

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

## Test Report

[www.riverbankacoustics.com](http://www.riverbankacoustics.com)

FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

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

**Sound Absorption**  
**RAL™-A22-502**

CONDUCTED: 2022-12-05

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ON: Reindeer 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 Reindeer 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 ID: Reindeer 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**

Material: Moss adhered to plastic boards  
Dimensions: 22 pieces @ 305 mm (12 in.) by 914 mm (36 in.)  
3 pieces @ 305 mm (12 in.) by 610 mm (24 in.)  
\*Thickness: Average @ approx. 38 mm (1.5 in.)  
Minimum @ approx. 30 mm (1.181 in.)  
Maximum @ approx. 45 mm (1.772 in.)  
Overall Weight: 37.53 kg (82.75 lbs)

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

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### Overall Specimen Properties

Size: 2.77 m (109.0 in) wide by 2.44 m (96.25 in) long  
Thickness: 0.04 m (1.5 in)  
Weight: 37.53 kg (82.75 lbs)  
Mass per Unit Area: 5.55 kg/m<sup>2</sup> (1.14 lbs/ft<sup>2</sup>)  
Calculation Area: 6.769 m<sup>2</sup> (72.86 ft<sup>2</sup>)

### Test Environment

Room Volume: 291.98 m<sup>3</sup>  
Temperature: 19.9 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)  
Relative Humidity: 55.5 % ± 0.4 % (Requirement: ≥ 40 % and ≤ 5 % change)  
Barometric Pressure: 98.1 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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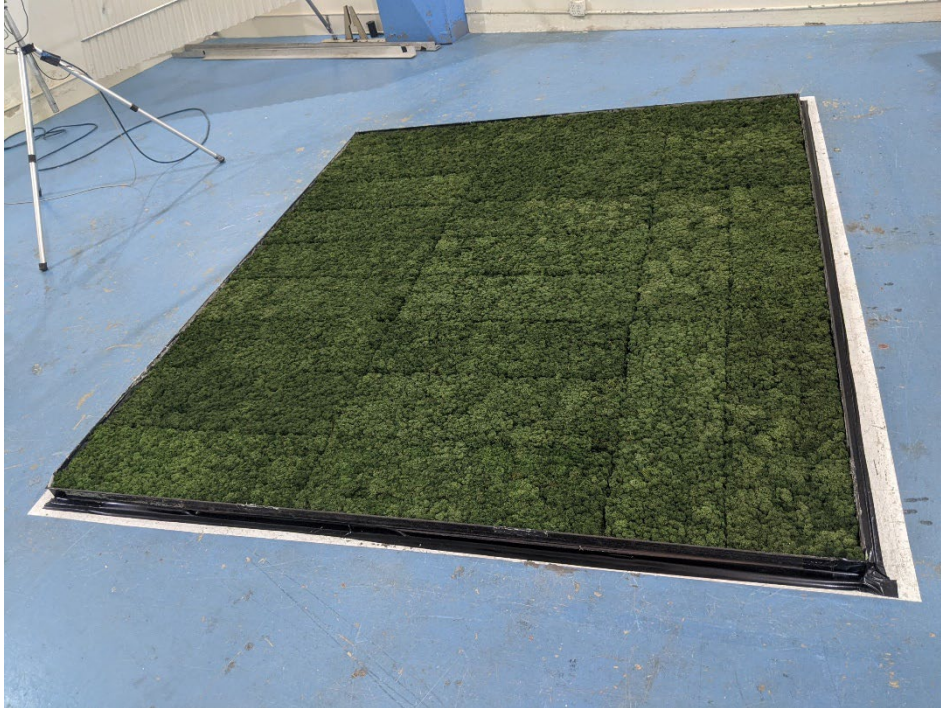


Figure 1 – Specimen mounted in test chamber

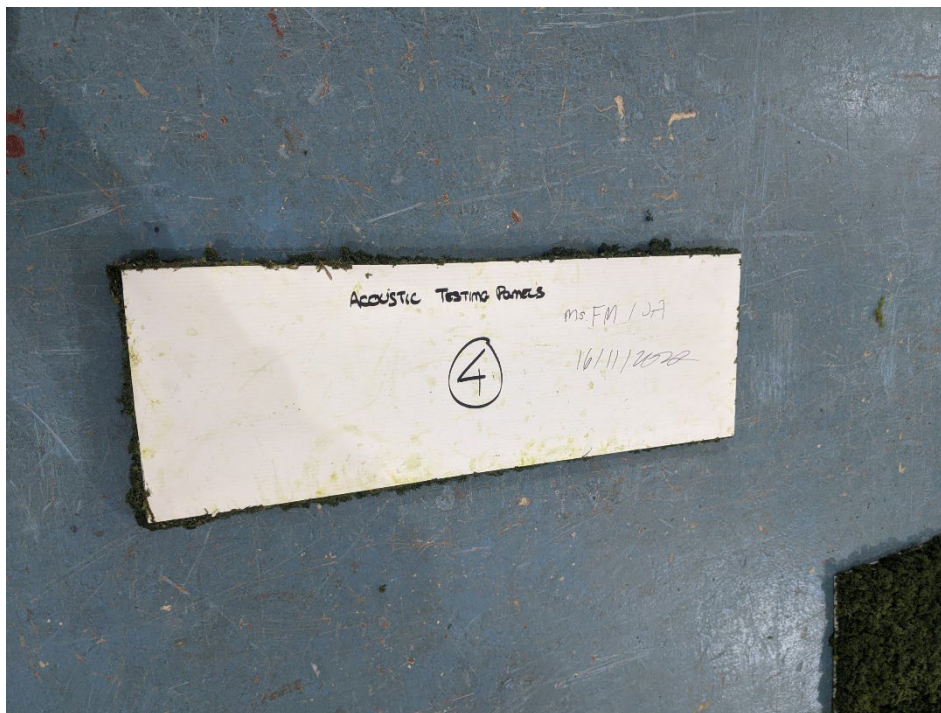


Figure 2 – Individual specimen piece



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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 <sup>2</sup> )	Total Absorption (Sabins)	Absorption Coefficient
100	0.70	7.48	0.10
** 125	0.95	10.24	0.14
160	1.23	13.19	0.18
200	1.15	12.33	0.17
** 250	1.13	12.13	0.17
315	1.57	16.86	0.23
400	1.62	17.42	0.24
** 500	2.04	21.92	0.30
630	2.26	24.35	0.33
800	2.53	27.22	0.37
** 1000	3.01	32.36	0.44
1250	3.33	35.89	0.49
1600	3.30	35.55	0.49
** 2000	3.27	35.23	0.48
2500	3.12	33.62	0.46
3150	3.15	33.93	0.47
** 4000	3.09	33.22	0.46
5000	3.28	35.34	0.49

**SAA = 0.35**

**NRC = 0.35**

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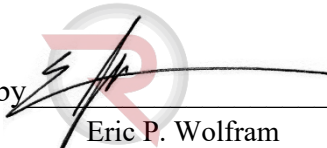
### TEST RESULTS (continued)

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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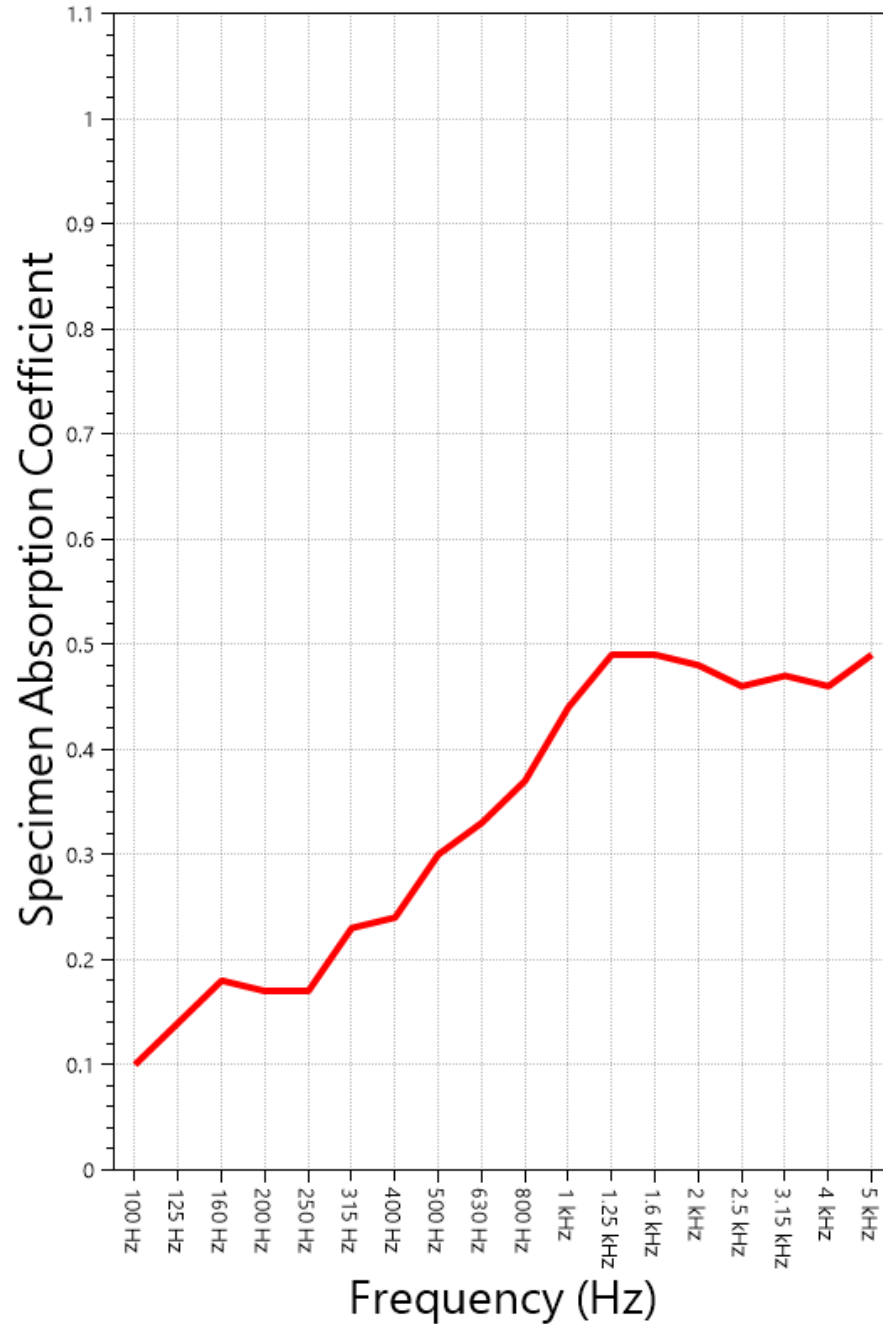
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### SOUND ABSORPTION REPORT

Reindeer Moss



**SAA = 0.35**

**NRC = 0.35**



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### **APPENDIX A: Extended Frequency Range Data**

Specimen: Reindeer 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	3.48	0.05
40	6.07	0.08
50	-7.72	-0.11
63	2.28	0.03
80	7.21	0.10
100	7.48	0.10
125	10.24	0.14
160	13.19	0.18
200	12.33	0.17
250	12.13	0.17
315	16.86	0.23
400	17.42	0.24
500	21.92	0.30
630	24.35	0.33
800	27.22	0.37
1000	32.36	0.44
1250	35.89	0.49
1600	35.55	0.49
2000	35.23	0.48
2500	33.62	0.46
3150	33.93	0.47
4000	33.22	0.46
5000	35.34	0.49
6300	36.62	0.50
8000	41.59	0.57
10000	36.52	0.50
12500	33.74	0.46



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### **APPENDIX B: Instruments of Traceability**

Specimen: Reindeer Moss (See Full Report)

<b><u>Description</u></b>	<b><u>Model</u></b>	<b><u>Serial Number</u></b>	<b><u>Date of Certification</u></b>	<b><u>Calibration Due</u></b>
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: Reindeer Moss (See Full Report)

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

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END