

## Test Report

SPONSOR: **FabriTRAK Systems Inc.**  
Mount Laurel, NJ

**Sound Absorption**  
**RAL™-A20-306**

CONDUCTED: 2020-07-15

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ON: 1 in. Terra Core Poly Hi Impact Infill (100 % Polyester Infill) (Type E-400 Mounting)

### TEST METHODOLOGY

Riverbank Acoustical Laboratories™ is accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as an ISO 17025:2017 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM C423-17: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The specimen mounting was performed according to ASTM E795-16: "Standard Practices for Mounting Test Specimens During Sound Absorption Tests." A description of the measurement procedure and room specifications are available upon request. The results presented in this report apply to the sample as received from the test sponsor.

### INFORMATION PROVIDED BY SPONSOR

The test specimen was designated by the sponsor as 1 in. Terra Core Poly Hi Impact Infill (100 % Polyester Infill) (Type E-400 Mounting). The following nominal product information was provided by the sponsor prior to testing. The accuracy of such sponsor-provided information can affect the validity of the test results.

#### Product Under Test

Trade Name: Terra Core Poly Hi-Impact Infill  
Material: 100 % polyester infill  
Thickness: 25.4 mm (1 in.)  
Manufacturer: FabriTRAK Systems Inc.

### SPECIMEN MEASUREMENTS & TEST CONDITIONS

Through a full external visual inspection performed on the test specimen, Riverbank personnel verified the following information:

#### Test Specimen

Material: Semirigid felt panels  
Dimensions: 4 @ 1219.2 mm (48 in.) x 1219.2 mm (48 in.)  
2 @ 304.8 mm (12 in.) x 1219.2 mm (48 in.)  
Thickness: 23.22 mm (0.914 in.)  
Overall Weight: 10.21 kg (22.5 lbs)  
Density: 65.72 kg/m<sup>3</sup> (4.10 lbs/ft<sup>3</sup>)

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### Overall Specimen Properties

Size: 2.74 m (108.0 in) wide by 2.44 m (96.0 in) long  
Thickness: 0.02 m (0.914 in)  
Weight: 10.21 kg (22.5 lbs)  
Mass per Unit Area: 1.53 kg/m<sup>2</sup> (0.31 lbs/ft<sup>2</sup>)  
Calculation Area: 6.689 m<sup>2</sup> (72 ft<sup>2</sup>)

### Test Environment

Room Volume: 291.98 m<sup>3</sup>  
Temperature: 22.7 °C ± 0.3 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)  
Relative Humidity: 58.7 % ± 0.2 % (Requirement: ≥ 40 % and ≤ 5 % change)  
Barometric Pressure: 98.8 kPa (Requirement not defined)

### MOUNTING METHOD

Type E-400 Mounting: The test specimen was mounted across a metal fixture which was open at its top and bottom and enclosed at its sides, creating an enclosed airspace between the test specimen and the horizontal test surface. The specimen was supported across the span of the fixture by an array of metal slats spaced approximately 304.8 mm (12 in.) on center. The numeral suffix in the designation is defined in ASTM E795-16 as the distance in millimeters from the exposed face of the test specimen to the test surface, rounded to the nearest integer multiple of 5. Perimeter edges were sealed with metal framing.

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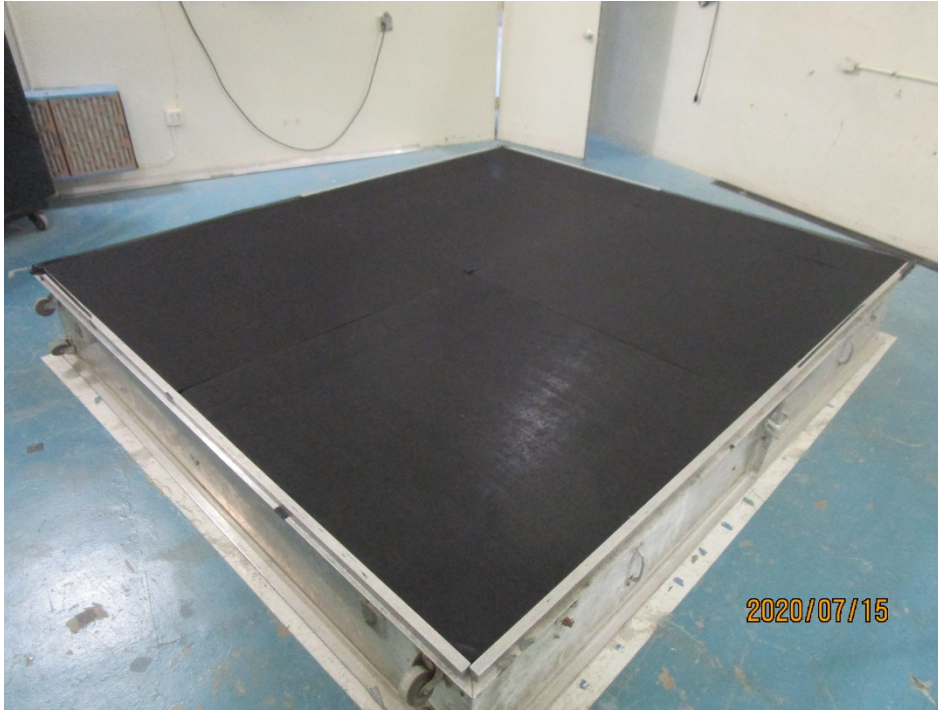


Figure 1 – Specimen mounted in test chamber

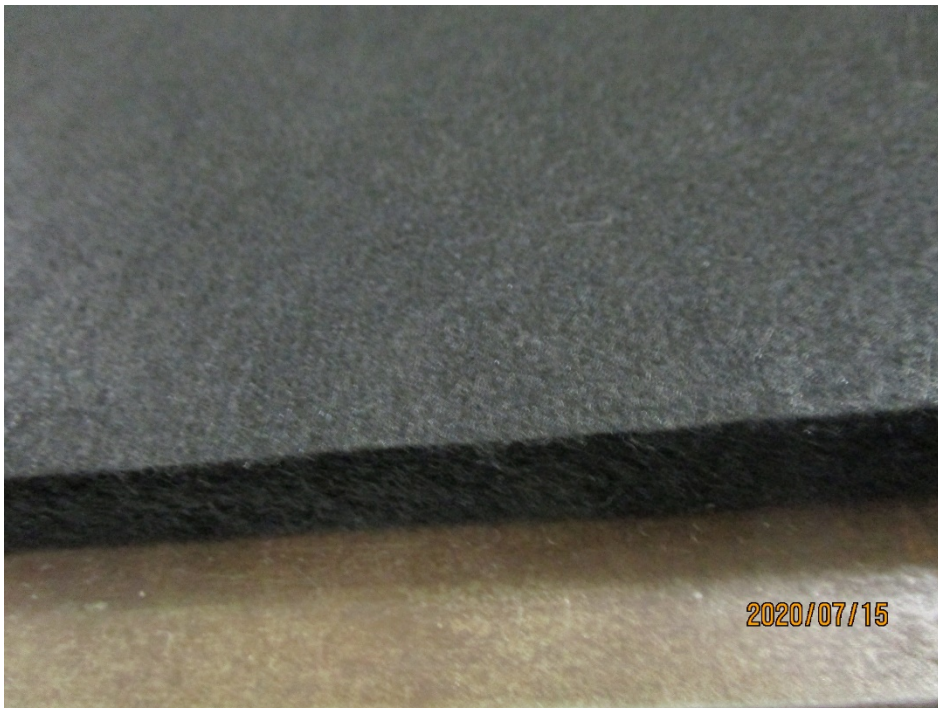


Figure 2 – Detail of specimen material

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### TEST RESULTS

Specimen total absorption and absorption coefficient are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages.

1/3 Octave Center Frequency (Hz)	Total Absorption (m <sup>2</sup> )	Total Absorption (Sabins)	Absorption Coefficient
100	5.32	57.31	0.80
** 125	5.48	58.94	0.82
160	5.02	54.05	0.75
200	6.14	66.10	0.92
** 250	5.87	63.23	0.88
315	5.27	56.73	0.79
400	4.86	52.33	0.73
** 500	4.09	43.97	0.61
630	5.41	58.19	0.81
800	5.78	62.25	0.86
** 1000	5.64	60.68	0.84
1250	6.15	66.15	0.92
1600	6.22	66.94	0.93
** 2000	6.33	68.11	0.95
2500	6.39	68.74	0.95
3150	6.63	71.36	0.99
** 4000	6.84	73.62	1.02
5000	6.93	74.58	1.04

**SAA = 0.85**  
**NRC = 0.80**

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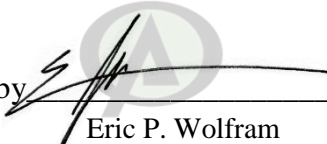
### TEST RESULTS (continued)

The sound absorption average (SAA) is defined in ASTM C423-17 Section 3.1.1 as the arithmetic average of the sound absorption coefficients of a material for the twelve one-third octave bands from 200 Hz through 2500 Hz, inclusive, rounded to the nearest integer multiple of 0.01.

The noise reduction coefficient (NRC) is defined from previous versions of ASTM C423 as the arithmetic average of the sound absorption coefficients at 250 Hz, 500 Hz, 1000 Hz, and 2000 Hz, rounded to the nearest integer multiple of 0.05.

Tested by   
Marc Sciaky  
Senior Experimentalist

Report by   
Malcolm Kelly  
Acoustical Test Engineer

Approved by   
Eric P. Wolfram  
Laboratory Manager

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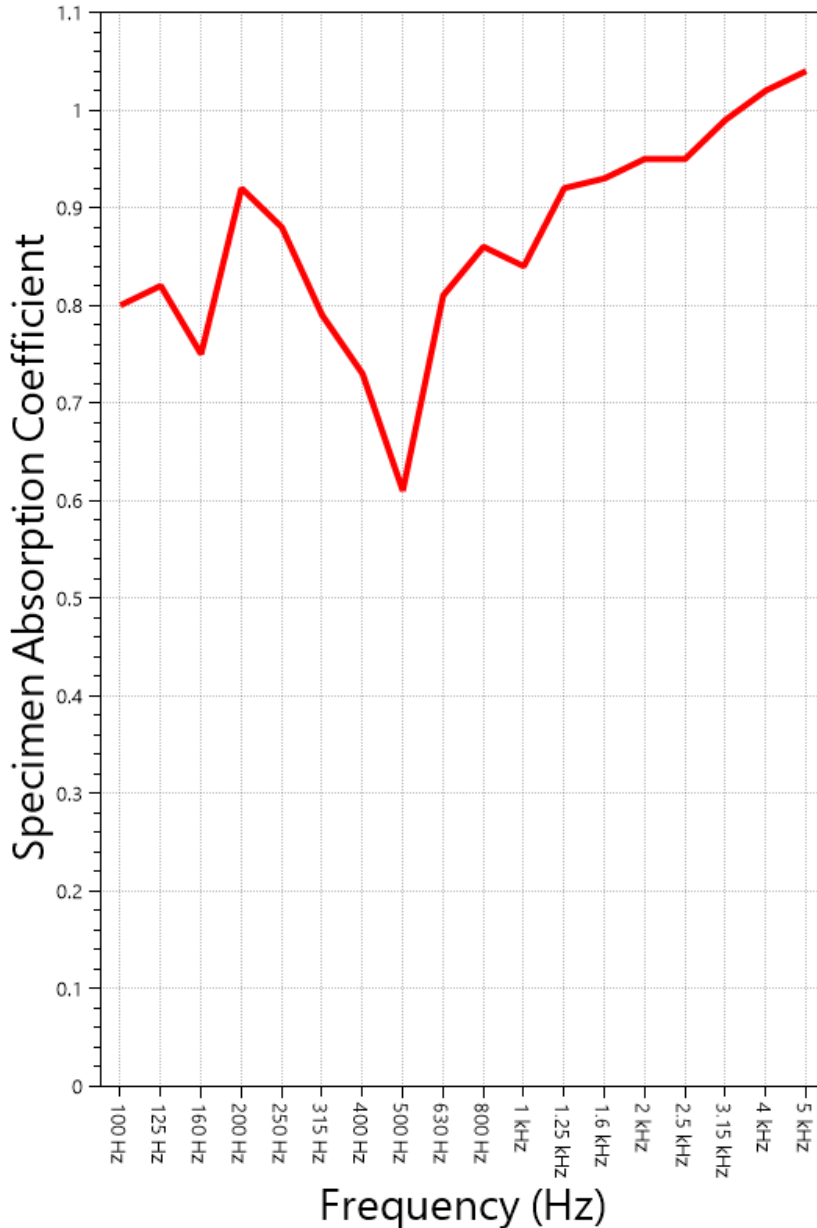
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SOUND ABSORPTION REPORT

1 in. Terra Core Poly Hi Impact Infill (100 % Polyester Infill) (Type E-400 Mounting)



SAA = 0.85  
NRC = 0.80



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### **APPENDIX A: Extended Frequency Range Data**

Specimen: 1 in. Terra Core Poly Hi Impact Infill (100 % Polyester Infill) (Type E-400 Mounting) (See Full Report)

*The following non-accredited data were obtained in accordance with ASTM C423-17, but extend beyond the defined frequency range of 100Hz to 5,000Hz. These unofficial results are representative of the RAL test environment only and intended for research & comparison purposes.*

1/3 Octave Band Center Frequency (Hz)	Total Absorption (Sabins)	Absorption Coefficient
31.5	17.49	0.24
40	10.96	0.15
50	12.80	0.18
63	29.17	0.41
80	25.72	0.36
100	57.31	0.80
125	58.94	0.82
160	54.05	0.75
200	66.10	0.92
250	63.23	0.88
315	56.73	0.79
400	52.33	0.73
500	43.97	0.61
630	58.19	0.81
800	62.25	0.86
1000	60.68	0.84
1250	66.15	0.92
1600	66.94	0.93
2000	68.11	0.95
2500	68.74	0.95
3150	71.36	0.99
4000	73.62	1.02
5000	74.58	1.04
6300	76.66	1.06
8000	77.67	1.08
10000	79.66	1.11
12500	84.51	1.17

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### APPENDIX B: Instruments of Traceability

Specimen: 1 in. Terra Core Poly Hi Impact Infill (100 % Polyester Infill) (Type E-400 Mounting) (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u>	<u>Calibration Due</u>
System 1	Type 3160-A-042	3160-106968	2020-06-26	2021-06-26
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2019-09-27	2020-09-27
Bruel & Kjaer Pistonphone	Type 4228	2781248	2019-08-09	2020-08-09
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP-PRHTemp2000	P97844	2020-02-18	2021-02-18

### APPENDIX C: Revisions to Original Test Report

Specimen: 1 in. Terra Core Poly Hi Impact Infill (100 % Polyester Infill) (Type E-400 Mounting) (See Full Report)

<u>Date</u>	<u>Revision</u>
2020-07-20	Original report issued

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END