

1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

Test Report

www.riverbankacoustics.com

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

SPONSOR: **BYNATURE**
Vancouver, British Columbia, Canada

Sound Absorption
RAL™-A22-501

CONDUCTED: 2022-12-05

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ON: Pole Moss

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.

INFORMATION PROVIDED BY SPONSOR

The test specimen was designated by the sponsor as Pole Moss. 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: Mossart Panels
Material: Pole Moss
Manufacturer: BYNATURE

SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

Test Specimen

Materials: Moss adhered to plastic boards
Dimensions: 5 pieces @ 813 mm (32 in.) by 914 mm (36 in.)
1 piece @ 533 mm (21 in.) by 686 mm (27 in.)
1 piece @ 235 mm (9.25 in.) by 533 mm (21 in.)
2 pieces @ 137 mm (5.375 in.) by 908 mm (35.75 in.)
1 piece @ 260 mm (10.25 in.) by 914 mm (36 in.)
1 piece @ 229 mm (9 in.) by 914 mm (36 in.)
1 piece @ 165 mm (6.5 in.) by 864 mm (34 in.)

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Test Specimen (continued)

Dimensions: 1 piece @ 165 mm (6.5 in.) by 51 mm (2 in.)
1 piece @ 870 mm (34.25 in.) by 914 mm (36 in.)
1 piece @ 914 mm (36 in.) by 914 mm (36 in.)

*Thickness: Average @ approx. 44 mm (1.75 in.)
Minimum @ approx. 20 mm (0.787 in.)
Maximum @ approx. 64 mm (2.5 in.)

Overall Weight: 37.99 kg (83.75 lbs)

**Note: Thickness includes plastic boards. Boards @ approx. 4 mm (0.157 in.) thick*

Overall Specimen Properties

Size: 2.45 m (96.5 in) wide by 2.76 m (108.5 in) long
Thickness: 0.06 m (2.5 in)
Weight: 37.99 kg (83.75 lbs)
Mass per Unit Area: 5.62 kg/m² (1.15 lbs/ft²)
Calculation Area: 6.755 m² (72.71 ft²)

Test Environment

Room Volume: 291.98 m³
Temperature: 19.9 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity: 57.85 % ± 4.3 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure: 98.3 kPa (Requirement not defined)

MOUNTING METHOD

Type A Mounting: The test specimen was laid directly against the test surface. Perimeter edges were sealed with metal framing and tape.

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Figure 1 – Specimen mounted in test chamber

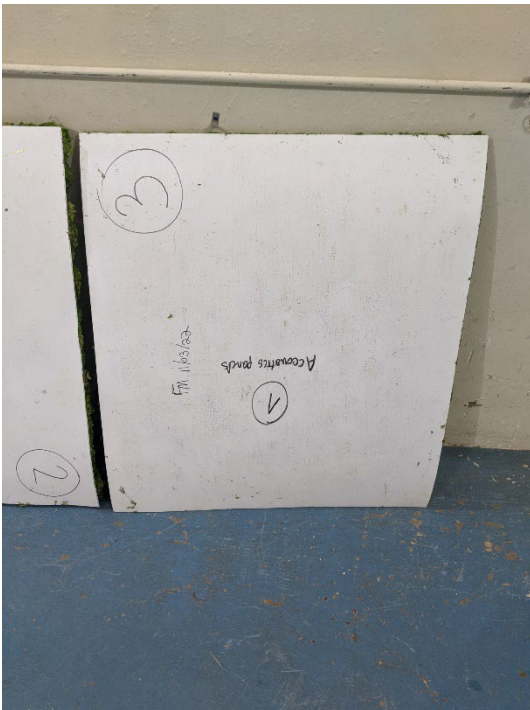


Figure 2 – Individual specimen piece

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Figure 3 – Individual specimen piece

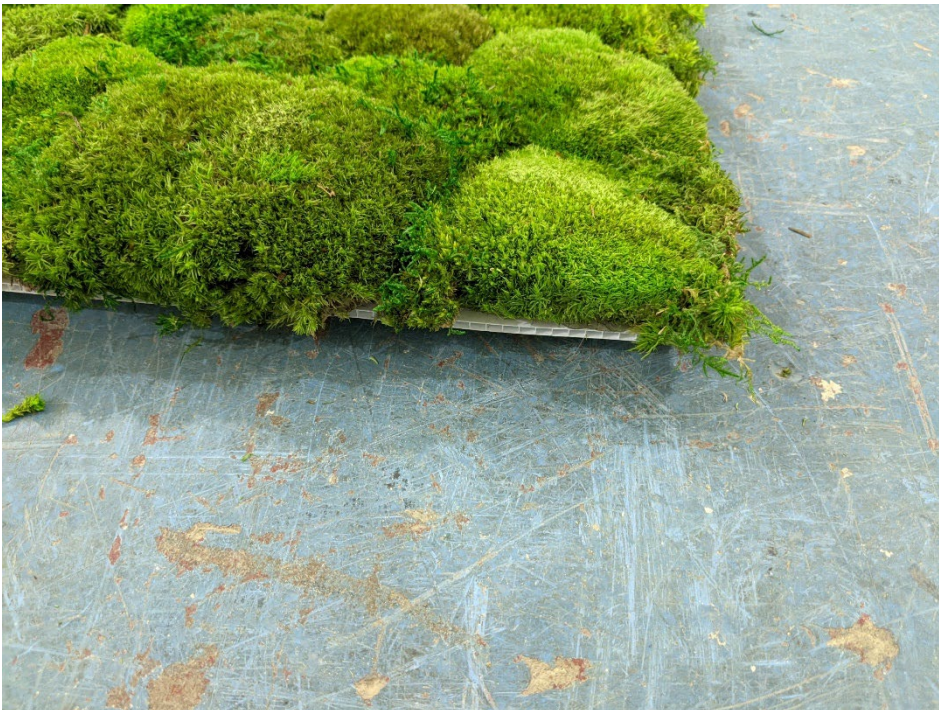


Figure 4 – Detail of specimen materials

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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	0.23	2.52	0.03
** 125	0.72	7.71	0.11
160	1.37	14.70	0.20
200	1.55	16.63	0.23
** 250	1.41	15.18	0.21
315	2.67	28.75	0.40
400	3.31	35.61	0.49
** 500	4.45	47.88	0.66
630	5.46	58.75	0.81
800	6.17	66.37	0.91
** 1000	6.57	70.76	0.97
1250	6.76	72.79	1.00
1600	6.76	72.72	1.00
** 2000	6.91	74.40	1.02
2500	6.87	73.92	1.02
3150	6.90	74.25	1.02
** 4000	7.02	75.53	1.04
5000	7.12	76.60	1.05

SAA = 0.73

NRC = 0.70

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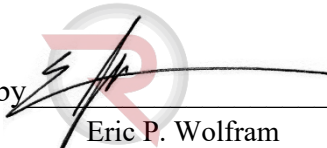
TEST RESULTS (continued)

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

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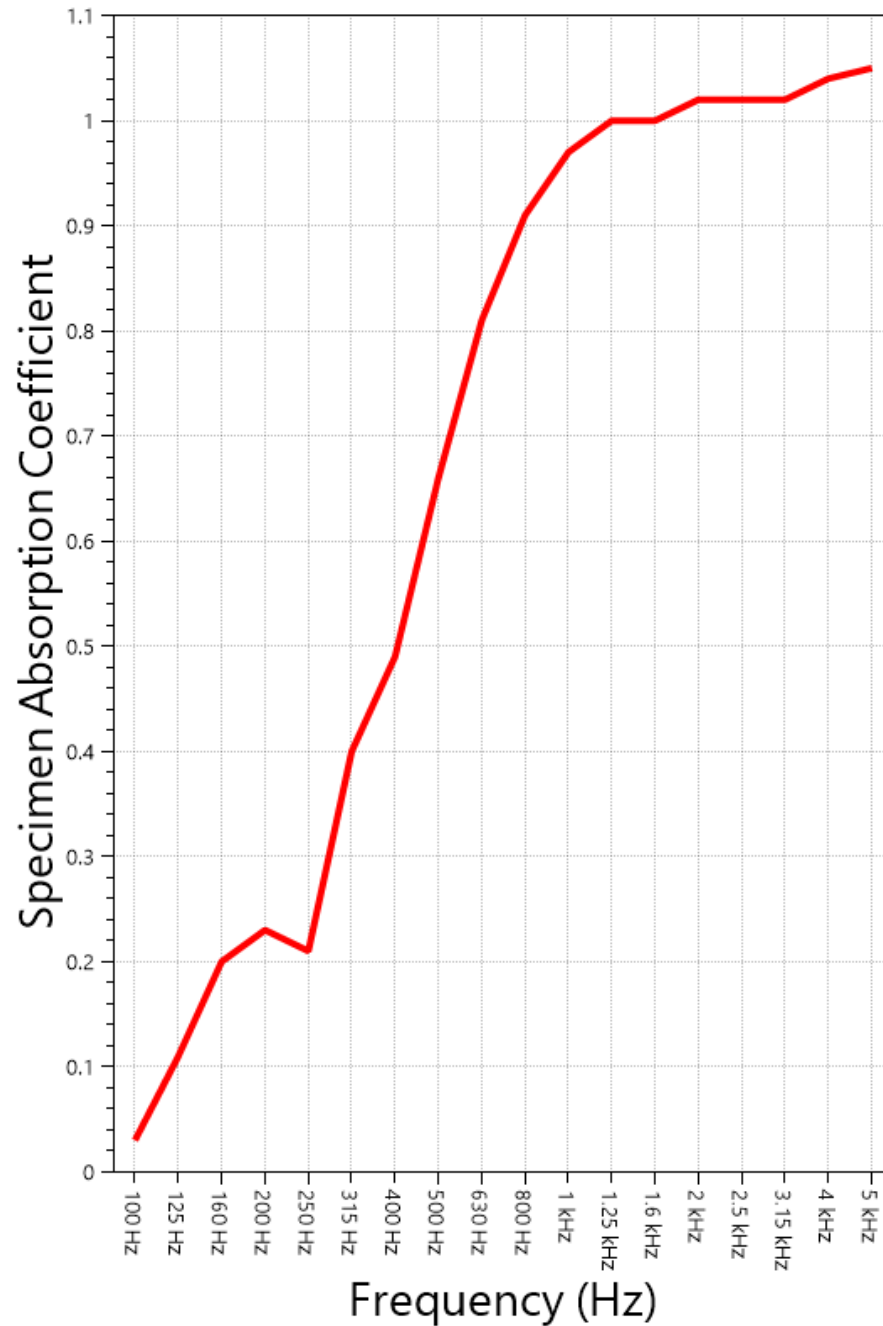
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SOUND ABSORPTION REPORT

Pole Moss



SAA = 0.73

NRC = 0.70

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APPENDIX A: Extended Frequency Range Data

Specimen: Pole Moss (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	11.63	0.16
40	4.77	0.07
50	2.17	0.03
63	3.15	0.04
80	4.55	0.06
100	2.52	0.03
125	7.71	0.11
160	14.70	0.20
200	16.63	0.23
250	15.18	0.21
315	28.75	0.40
400	35.61	0.49
500	47.88	0.66
630	58.75	0.81
800	66.37	0.91
1000	70.76	0.97
1250	72.79	1.00
1600	72.72	1.00
2000	74.40	1.02
2500	73.92	1.02
3150	74.25	1.02
4000	75.53	1.04
5000	76.60	1.05
6300	78.37	1.08
8000	79.93	1.10
10000	80.79	1.11
12500	88.47	1.22

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APPENDIX B: Instruments of Traceability

Specimen: Pole Moss (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	2022-07-12	2023-07-12
Bruel & Kjaer Mic And Preamp C	Type 4943-B-001	2311439	2022-05-02	2023-05-02
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: Pole Moss (See Full Report)

<u>Date</u>	<u>Revision</u>
2022-12-09	Original report issued

END