1512 BATAVIA AVENUE GENEVA, ILLINOIS 60134

OF IIT RESEARCH INSTITUTE

REPORT

312/232-0104 FOUNDED 1918 BY WALLACE CLEMENT SABINE

FOR: Alpha Audio

Sound Absorption Test RAL -A88-80

ON: Egg Crates

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CONDUCTED: 28 March 1988

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 C423-84a and £795-83. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Bureau of Standards 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 1330658.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the client as egg crates. The overall dimensions of the specimen as measured were 2.34 m (92 in.) wide by 2.63 m (103.5 in.) long and nominally 5.1 cm (2 in.) high. The specimen was tested in the laboratory's 292 m³ (10,311 ft³) test chamber. The weight of the specimen as measured was 4.5 kg (10.0 lbs) an average of 0.73 kg/m² (0.15 lbs/ft²). The area used in the calculations was 6.14 m² (66.1 ft²). The room temperature at the time of the test was 21°C (69°F) and 61% relative humidity.

PRECONDITIONING

The specimen was held at least 24 hours under the test conditions of 21°C (70°F) and 60% relative humidity.

MOUNTING A

The test specimen was laid directly against the test surface.

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TEST_RESULTS	

TEST RESULTS

) '	
1/3 Octave Co Center Freque (Hz)		Total Absorption In Sabins	% Of Uncertainty With 95% Confidence Limit	
100 ** 125	0.00 0.01	0.02	0.95	
** 125 160	0.00	0.00	0.97	
200 ** 250	0.07	4.62 4.90	0.96 1.10	
315	0.07	4.44	1.08	
** 500	0.13 0.44	8.60 29.15	1.08 0.78	
630	0.73	48.30	0.71	
** 1000		48.64 40.59	0.69 0.70	
1250		34.51	0.68	
** 2000	0.48	30.27 31.88	0.74 0.71	
2500	0.58	38.17	0.72	
** 4000	0.59 0.69	38.73 45.38	0.65	
5000	0.82	54.14	0.66	

NRC = .40

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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 C423-84a. 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.

Reviewed by

Diane C. Perrone

Senior Technician

Peter E.

Senior Technician

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