

RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

OF
IIT RESEARCH INSTITUTE

630/232-0104

FOUNDED 1918 BY
WALLACE CLEMENT SABINE

REPORT

FOR: Auralex Acoustics

Sound Absorption Test

RAL™-A02-181

ON: VersaTile Panels - Configuration #1

Page 1 of 4

CONDUCTED: 27 August 2002

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 C423-01 and E795-00. 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 procedure and room qualifications is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as VersaTile panels - configuration #1. The overall dimensions of the specimen as measured were nominally 2.43 m (95.5 in.) wide by 2.84 m (112 in.) long and 51 mm (2 in.) thick. The specimen consisted of twenty-eight (28) pieces of polyurethane foam. Each piece was nominally 406 mm (16 in.) wide by 606 mm (23.875 in.) long and 51 mm (2 in.) thick. The specimen was tested in the laboratory's 292 m³ (10,311 ft³) test chamber.

A description of the specimen is as follows: Each of the nominal 25.4 mm (1 in.) thick foam pieces had a linear contour consisting of three high rows and two low rows. The low rows and center high row had flat surfaces while the two end rows were upward tapered edges. The high flat surface created a corresponding depression on the under side while the low flat surfaces created corresponding projections on the under side of each piece. The two rows of projections on the under side of the pieces were in full contact with the test room floor. A drawing of the specimen and orientation as provided by the manufacturer has been retained on file.

The weight of the entire specimen as measured was 8.2 kg (18 lbs), an average of 1.2 kg/m² (0.24 lbs/ft²). The area used in the calculations was 6.9 m² (74.3 ft²). The room temperature at the time of the test was 21°C (69°F) and 63% relative humidity.

MOUNTING A

The test specimen was laid directly against the test surface. The perimeter was sealed using wood and metal framing.

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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TEST RESULTS

1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins
100	0.45	33.63
** 125	0.36	26.82
160	0.27	20.16
200	0.34	25.09
** 250	0.48	35.79
315	0.64	47.87
400	0.75	55.67
** 500	0.84	62.10
630	0.84	62.67
800	0.84	62.37
** 1000	0.80	59.28
1250	0.84	62.60
1600	0.86	64.13
** 2000	0.90	67.15
2500	0.94	70.19
3150	0.97	72.13
** 4000	0.99	73.21
5000	0.99	73.78

SAA = 0.76

NRC = 0.75

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TEST RESULTS (Continued)

The sound absorption average (SAA) is defined as a single number rating, the average, rounded to the nearest 0.01, of the sound absorption coefficient of a material for the twelve one-third octave bands from 200 through 2500 Hz, inclusive.

The noise reduction coefficient (NRC) is defined from previous versions of this same test method as the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by Marc Sciaky
Marc Sciaky
Senior Technician

Approved by David L. Moyer
David L. Moyer
Laboratory Manager

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NVLAP

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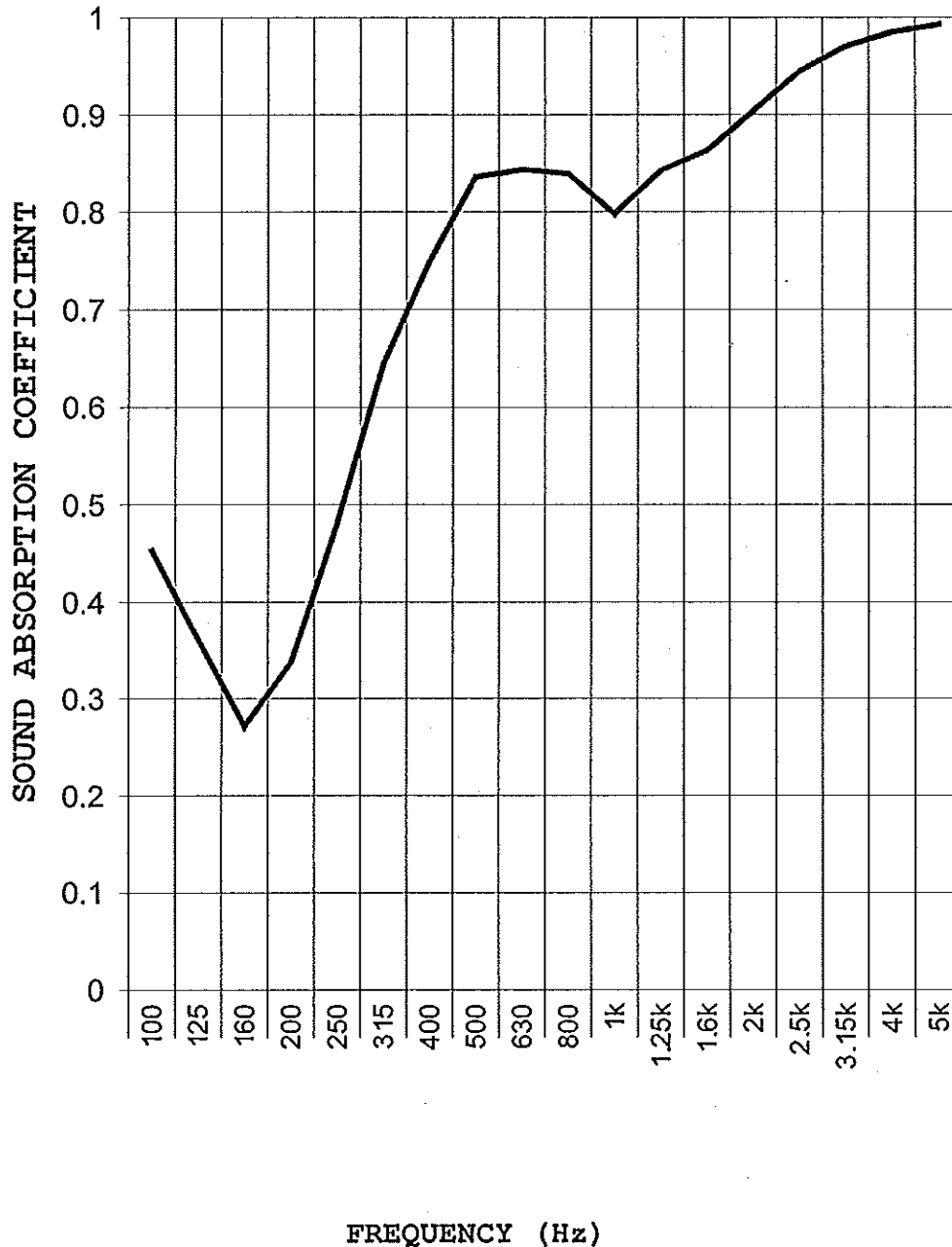
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SOUND ABSORPTION REPORT
RAL - A02-181

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SAA = 0.76

NRC = 0.75

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NVLAQ

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REPORT

FOR: Auralex Acoustics

Sound Absorption Test

RAL™-A02-182

ON: VersaTile Panels - Configuration #2

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CONDUCTED: 27 August 2002

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 C423-01 and E795-00. 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 procedure and room qualifications is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as VersaTile panels - configuration #2. The overall dimensions of the specimen as measured were nominally 2.43 m (95.5 in.) wide by 2.84 m (112 in.) long and 51 mm (2 in.) thick. The specimen consisted of twenty-eight (28) pieces of polyurethane foam. Each piece was nominally 406 mm (16 in.) wide by 606 mm (23.875 in.) long and 51 mm (2 in.) thick. The specimen was tested in the laboratory's 292 m³ (10,311 ft³) test chamber.

A description of the specimen is as follows: Each of the nominal 25.4 mm (1 in.) thick foam pieces had a linear contour consisting of two high rows and three low rows. The high rows and center low row had flat surfaces while the two end rows were downward tapered edges. Each high flat surface created corresponding depressions on the under side while the low surface created a corresponding projection on the under side of each piece. The single rows of projections and the tapered edges on the under side of the pieces were in full contact with the test room floor. A drawing of the specimen and orientation as provided by the manufacturer has been retained on file.

The weight of the entire specimen as measured was 8.2 kg (18 lbs), an average of 1.2 kg/m² (0.24 lbs/ft²). The area used in the calculations was 6.9 m² (74.3 ft²). The room temperature at the time of the test was 21°C (69°F) and 63% relative humidity.

MOUNTING A

The test specimen was laid directly against the test surface. The perimeter was sealed using wood and metal framing.

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Auralex Acoustics

RAL™-A02-182

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TEST RESULTS

1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins
100	0.32	23.90
** 125	0.26	19.42
160	0.36	26.76
200	0.38	28.40
** 250	0.52	38.60
315	0.67	49.84
400	0.74	54.87
** 500	0.90	66.98
630	0.92	68.59
800	0.91	67.62
** 1000	0.92	68.20
1250	0.91	67.70
1600	0.90	66.89
** 2000	0.92	68.43
2500	0.99	73.22
3150	1.01	74.92
** 4000	1.00	74.46
5000	1.06	78.67

SAA = 0.81

NRC = 0.80

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TEST RESULTS (Continued)

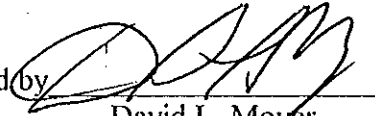
The sound absorption average (SAA) is defined as a single number rating, the average, rounded to the nearest 0.01, of the sound absorption coefficient of a material for the twelve one-third octave bands from 200 through 2500 Hz, inclusive.

The noise reduction coefficient (NRC) is defined from previous versions of this same test method as the average of the coefficients at 250, 500, 1000, and 2000 Hz, expressed to the nearest integral multiple of 0.05.

Tested by


Marc Sciaky
Senior Technician

Approved by


David L. Moyer
Laboratory Manager

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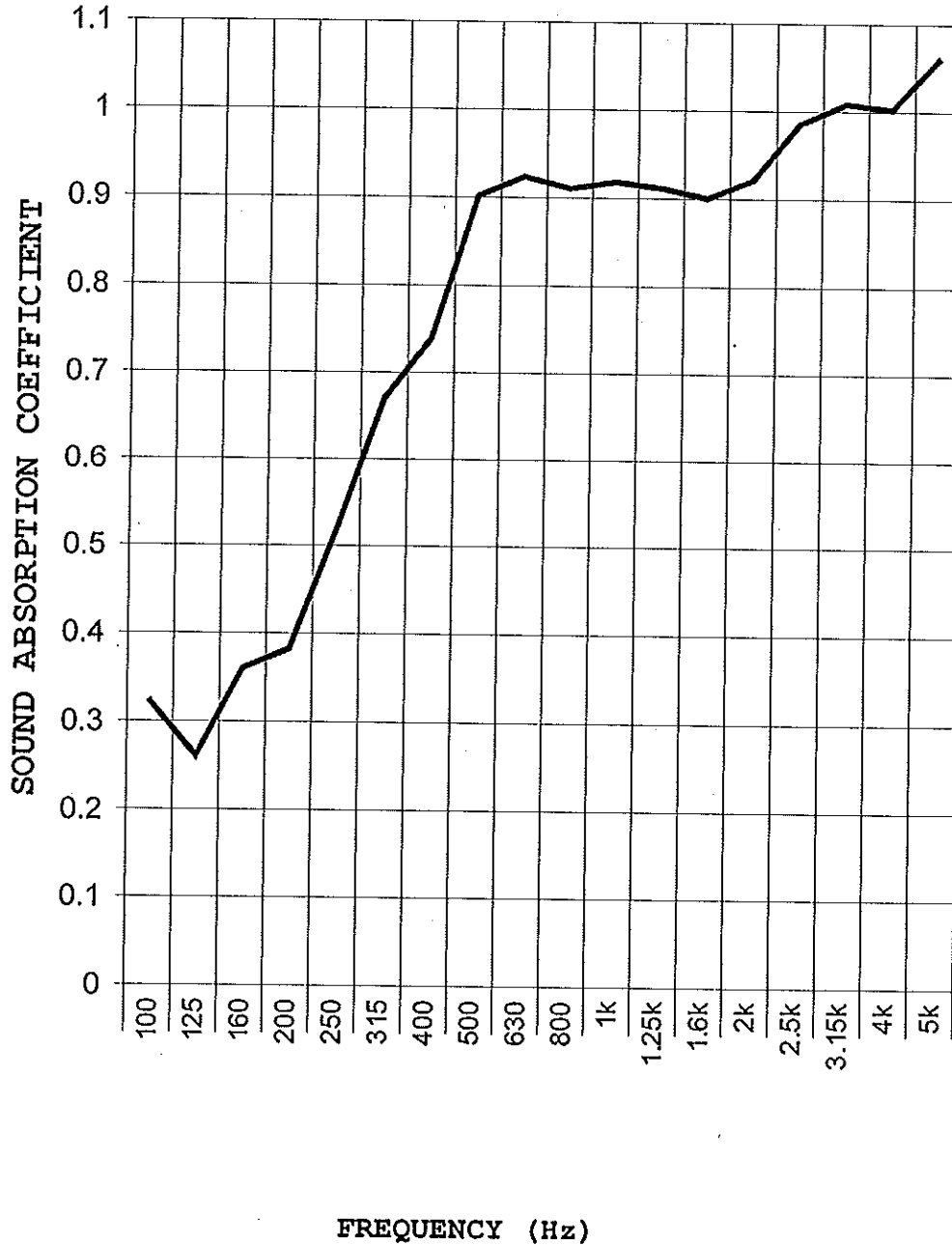
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SOUND ABSORPTION REPORT
RAL - A02-182

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SAA = 0.81

NRC = 0.80

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FOR: Auralex Acoustics

Sound Absorption Test

RAL™-A02-183

ON: VersaTile Panels - Configuration #3

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CONDUCTED: 27 August 2002

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 C423-01 and E795-00. 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 procedure and room qualifications is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as VersaTile panels - configuration #3. The overall dimensions of the specimen as measured were nominally 2.43 m (95.5 in.) wide by 2.83 m (112 in.) long and 305 mm (12 in.) thick. The specimen consisted of forty (40) pieces of polyurethane foam. Each piece was nominally 406 mm (16 in.) wide by 606 mm (23.875 in.) long and 51 mm (2 in.) thick. The specimen was tested in the laboratory's 292 m³ (10,311 ft³) test chamber.

A description of the specimen is as follows: Each of the nominal 25.4 mm (1 in.) thick foam pieces had a linear contour consisting of two high rows and three low rows. The high rows and center low row had flat surfaces while the two end rows were downward tapered edges. Each high flat surface created corresponding depressions on the under side while the low surface created a corresponding projection on the under side. Setup of the specimen consisted of two panels each with a tapered edge on the test room floor and the other edges touching creating a tent-like nominal 254 mm (10 in.) deep cavity. A drawing of the specimen and orientation as provided by the manufacturer has been retained on file.

The weight of the entire specimen as measured was 11.7 kg (25.75 lbs), an average of 1.71 kg/m² (0.35 lbs/ft²). The area used in the calculations was 6.87 m² (73.9 ft²). The room temperature at the time of the test was 21°C (69°F) and 63% relative humidity.

MOUNTING A

The test specimen was laid directly against the test surface. The perimeter was sealed using wood and metal framing.

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TEST RESULTS

1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins
100	0.95	70.04
** 125	0.88	65.22
160	0.85	62.57
200	0.88	64.71
** 250	1.01	74.37
315	0.99	73.52
400	0.95	69.97
** 500	0.99	73.45
630	1.05	77.38
800	1.10	81.26
** 1000	1.12	82.73
1250	1.13	83.55
1600	1.11	82.28
** 2000	1.13	83.52
2500	1.14	84.24
3150	1.14	83.93
** 4000	1.17	86.34
5000	1.19	88.26

SAA = 1.05

NRC = 1.05

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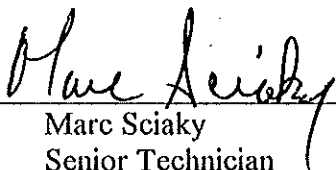
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TEST RESULTS (Continued)

The sound absorption average (SAA) is defined as a single number rating, the average, rounded to the nearest 0.01, of the sound absorption coefficient of a material for the twelve one-third octave bands from 200 through 2500 Hz, inclusive.

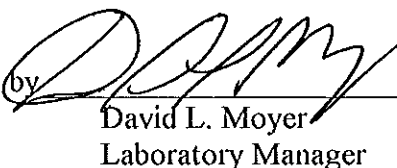
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Tested by



Marc Sciaky
Senior Technician

Approved by



David L. Moyer
Laboratory Manager

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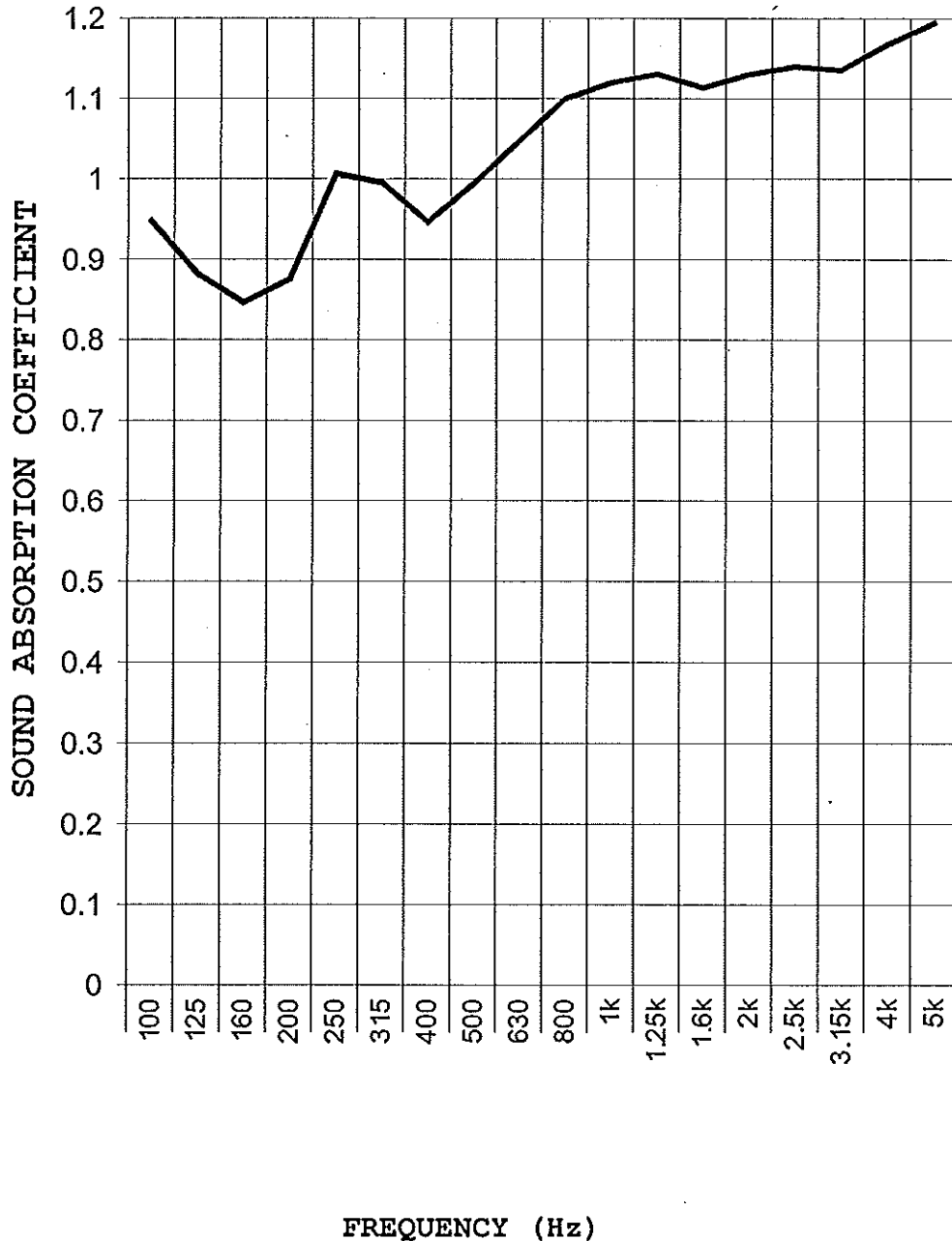
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SAA = 1.05

NRC = 1.05

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