

# RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE  
GENEVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

312/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## REPORT

FOR: Alpha Audio

Sound Absorption Test  
RAL-A88-75

ON: Thick Pile Carpet

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CONDUCTED: 24 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 E795-83. 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 Thick Pile Carpet. The overall dimensions of the specimen as measured were 2.44 m (96 in.) wide by 2.74 m (108 in.) long and nominally 6.4 mm (0.25 in.) thick. The specimen was tested in the laboratory's 292 m<sup>3</sup> (10,311 ft<sup>3</sup>) test chamber. The client's description of the specimen was as follows: The specimen was a Thick Pile Carpet that consisted of nylon with latex primary backing. The face weight was 30 oz., and the color was grey. A visual inspection verified the client's description of the specimen. The weight of the specimen as measured was 14.7 kg (32.5 lbs) an average of 2.2 kg/m<sup>2</sup> (0.45 lbs/ft<sup>2</sup>). The area used in the calculations was 6.69 m<sup>2</sup> (72 ft<sup>2</sup>). The room temperature at the time of the test was 22°C (71°F) and 56% relative humidity.

### PRECONDITIONING

The specimen was held at least 24 hours under the test conditions of 22°C (71°F) and 60% 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
100	0.02	1.57	0.95
** 125	0.00	0.00	1.08
160	0.03	2.37	0.98
200	0.06	4.01	1.16
** 250	0.06	4.62	1.16
315	0.06	4.40	1.11
400	0.05	3.47	1.14
** 500	0.12	8.42	1.07
630	0.15	11.16	0.93
800	0.23	16.82	0.94
** 1000	0.29	20.74	0.88
1250	0.34	24.74	0.78
1600	0.43	30.80	0.76
** 2000	0.55	39.84	0.74
2500	0.62	44.56	0.78
3150	0.66	47.55	0.70
** 4000	0.79	57.07	0.68
5000	0.90	64.98	0.92

NRC = .25

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 (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  
Diane C. Perrone  
Senior Technician

Submitted by Peter E. Straus  
Peter E. Straus  
Senior Technician

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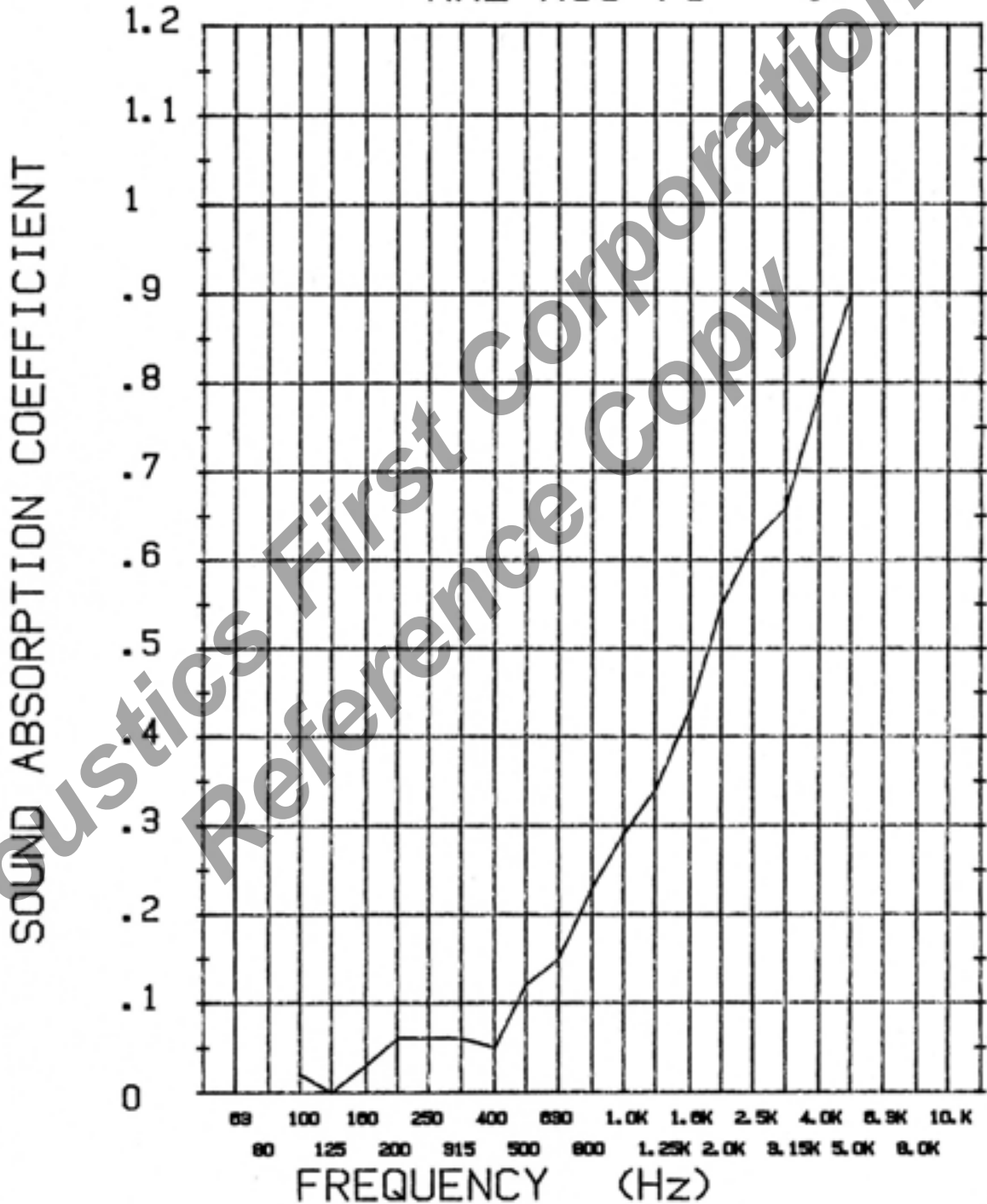
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N R C = . 25

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