

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

An ALION Technical Center

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

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WALLACE CLEMENT SABINE

## Test Report

SPONSOR: **Sound Seal**  
Agawam, MA

**Sound Absorption**  
**RAL™-A21-416**

CONDUCTED: 2021-07-20

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ON: Timberstix panels (Type A mounting)

### 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." 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 Timberstix panels (Type A mounting). 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: Timberstix  
Thickness: 22 mm (0.866 in.)

### SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

#### Test Specimen

Materials: Medium density fiberboard slats with wood veneer facing  
Spaced slats fastened over semirigid felt paneling  
Dimensions: 5 panels @ 603 mm (23.75 in.) by 2442 mm (96.125 in.)  
Slats, 15 per panel @ 25 mm (0.984 in.) wide, spaced 40 mm (1.575 in.) on centers  
Thickness: Slats @ 12.75 mm (0.502 in.)  
Felt @ 9.37 mm (0.369 in.)  
Overall Weight: 56.93 kg (125.5 lbs)  
Installation: Slats exposed to sound field  
5 mm (0.197 in.) wide overlap at joints, slat spacing preserved panel to panel

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### Overall Specimen Properties

Size: 2.99 m (117.75 in) wide by 2.44 m (96.125 in) long  
Thickness: 0.02 m (0.871 in)  
Weight: 56.93 kg (125.5 lbs)  
Mass per Unit Area: 7.8 kg/m<sup>2</sup> (1.6 lbs/ft<sup>2</sup>)  
Calculation Area: 7.302 m<sup>2</sup> (78.6 ft<sup>2</sup>)

### Test Environment

Room Volume: 291.98 m<sup>3</sup>  
Temperature: 21.9 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)  
Relative Humidity: 64.35 % ± 0.7 % (Requirement: ≥ 40 % and ≤ 5 % change)  
Barometric Pressure: 99.1 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 panel



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Figure 3 – Individual specimen panel, face mated to horizontal test surface

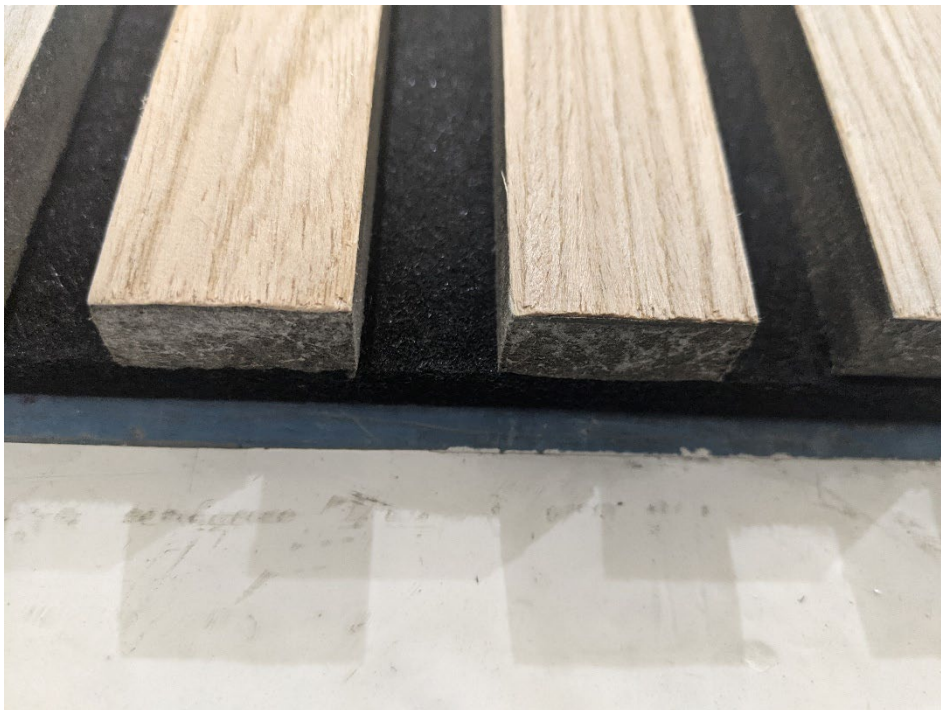


Figure 4 – Detail of specimen materials

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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	0.31	3.38	0.04
** 125	0.58	6.27	0.08
160	0.20	2.11	0.03
200	0.46	4.92	0.06
** 250	0.57	6.13	0.08
315	0.94	10.13	0.13
400	1.39	14.93	0.19
** 500	2.10	22.61	0.29
630	2.84	30.59	0.39
800	3.89	41.88	0.53
** 1000	5.11	54.96	0.70
1250	6.33	68.15	0.87
1600	7.40	79.69	1.01
** 2000	7.84	84.35	1.07
2500	7.51	80.85	1.03
3150	6.58	70.87	0.90
** 4000	6.08	65.48	0.83
5000	5.53	59.57	0.76

**SAA = 0.53**  
**NRC = 0.55**

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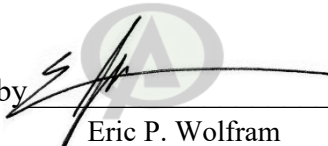
### TEST RESULTS (continued)

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   
Malcolm Kelly  
Acoustical Test Engineer

Approved by   
Eric P. Wolfram  
Laboratory Manager

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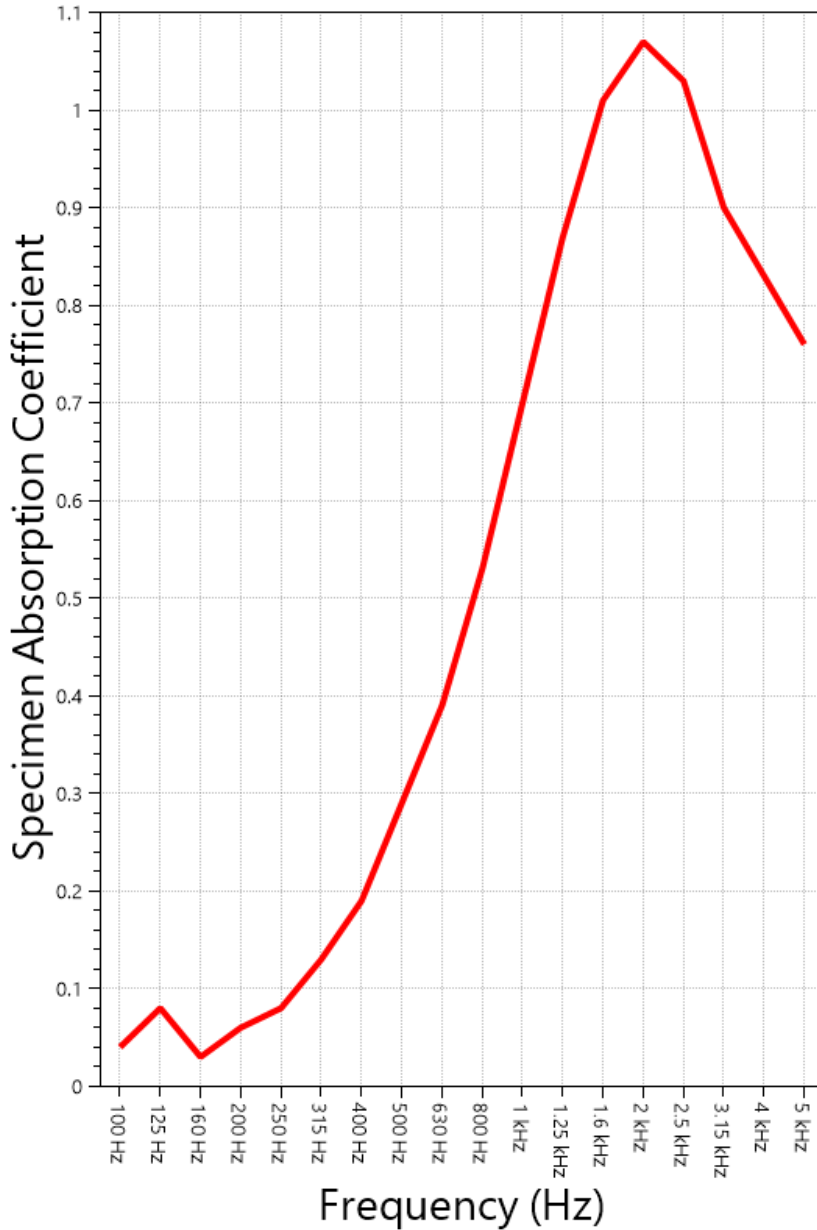
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**SOUND ABSORPTION REPORT**  
Timberstix panels (Type A mounting)



**SAA = 0.53**  
**NRC = 0.55**

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

Specimen: Timberstix panels (Type A mounting) (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 (Sabins)	Absorption Coefficient
31.5	0.56	0.01
40	0.50	0.01
50	2.83	0.04
63	-1.74	-0.02
80	1.07	0.01
100	3.38	0.04
125	6.27	0.08
160	2.11	0.03
200	4.92	0.06
250	6.13	0.08
315	10.13	0.13
400	14.93	0.19
500	22.61	0.29
630	30.59	0.39
800	41.88	0.53
1000	54.96	0.70
1250	68.15	0.87
1600	79.69	1.01
2000	84.35	1.07
2500	80.85	1.03
3150	70.87	0.90
4000	65.48	0.83
5000	59.57	0.76
6300	52.53	0.67
8000	46.46	0.59
10000	41.12	0.52
12500	36.31	0.46



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

Specimen: Timberstix panels (Type A mounting) (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	2021-07-01	2022-07-01
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: Timberstix panels (Type A mounting) (See Full Report)

<b><u>Date</u></b>	<b><u>Revision</u></b>
2021-07-23	Original report issued
2022-03-03	All Pages: The original manufacturer/requester identification and specimen designation was changed to facilitate a private label sales agreement. The original requester has provided a letter to RAL on their company letterhead certifying that the product identified has not changed in materials, composition, or manufacturing methods since the original test date and the product sold under the private label agreement is exactly identical to the original specimen described in the test report and sourced from the same manufacturing process. -EPW

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END