

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

Test Report

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Archifibe Inc.**
Mississauga, Ontario, Canada

Sound Absorption
RAL™-A22-055

CONDUCTED: 2022-02-09

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ON: ezoCore 50mm

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 ezoCore 50mm. 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

Product Name: ezoCore 50 mm
Frame/Edge Description: Exposed Edges
Core Material: Laminated Thermobond and Needlepunched PET Fiber
Nominal Thickness: 50 mm
Panel Dimensions: 1219 mm by 2743 mm
Manufacturer: Archifibe Inc.

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SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Dimensions: 8 panels @ 610 mm (24 in.) by 1372 mm (54 in.)
Thickness: 48.56 mm (1.912 in.)
Overall Weight: 37.08 kg (81.75 lbs)
Mass per Unit Volume: 114 kg/m³ (7.13 lbs/ft³)

Overall Specimen Properties

Size: 2.44 m (96.0 in) wide by 2.74 m (108.0 in) long
Thickness: 48.56 mm (1.912 in.)
Weight: 37.08 kg (81.75 lbs)
Mass per Unit Area: 5.54 kg/m² (1.14 lbs/ft²)
Calculation Area: 6.689 m² (72. ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 20.5 °C ± 0.2 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 60.5 % ± 2.4 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 97.9 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.

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Figure 1 – Specimen mounted in test chamber



Figure 2 – Individual specimen panel

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Figure 3 – Detail of specimen materials

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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	1.00	10.77	0.15
** 125	2.15	23.12	0.32
160	2.76	29.68	0.41
200	4.18	44.96	0.62
** 250	4.99	53.76	0.75
315	6.23	67.04	0.93
400	6.85	73.74	1.02
** 500	7.69	82.79	1.15
630	8.20	88.25	1.23
800	8.23	88.62	1.23
** 1000	8.26	88.92	1.24
1250	8.37	90.14	1.25
1600	8.09	87.07	1.21
** 2000	7.96	85.67	1.19
2500	7.52	80.98	1.12
3150	7.34	78.96	1.10
** 4000	7.25	78.04	1.08
5000	7.40	79.68	1.11

SAA = 1.08
NRC = 1.10

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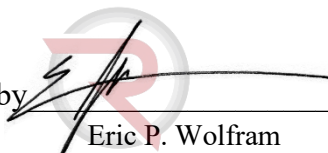
TEST RESULTS (continued)

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 
Keith Kimberling
Associate Test Engineer

Approved by 
Eric P. Wolfram
Laboratory Manager

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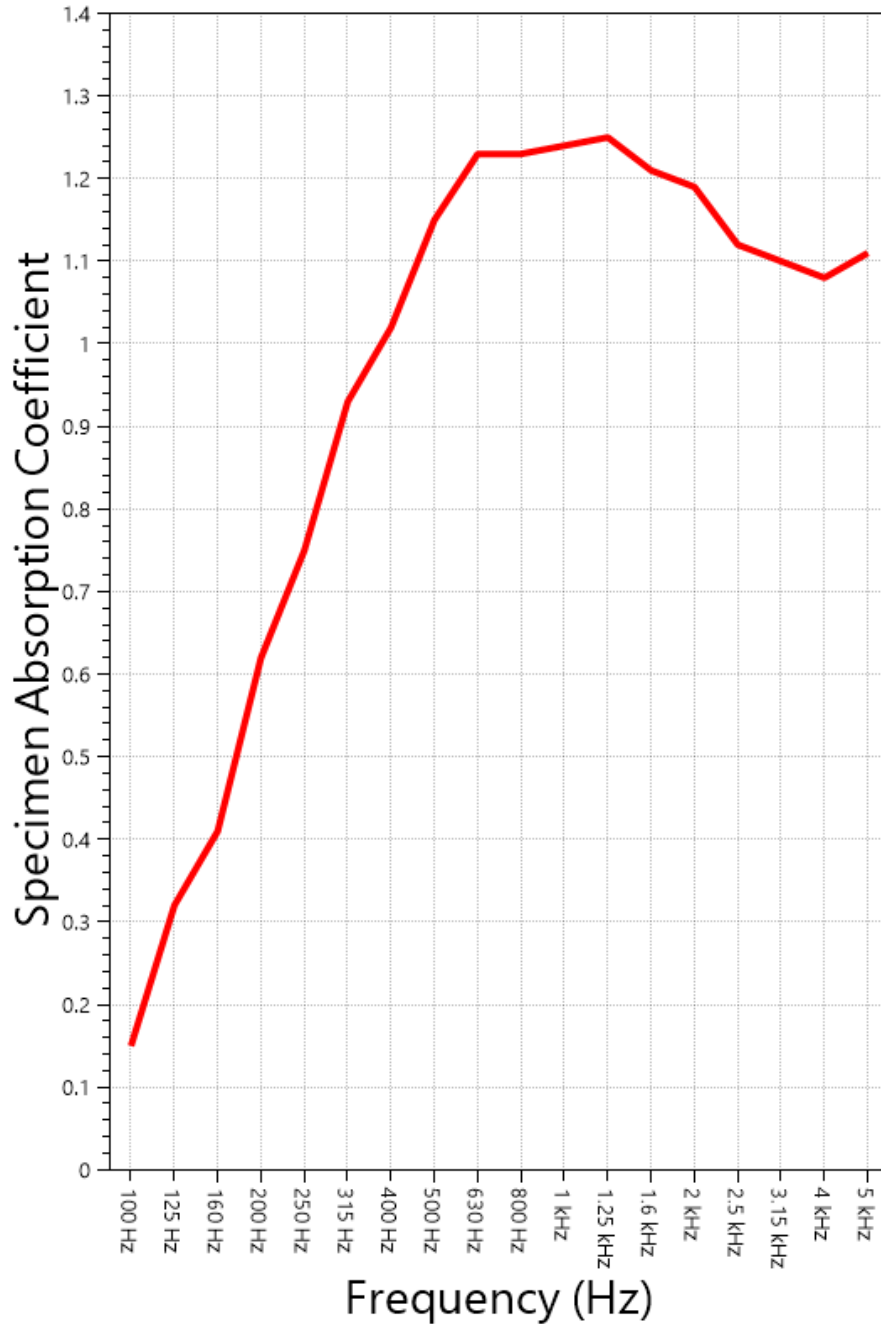
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SOUND ABSORPTION REPORT
ezoCore 50mm



SAA = 1.08
NRC = 1.10



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APPENDIX A: Extended Frequency Range Data

Specimen: ezoCore 50mm (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	6.19	0.09
40	9.12	0.13
50	11.74	0.16
63	2.95	0.04
80	-1.88	-0.03
<hr/>		
100	10.77	0.15
125	23.12	0.32
160	29.68	0.41
200	44.96	0.62
250	53.76	0.75
315	67.04	0.93
400	73.74	1.02
500	82.79	1.15
630	88.25	1.23
800	88.62	1.23
1000	88.92	1.24
1250	90.14	1.25
1600	87.07	1.21
2000	85.67	1.19
2500	80.98	1.12
3150	78.96	1.10
4000	78.04	1.08
5000	79.68	1.11
<hr/>		
6300	78.76	1.09
8000	76.06	1.06
10000	72.77	1.01
12500	62.04	0.86

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APPENDIX B: Instruments of Traceability

Specimen: ezoCore 50mm (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	2021-07-01	2022-07-01
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2021-07-13	2022-07-13
Bruel & Kjaer Pistonphone	Type 4228	2781248	2021-08-13	2022-08-13
EXTECH Hygro 999	SD700	A.106999	2021-05-11	2022-05-11

APPENDIX C: Revisions to Original Test Report

Specimen: ezoCore 50mm (See Full Report)

<u>Date</u>	<u>Revision</u>
2022-02-17	Original report issued

END