

1512 S BATAVIA AVENUE  
GENEVA, IL 60134

An  ALION Technical Center

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630-232-0104

## Test Report

FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

SPONSOR: **Sound Seal**  
Agawam, MA

**Sound Absorption**  
**RAL™-A20-362**

CONDUCTED: 2020-08-31

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ON: Plex Board™ 18mm Panel

### 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 Plex Board™ 18mm Panel. 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: Plex Board™ 18mm Panel  
Material: Polyethylene terephthalate felt  
Thickness: 18 mm (0.709 in.)  
Manufacturer: Sound Seal

### SPECIMEN MEASUREMENTS & TEST CONDITIONS

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

#### Test Specimen

Material: Two (2) layers of semirigid felt paneling, adhered together  
Dimensions: 2 @ 1219.2 mm (48 in.) x 2438.4 mm (96 in.)  
1 @ 304.8 mm (12 in.) x 2438.4 mm (96 in.)  
Thickness: 18.47 mm (0.727 in.)  
Overall Weight: 17.8 kg (39.25 lbs)

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### Overall Specimen Properties

Size: 2.74 m (108.0 in) wide by 2.44 m (96.0 in) long  
Thickness: 0.02 m (0.727 in)  
Weight: 17.8 kg (39.25 lbs)  
Mass per Unit Area: 2.66 kg/m<sup>2</sup> (0.55 lbs/ft<sup>2</sup>)  
Calculation Area: 6.689 m<sup>2</sup> (72. ft<sup>2</sup>)

### Test Environment

Room Volume: 291.98 m<sup>3</sup>  
Temperature: 22.9 °C ± 0.0 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)  
Relative Humidity: 57.85 % ± 0.5 % (Requirement: ≥ 40 % and ≤ 5 % change)  
Barometric Pressure: 98.0 kPa (Requirement not defined)

### MOUNTING METHOD

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

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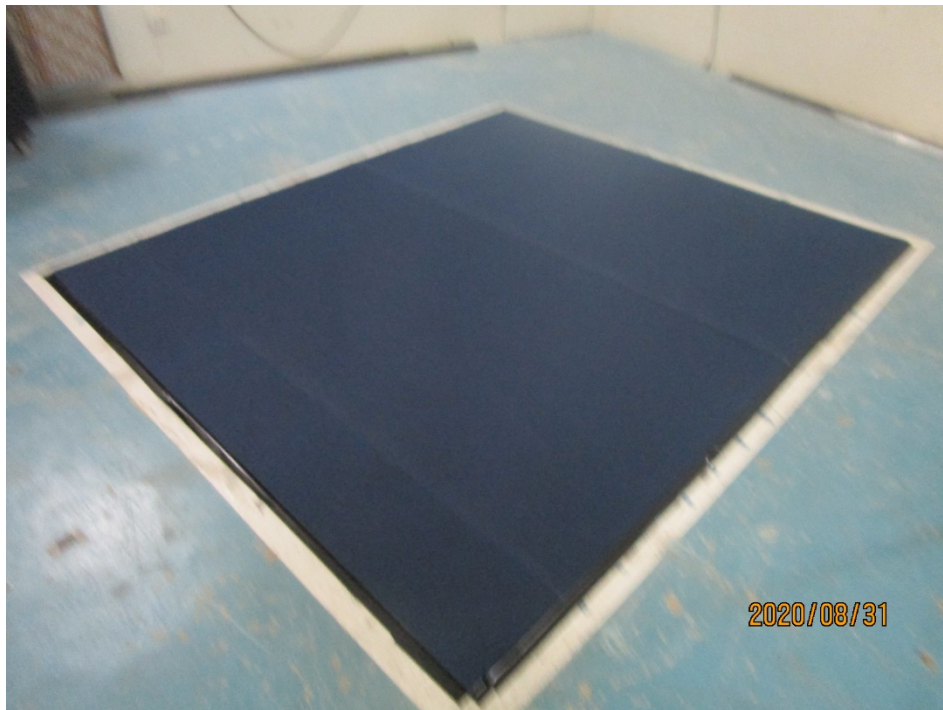


Figure 1 – Specimen mounted in test chamber



Figure 2 – Detail of specimen materials, prior to installation of perimeter seal

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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	0.55	5.92	0.08
** 125	0.35	3.79	0.05
160	0.32	3.46	0.05
200	0.79	8.54	0.12
** 250	0.79	8.48	0.12
315	1.31	14.06	0.20
400	1.72	18.56	0.26
** 500	2.59	27.89	0.39
630	3.53	37.99	0.53
800	4.39	47.23	0.66
** 1000	4.95	53.25	0.74
1250	5.44	58.51	0.81
1600	5.86	63.05	0.88
** 2000	6.38	68.68	0.95
2500	6.68	71.87	1.00
3150	6.82	73.44	1.02
** 4000	6.93	74.57	1.04
5000	6.98	75.17	1.04

**SAA = 0.56**  
**NRC = 0.55**

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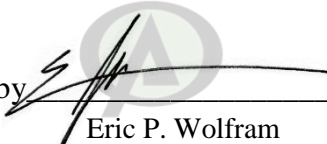
### TEST RESULTS (continued)

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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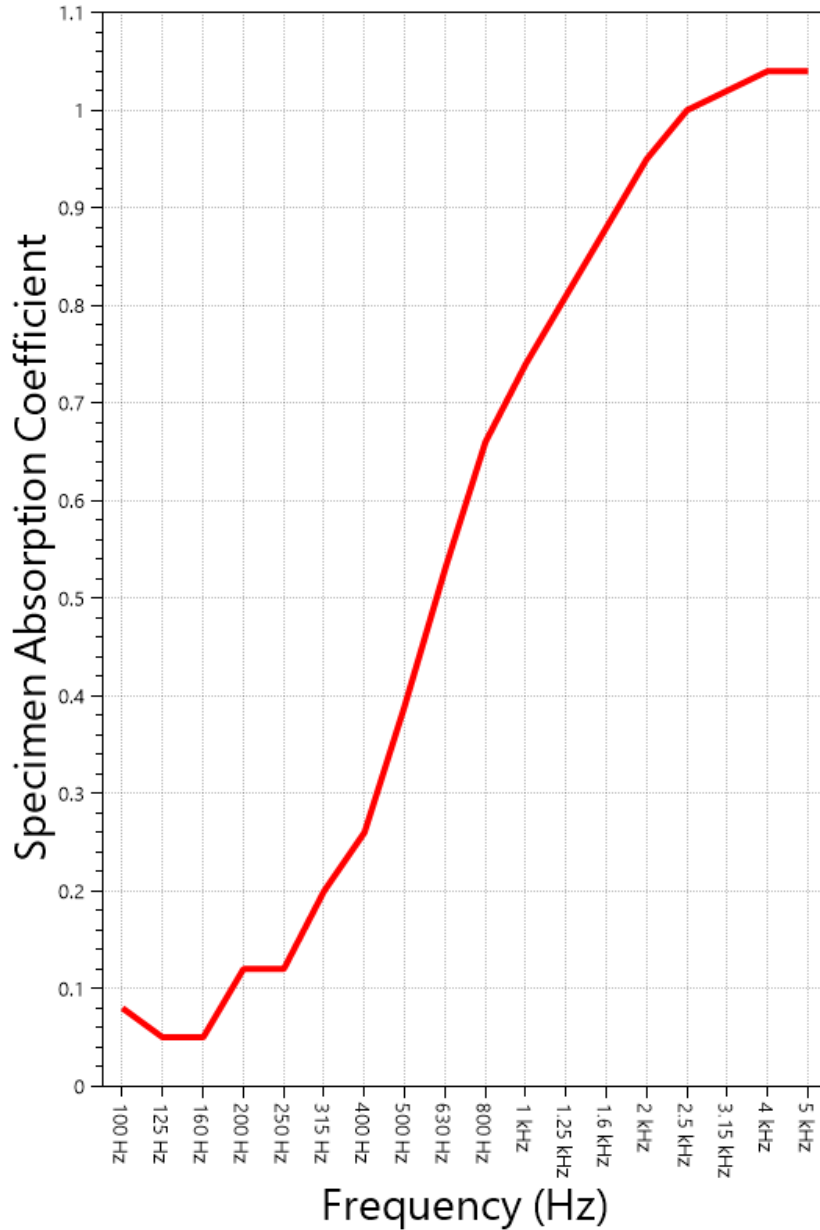
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SOUND ABSORPTION REPORT

Plex Board™ 18mm Panel



SAA = 0.56

NRC = 0.55

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

Specimen: Plex Board™ 18mm Panel (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	-0.71	-0.01
40	0.69	0.01
50	-4.53	-0.06
63	1.83	0.03
80	11.48	0.16
100	5.92	0.08
125	3.79	0.05
160	3.46	0.05
200	8.54	0.12
250	8.48	0.12
315	14.06	0.20
400	18.56	0.26
500	27.89	0.39
630	37.99	0.53
800	47.23	0.66
1000	53.25	0.74
1250	58.51	0.81
1600	63.05	0.88
2000	68.68	0.95
2500	71.87	1.00
3150	73.44	1.02
4000	74.57	1.04
5000	75.17	1.04
6300	75.41	1.05
8000	77.59	1.08
10000	78.52	1.09
12500	85.56	1.19

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

Specimen: Plex Board™ 18mm Panel (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	2020-06-26	2021-06-26
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2019-09-27	2020-09-27
Bruel & Kjaer Sound Level Calibrator	Type 4230	861609	2019-11-19	2020-11-19
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP-PRHTemp2000	P97844	2020-02-18	2021-02-18

### **APPENDIX C: Revisions to Original Test Report**

Specimen: Plex Board™ 18mm Panel (See Full Report)

<b><u>Date</u></b>	<b><u>Revision</u></b>
2020-09-03	Original report issued
2020-09-24	Page 1-8: The original manufacturer/requester identification and specimen designation were 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. –MP, approved by EPW.

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END