

Test Report

SPONSOR: **Sound Seal**
Agawam, MA

Sound Absorption
RAL™-A20-363

CONDUCTED: 2020-08-31

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ON: Tetrax Air™ 27mm Panel

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 Tetrax Air™ 27mm Panel. 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: Tetrax Air™ 27mm Panel
Material: Polyethylene terephthalate felt
Thickness: 27 mm (1.063 in.)
Manufacturer: Sound Seal

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Materials: Assembled semirigid felt paneling
Dimensions: 12 @ 533.4 mm (21 in.) x 1066.8 mm (42 in.)
Hollow geometry, wall thickness @ 9 mm (0.354 in.), One large face open
Six (6) 65 mm (2.559 in.) square x 18 mm (0.709 in.) thick felt supports adhered at inside corners and at midpoints of long edges, flush with face of main panel body
Thickness: 27.69 mm (1.09 in.) overall
Overall Weight: 10.77 kg (23.75 lbs)
Installation: Open face mated to horizontal test surface

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Overall Specimen Properties

Size: 2.13 m (84.0 in) wide by 3.2 m (126.0 in) long
Thickness: 0.03 m (1.09 in)
Weight: 10.77 kg (23.75 lbs)
Mass per Unit Area: 1.58 kg/m² (0.32 lbs/ft²)
Calculation Area: 6.828 m² (73.5 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 23.0 °C ± 0.2 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 57.45 % ± 0.5 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 98.0 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.

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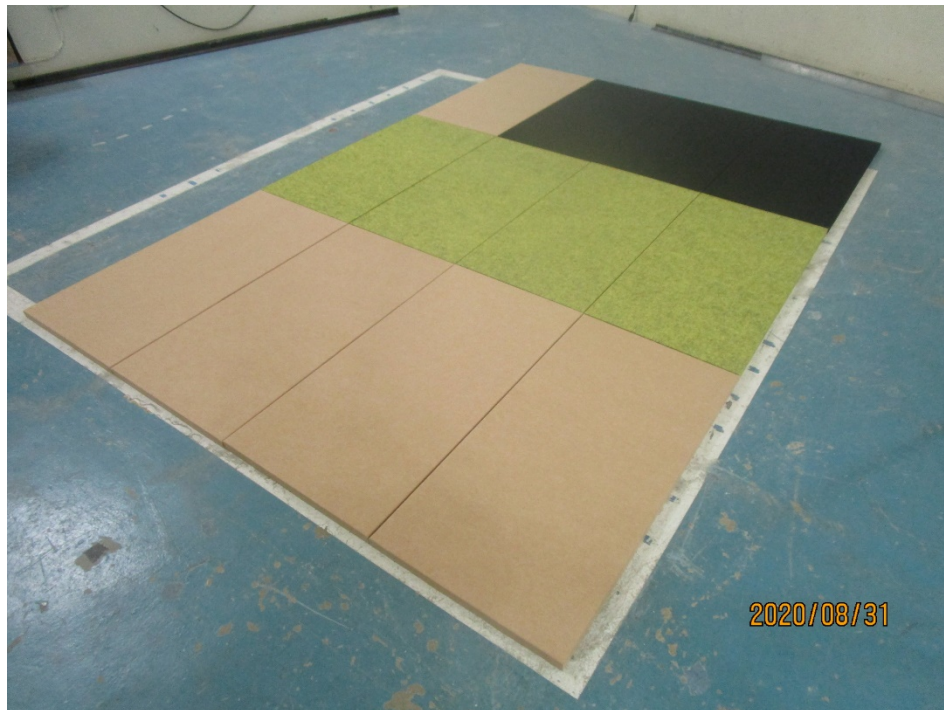


Figure 1 – Specimen mounted in test chamber

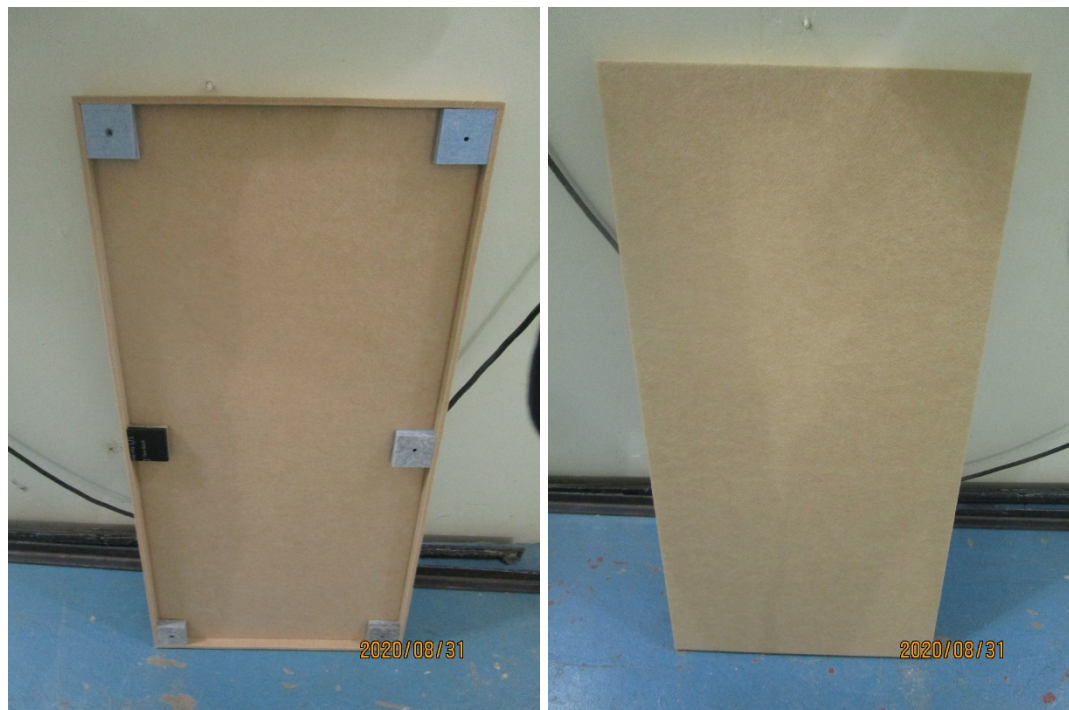


Figure 2 – Specimen faces mated to horizontal test surface (left) and exposed to sound field (right)

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Figure 3 – 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 ²)	Total Absorption (Sabins)	Absorption Coefficient
100	0.08	0.91	0.01
** 125	0.43	4.64	0.06
160	0.46	4.91	0.07
200	0.82	8.80	0.12
** 250	0.81	8.71	0.12
315	1.16	12.49	0.17
400	1.27	13.71	0.19
** 500	1.89	20.33	0.28
630	2.61	28.13	0.38
800	3.39	36.46	0.50
** 1000	4.20	45.18	0.61
1250	4.81	51.79	0.70
1600	5.59	60.21	0.82
** 2000	6.18	66.55	0.91
2500	6.63	71.39	0.97
3150	6.89	74.16	1.01
** 4000	6.79	73.09	0.99
5000	6.56	70.61	0.96

SAA = 0.48
NRC = 0.50

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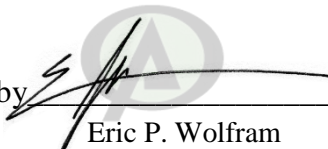
TEST RESULTS (continued)

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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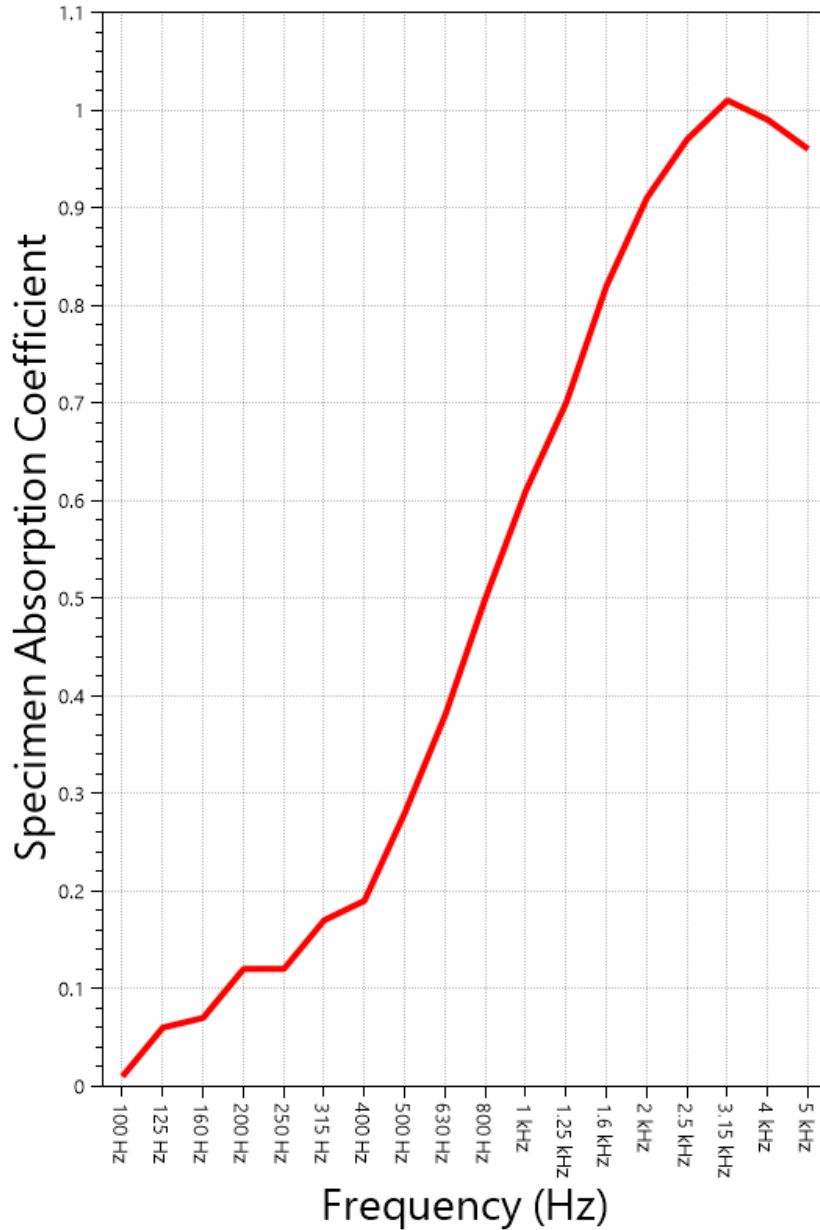
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SOUND ABSORPTION REPORT

Tetrix Air™ 27mm Panel



SAA = 0.48
NRC = 0.50

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APPENDIX A: Extended Frequency Range Data

Specimen: Tetrax Air™ 27mm Panel (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	2.90	0.04
40	-1.44	-0.02
50	8.73	0.12
63	5.83	0.08
80	5.46	0.07
100	0.91	0.01
125	4.64	0.06
160	4.91	0.07
200	8.80	0.12
250	8.71	0.12
315	12.49	0.17
400	13.71	0.19
500	20.33	0.28
630	28.13	0.38
800	36.46	0.50
1000	45.18	0.61
1250	51.79	0.70
1600	60.21	0.82
2000	66.55	0.91
2500	71.39	0.97
3150	74.16	1.01
4000	73.09	0.99
5000	70.61	0.96
6300	68.20	0.93
8000	71.08	0.97
10000	77.75	1.06
12500	78.99	1.07

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APPENDIX B: Instruments of Traceability

Specimen: Tetrax Air™ 27mm Panel (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 Sound Level Calibrator	Type 4230	861609	2019-11-19	2020-11-19
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: Tetrax Air™ 27mm Panel (See Full Report)

<u>Date</u>	<u>Revision</u>
2020-09-03	Original report issued
2020-09-24	Page 1-9: The original manufacturer/requester identification and specimen designation were changed to facilitate a private label sales agreement. The original requester has provided a letter to RAL on their company letterhead certifying that the product identified has not changed in materials, composition, or manufacturing methods since the original test date and the product sold under the private label agreement is exactly identical to the original specimen described in the test report and sourced from the same manufacturing process. –MP, approved by EPW.

END