RIVERBANK ACOUSTICAL LABORATORIES

1512 S BATAVIA AVENUE
GENEVA, IL 60134

630-232-0104

# Test Report

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **Sound Seal**
Agawam, MA

**Sound Absorption**
**RAL™-A22-355**

CONDUCTED: 2022-08-18



ON: Aerial Exterior Grade Acoustical Wall Baffle

## 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 C423-22: "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.

## SPECIMEN MEASUREMENTS & TEST CONDITIONS

The test specimen was designated by the sponsor as Aerial Exterior Grade Acoustical Wall Baffle. Through a full external visual inspection performed on the test specimen, Riverbank personnel verified the following information:

**Test Specimen**

| | |
|---|---|
| Dimensions: | 2 banners @ 1219 mm (48 in.) by 2743 mm (108 in.) |
| Thickness: | 51 mm (2 in.) |
| Overall Weight: | 13.27 kg (29.25 lbs) |
| Mass per Unit Volume: | Approx. 39 kg/m$^3$ (2.4 lbs/ft$^3$) |

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## Overall Specimen Properties

| | |
|---|---|
| Size: | 2.44 m (96.0 in) wide by 2.74 m (108.0 in) long |
| Thickness: | 0.05 m (2.0 in) |
| Weight: | 13.27 kg (29.25 lbs) |
| Mass per Unit Area: | 1.98 kg/m² (0.41 lbs/ft²) |
| Calculation Area: | 6.689 m² (72. ft²) |

## Test Environment

| | |
|---|---|
| Room Volume: | 291.98 m³ |
| Temperature: | 21.7 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change) |
| Relative Humidity: | 56.75 % ± 0.5 % (Requirement: ≥ 40 % and ≤ 5 % change) |
| Barometric Pressure: | 98.8 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 – 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 | 1.83 | 19.69 | 0.27 |
| ** 125 | 2.41 | 25.99 | 0.36 |
| 160 | 3.39 | 36.45 | 0.51 |
| 200 | 5.28 | 56.84 | 0.79 |
| ** 250 | 6.50 | 69.99 | 0.97 |
| 315 | 8.08 | 87.02 | 1.21 |
| 400 | 8.33 | 89.63 | 1.24 |
| ** 500 | 7.21 | 77.62 | 1.08 |
| 630 | 6.01 | 64.71 | 0.90 |
| 800 | 4.20 | 45.17 | 0.63 |
| ** 1000 | 3.17 | 34.09 | 0.47 |
| 1250 | 2.43 | 26.21 | 0.36 |
| 1600 | 1.81 | 19.51 | 0.27 |
| ** 2000 | 1.44 | 15.51 | 0.22 |
| 2500 | 1.26 | 13.54 | 0.19 |
| 3150 | 1.03 | 11.04 | 0.15 |
| ** 4000 | 0.75 | 8.12 | 0.11 |
| 5000 | 0.58 | 6.19 | 0.09 |

**SAA = 0.69**
**NRC = 0.70**

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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
*Test Engineer*

Approved by _____
Eric P. Wolfram
*Laboratory Manager*

Digitally signed by Eric P Wolfram
Date: 2022.08.29 14:54:41 -05'00'

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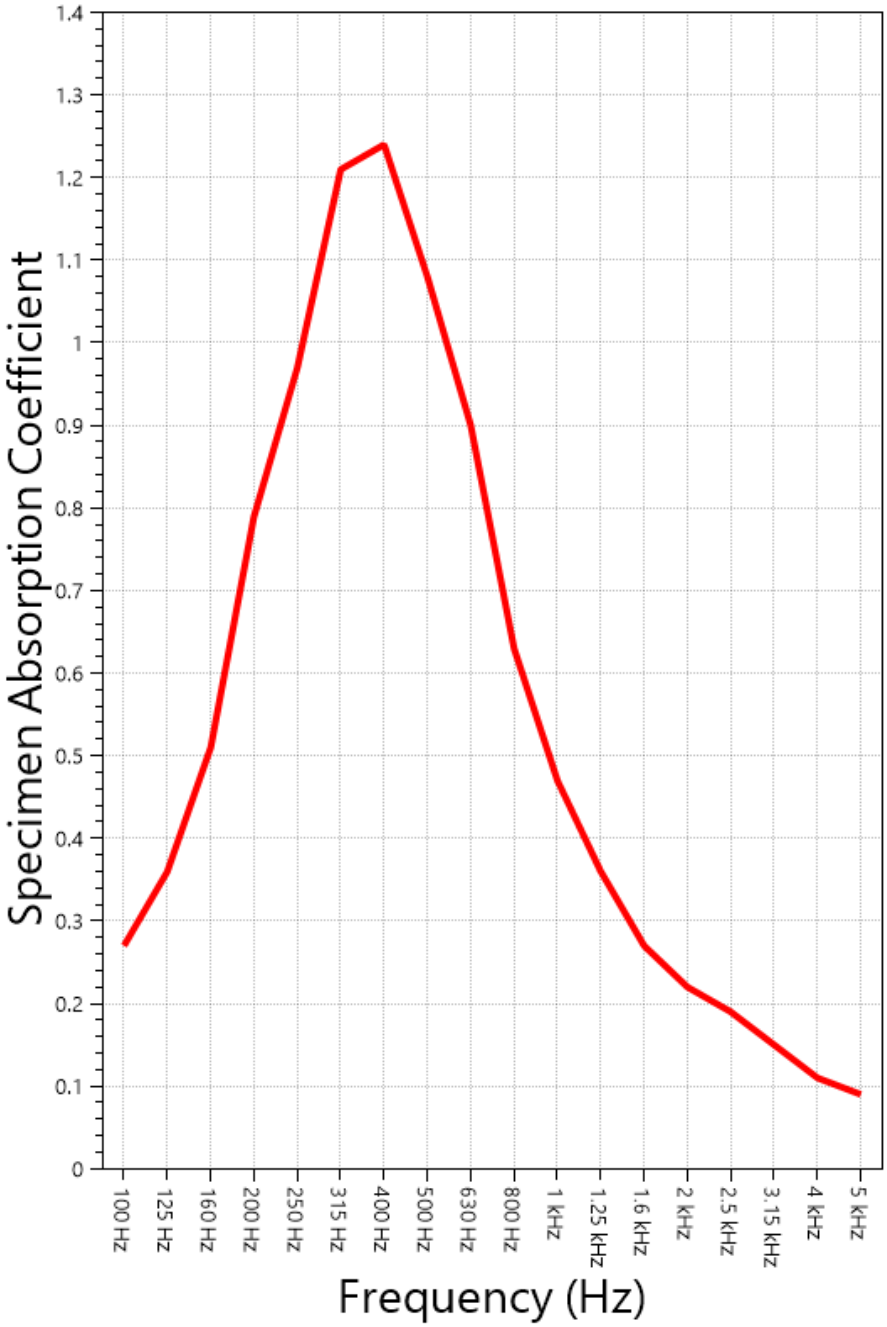
## SOUND ABSORPTION REPORT

Aerial Exterior Grade Acoustical Wall Baffle




**SAA = 0.69**
**NRC = 0.70**

NVLAP TESTING
NVLAP LAB CODE 100227-0

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## APPENDIX A: Extended Frequency Range Data

Specimen: Aerial Exterior Grade Acoustical Wall Baffle (See Full Report)

*The following non-accredited data were obtained in accordance with ASTM C423-22, 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 | 6.27 | 0.09 |
| 40 | 4.76 | 0.07 |
| 50 | -15.26 | -0.21 |
| 63 | -9.37 | -0.13 |
| 80 | 16.73 | 0.23 |
| 100 | 19.69 | 0.27 |
| 125 | 25.99 | 0.36 |
| 160 | 36.45 | 0.51 |
| 200 | 56.84 | 0.79 |
| 250 | 69.99 | 0.97 |
| 315 | 87.02 | 1.21 |
| 400 | 89.63 | 1.24 |
| 500 | 77.62 | 1.08 |
| 630 | 64.71 | 0.90 |
| 800 | 45.17 | 0.63 |
| 1000 | 34.09 | 0.47 |
| 1250 | 26.21 | 0.36 |
| 1600 | 19.51 | 0.27 |
| 2000 | 15.51 | 0.22 |
| 2500 | 13.54 | 0.19 |
| 3150 | 11.04 | 0.15 |
| 4000 | 8.12 | 0.11 |
| 5000 | 6.19 | 0.09 |
| 6300 | 5.82 | 0.08 |
| 8000 | 7.49 | 0.10 |
| 10000 | 7.61 | 0.11 |
| 12500 | 10.52 | 0.15 |

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## APPENDIX B: Instruments of Traceability

Specimen: Aerial Exterior Grade Acoustical Wall Baffle (See Full Report)

| Description | Model | Serial Number | Date of Certification | Calibration Due |
|---|---|---|---|---|
| System 1 | Type 3160-A-042 | 3160-106968 | 2022-07-12 | 2023-07-12 |
| Bruel & Kjaer Mic And Preamp A | Type 4943-B-001 | 2311428 | 2021-09-30 | 2022-09-30 |
| Bruel & Kjaer Pistonphone | Type 4228 | 2781248 | 2022-07-22 | 2023-07-22 |
| EXTECH Hygro 959 | SD700 | A099959 | 2022-03-22 | 2023-03-22 |

## APPENDIX C: Revisions to Original Test Report

Specimen: Aerial Exterior Grade Acoustical Wall Baffle (See Full Report)

| Date | Revision |
|---|---|
| 2022-08-29 | Original report issued |

END