

RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

OF
IIT RESEARCH INSTITUTE

630/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

TEST REPORT

FOR: Best Block Company

Sound Absorption Test
RAL™-A00-105

ON: 8 in. Sound Cell with Fiber Inserts

Page 1 of 4

CONDUCTED: 15 September 2000

TEST METHOD

The test method complied 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 E795-93. 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.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as an 8 in. Sound Cell with fiber inserts. The overall dimensions of the specimen as measured were 2.38 m (93.75 in.) wide by 1.94 m (76.25 in.) long and 194 mm (7.625 in.) thick. The specimen was tested in the laboratory's 292 m³ (10,311 ft³) test chamber.

The sample consisted of concrete blocks with one side spread open at an angle of 30° in two places to expose the inside cavities. Each of the two cavities of each Sound Cell had an insert of mineral fiber measuring 184 mm (7.25 in.) wide by nominally 152 mm (6 in.) high and 38 mm (1.5 in.) thick. Each of the two cavities of a Sound Cell block measured nominally 165 mm (6.5 in.) by 152 mm (6 in.) by the height of the block which was 194 mm (7.625 in.). The overall dimensions of each Sound Cell block were 394 mm (15.5 in.) wide by 194 mm (7.625 in.) high and 194 mm (7.625 in.) thick. The blocks were arranged in 10 rows of 6 blocks each so that the cavities of all blocks lined up forming a continuous cavity from one end of the sample to the other.

The weight of the specimen as measured was 982.8 kg (2,166.75 lbs) an average of 213.3 kg/m² (43.7 lbs/ft²). The area used in the calculations was 4.61 m² (49.6 ft²). The room temperature at the time of the test was 22°C (71°F) and 58±1% relative humidity.

MOUNTING A

The test specimen was laid directly against the test surface.

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RAL™-A00-105

15 September 2000

Page 2 of 4

TEST RESULTS

1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins	% Of Uncertainty With 95% Confidence Limit With Specimen
100	0.50	24.95	2.98
**125	0.67	33.46	2.90
160	0.94	46.70	2.30
200	1.16	57.52	1.87
**250	0.89	44.03	1.64
315	0.68	33.67	1.20
400	0.59	29.36	1.02
**500	0.51	25.52	0.90
630	0.55	27.45	0.73
800	0.66	32.81	0.67
**1000	0.75	37.21	0.64
1250	0.78	38.54	0.63
1600	0.79	39.13	0.51
**2000	0.77	38.38	0.43
2500	0.71	35.15	0.46
3150	0.68	33.85	0.42
**4000	0.69	34.35	0.49
5000	0.69	34.10	0.49

NRC = 0.75

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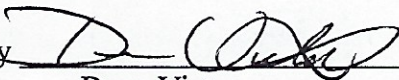
Page 3 of 4

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 C423-90a. 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.

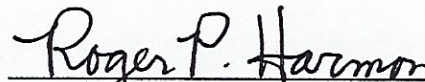
The noise reduction coefficient (NRC) is the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by



Dean Victor
Senior Experimentalist

Reviewed by



Roger P. Harmon
Research Engineer

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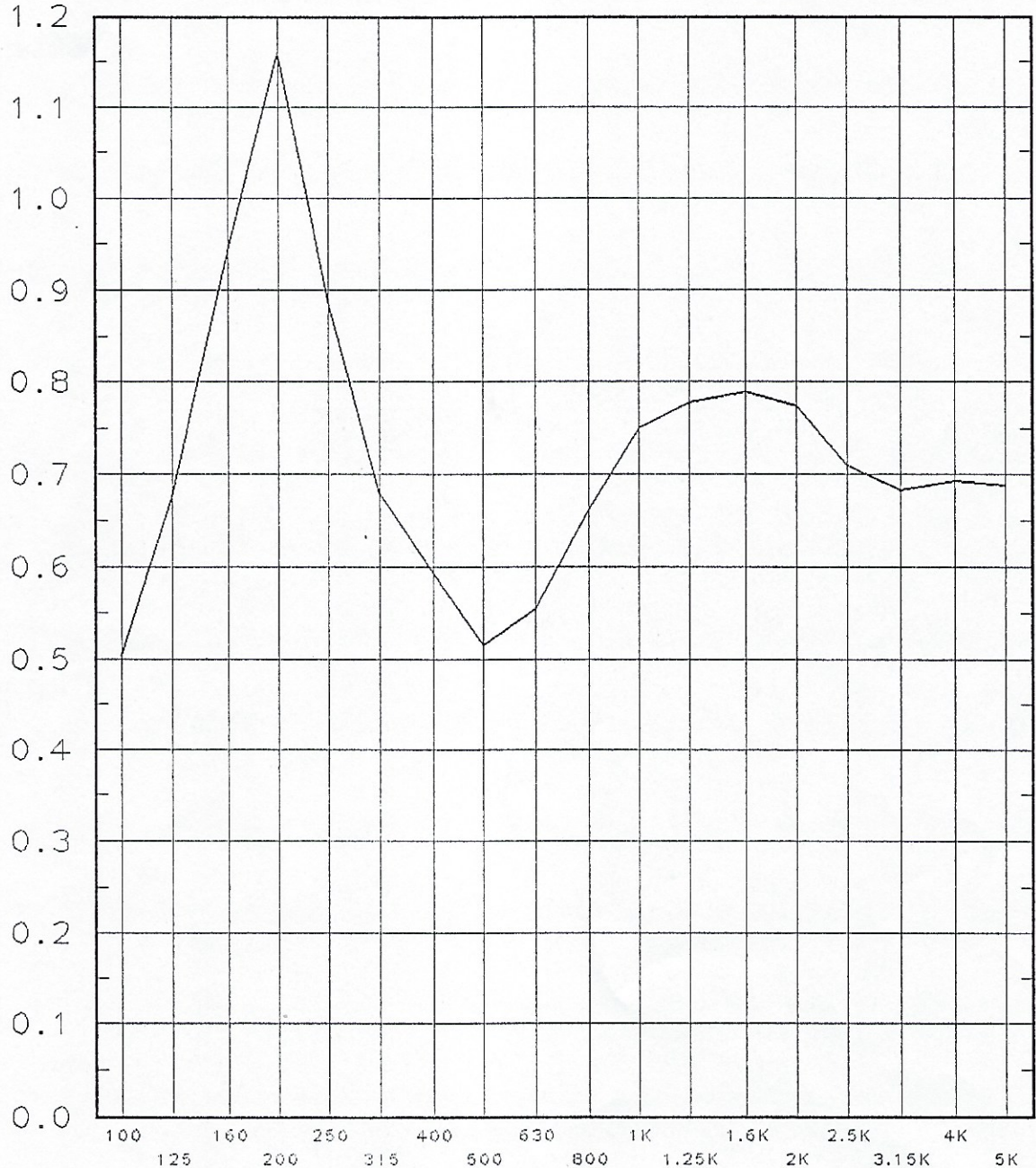
TEST REPORT

SOUND ABSORPTION REPORT

RAL - A00-105

PAGE 4 OF 4

SOUND ABSORPTION COEFFICIENT



FREQUENCY (Hz)

NRC = 0.75

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