RIVERBANK ACOUSTICAL LABORATORIES

627 RIVERBANK DRIVE
GENEVA, IL 60134

630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Moxie Surfaces**
Encinitas, CA

Sound Absorption
RAL™-A24-153

CONDUCTED: 2024-03-20

ON: AIR-board Acoustic – 1" (Type F-100 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 C423-23: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method." The specimen mounting was performed according to ASTM E795-23: "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 AIR-board Acoustic – 1". 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:	AIR-board Acoustic – 1"
Manufacturer:	Design Composite
US Distributor:	Moxie Surfaces

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Material:	Panels, honeycomb core and microperforated sheets on face and back
Dimensions:	2 panels @ 1219 mm (48 in.) by 2438 mm (96 in.)
Thickness:	25.32 mm (0.997 in.)
Overall Weight:	23.59 kg (52 lbs)

Overall Specimen Properties

Size:	2.44 m (96.0 in) wide by 2.44 m (96.0 in) long
Thickness:	0.03 m (0.997 in)
Weight:	23.59 kg (52.0 lbs)
Mass per Unit Area:	3.97 kg/m² (0.81 lbs/ft²)
Calculation Area:	5.946 m² (64. ft²)

Test Environment

Room Volume:	291.98 m³
Temperature:	21.2 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity:	61.5 % ± 1.2 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure:	99.0 kPa (Requirement not defined)

MOUNTING METHOD

Type F-100 Mounting: The test specimen was laid over wood spacers placed on the horizontal test surface, creating a 102 mm (4 in.) thick airspace between the test surface and the panel body. The numeral suffix in the mounting designation is the thickness of the spacers in millimeters, rounded to the nearest integer multiple of 5. Perimeter edges were sealed with wood and metal framing and tape.

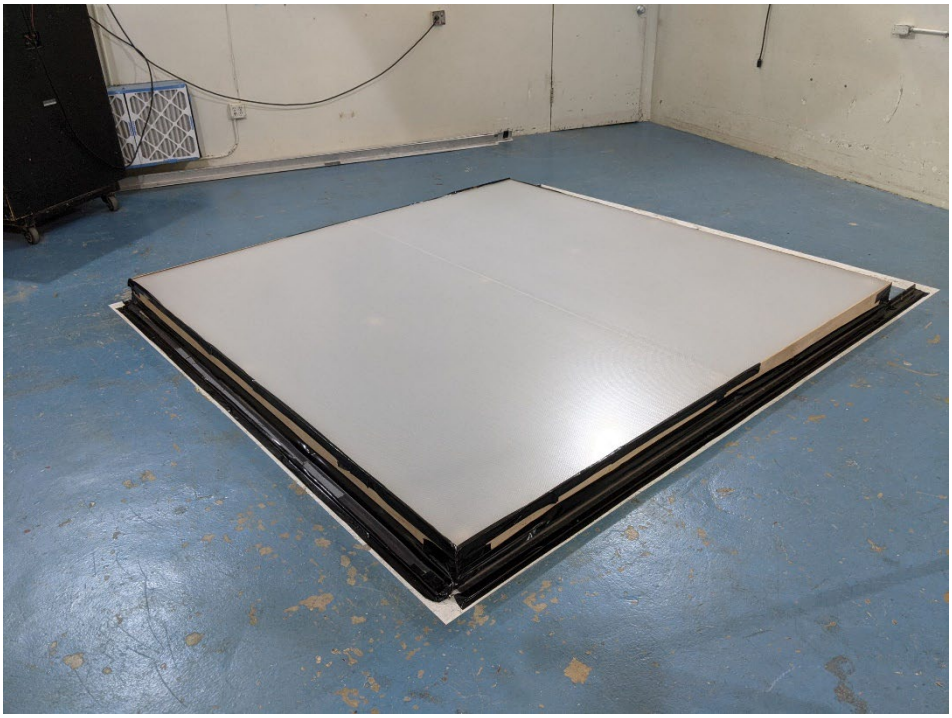

Figure 1 – Specimen mounted in test chamber

Figure 2 – Individual specimen panel

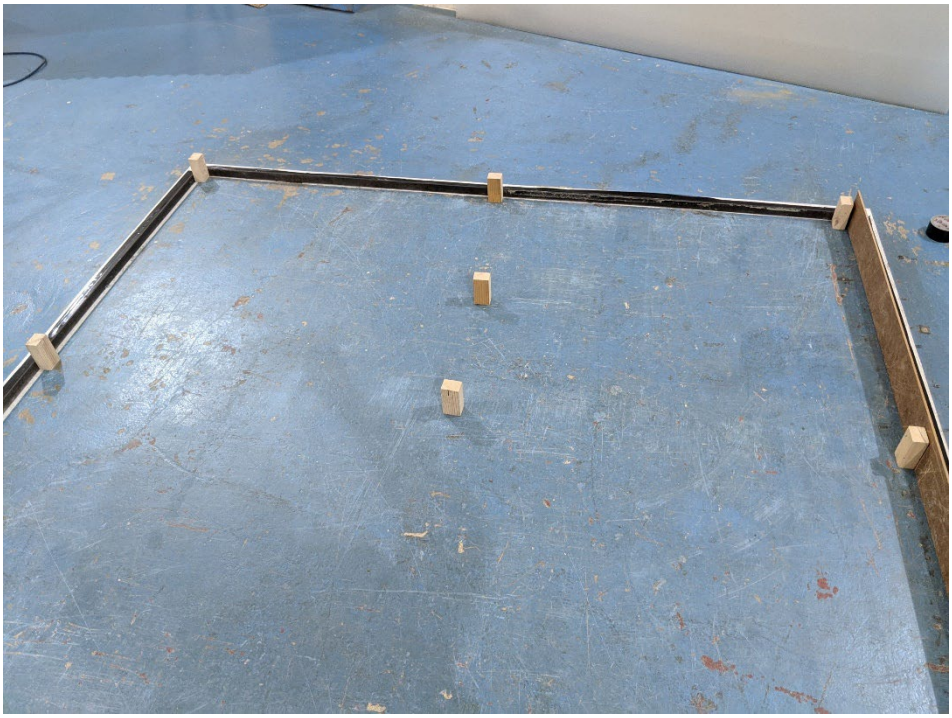

Figure 3 – Wood spacers in test chamber

Figure 4 – Specimen partially installed over spacers

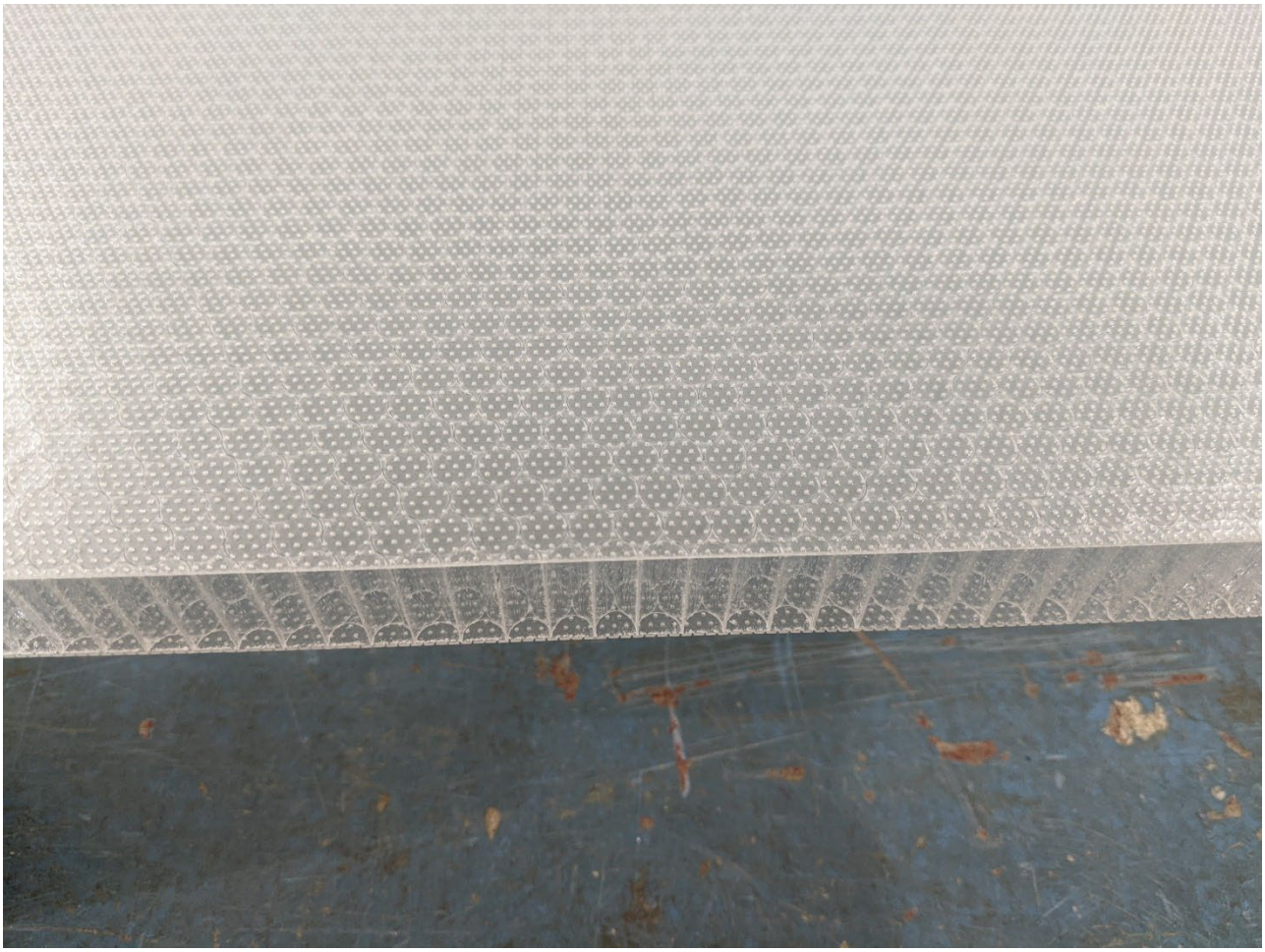

Figure 5 – Detail of specimen materials

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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	0.94	10.12	0.16
** 125	0.90	9.73	0.15
160	1.04	11.24	0.18
200	1.34	14.40	0.22
** 250	1.74	18.74	0.29
315	2.81	30.26	0.47
400	3.37	36.31	0.57
** 500	4.10	44.13	0.69
630	4.39	47.26	0.74
800	4.02	43.25	0.68
** 1000	3.73	40.13	0.63
1250	3.49	37.55	0.59
1600	3.63	39.10	0.61
** 2000	4.71	50.66	0.79
2500	4.52	48.65	0.76
3150	4.37	47.06	0.74
** 4000	3.39	36.48	0.57
5000	2.39	25.70	0.40

SAA = 0.59
NRC = 0.60

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TEST RESULTS (continued)

The sound absorption average (SAA) is defined in ASTM C423-23 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
Test Engineer

Approved by _____
Eric P. Wolfram
Laboratory Manager

Digitally signed by
Eric P Wolfram
Date: 2024.04.12
09:40:41 -05'00'

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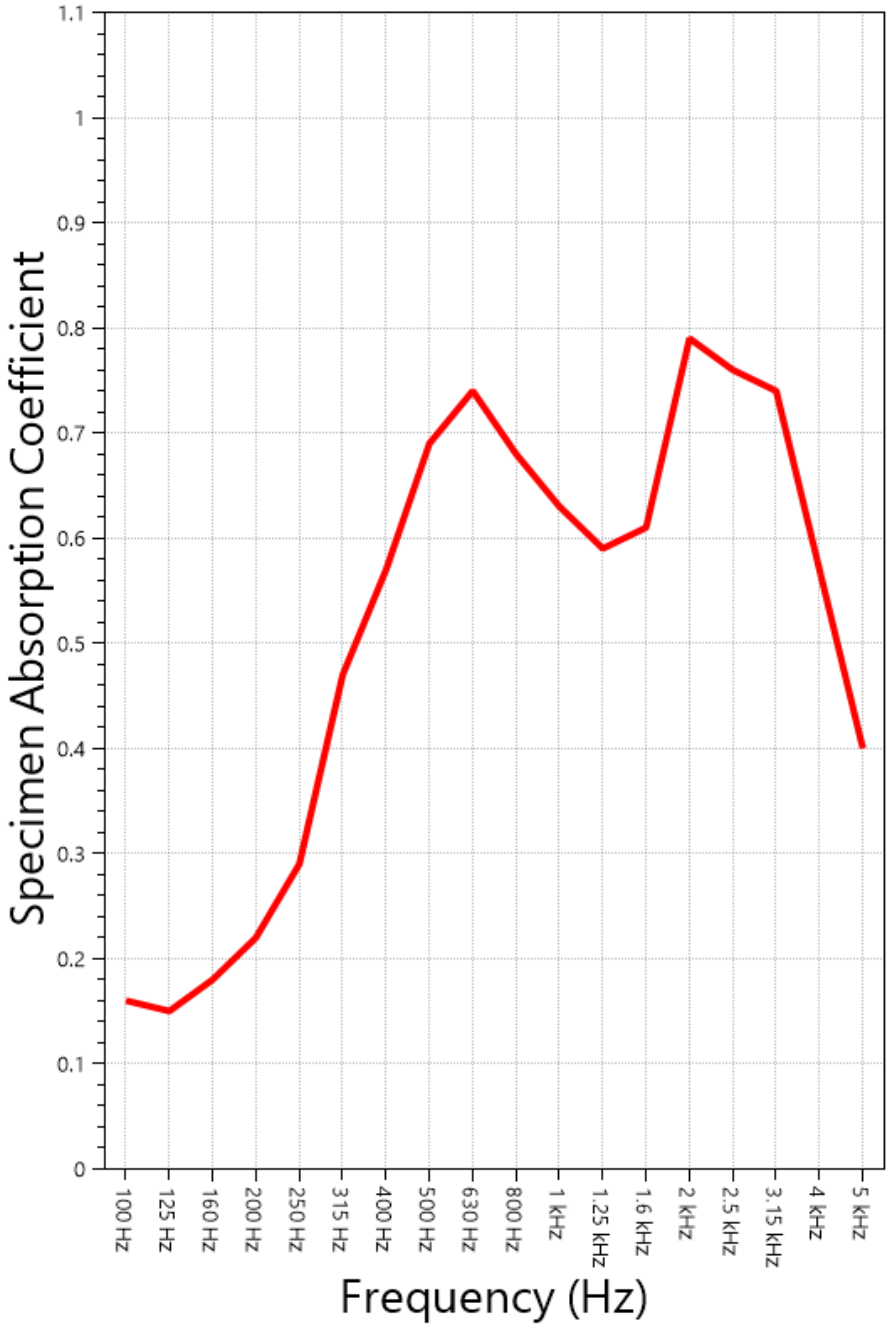
SOUND ABSORPTION REPORT

AIR-board Acoustic – 1”



SAA = 0.59
NRC = 0.60

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APPENDIX A: Extended Frequency Range Data

Specimen: AIR-board Acoustic – 1" (See Full Report)

The following non-accredited data were obtained in accordance with ASTM C423-23, 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	4.42	0.07
40	3.40	0.05
50	4.86	0.08
63	-4.83	-0.08
80	8.66	0.14
100	10.12	0.16
125	9.73	0.15
160	11.24	0.18
200	14.40	0.22
250	18.74	0.29
315	30.26	0.47
400	36.31	0.57
500	44.13	0.69
630	47.26	0.74
800	43.25	0.68
1000	40.13	0.63
1250	37.55	0.59
1600	39.10	0.61
2000	50.66	0.79
2500	48.65	0.76
3150	47.06	0.74
4000	36.48	0.57
5000	25.70	0.40
6300	21.28	0.33
8000	26.04	0.41
10000	37.99	0.59
12500	6.79	0.11

APPENDIX B: Instruments of Traceability

Specimen: AIR-board Acoustic – 1" (See Full Report)

Description	Model	Serial Number	Date of Certification	Calibration Due
System 1	Type 3160-A-042	3160-106968	2023-07-17	2024-07-17
Bruel & Kjaer Mic And Preamp G	Type 4943-B-001	2525858	2023-05-03	2024-05-03
Bruel & Kjaer Pistonphone	Type 4228	2781248	2023-07-12	2024-07-12
EXTECH Hygro 6015	SD700	A.116015	2023-05-31	2024-05-31

APPENDIX C: Revisions to Original Test Report

Specimen: AIR-board Acoustic – 1" (See Full Report)

Date	Revision
2024-04-08	Original report issued

END