	0.002
4000	6.70	0.007	13.56	0.004	1.02	0.001
5000	7.30	0.006	14.29	0.001	1.04	0.001

<b>NRC RATING</b>	0.90	<i>(Noise Reduction Coefficient)</i>
<b>SAA RATING</b>	0.90	<i>(Sound Absorption Average)</i>

**Notes:**

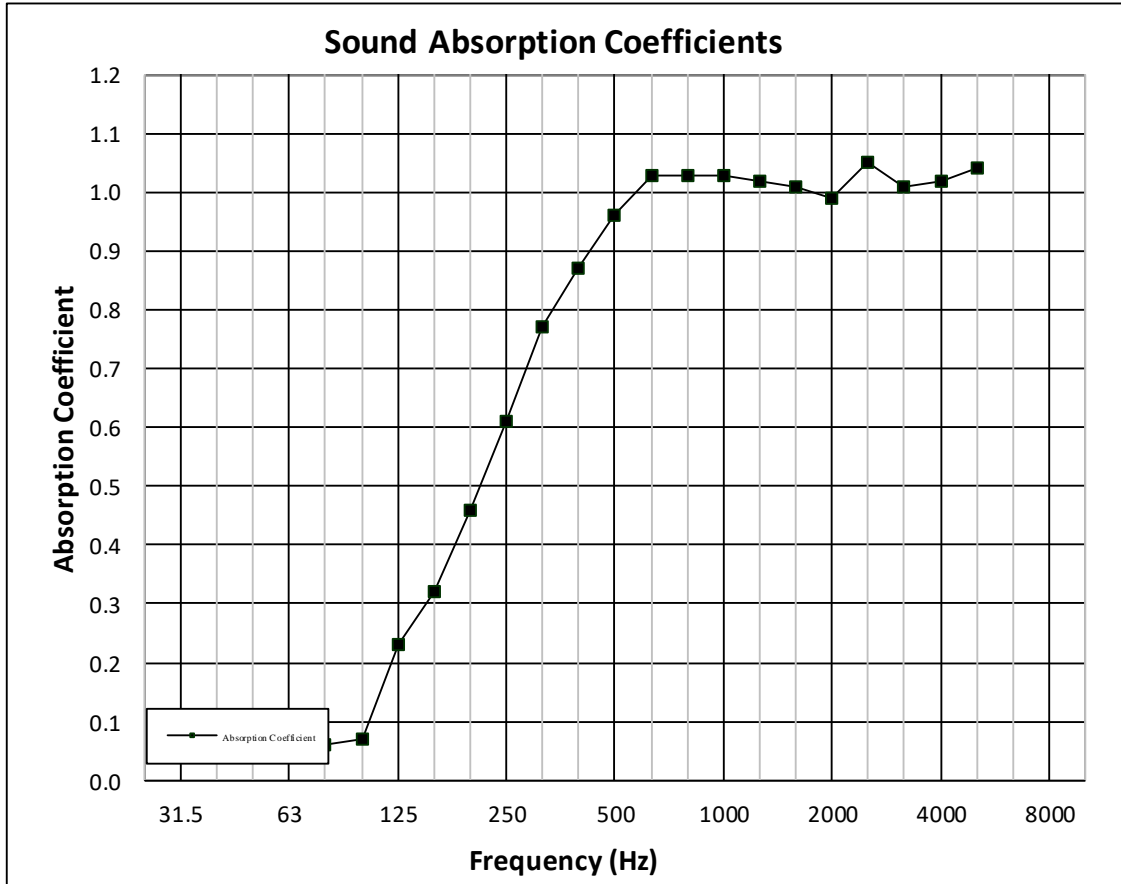
- 1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.
- 2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500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

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### J8679.02A GRAPH





## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### J8679.02B DATA

<b>TECHNICIAN</b>	Zachary Golden	
<b>SPECIMEN AREA</b>	6.69 m <sup>2</sup>	
<b>MOUNTING TYPE</b>	E-400	
	<b>EMPTY</b>	<b>FULL</b>
<b>TEMP °C</b>	23.3	23.1
<b>RH %</b>	43	44
<b>B.P. (mb)</b>	983	983

FREQ (Hz)	EMPTY ROOM ABSORPTION (m <sup>2</sup> )	UNCERTAINTY	FULL ROOM ABSORPTION (m <sup>2</sup> )	UNCERTAINTY	ABSORPTION COEFFICIENT	RELATIVE UNCERTAINTY
80	5.32	0.748	7.61	0.586	0.34	0.142
100	5.23	0.584	9.12	0.565	0.58	0.121
125	5.40	0.798	11.20	0.193	0.87	0.123
160	5.11	0.208	11.59	0.050	0.97	0.032
200	4.67	0.167	11.53	0.044	1.03	0.026
250	5.07	0.095	12.20	0.067	1.07	0.017
315	5.32	0.112	12.25	0.058	1.04	0.019
400	5.41	0.033	11.92	0.040	0.97	0.008
500	5.54	0.079	11.70	0.030	0.92	0.013
630	5.11	0.022	11.94	0.017	1.02	0.004
800	5.15	0.027	12.24	0.025	1.06	0.005
1000	5.19	0.018	12.08	0.007	1.03	0.003
1250	5.50	0.020	12.47	0.016	1.04	0.004
1600	5.52	0.011	12.46	0.009	1.04	0.002
2000	5.49	0.016	12.32	0.037	1.02	0.006
2500	5.77	0.010	13.06	0.101	1.09	0.015
3150	6.14	0.010	13.11	0.004	1.04	0.002
4000	6.70	0.007	13.60	0.009	1.03	0.002
5000	7.30	0.006	14.07	0.005	1.01	0.001

<b>NRC RATING</b>	1.00	<i>(Noise Reduction Coefficient)</i>
<b>SAA RATING</b>	1.03	<i>(Sound Absorption Average)</i>

**Notes:**

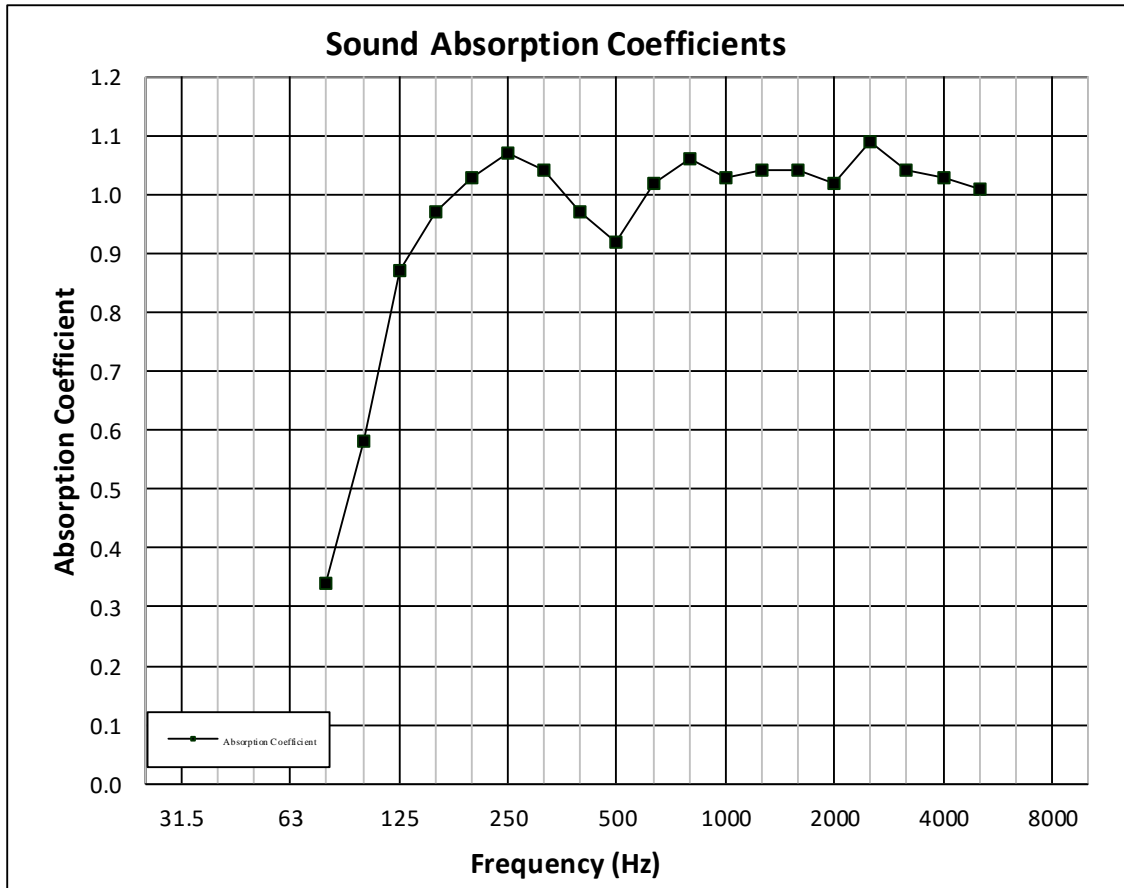
- 1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.
- 2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500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

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### J8679.02B GRAPH



## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19

### SECTION 11

### PHOTOGRAPHS



**Photo No. 1**  
**Type A View of Installed Test Specimen**



**Photo No. 2**  
**Type A Side View of Installed Test Specimen**

## TEST REPORT FOR FABRITRAK SYSTEMS, INC.

Report No.: J8679.03-113-11-R0

Date: 07/26/19



**Photo No. 3**  
**Type E-400 View of Installed Test Specimen**



Total Quality. Assured.

130 Derry Court  
York, Pennsylvania 17406

Telephone: 717-764-7700  
Facsimile: 717-764-4129  
[www.intertek.com/building](http://www.intertek.com/building)

**TEST REPORT FOR FABRITRAK SYSTEMS, INC.**

Report No.: J8679.03-113-11-R0

Date: 07/26/19

**SECTION 12**

**REVISION LOG**

REVISION #	DATE	PAGES	REVISION
0	07/26/19	N/A	Original Report Issue