Weighted sound absorption coefficient α_w according to EN ISO 11654

EchoFree

Acoustic booth

WEIGHTED SOUND ABSORPTION COEFFICIENT

$\alpha_w = 0.75$

Absorption class

C

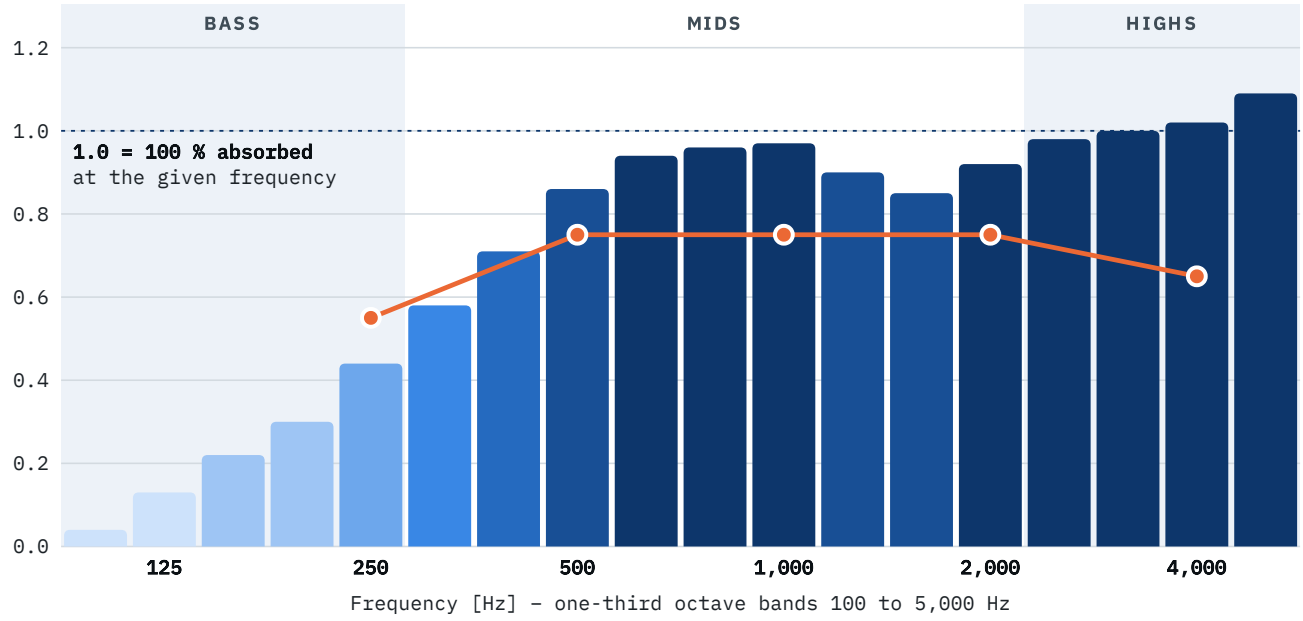
according to EN ISO 11654

1. Measured absorption coefficients in one-third octave bands

F [HZ]	100	125	160	200	250	315	400	500	630	800	1,000	1,250	1,600	2,000	2,500	3,150	4,000	5,000
α_s	0.04	0.13	0.22	0.30	0.44	0.58	0.71	0.86	0.94	0.96	0.97	0.90	0.85	0.92	0.98	1.00	1.02	1.09

Source of values: report RAL™-A12-119, page 2 (annex to this document).

2. Absorption by frequency



measured absorption coefficient α_s (the darker, the more it absorbs)

ISO 11654 reference curve for α_w = 0.75

3. Sound absorption class

E	D	C	B	A
0.15–0.25	0.30–0.55	0.60–0.75	0.80–0.85	0.90–1.00

▲ EchoFree: α_w = 0.75 → class C

4. Calculation according to EN ISO 11654

OCTAVE [HZ]	A_S 1/3 OCTAVES	MEAN	A_P	REF. CURVE	UNFAVOURABLE DEVIATION
125	0.04 · 0.13 · 0.22	0.130	**0.15**	–	–
250	0.30 · 0.44 · 0.58	0.440	**0.45**	0.55	0.10
500	0.71 · 0.86 · 0.94	0.837	**0.85**	0.75	0.00
1,000	0.96 · 0.97 · 0.90	0.943	**0.95**	0.75	0.00
2,000	0.85 · 0.92 · 0.98	0.917	**0.90**	0.75	0.00
4,000	1.00 · 1.02 · 1.09	1.037	**1.00***	0.65	0.00
Sum of unfavourable deviations (250–4,000 Hz) — limit of the standard ≤ 0.10					**0.10**

* Mean rounded to 0.05 and capped at 1.00 according to the standard. The reference curve (0.80 / 1.00 / 1.00 / 1.00 / 0.90) is shifted in steps of 0.05 towards lower values until the sum of unfavourable deviations does not exceed 0.10. At the value 0.75 in the 500 Hz band the sum is 0.10, therefore $\alpha_w = 0.75$. Shape indicator H: α_p exceeds the curve by 0.25 or more in the band 2 000–4 000 Hz (the material absorbs more there than α_w indicates). According to Annex B of the standard, α_w 0.60–0.75 corresponds to absorption class C.

5. Underlying laboratory measurement

Laboratory	Riverbank Acoustical Laboratories, 1512 S Batavia Ave, Geneva, IL, USA — NVLAP accreditation (Lab Code 100227-0), ISO/IEC 17025:2017
Report	RAL™-A12-119, measured 13 Apr 2012
Method	ASTM C423-09a and E795-05, reverberation room 292 m³, 22 °C, 63 % RH
Mounting	type G-75 per ASTM E795: single layer hung parallel to the chamber wall at a distance of 75 mm
Specimen	Producer’s Choice Acoustic Blankets VB-72 (cotton blend, recycled cotton filling), 2.46 × 2.74 m, area 6.8 m²

6. Notice

This document was issued by VocalBoothToGo-EU s.r.o. It is not a laboratory report and Riverbank Acoustical Laboratories is not its author. The α_w value is calculated according to EN ISO 11654 from one-third octave absorption coefficients measured by the laboratory using the ASTM C423 method, which is similar to EN ISO 354 (reverberation room).

The results apply to the tested specimen and the stated mounting. The laboratory’s original report is attached unchanged as an annex.

Annex: Riverbank Acoustical Laboratories report RAL™-A12-119 (4 pages, original).

Prepared by: VocalBoothToGo-EU s.r.o.

Date: 28 September 2026

RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104
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TEST REPORT

FOR: MoversSupplies.com
Jefferson, MD

Sound Absorption Test
RAL™-A12-119

ON: Producer's Choice Acoustic Blankets VB-72

CONDUCTED: 13 April 2012

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 C423-09a and E795-05. 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 (NVLAP Lab Code: 100227-0). 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 Producer's Choice Acoustic Blankets VB-72. The overall dimensions of the specimen as measured were nominally 2.46 m (97 in.) wide by 2.74 m (108 in.) high and 12.7 mm (0.5 in.) thick. The specimen consisted of two (2) pieces. One (1) piece was nominally 2.46 m (97 in.) wide by 1.93 m (76 in.) high. One (1) piece was nominally 2.46 m (97 in.) wide by 812 mm (32 in.) high. The specimen was tested in the laboratory's 292 m^3 (10,311 ft^3) test chamber.

The manufacturer's description of the specimen was as follows: Producer's Choice Acoustic Blankets VB-72. Straight 2" stitching. Colors – One side black, the other side white. White thread. Woven black binding. Outer material is cotton mix fabric. Filler is recycled cotton. A visual inspection verified the manufacturer's description of the specimen.

The weight of the entire specimen as measured was 6.6 kg (14.5 lbs), an average of 0.97 kg/m^2 (0.2 lbs/ft^2). The area used in the calculations was 6.8 m^2 (72.8 ft^2). The room temperature at the time of the test was 22°C (71°F) and 63±1% relative humidity.

MOUNTING G-75

Test specimen hung parallel to the test surface. The number designates the distance in mm from the centerline of the hangers to the test surface.

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NVLAP Lab Code 100227-0

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TEST REPORT

MoversSupplies.com

RAL™-A12-119

13 April 2012

TEST RESULTS

	1/3 Octave Center Frequency (Hz)	Absorption Coefficient	Total Absorption In Sabins
	100	0.04	3.14
**	125	0.13	9.80
	160	0.22	15.76
	200	0.30	21.93
**	250	0.44	32.03
	315	0.58	42.39
	400	0.71	51.75
**	500	0.86	62.69
	630	0.94	68.17
	800	0.96	69.59
**	1000	0.97	70.80
	1250	0.90	65.42
	1600	0.85	61.76
**	2000	0.92	66.77
	2500	0.98	71.13
	3150	1.00	72.44
**	4000	1.02	74.31
	5000	1.09	79.27

SAA = 0.78
NRC = 0.80

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TEST REPORT

MoversSupplies.com

RAL™-A12-119

13 April 2012

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
Experimentalist

Approved by _____
Dean Victor
Senior Experimentalist

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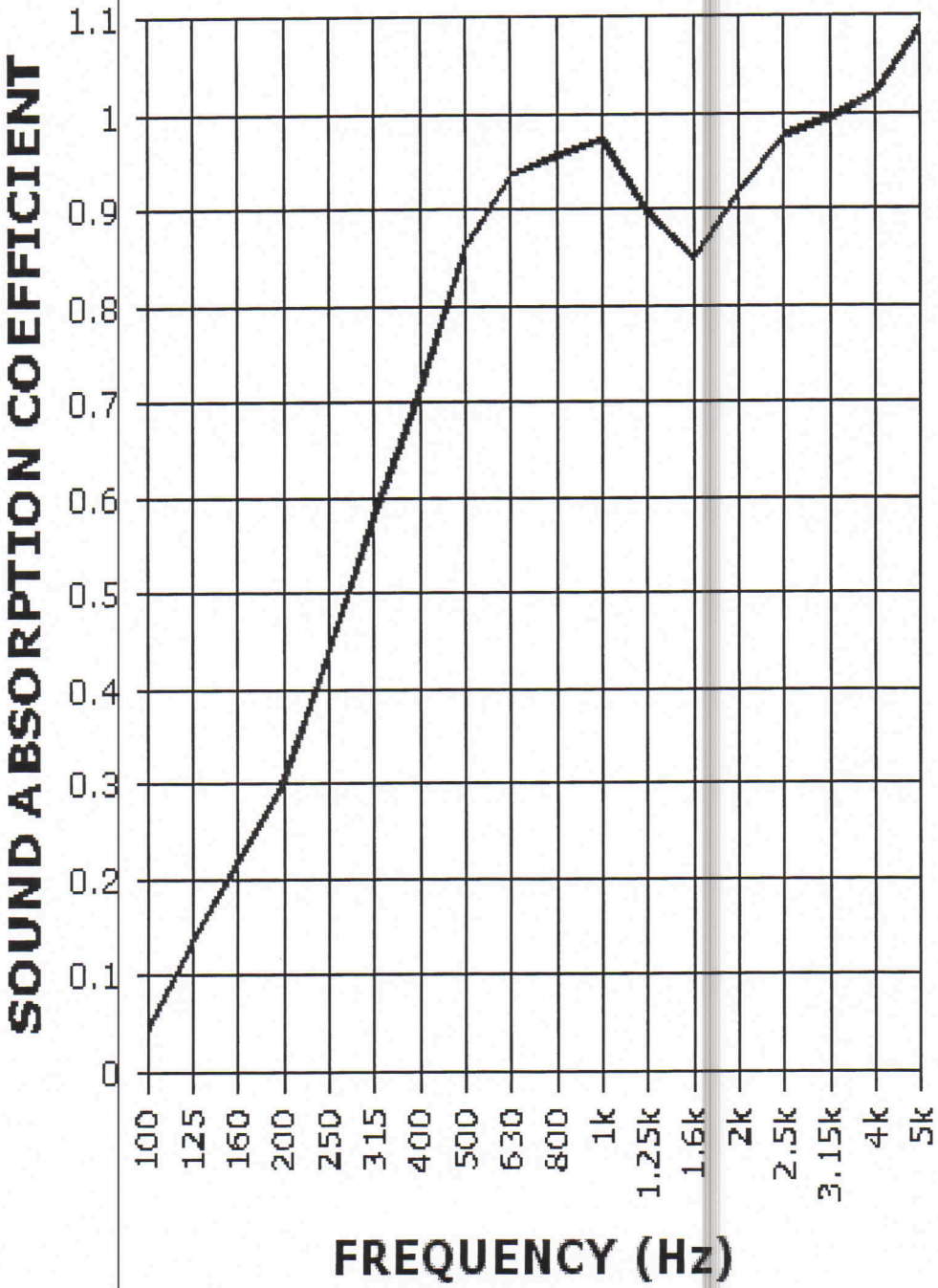
TEST REPORT

SOUND ABSORPTION REPORT
RAL-A12-119



SAA=0.78
NRC=0.80

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