

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

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **ASI**
Chaska, MN

Sound Absorption
RAL™-A25-049

CONDUCTED: 2025-02-06

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ON: MPA Grille with 1" Backer

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 MPA Grille with 1" Backer. 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: MPA Grille with 1" Backer
Manufacturer: ASI

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Backing Layer

Material: Fibrous insulation
Dimensions: 4 @ 610 mm (24 in.) by 1118 mm (44 in.)
4 @ 610 mm (24 in.) by 1219 mm (48 in.)
1 @ 305 mm (12 in.) by 1118 mm (44 in.)
1 @ 305 mm (12 in.) by 1219 mm (48 in.)
Thickness: 27.94 mm (1.1 in.)
Overall Weight: 6.46 kg (14.25 lbs)
Mass per Unit Volume: 36.1 kg/m³ (2.25 lbs/ft³)

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SPECIMEN MEASUREMENTS & TEST CONDITIONS (continued)

Test Specimen

Material: Pieces comprised of spaced flutes
Dimensions: 3 pieces @ 578 mm (22.75 in.) by 2743 mm (108 in.)
1 piece @ 521 mm (20.5 in.) by 2743 mm (108 in.)
Flute Width: 42.71 mm (1.6815 in.)
Flute Spacing: 18.38 mm (0.7235 in.)
Flute Depth: Varied from 27.14 mm (1.0685 in.) to 40.09 mm (1.5785 in.)
Total Maximum Depth: 65.49 mm (2.5785 in.)
Overall Weight: 29.03 kg (64 lbs)

Overall Specimen Properties

Size: 2.32 m (91.5 in) wide by 2.74 m (108.0 in) long
Thickness: 0.09 m (3.6785 in)
Weight: 35.49 kg (78.25 lbs)
Mass per Unit Area: 5.57 kg/m² (1.14 lbs/ft²)
Calculation Area: 6.376 m² (68.63 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 21.3 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 59.3 % ± 1.0 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 98.5 kPa (Requirement not defined)

MOUNTING METHOD

Type E-450 Mounting: The test specimen was mounted across a metal fixture which was open at its top and bottom and enclosed at its sides, creating an enclosed airspace between the test specimen and the horizontal test surface. The numeral suffix in the designation is defined in ASTM E795-23 as the distance in millimeters from the exposed face of the test specimen to the test surface, rounded to the nearest integer multiple of 5. For the purposes of this report, the mounting designation uses the plane tangent to the topmost surfaces of the specimen flutes as a reference datum. Perimeter edges were sealed with metal framing and tape.

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Figure 1 – Specimen mounted in test chamber



Figure 2 – Base layer partially installed in E-mount frame

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Figure 3 – Specimen pieces partially installed over base layer



Figure 4 – 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	5.36	57.74	0.84
** 125	5.88	63.29	0.92
160	5.75	61.88	0.90
200	6.74	72.59	1.06
** 250	6.38	68.63	1.00
315	6.00	64.55	0.94
400	5.62	60.44	0.88
** 500	5.73	61.64	0.90
630	6.40	68.86	1.00
800	6.83	73.55	1.07
** 1000	6.95	74.86	1.09
1250	6.84	73.57	1.07
1600	6.60	71.07	1.04
** 2000	6.48	69.77	1.02
2500	6.47	69.66	1.02
3150	6.48	69.76	1.02
** 4000	6.46	69.50	1.01
5000	6.36	68.49	1.00

SAA = 1.01
NRC = 1.00

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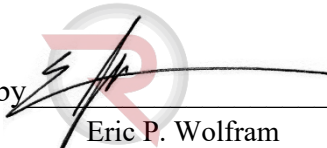
TEST RESULTS (continued)

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

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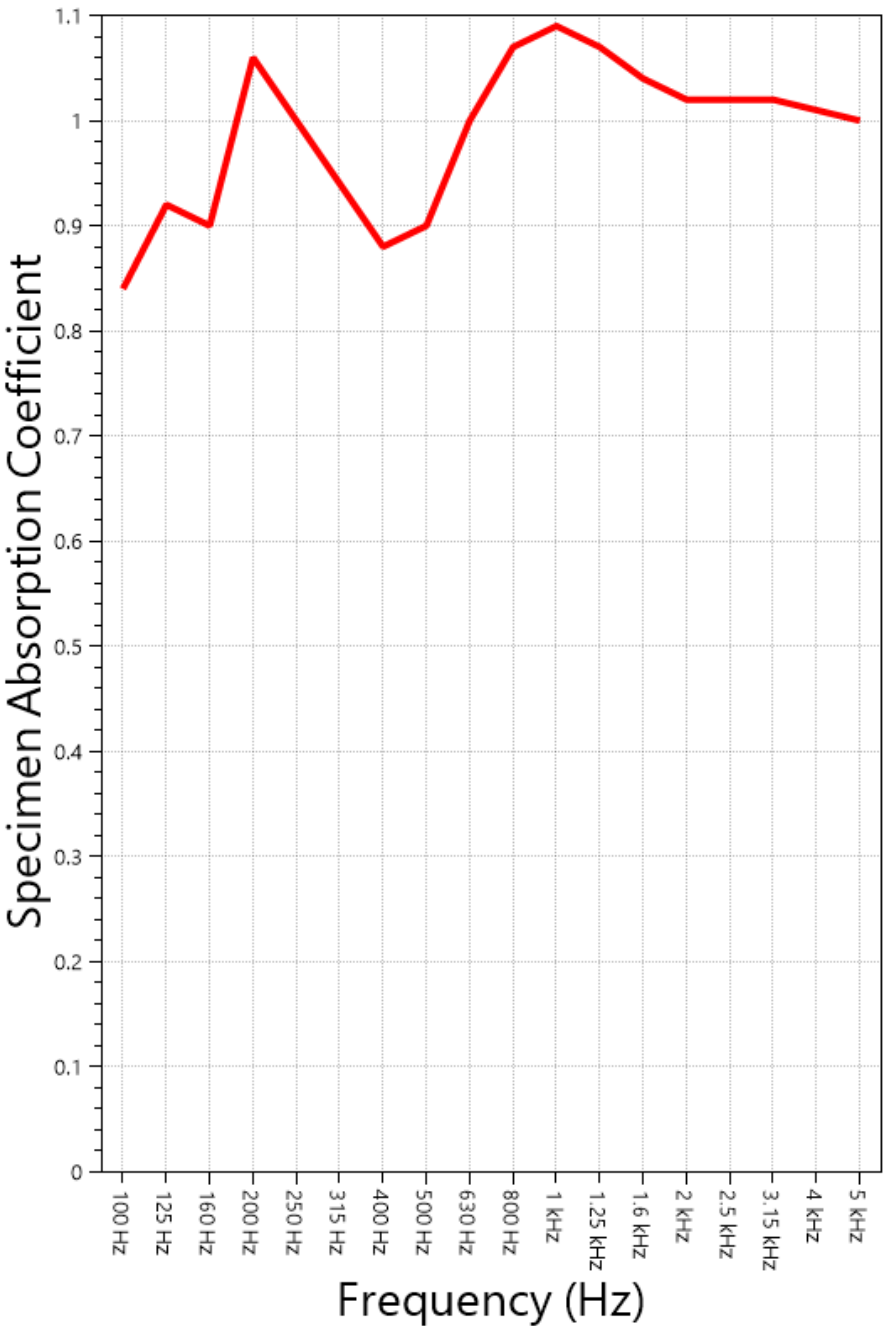
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SOUND ABSORPTION REPORT
MPA Grille with 1" Backer



SAA = 1.01
NRC = 1.00

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APPENDIX A: Extended Frequency Range Data

Specimen: MPA Grille with 1" Backer (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	11.48	0.17
40	10.71	0.16
50	26.03	0.38
63	25.11	0.37
80	20.33	0.30
100	57.74	0.84
125	63.29	0.92
160	61.88	0.90
200	72.59	1.06
250	68.63	1.00
315	64.55	0.94
400	60.44	0.88
500	61.64	0.90
630	68.86	1.00
800	73.55	1.07
1000	74.86	1.09
1250	73.57	1.07
1600	71.07	1.04
2000	69.77	1.02
2500	69.66	1.02
3150	69.76	1.02
4000	69.50	1.01
5000	68.49	1.00
6300	68.49	1.00
8000	67.36	0.98
10000	71.75	1.05
12500	82.90	1.21

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APPENDIX B: Instruments of Traceability

Specimen: MPA Grille with 1" Backer (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	3160-106974	2024-08-15	2025-08-15
Bruel & Kjaer Mic And Preamp G	Type 4943-B-001	2525858	2024-05-07	2025-05-07
Bruel & Kjaer Pistonphone	Type 4228	2781248	2024-07-19	2025-07-19
EXTECH Hygro 959	SD700	A099959	2024-03-29	2025-03-29

APPENDIX C: Revisions to Original Test Report

Specimen: MPA Grille with 1" Backer (See Full Report)

<u>Date</u>	<u>Revision</u>
2025-02-27	Original report issued

END