RIVERBANK ACOUSTICAL LABORATORIES

OF
IIT RESERCH INSTITUTE

1512 BATAVIA AVENUE
GENEVA ILLINOIS 60134

708/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

REPORT

FOR: USAFoam

ON: 4" STUDIOFOAM Acoustic Foam

Auralex™
4" Studiofoam Wedges

Sound Absorption Test
RAL™-A93-136

CONDUCTED: 25 May 1993

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 1440522.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as 4" STUDIOFOAM Acoustic Foam. The overall dimensions of the specimen as measured were 1.83 m (72.0 in.) wide by 2.44 m (96.0 in.) long and 102 mm (4.0 in.) thick. The specimen consisted of six pieces. Each piece was 0.61 m (24.0 in.) wide by 1.22 m (48.0 in.) long. The specimen was tested in the laboratory's 292 m^3 (10,311 ft^3) test chamber. The manufacturer's description of the specimen was as follows: STUDIOFOAM 4" Sound Absorbent Wedges. STUDIOFOAM was formulated of flame-retardant, high density (1.5-1.7# as poured; commonly referred to as 2.0# as sold) open cell polyurethane foam rubber which was cut in an anechoic wedge design. The overall size of each piece of foam was 24" x 48" x 4". The base of each piece measured 1", and each sheet consisted of 20 peaks and 20 valleys. A visual inspection verified the manufacturer's description of the specimen. The weight of the specimen as measured was 7.5 kg (16.5 lbs) an average of 1.7 kg/m^2 (0.3 lbs/ft^2). The area used in the calculations was 4.5 m^2 (48 ft^2). The room temperature at the time of the test was 21°C (70°F) and 61% relative humidity.

MOUNTING A

The test specimen was laid directly against the test surface.

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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	0.24	11.34	2.67
★★ 125	0.31	14.74	2.70
160	0.36	17.46	1.95
200	0.62	29.84	1.82
★★ 250	0.85	40.82	1.70
315	1.09	52.47	1.20
400	1.21	57.91	1.46
★★ 500	1.25	60.06	0.90
630	1.17	56.19	0.85
800	1.16	55.80	0.75
★★ 1000	1.14	54.53	0.81
1250	1.08	51.89	0.59
1600	1.06	50.96	0.57
★★ 2000	1.06	50.66	0.57
2500	1.11	53.11	0.46
3150	1.09	52.14	0.47
★★ 4000	1.09	52.44	0.43
5000	1.10	52.69	0.52

NRC = 1.10