

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

An  ALION Technical Center

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WALLACE CLEMENT SABINE

Test Report

FOR: **Audimute**
Beachwood, OH

Sound Absorption
RAL™-A17-299

CONDUCTED: 2017-10-30
ON: Absorption Sheets

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TEST METHOD

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 17025:2005 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 measuring procedure and room qualifications is available upon request.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Absorption Sheets. A full external visual inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

Panel

Trade Name: Absorption Sheets
Material: eco-C-tex™ proprietary sound absorbing woven mesh insulate
Dimensions: 2 @ 2406.65 mm (94.75 in.) x 1371.6 mm (54 in.)
Thickness: 17.02 mm (0.67 in.)
Overall Weight: 9.07 kg (20 lbs)

Physical Measures

Size: 2.74 m (108.00 in.) wide by 2.41 m (94.75 in.) long
Thickness: 17.02 mm (0.67 in.)
Weight: 9.07 kg (20.00 lbs.)
Mass per Unit Area: 1.37 kg/m² (0.28 lbs./ft²)
Area: 6.61 m² (71.10 ft²)

Test Environment

Volume: 292.0 m³ (10,311.0 ft³)
Temperature: 21.8±0.3°C (71.2±0.5°F) (Requirement: ≥10° C and ≤5° C change)
Humidity: 61.4±0.6% (Requirement: ≥40% RH and ≤5% change)
Barometric Pressure: 98.5 kPa. (Requirement not defined)



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THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

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Figure 1 – Specimen mounted in the test chamber.



Figure 2 – Detail of test specimen.



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MOUNTING METHOD

Type G-75 Mounting: The specimen was hung parallel to the test surface with a 76.2 mm (3 in.) air gap. A wood plank was inserted at top of the test specimen and butted against the test surface to prevent infiltration of sound into the airspace from the top.

TEST RESULTS

1/3 Octave Center Frequency (Hz)	Total Absorption (SI) (m ²)	Total Absorption (IP) (Sabins)	Absorption Coefficient (Sabins / ft ²)
100	0.36	3.86	0.05
** 125	0.79	8.53	0.12
160	1.59	17.15	0.24
200	2.11	22.69	0.32
** 250	2.49	26.78	0.38
315	3.95	42.48	0.60
400	4.92	52.94	0.74
** 500	6.33	68.09	0.96
630	7.25	78.09	1.10
800	7.34	78.96	1.11
** 1000	7.33	78.92	1.11
1250	7.10	76.47	1.08
1600	6.76	72.77	1.02
** 2000	6.71	72.23	1.02
2500	6.81	73.30	1.03
3150	6.93	74.58	1.05
** 4000	6.85	73.75	1.04
5000	6.84	73.58	1.03

SAA = 0.87
NRC = 0.85



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TEST RESULTS (Continued)

The sound absorption average (SAA) is defined as a single number rating, the average, rounded to the nearest 0.01, of the sound absorption coefficient of a material for the twelve one-third octave bands from 200 through 2500 Hz, inclusive.

The noise reduction coefficient (NRC) is defined from previous versions of this same test method as the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by *Marc Sciaky*
Marc Sciaky
Experimentalist

Report by *Malcolm Kelly*
Malcolm Kelly
Acoustician

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



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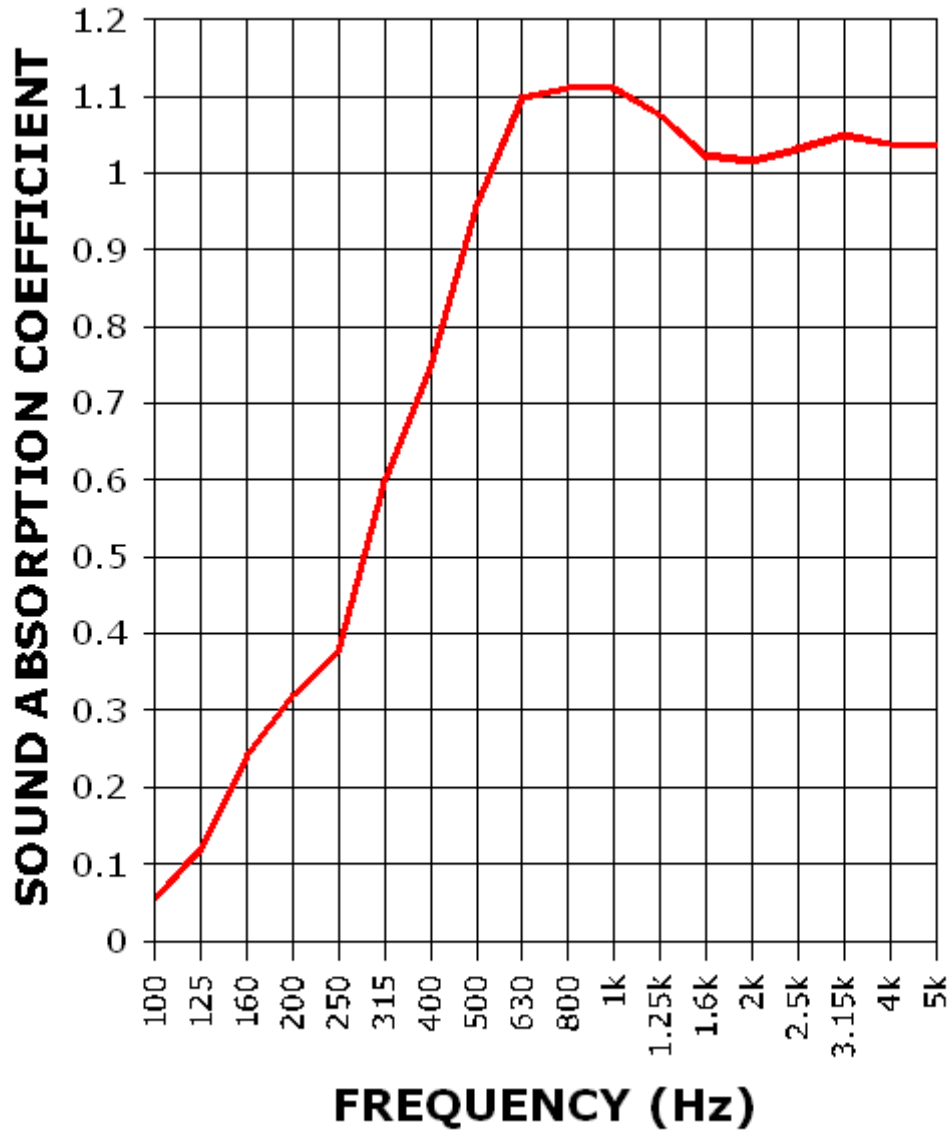
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SOUND ABSORPTION REPORT

Absorption Sheets



SAA = 0.87

NRC = 0.85



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APPENDIX A: Extended Frequency Range Data

Specimen: Absorption Sheets (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 (Sabins / ft ²)
31.5	-1.56	-0.02
40	-3.03	-0.04
50	1.26	0.02
63	-3.40	-0.05
80	7.00	0.10
100	3.86	0.05
125	8.53	0.12
160	17.15	0.24
200	22.69	0.32
250	26.78	0.38
315	42.48	0.60
400	52.94	0.74
500	68.09	0.96
630	78.09	1.10
800	78.96	1.11
1000	78.92	1.11
1250	76.47	1.08
1600	72.77	1.02
2000	72.23	1.02
2500	73.30	1.03
3150	74.58	1.05
4000	73.75	1.04
5000	73.58	1.03
6300	70.84	1.00
8000	66.55	0.94
10000	58.40	0.82
12500	38.68	0.54



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APPENDIX B: Instruments of Traceability

Specimen: Absorption Sheets (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u>	<u>Calibration Due</u>
Bruel & Kjaer Pulse Analyzer - System3	Type 3560-C	2647140	2017-04-21	2018-04-21
Bruel & Kjaer Mic And Preamp C	Type 4943-B-001	2311439	2017-03-17	2018-03-17
Bruel & Kjaer Pistonphone	Type 4228	2781248	2017-08-02	2018-08-02
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP-PRHTemp2000	P97844	2017-01-16	2018-01-16

END



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