

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

An  ALION Technical Center

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Test Report

SPONSOR: **Vocal Booth To Go**
Frederick, MD

Sound Absorption
RAL™-A20-447

CONDUCTED: 2020-10-30

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ON: Acoustical Felt Panels with SoundBlock (2.5 inch panels)

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 Acoustical Felt Panels with SoundBlock (2.5 inch panels). 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: Acoustical Felt Panels with SoundBlock
Manufacturer: Vocal Booth To Go

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Materials: Compressible fibrous insulation core
Mass loaded vinyl sheet adhered to one face of core
Quilted textile adhered to exterior face of mass loaded vinyl sheet
Dimensions: 8 @ 615.95 mm (24.25 in.) x 1219.2 mm (48 in.)
Thickness: Mass loaded vinyl sheet @ 3.18 mm (0.125 in.)
Overall @ approximately 63.5 mm (2.5 in.)
Overall Weight: 47.63 kg (105 lbs)
Installation: Face with mass loaded vinyl oriented toward test surface

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Overall Specimen Properties

Size: 2.45 m (96.5 in) wide by 2.44 m (96.0 in) long
Thickness: 0.06 m (2.5 in)
Weight: 47.63 kg (105.0 lbs)
Mass per Unit Area: 7.97 kg/m² (1.63 lbs/ft²)
Calculation Area: 5.976 m² (64.33 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.9 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 56.95 % ± 0.3 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 99.7 kPa (Requirement not defined)

MOUNTING METHOD

Type A Mounting: The test specimen was laid directly against the test surface. Per sponsor request, the perimeter edges were left exposed, as would be typical of a field installation of the product under test. Testing the same specimen with sealed edges may result in decreased measured sound absorption.

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Figure 1 – Specimen mounted in test chamber



Figure 2 – Detail of specimen materials

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Figure 3 – Detail of specimen installation, mass loaded vinyl layer mated to test surface

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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 ²)	Total Absorption (Sabins)	Absorption Coefficient
100	2.46	26.49	0.41
** 125	2.37	25.47	0.40
160	2.69	28.91	0.45
200	3.61	38.90	0.60
** 250	4.04	43.53	0.68
315	5.48	59.00	0.92
400	6.23	67.08	1.04
** 500	6.20	66.72	1.04
630	6.01	64.68	1.01
800	6.25	67.24	1.05
** 1000	6.43	69.25	1.08
1250	6.46	69.50	1.08
1600	6.49	69.90	1.09
** 2000	6.44	69.34	1.08
2500	6.36	68.50	1.06
3150	6.20	66.73	1.04
** 4000	6.25	67.24	1.05
5000	6.41	68.99	1.07

SAA = 0.98
NRC = 0.95

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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 Dean Victor
Dean Victor
Lead Experimentalist

Report by Malcolm Kelly
Malcolm Kelly
Acoustical Test Engineer

Approved by Eric P. Wolfram
Eric P. Wolfram
Laboratory Manager

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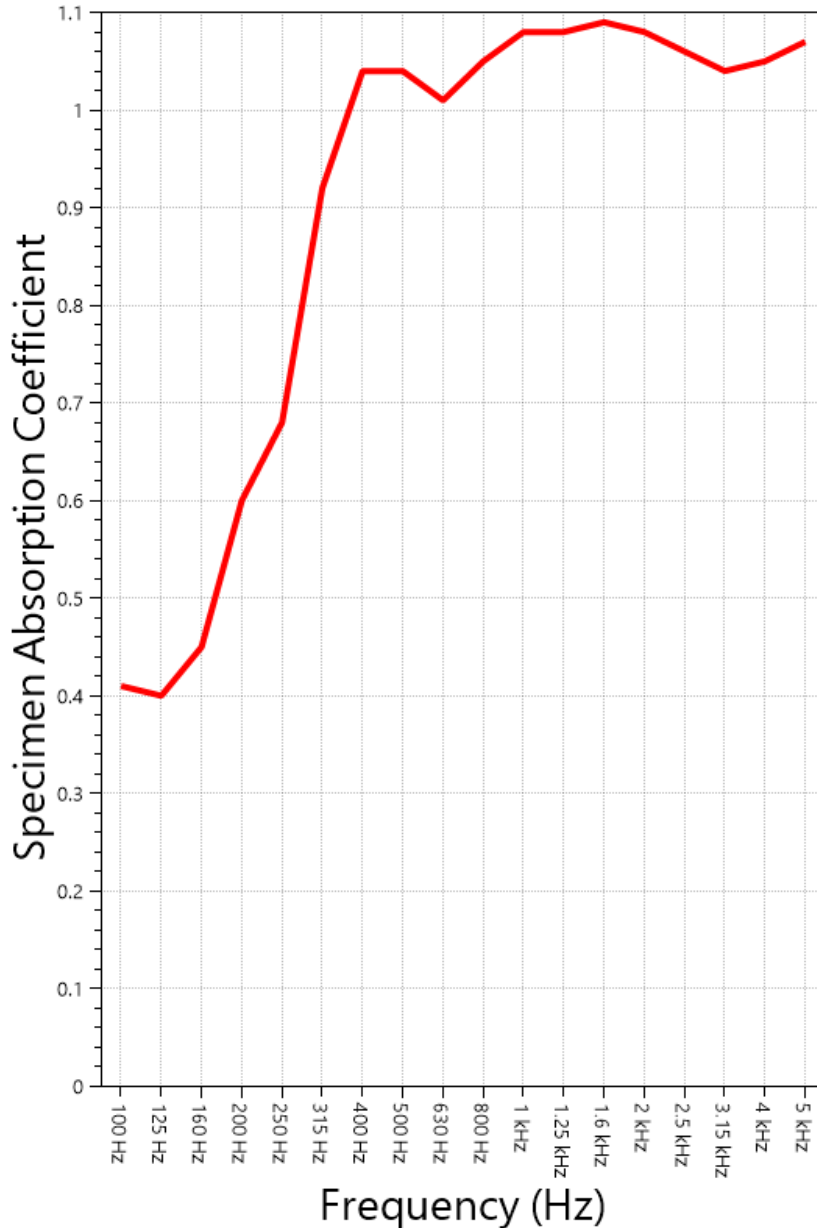
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SOUND ABSORPTION REPORT

Acoustical Felt Panels with SoundBlock (2.5 inch panels)



SAA = 0.98

NRC = 0.95

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APPENDIX A: Extended Frequency Range Data

Specimen: Acoustical Felt Panels with SoundBlock (2.5 inch panels) (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	7.22	0.11
40	0.84	0.01
50	10.84	0.17
63	6.54	0.10
80	9.47	0.15
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100	26.49	0.41
125	25.47	0.40
160	28.91	0.45
200	38.90	0.60
250	43.53	0.68
315	59.00	0.92
400	67.08	1.04
500	66.72	1.04
630	64.68	1.01
800	67.24	1.05
1000	69.25	1.08
1250	69.50	1.08
1600	69.90	1.09
2000	69.34	1.08
2500	68.50	1.06
3150	66.73	1.04
4000	67.24	1.05
5000	68.99	1.07
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6300	69.96	1.09
8000	71.08	1.10
10000	66.05	1.03
12500	71.07	1.10

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APPENDIX B: Instruments of Traceability

Specimen: Acoustical Felt Panels with SoundBlock (2.5 inch panels) (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	2020-09-30	2021-09-30
Bruel & Kjaer Pistonphone	Type 4228	2781248	2020-08-12	2021-08-12
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: Acoustical Felt Panels with SoundBlock (2.5 inch panels) (See Full Report)

<u>Date</u>	<u>Revision</u>
2020-11-09	Original report issued

END