

RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE
GENEVA ILLINOIS 60134

OF
IIT RESEARCH INSTITUTE

708/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

REPORT

Auralex™
4" WaveCave Studiofoam

FOR: Auralex Acoustics

Sound Absorption Test
RAL™-A97-184

ON: 4" WaveCave Studiofoam

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CONDUCTED: 17 October 1997

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 4" WaveCave™ Studiofoam™. The overall dimensions of the specimen as measured were 2.44 m (96 in.) wide by 2.44 m (96 in.) high and 102 mm (4 in.) thick. The specimen consisted of eight units that measured nominally 1.2 m (48 in.) wide by 0.6 m (24 in.) long and 102 mm (4 in.) thick. The specimen was tested in the laboratory's 292 m³ (10,311 ft³) test chamber. The manufacturer's description of the specimen was as follows: The specimen was a WaveCave™ Studiofoam™ manufactured from proprietary Auralex™ open-celled polyurethane foam of a 1.7# nominal density and class B flame retardancy. Each unit consisted of a repeating pattern of sequences of flat surfaces and anechoic wedges. Each sequence consisted of 5 anechoic wedges bordered by flat areas of 38-76 mm (1.5-3.0 in.). Behind each anechoic wedge was a similarly-shaped air chamber. The overall height of the specimen was 102 mm (4 in.), with the anechoic wedges measuring 51 mm (2 in.) from valley to peak and the flat surfaces measuring 51 mm (2 in.) in thickness. The specimen measured 48 mm (1.875 in.) from anechoic wedge peak to neighboring peak. A visual inspection verified the manufacturer's description of the specimen. The weight of the specimen as measured was 8.2 kg (18 lbs) an average of 1.4 kg/m² (0.28 lbs/ft²). The area used in the calculations was 5.9 m² (64 ft²). The room temperature at the time of the test was 21°C (69°F) and 61% 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.

NVLAP

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ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.
THE LABORATORY'S ACCREDITATION OR ANY OF ITS TEST REPORTS IN NO WAY CONSTITUTES
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TEST RESULTS

1/3 Octave Center Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins	% Of Uncertainty With 95% Confidence Limit With Specimen
100	0.29	18.32	3.24
** 125	0.33	20.97	2.68
160	0.35	22.53	2.33
200	0.57	36.51	2.02
** 250	0.82	52.62	1.66
315	1.07	68.27	1.59
400	1.11	71.20	1.52
** 500	1.18	75.35	1.03
630	1.13	72.63	1.06
800	1.14	72.88	0.84
** 1000	1.05	66.93	0.81
1250	1.01	64.72	0.74
1600	0.99	63.24	0.64
** 2000	0.98	62.74	0.57
2500	1.01	64.54	0.55
3150	1.02	65.39	0.57
** 4000	1.05	67.38	0.52
5000	1.07	68.30	0.51

NRC = 1.00

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