SPONSOR: **Auralex Acoustics**
Indianapolis, IN

Sound Absorption
RAL™-A21-257

CONDUCTED: 2021-04-12

ON: M224 Pro Panel (8 objects at dihedral corners)

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." 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 M224 Pro Panel (8 objects at dihedral corners). 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

Trade Name:	M224 ProPanel Corner Trap
Core Material:	Fiberglass
Core Nominal Thickness:	50.8 mm (2 in.)
Core Nominal Density:	96.1 kg/m^3 (6 lbs/ft^3)
Panel Dimensions:	610 mm (24 in.) by 1219 mm (48 in.)
Manufacturer:	Auralex Acoustics

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Materials:	Woven textile adhered to rigid fiberglass core, exposed at underside
Dimensions:	8 @ 610 mm (24 in.) by 1219 mm (48 in.)
Overall Weight:	28.35 kg (62.5 lbs)
Mass per Unit Volume:	94.81 kg/m^3 (5.92 lbs/ft^3)
Installation:	Face with exposed core material oriented away from sound field

Physical Measurements (per object)

Dimensions:	609.6 mm (24 in.) wide by 1219.2 mm (48 in.) long
Thickness:	50.29 mm (1.98 in.)
Average Weight:	3.54 kg (7.81 lbs)

Test Environment

Room Volume:	291.98 m³
Temperature:	21.8 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity:	62.0 % ± 4.0 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure:	98.3 kPa (Requirement not defined)

MOUNTING METHOD

Non-standard mounting: The specimen is an array of 8 spaced sound absorbing objects placed around the edges of the test chamber, oriented with their lengths parallel to the test chamber floor, bridging dihedral corners at the test chamber floor and walls. Three (3) objects were placed along the north wall of the chamber, two (2) objects were placed along each of the west and south walls, and one (1) object was placed along the east wall. Objects sharing a wall were placed 508 mm (20 in.) apart.

Figure 1 – Specimen configuration at west (left) and north (right) chamber walls

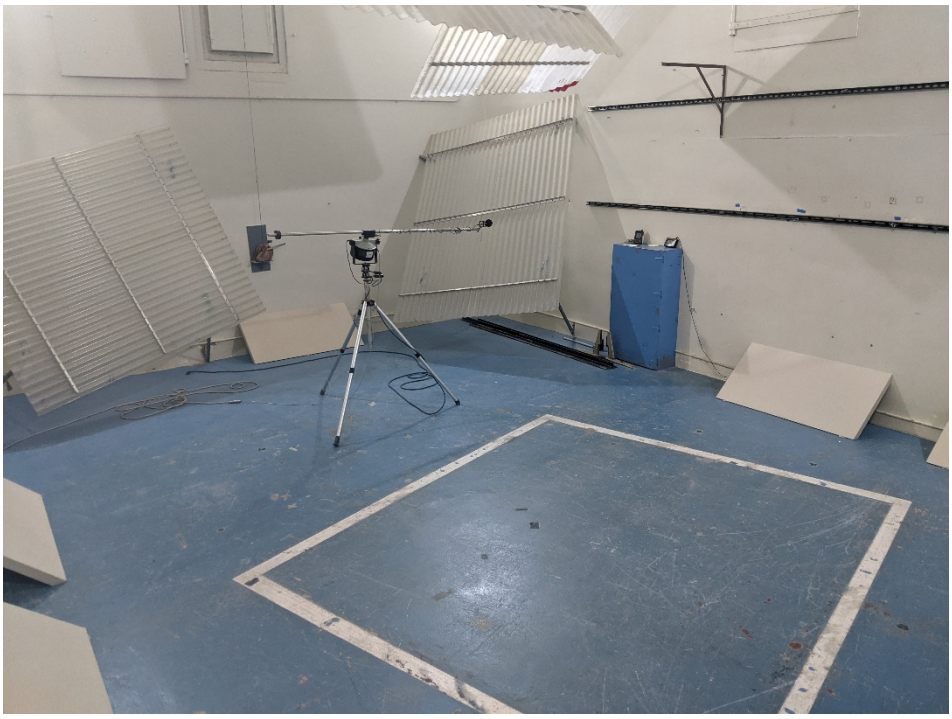


Figure 2 – Specimen configuration at east (left, background) and south (right) chamber walls

Figure 3 – Individual specimen object, exposed core material at underside

Figure 4 – Detail of specimen panel placed in test chamber

TEST RESULTS

Note: There is currently no standardized method for calculating Absorption Coefficients from spaced object absorbers. The sound absorption performance of spaced object absorbers should not be compared directly with specimens tested as a single rectangular area (e.g. mounting types A, E, etc.).

1/3 Octave Center Frequency	Total Absorption		Absorption per Object	
(Hz)	(m^2)	(Sabins)	(m^2 / Object)	(Sabins / Object)
100	4.64	49.90	0.58	6.24
** 125	8.59	92.44	1.07	11.56
160	8.81	94.85	1.10	11.86
200	9.51	102.32	1.19	12.79
** 250	9.12	98.18	1.14	12.27
315	8.42	90.64	1.05	11.33
400	8.37	90.06	1.05	11.26
** 500	8.73	93.94	1.09	11.74
630	9.09	97.84	1.14	12.23
800	8.88	95.55	1.11	11.94
** 1000	8.96	96.48	1.12	12.06
1250	8.65	93.07	1.08	11.63
1600	8.24	88.67	1.03	11.08
** 2000	8.14	87.57	1.02	10.95
2500	7.84	84.38	0.98	10.55
3150	7.80	83.93	0.97	10.49
** 4000	7.67	82.51	0.96	10.31
5000	7.76	83.51	0.97	10.44

Tested by Marc Sciaky
Senior Experimentalist

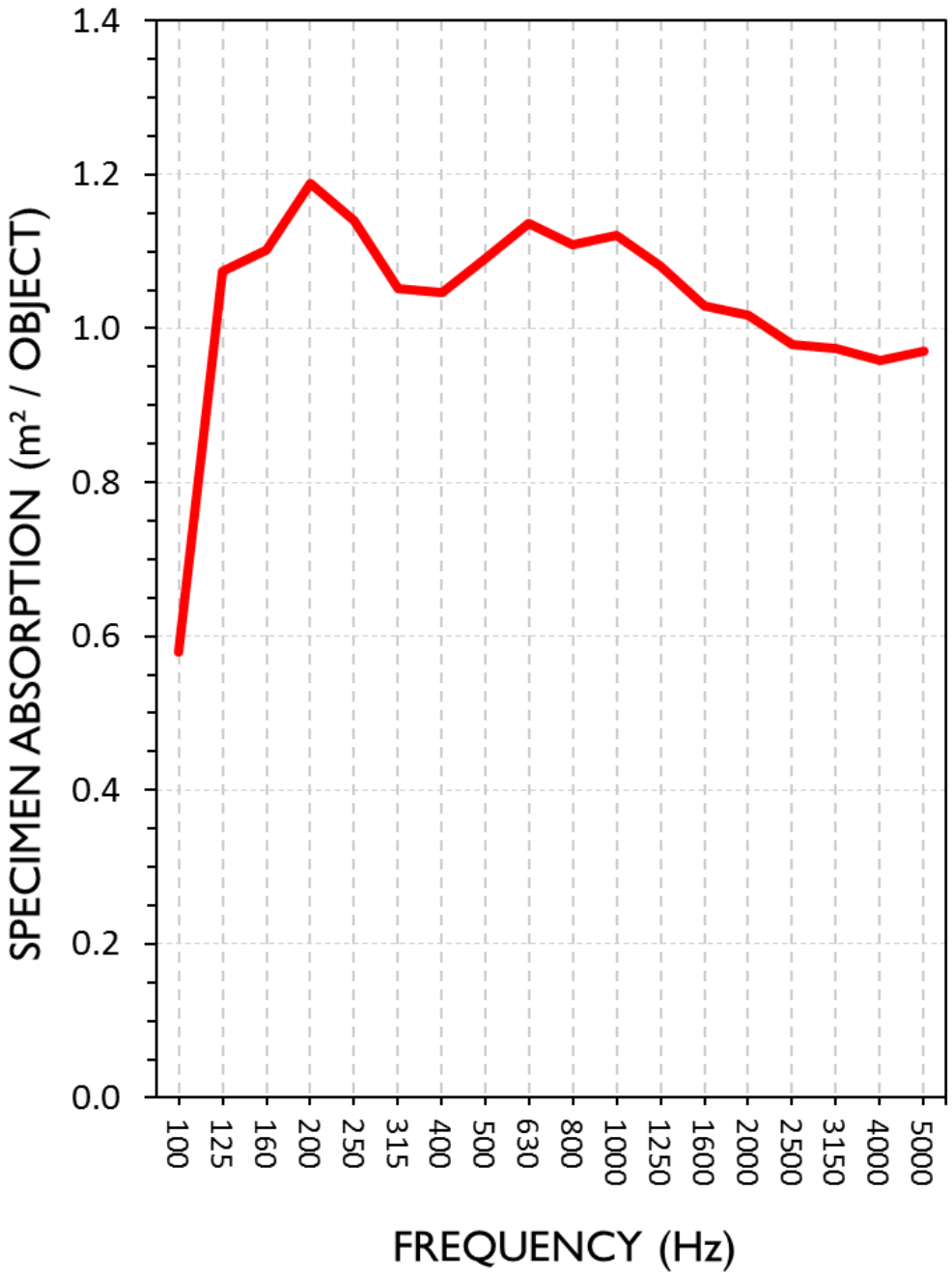
Report by Malcolm Kelly
Test Engineer, Acoustician

Approved by Eric P. Wolfram
Laboratory Manager

Digitally signed by Eric P Wolfram
Date: 2021.04.22 14:21:54 -05'00'

SOUND ABSORPTION REPORT

M224 Pro Panel (8 objects at dihedral corners)



APPENDIX A: Extended Frequency Range Data

Specimen: M224 Pro Panel (8 objects at dihedral corners) (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 (m^2)	Total Absorption (Sabins)	Absorption per Object (m^2 / Object)	Absorption per Object (Sabins / Object)
31.5	0.21	2.29	0.03	0.29
40	0.33	3.56	0.04	0.45
50	0.13	1.37	0.02	0.17
63	0.77	8.27	0.10	1.03
80	2.65	28.52	0.33	3.57
100	4.64	49.90	0.58	6.24
125	8.59	92.44	1.07	11.56
160	8.81	94.85	1.10	11.86
200	9.51	102.32	1.19	12.79
250	9.12	98.18	1.14	12.27
315	8.42	90.64	1.05	11.33
400	8.37	90.06	1.05	11.26
500	8.73	93.94	1.09	11.74
630	9.09	97.84	1.14	12.23
800	8.88	95.55	1.11	11.94
1000	8.96	96.48	1.12	12.06
1250	8.65	93.07	1.08	11.63
1600	8.24	88.67	1.03	11.08
2000	8.14	87.57	1.02	10.95
2500	7.84	84.38	0.98	10.55
3150	7.80	83.93	0.97	10.49
4000	7.67	82.51	0.96	10.31
5000	7.76	83.51	0.97	10.44
6300	7.75	83.42	0.97	10.43
8000	7.84	84.41	0.98	10.55
10000	8.24	88.69	1.03	11.09
12500	9.18	98.80	1.15	12.35

APPENDIX B: Instruments of Traceability

Specimen: M224 Pro Panel (8 objects at dihedral corners) (See Full Report)

Description	Model	Serial Number	Date of Certification	Calibration Due
System 1	Type 3160-A-042	3160-106968	2020-06-26	2021-06-26
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2020-09-30	2021-09-30
Bruel & Kjaer Pistonphone	Type 4228	2781248	2020-08-12	2021-08-12
EXTECH Hygro 639	SD700	A.103639	2020-12-18	2021-12-18

APPENDIX C: Revisions to Original Test Report

Specimen: M224 Pro Panel (8 objects at dihedral corners) (See Full Report)

Date	Revision
2021-04-22	Original report issued

END