

# RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE  
EENEVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## REPORT

FOR: Auralex Acoustics

Sound Absorption Test  
RAL™-A02-71

ON: DST 112 Tiles

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CONDUCTED: 8 April 2002

### 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 C423-90a and E795-00. 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. A description of the measuring technique is available separately.

### DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Auralex DST 112 Tiles. The overall dimensions of the specimen as measured were 2.44 m (96 in.) wide by 2.44 m (96 in.) long and 51 mm (2 in.) thick. The specimen consisted of sixty four (64) pieces. Each piece was 305 mm (12 in.) wide by 305 mm (12 in.) long and 51 mm (2 in.) thick. The specimen was tested in the laboratory's 292 m<sup>3</sup> (10,311 ft<sup>3</sup>) test chamber.

A description of the specimen was as follows: DST 112 Tiles, 2" thick sawtooth-cut foam. Each unit is 12" x 12" x 2". Open cell foam, 0.5" thick at the valley, 2" thick at the peak of a sawtooth.

The weight of the entire specimen as measured was 4.5 kg (10 lbs), an average of 1 kg/m<sup>2</sup> (0.2 lbs/ft<sup>2</sup>). The area used in the calculations was 5.9 m<sup>2</sup> (64 ft<sup>2</sup>). The room temperature at the time of the test was 20°C (68°F) and 62±2% relative humidity.

### MOUNTING A

The test specimen was laid directly against the test surface.

THE RESULTS REPORTED ABOVE APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR MEASUREMENT. NO RESPONSIBILITY IS ASSUMED FOR PERFORMANCE OF ANY OTHER SPECIMEN.



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ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.  
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### TEST RESULTS

1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins	% Of Uncertainty With 95% Confidence Limit With Specimen
100	0.14	9.28	2.87
** 125	0.12	7.93	2.78
160	0.14	8.82	2.29
200	0.22	14.33	2.00
** 250	0.27	17.47	1.84
315	0.36	22.87	1.26
400	0.43	27.36	1.16
** 500	0.54	34.33	1.17
630	0.62	39.49	1.22
800	0.68	43.70	0.97
** 1000	0.71	45.61	0.99
1250	0.76	48.53	0.76
1600	0.80	51.18	0.73
** 2000	0.83	53.02	0.81
2500	0.85	54.11	0.67
3150	0.89	57.23	0.69
** 4000	0.99	63.49	0.64
5000	1.09	70.01	0.63

NRC = 0.60

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### TEST RESULTS (Continued)

The percentage of uncertainty for the required 95% confidence limits indicated above must fall within the prescribed limits designated in par. 13.2 of ASTM C423-90a. It states that for the absorption of the reverberation room containing the specimen the testing laboratory shall obtain data with less than 4% uncertainty at 125 (hertz) and 2% uncertainty at 250, 500, 1000, 2000, and 4000 (hertz). The method of calculation is described in ASTM STP 15D and outlined in section 13 of the standard.

The noise reduction coefficient (NRC) is the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by   
Dean Victor  
Senior Experimentalist

Approved by   
David L. Moyer  
Laboratory Manager

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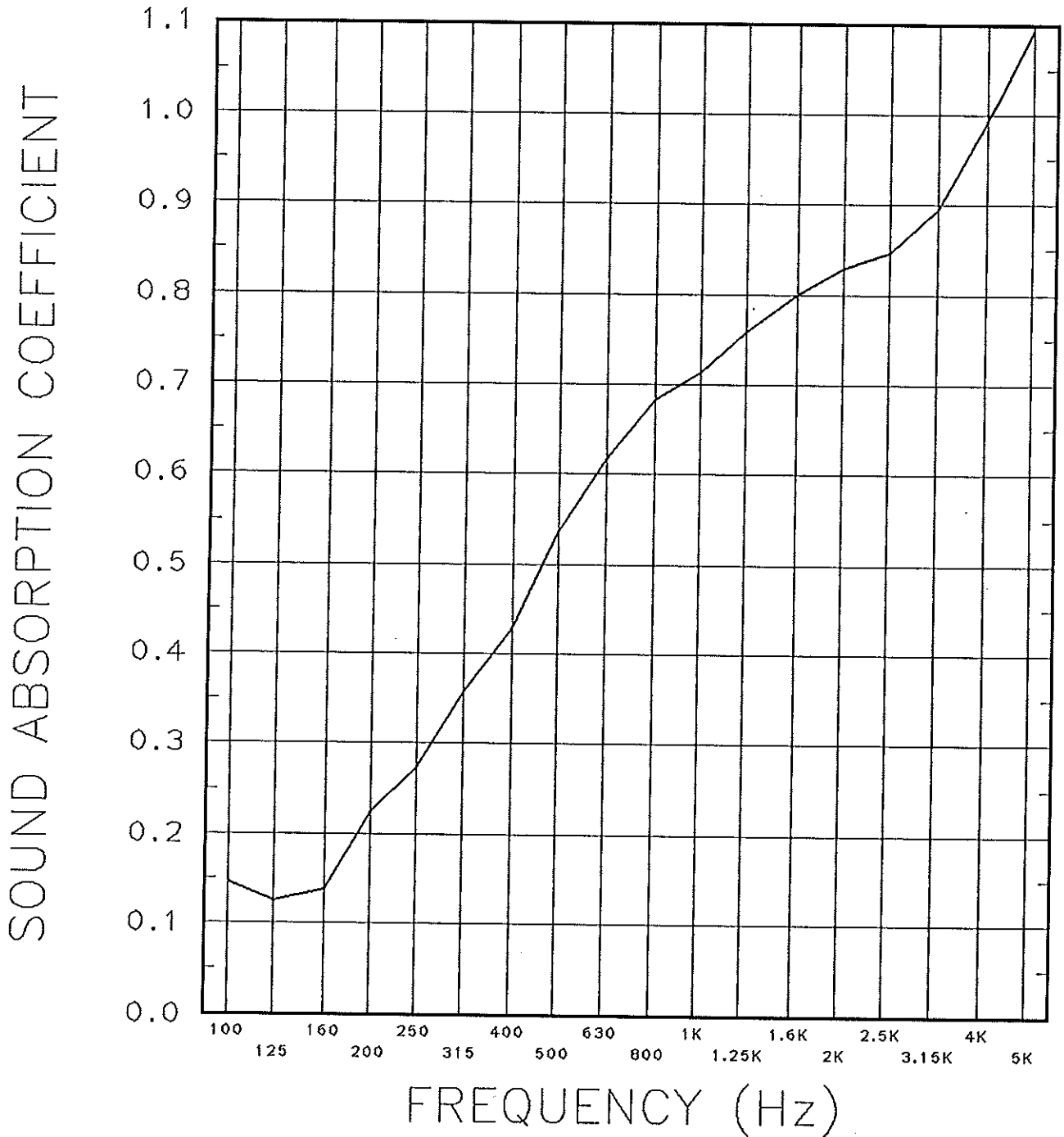


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