

# RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE  
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## TEST REPORT

FOR: **Auralex Acoustics, Inc.**  
Indianapolis, IN.

**Sound Absorption**  
**RAL™-A14-255**

CONDUCTED: 2014-11-18

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ON: Deep 6 Bass Trap Panel

### TEST METHOD

The test method conformed explicitly with the requirements of the ASTM Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method: ASTM C423-09a and E795-05. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring procedure and room qualifications is available separately.

### DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Deep 6 Bass Trap Panel. A visual inspection verified the manufacturer's description. The specimen consisted of eight panels measured as 1.23 m (48.25 in.) long by 609.60 m (24.0 in.) wide. From top to bottom, the specimen was composed of the following: 50.80 mm (2.0 in.) thick, rigid fiberglass with beveled and chemically hardened edges, all wrapped with 0.76 mm (0.03 in.) fabric; 52.83 mm (2.08 in.) thick, semi-rigid mineral wool insulation; 52.32 mm (2.06 in.) thick, semi-rigid mineral wool insulation with foil backing. The specimen was encased by a metal frame measured as 144.27 mm (5.68 in.) deep and 0.76 mm (0.03 in.) thick.

Laid together as a single rectangular patch, the overall dimensions of the specimen as measured were 2.45 m (96.50 in.) wide by 2.44 m (96.00 in.) long and 152.64 mm (6.01 in.) thick. The area used in the calculations was 5.97 m<sup>2</sup> (64.30 ft<sup>2</sup>). The weight of the entire specimen as measured was 116.58 kg (257.00 lbs), an average of 19.48 kg/m<sup>2</sup> (3.99 lbs/ft<sup>2</sup>).

The specimen was tested in the laboratory's 292.0 m<sup>3</sup> (10,311.0 ft<sup>3</sup>) test chamber. The room temperature at the time of the test was 20.2±0.0°C (68.4±0.0°F) and 64.1±0.1% relative humidity. The atmospheric pressure was 98.9 kPa.



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Figure 1 - Specimen mounted in the test chamber.



Figure 2 - Detail of the test specimen.



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### MOUNTING A

The test specimen was laid directly against the test surface. The perimeter edges were exposed, as would be typical of an actual installation of this specimen.

### TEST RESULTS

| 1/3 Octave Center<br>Frequency<br>(Hz) | Absorption<br>Coefficient<br>(Sabins / ft <sup>2</sup> ) | Total Absorption<br>In Sabins |
|--|--|-------------------------------|
| 100                                    | 0.90   | 58.04                         |
| ** 125                                 | 0.96   | 61.82                         |
| 160                                    | 0.91   | 58.29                         |
| 200                                    | 0.99   | 63.50                         |
| ** 250                                 | 0.92   | 58.91                         |
| 315                                    | 0.98   | 63.31                         |
| 400                                    | 1.02   | 65.52                         |
| ** 500                                 | 1.00   | 64.27                         |
| 630                                    | 1.03   | 66.02                         |
| 800                                    | 1.03   | 66.37                         |
| ** 1000                                | 1.04   | 67.02                         |
| 1250                                   | 1.02   | 65.27                         |
| 1600                                   | 1.06   | 68.12                         |
| ** 2000                                | 1.03   | 66.45                         |
| 2500                                   | 1.01   | 64.76                         |
| 3150                                   | 0.98   | 63.13                         |
| ** 4000                                | 0.99   | 63.54                         |
| 5000                                   | 1.00   | 64.43                         |

**SAA = 1.01**

**NRC = 1.00**



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### TEST RESULTS (Continued)

The sound absorption average (SAA) is defined as a single number rating, the average, rounded to the nearest 0.01, of the sound absorption coefficient of a material for the twelve one-third octave bands from 200 through 2500 Hz, inclusive.

The noise reduction coefficient (NRC) is defined from previous versions of this same test method as the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by   
Marc Sciaky  
Experimentalist

Report by   
Chris Nottoli  
Acoustician

Approved by   
Eric P. Wolfram  
Laboratory Manager



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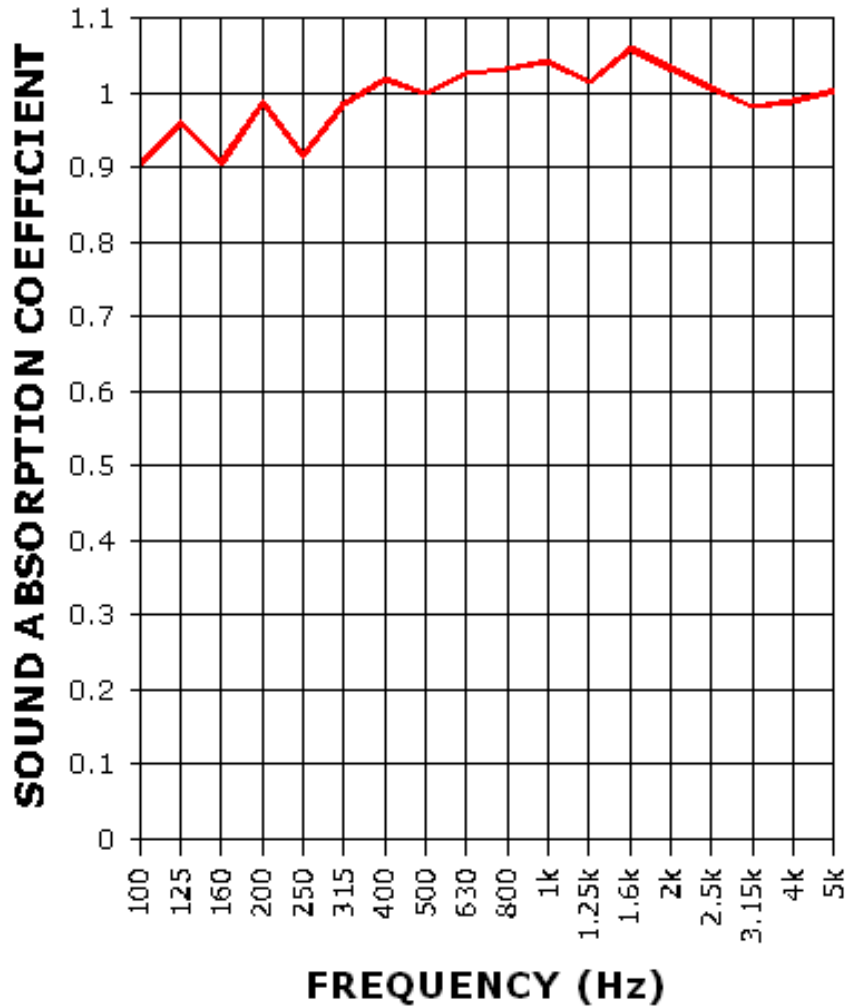
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### SOUND ABSORPTION REPORT Deep 6 Bass Trap Panel



**SAA = 1.01**  
**NRC = 1.00**



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### Appendix to ASTM C423 Sound Absorption Test **Extended Frequency Range Data**

Product Description: Deep 6 Bass Trap Panel (See Full Report)

Riverbank Acoustical Laboratories is accredited to perform sound absorption coefficient measurements for the frequency range of 100Hz to 5,000Hz. However, we calculate sound absorption values at additional test frequencies as a service to our clients.

Although these measurements were made in accordance with the procedures described in ASTM C423-09a, they do not qualify as part of the standard. Since the results are representative of the test environment only, they are unofficial and intended for research and development guidelines rather than for commercial purposes. The sound absorption values at additional frequencies were as follows:

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| <b>1/3 Octave Center Frequency<br/>(Hz)</b> | <b>Absorption<br/>Coefficient<br/>(Sabins / ft<sup>2</sup>)</b> | <b>Total Absorption<br/>(Sabins)</b> |
|---|---|--------------------------------------|
| 40  | 0.27  | 17.50                                |
| 50  | 0.21  | 13.74                                |
| 63  | 0.03  | 2.20                                 |
| 80  | 0.30  | 19.39                                |
| 6300  | 0.94  | 60.57                                |
| 8000  | 0.87  | 56.00                                |
| 10000                                       | 0.87  | 56.18                                |

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END



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