

627 RIVERBANK DRIVE
GENEVA, IL 60134
630-232-0104

Test Report

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Moxie Surfaces**
Encinitas, CA

Sound Absorption
RAL™-A24-157

CONDUCTED: 2024-03-21

Page 1 of 8

ON: AIR-board Acoustic Quiet – 1” (Type K 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 Quiet – 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 Quiet – 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: Panel with honeycomb core, microperforated sheet on one side, solid sheet on other side
Dimensions: 1219 mm (48 in.) by 2438 mm (96 in.)
Thickness: 26.35 mm (1.0375 in.)
Overall Weight: 15.76 kg (34.75 lbs)

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Moxie Surfaces
2024-03-21

RAL™-A24-157
Page 2 of 8

Overall Specimen Properties

Size: 1.22 m (48.0 in) wide by 2.44 m (96.0 in) long
Thickness: 0.03 m (1.0375 in)
Weight: 15.76 kg (34.75 lbs)
Mass per Unit Area: 5.3 kg/m² (1.09 lbs/ft²)
Calculation Area: 5.946 m² (64. ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.4 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 60.3 % ± 4.6 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 99.8 kPa (Requirement not defined)

MOUNTING METHOD

Type K Mounting: The specimen was placed in the reverberation room in an upright position at an oblique angle to and at least 1.52 m (60 in.) from all walls. 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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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Moxie Surfaces
2024-03-21

RAL™-A24-157
Page 3 of 8

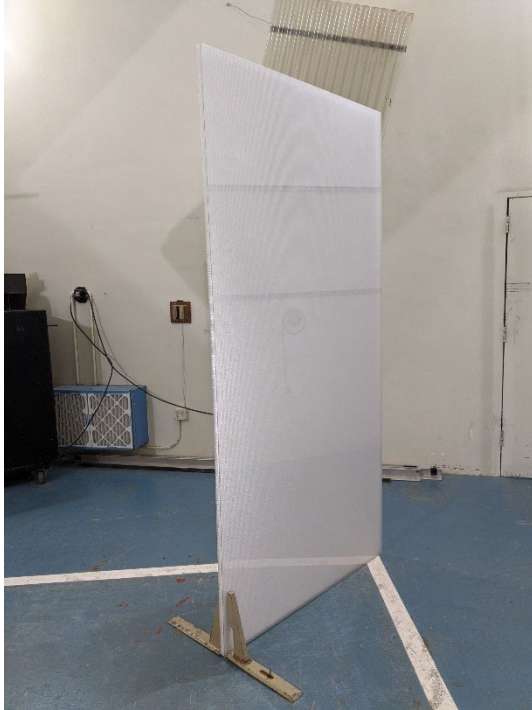


Figure 1 – Specimen mounted in test chamber

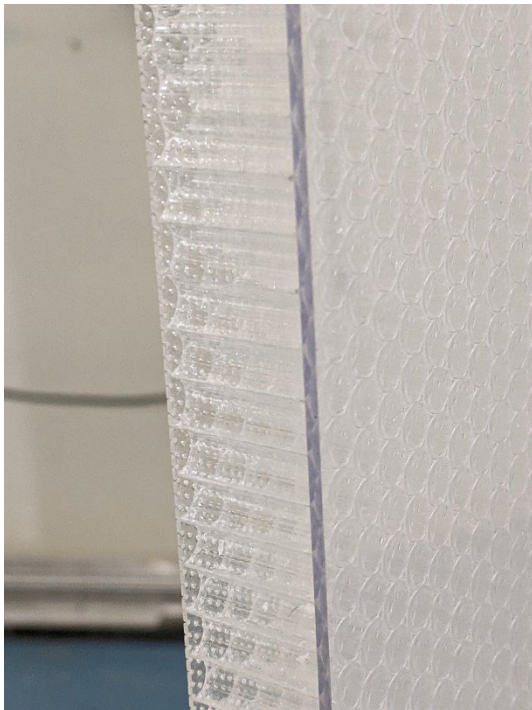


Figure 2 – Detail of specimen materials

627 RIVERBANK DRIVE
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 630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
 WALLACE CLEMENT SABINE

Moxie Surfaces
 2024-03-21

RAL™-A24-157
 Page 4 of 8

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 | -0.04 | -0.39 | -0.01 |
| ** 125 | 0.00 | -0.05 | 0.00 |
| 160 | 0.10 | 1.10 | 0.02 |
| 200 | 0.06 | 0.63 | 0.01 |
| ** 250 | 0.15 | 1.64 | 0.03 |
| 315 | 0.22 | 2.34 | 0.04 |
| 400 | 0.28 | 2.99 | 0.05 |
| ** 500 | 0.21 | 2.29 | 0.04 |
| 630 | 0.51 | 5.47 | 0.09 |
| 800 | 0.99 | 10.64 | 0.17 |
| ** 1000 | 1.40 | 15.05 | 0.24 |
| 1250 | 1.63 | 17.57 | 0.27 |
| 1600 | 1.82 | 19.62 | 0.31 |
| ** 2000 | 1.60 | 17.21 | 0.27 |
| 2500 | 1.45 | 15.56 | 0.24 |
| 3150 | 1.23 | 13.23 | 0.21 |
| ** 4000 | 1.20 | 12.91 | 0.20 |
| 5000 | 0.96 | 10.33 | 0.16 |

SAA = 0.15
NRC = 0.15

627 RIVERBANK DRIVE
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630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Moxie Surfaces
2024-03-21

RAL™-A24-157
Page 5 of 8

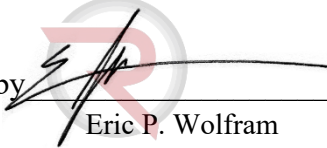
TEST RESULTS (continued)

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

627 RIVERBANK DRIVE
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630-232-0104

Test Report

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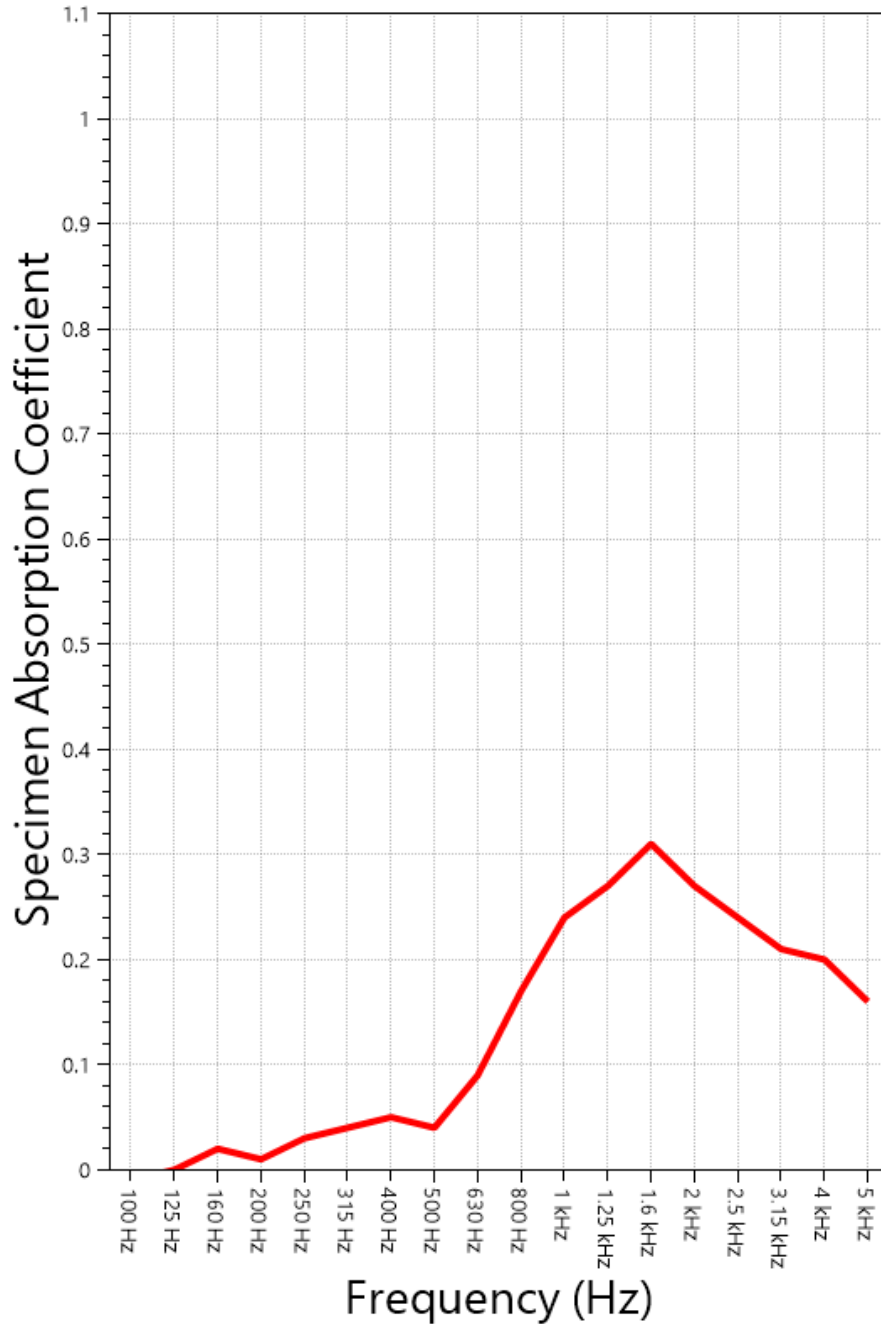
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2024-03-21

RAL™-A24-157

Page 6 of 8

SOUND ABSORPTION REPORT

AIR-board Acoustic Quiet – 1”



SAA = 0.15

NRC = 0.15



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Moxie Surfaces
 2024-03-21

RAL™-A24-157
 Page 7 of 8

APPENDIX A: Extended Frequency Range Data

Specimen: AIR-board Acoustic Quiet – 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 | 2.48 | 0.04 |
| 40 | -4.01 | -0.06 |
| 50 | -17.93 | -0.28 |
| 63 | -3.85 | -0.06 |
| 80 | -0.75 | -0.01 |
| 100 | -0.39 | -0.01 |
| 125 | -0.05 | 0.00 |
| 160 | 1.10 | 0.02 |
| 200 | 0.63 | 0.01 |
| 250 | 1.64 | 0.03 |
| 315 | 2.34 | 0.04 |
| 400 | 2.99 | 0.05 |
| 500 | 2.29 | 0.04 |
| 630 | 5.47 | 0.09 |
| 800 | 10.64 | 0.17 |
| 1000 | 15.05 | 0.24 |
| 1250 | 17.57 | 0.27 |
| 1600 | 19.62 | 0.31 |
| 2000 | 17.21 | 0.27 |
| 2500 | 15.56 | 0.24 |
| 3150 | 13.23 | 0.21 |
| 4000 | 12.91 | 0.20 |
| 5000 | 10.33 | 0.16 |
| 6300 | 8.83 | 0.14 |
| 8000 | 14.89 | 0.23 |
| 10000 | 15.09 | 0.24 |
| 12500 | 10.63 | 0.17 |

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Moxie Surfaces
2024-03-21

RAL™-A24-157
Page 8 of 8

APPENDIX B: Instruments of Traceability

Specimen: AIR-board Acoustic Quiet – 1” (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 | 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 Quiet – 1” (See Full Report)

| <u>Date</u> | <u>Revision</u> |
|-------------|------------------------|
| 2024-04-08 | Original report issued |

END