

RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE
GENEVA, ILLINOIS 60134

OF
IIT RESEARCH INSTITUTE

708/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

REPORT

FOR: Carboline Company

Sound Absorption Test
RAL™-A90-468

ON: Pyrocrete 239

Page 1 of 4

CONDUCTED: 20 December 1990

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 C423-89 and E795-83. 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 1330658.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Pyrocrete 239. The overall dimensions of the specimen as measured were 2.44 m (96 in.) wide by 2.74 m (108 in.) long and nominally 3.2 cm (1.25 in.) thick. The specimen consisted of twelve units. Each unit was 61.0 cm (24 in.) wide by 91.4 cm (36 in.) long and nominally 3.2 cm (1.25 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 cementitious fireproofing designated as Carboline Pyrocrete 239 at 2.5 cm (1 in.) thick over 6.4 mm (0.25 in.) thick transite. A visual inspection verified the manufacturer's description of the specimen. The weight of the specimen as measured was 135 kg (298 lbs) an average of 20 kg/m² (4.1 lbs/ft²). The weight of the Pyrocrete 239 was calculated at approximately 75 kg (166 lbs). The area used in the calculations was 6.7 m² (72 ft²). Manufacturer's description is maintained on file. The room temperature at the time of the test was 22°C (71°F) and 64% 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.



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ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.
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20 December 1990

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
100	0.16	11.67	0.72
** 125	0.11	7.99	0.76
160	0.24	17.52	0.89
200	0.34	24.23	0.76
** 250	0.42	30.48	0.79
315	0.53	37.85	0.78
400	0.65	46.68	0.68
** 500	0.80	57.38	0.68
630	0.85	61.34	0.62
800	0.87	62.30	0.64
** 1000	0.90	64.75	0.63
1250	0.91	65.76	0.71
1600	0.90	64.91	0.67
** 2000	0.88	63.63	0.65
2500	0.84	60.78	0.66
3150	0.89	64.11	0.58
** 4000	0.87	62.33	0.54
5000	0.87	62.89	0.58

NRC = .75

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20 December 1990

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 C423-89. 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.

Submitted by Diane C. Perrone Reviewed by J. W. Kopec
Diane C. Perrone
Senior Technician
John W. Kopec
Supervisor, Riverbank
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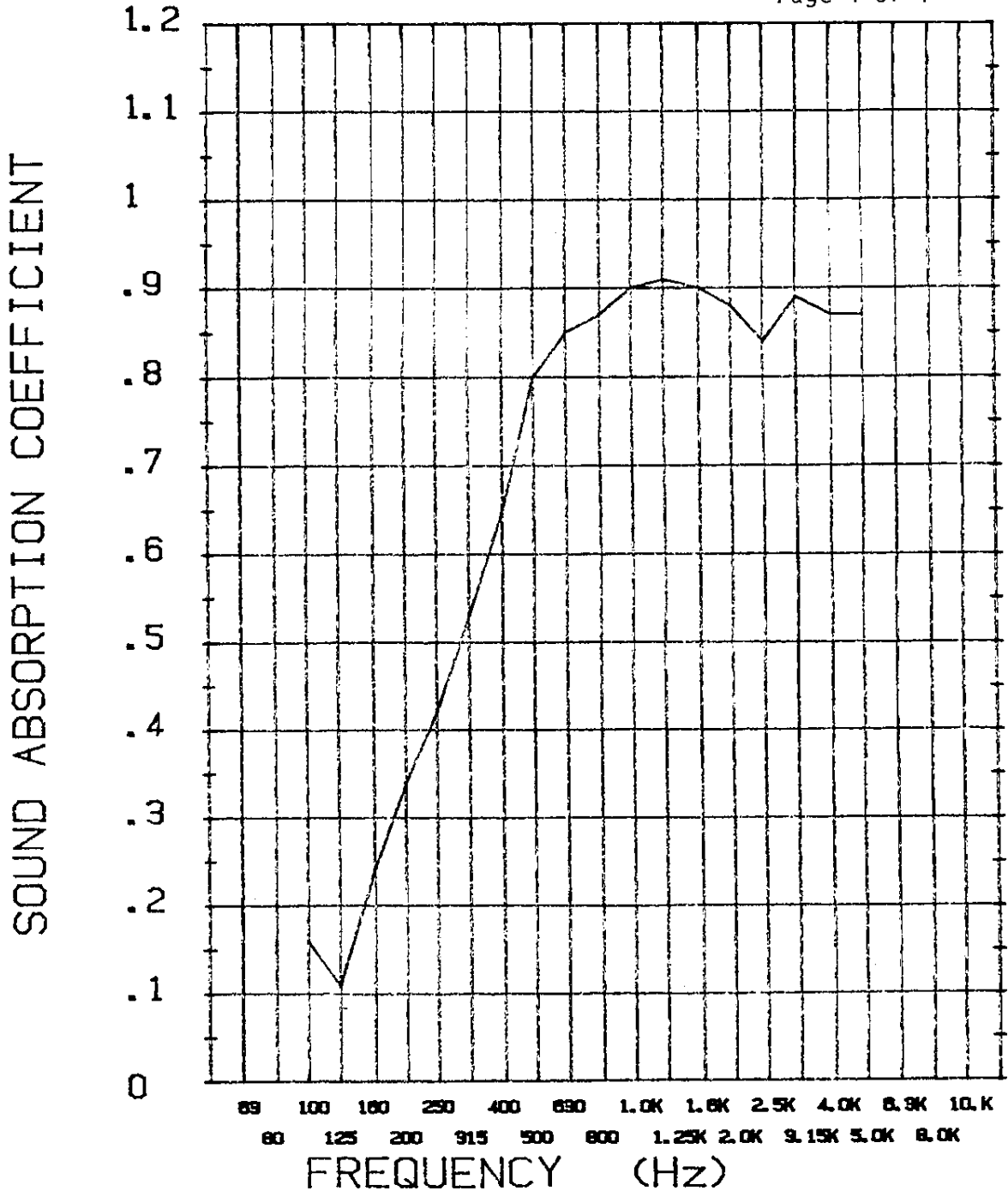
NVLAP

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REPORT

SOUND ABSORPTION REPORT

RAL-A90-468 Page 4 of 4



N R C = . 75

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