

# RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE  
EVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## REPORT

FOR: Auralex™ Acoustics

Sound Absorption Test  
RAL™-A98-82

ON: 2" Auralex Metro

Page 1 of 4

CONDUCTED: 28 May 1998

### 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 E795-92. 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. The microphone used was a Bruel & Kjaer serial number 1330828.

### DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as 2" Auralex Metro. The overall dimensions of the specimen as measured were 2.44 m (96 in.) wide by 2.44 m (96 in.) high and 51 mm (2 in.) thick. The specimen consisted of eight units that measured nominally 1.2 m (48 in.) wide by 610 mm (24 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. The manufacturer's description of the specimen was as follows: The specimen was a 1.7# density Auralex Studiofoam™ cut into nested pairs yielding individual pieces containing flat-topped protrusions of varying heights and widths. A visual inspection verified the manufacturer's description of the specimen. The weight of the specimen as measured was 4.9 kg (10.75 lbs) an average of 0.8 kg/m<sup>2</sup> (0.17 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 21°C (70°F) and 60% 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.



ACCREDITED BY DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY  
ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.  
THE LABORATORY'S ACCREDITATION OR ANY OF ITS TEST REPORTS IN NO WAY CONSTITUTES  
OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NIST.

# RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE  
EVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## REPORT

Auralex™ Acoustics

RAL™-A98-82

28 May 1998

Page 2 of 4

### TEST RESULTS

1/3 Octave Center Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins	% Of Uncertainty With 95% Confidence Limit With Specimen
100	0.08	5.98	2.96
** 125	0.13	9.21	2.80
160	0.09	6.50	2.11
200	0.18	13.26	1.85
** 250	0.23	16.34	1.37
315	0.35	25.46	1.10
400	0.47	33.75	1.13
** 500	0.68	48.94	1.06
630	0.82	59.16	0.79
800	0.90	64.50	0.84
** 1000	0.93	66.86	0.75
1250	0.96	68.80	0.68
1600	0.92	66.43	0.62
** 2000	0.91	65.45	0.59
2500	0.89	63.79	0.54
3150	0.87	62.91	0.50
** 4000	0.89	64.33	0.53
5000	0.92	65.91	0.51

NRC = 0.70

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



ACCREDITED BY DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY  
ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.  
THE LABORATORY'S ACCREDITATION OR ANY OF ITS TEST REPORTS IN NO WAY CONSTITUTES  
OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NIST.

# RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE  
DUNEEVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## REPORT

Auralex™ Acoustics

RAL™-A98-82

28 May 1998

Page 3 of 4

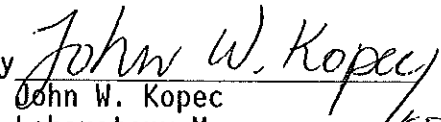
### TEST RESULTS (con't)

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.

Tested &  
Reviewed by

  
Dean Victor  
Senior Experimentalist

Submitted by

  
John W. Kopec  
Laboratory Manager *KTD*

Revision 29 June 1998 (page numbers only)

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



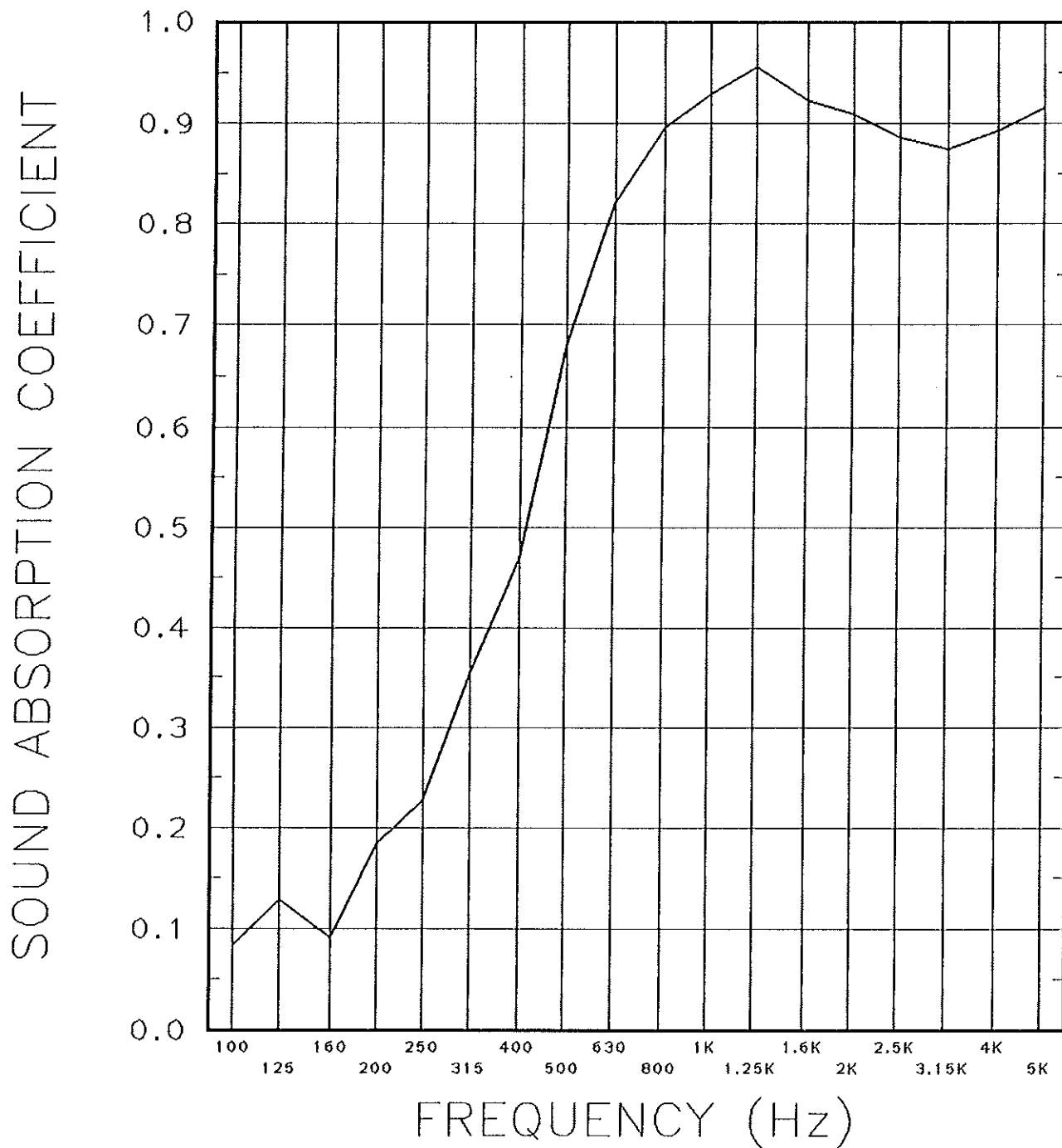
ACCREDITED BY DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY  
ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.  
THE LABORATORY'S ACCREDITATION OR ANY OF ITS TEST REPORTS IN NO WAY CONSTITUTES  
OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NIST.

REPORT

SOUND ABSORPTION REPORT

RAL - A98-82

PAGE 4 OF 4



NRC = 0.70

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



ACCREDITED BY DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY  
ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.  
THE LABORATORY'S ACCREDITATION OR ANY OF ITS TEST REPORTS IN NO WAY CONSTITUTES  
OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NIST.