Weighted sound absorption coefficient α_w according to EN ISO 11654

CBT-WD

Ceiling acoustic blanket, **double layer** · product code 101413

WEIGHTED SOUND ABSORPTION COEFFICIENT

$\alpha_w = 1.00$

Absorption class

A

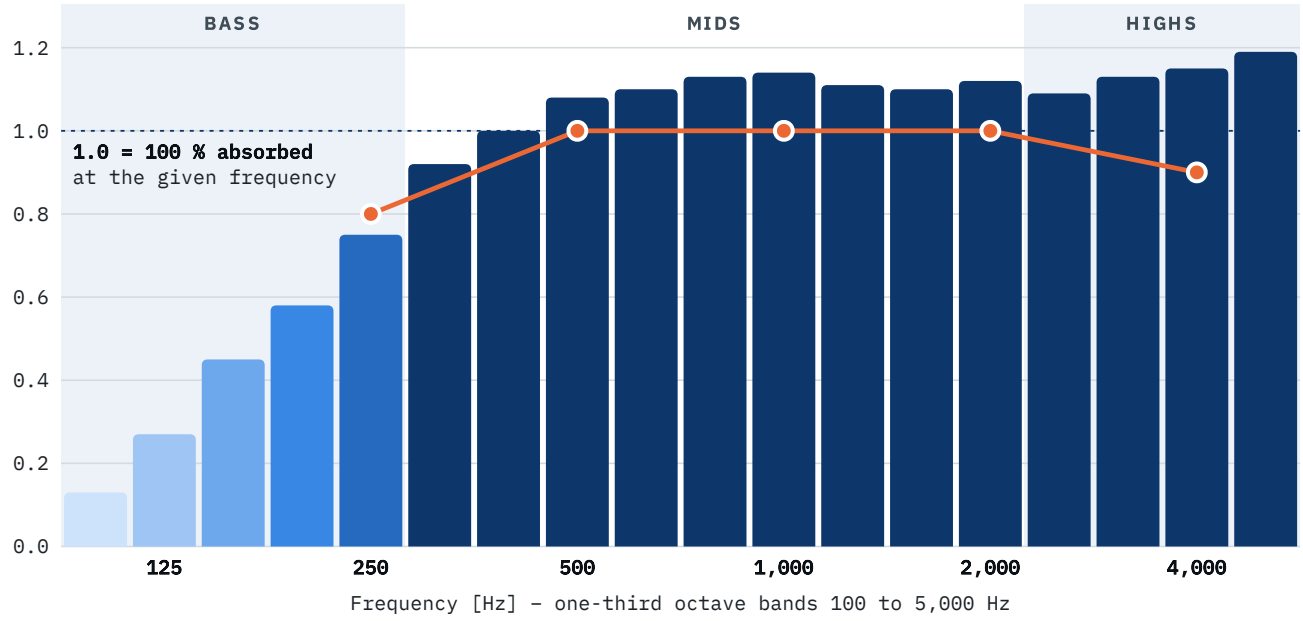
according to EN ISO 11654

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	0.13	0.27	0.45	0.58	0.75	0.92	1.00	1.08	1.10	1.13	1.14	1.11	1.10	1.12	1.09	1.13	1.15	1.19

Source of values: report RAL™-A19-502, page 5 (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 = 1.00

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

▲ CBT-WD: α_w = 1.00 → class A

4. Calculation according to EN ISO 11654

OCTAVE [HZ]	A_S 1/3 OCTAVES	MEAN	A_P	REF. CURVE	UNFAVOURABLE DEVIATION
125	0.13 · 0.27 · 0.45	0.283	**0.30**	–	–
250	0.58 · 0.75 · 0.92	0.750	**0.75**	0.80	0.05
500	1.00 · 1.08 · 1.10	1.060	**1.00***	1.00	0.00
1,000	1.13 · 1.14 · 1.11	1.127	**1.00***	1.00	0.00
2,000	1.10 · 1.12 · 1.09	1.103	**1.00***	1.00	0.00
4,000	1.13 · 1.15 · 1.19	1.157	**1.00***	0.90	0.00
Sum of unfavourable deviations (250–4,000 Hz) — limit of the standard ≤ 0.10					**0.05**

* 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 1.00 in the 500 Hz band the sum is 0.05, therefore α_W = 1.00. No shape indicator (L, M, H) is given – no α_p exceeds the curve by 0.25 or more. According to Annex B of the standard, α_W 0.90–1.00 corresponds to absorption class A.

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™-A19-502, measured 6 Dec 2019, issued 8 Jan 2020
Method	ASTM C423-17, reverberation room 291.98 m³, 21.4 °C, 55 % RH
Mounting	type G-115 per ASTM E795-16 (modified): two layers hung with a 76 mm gap, 76 mm from the chamber wall, edges unsealed
Specimen	Acoustic Blanket, Producer’s Choice (VB-77G), manufacturer Vocal Booth To Go, 2 × 2,032 × 2,692 mm
Deviation from the standard	specimen area 5.47 m² (ASTM C423 requires min. 5.57 m²) — stated in the report

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™-A19-502 (9 pages, original).

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

Date: 28 September 2026

RIVERBANK ACOUSTICAL LABORATORIES

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Test Report

SPONSOR: **Vocal Booth To Go**
Frederick, MD

Sound Absorption
RAL™-A19-502

CONDUCTED: 2019-12-06

ON: Acoustic Blanket, Producer's Choice - dual layer (Modified Type G-115 Mounting, specimen undersized)

TEST METHODOLOGY

Riverbank Acoustical Laboratories™ is accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as an ISO 17025:2017 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM C423-17: "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method," with the single exception that the specimen area of 5.47 m^2 was less than the minimum area of 5.57 m^2 specified in Section 9.1.1 of the standard. Refer to the mounting description on Page 2 for details. The specimen mounting was performed according to the Type G Mounting described in Section 12 of ASTM E795-16: "Standard Practices for Mounting Test Specimens During Sound Absorption Tests," with the single exception that the top edge of the specimen was not closed off. A description of the measurement procedure and room specifications are available upon request. The results presented in this report apply to the sample as received from the test sponsor.

INFORMATION PROVIDED BY SPONSOR

The test specimen was designated by the sponsor as Acoustic Blanket, Producer's Choice - dual layer (Modified Type G-115 Mounting, specimen undersized). The following nominal product information was provided by the sponsor prior to testing. The accuracy of such sponsor-provided information can affect the validity of the test results.

Product Under Test

Trade Name:	Acoustic Blanket, Producer's Choice
Material ID:	VB-77G
Manufacturer:	Vocal Booth To Go

SPECIMEN MEASUREMENTS & TEST CONDITIONS

Through a full external visual inspection performed on the test specimen, Riverbank personnel verified the following information:

Test Specimen

Material:	Quilted blanket
Dimensions:	2 @ 2032 mm (80 in.) x 2692.4 mm (106 in.)
Thickness:	7.26 mm (0.286 in.) each
Overall Weight:	12.02 kg (26.5 lbs)

Note: The specimen was cut to the given dimensions from larger samples. The cut edges of the specimen material were sealed with duct tape.

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Overall Specimen Properties

Size:	2.03 m (80.0 in) wide by 2.69 m (106.0 in) long
Thickness:	0.09 m (3.572 in)
Weight:	12.02 kg (26.5 lbs)
Mass per Unit Area:	2.2 kg/m² (0.45 lbs/ft²)
Calculation Area:	5.471 m² (58.89 ft²)

Test Environment

Room Volume:	291.98 m³
Temperature:	21.4 °C ± 0.1 °C (Requirement: ≥ 10 °C and ≤ 5 °C change)
Relative Humidity:	54.95 % ± 1.1 % (Requirement: ≥ 40 % and ≤ 5 % change)
Barometric Pressure:	99.6 kPa (Requirement not defined)

MOUNTING METHOD

Modified Type G-115 Mounting: The test specimen was hung using a stand provided by the test sponsor. The specimen was cut to the dimensions given above to accommodate the limited height of the stand. An array of 76.2 mm (3 in.) wide wooden spacers was used to space the specimen layers approximately 76.2 mm (3 in.) apart. The hung specimen was placed in the test chamber with a 76 mm (3.0 in.) wide gap between the vertical test surface and the nearest layer of sample material. The distance between the vertical test surface and the centerline of the specimen was approximately 114 mm (4.5 in.). The numeral suffix in the mounting designation is the distance in millimeters between the vertical test surface and the centerline of the test specimen, rounded to the nearest integer multiple of 5. Perimeter edges were left unsealed. All modifications to the standard mounting practice were intended to better represent the typical field condition, as described by the test sponsor.

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Figure 1 – Specimen mounted in test chamber



Figure 2 – Detail of single layer of specimen material

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Figure 3 – Detail of hanging method, spacer

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2019-12-06

TEST RESULTS

Specimen total absorption and absorption coefficient are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages.

1/3 Octave Center Frequency (Hz)	Total Absorption (m^2)	Total Absorption (Sabins)	Absorption Coefficient
100	0.70	7.57	0.13
** 125	1.50	16.13	0.27
160	2.49	26.75	0.45
200	3.16	34.00	0.58
** 250	4.12	44.34	0.75
315	5.05	54.38	0.92
400	5.47	58.84	1.00
** 500	5.91	63.57	1.08
630	6.04	65.02	1.10
800	6.18	66.48	1.13
** 1000	6.26	67.41	1.14
1250	6.08	65.40	1.11
1600	6.03	64.89	1.10
** 2000	6.13	65.96	1.12
2500	5.97	64.24	1.09
3150	6.18	66.47	1.13
** 4000	6.31	67.93	1.15
5000	6.51	70.11	1.19

SAA = 1.01
NRC = 1.00

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TEST RESULTS (continued)

The sound absorption average (SAA) is defined in ASTM C423-17 Section 3.1.1 as the arithmetic average of the sound absorption coefficients of a material for the twelve one-third octave bands from 200 Hz through 2500 Hz, inclusive, rounded to the nearest integer multiple of 0.01.

The noise reduction coefficient (NRC) is defined from previous versions of ASTM C423 as the arithmetic average of the sound absorption coefficients at 250 Hz, 500 Hz, 1000 Hz, and 2000 Hz, rounded to the nearest integer multiple of 0.05.

Tested by _____
Marc Sciaky
Senior Experimentalist

Report by _____
Malcolm Kelly
Acoustical Test Engineer

Approved by _____
Eric P. Wolfram
Laboratory Manager

Digitally signed by
Eric P Wolfram
Location: Geneva, IL
Date: 2020.01.08
10:08:07 -06'00'

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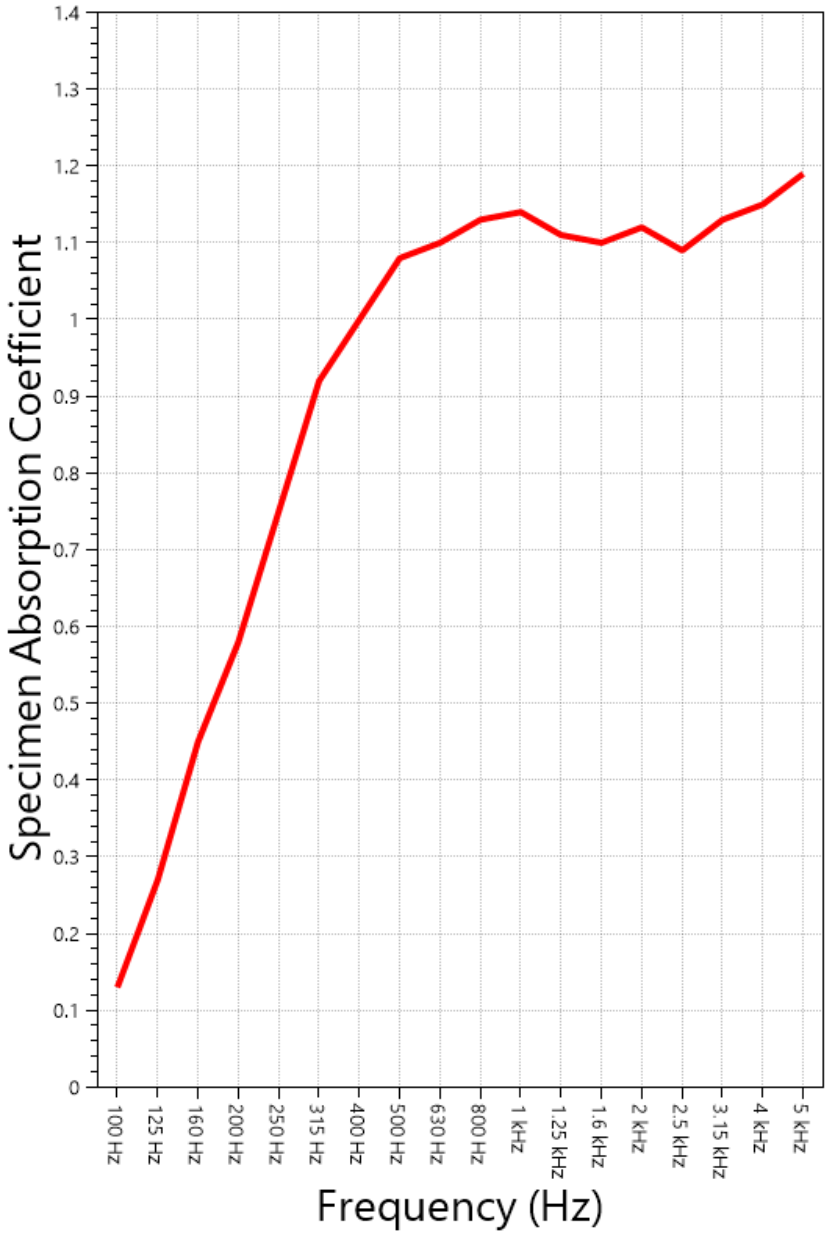
RAL™-A19-502

SOUND ABSORPTION REPORT

Acoustic Blanket, Producer's Choice - dual layer
(Modified Type G-115 Mounting, specimen undersized)



SAA = 1.01
NRC = 1.00

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APPENDIX A: Extended Frequency Range Data

Specimen: Acoustic Blanket, Producer's Choice - dual layer (Modified Type G-115 Mounting, specimen undersized) (See Full Report)

The following non-accredited data were obtained in accordance with ASTM C423-17, but extend beyond the defined frequency range of 100Hz to 5,000Hz. These unofficial results are representative of the RAL test environment only and intended for research & comparison purposes.

1/3 Octave Band Center Frequency (Hz)	**Total Absorption** (Sabins)	**Absorption Coefficient**
31.5	2.13	0.04
40	3.38	0.06
50	-4.16	-0.07
63	-8.70	-0.15
80	2.21	0.04
100	7.57	0.13
125	16.13	0.27
160	26.75	0.45
200	34.00	0.58
250	44.34	0.75
315	54.38	0.92
400	58.84	1.00
500	63.57	1.08
630	65.02	1.10
800	66.48	1.13
1000	67.41	1.14
1250	65.40	1.11
1600	64.89	1.10
2000	65.96	1.12
2500	64.24	1.09
3150	66.47	1.13
4000	67.93	1.15
5000	70.11	1.19
6300	68.63	1.17
8000	72.24	1.23
10000	75.45	1.28
12500	74.59	1.27

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APPENDIX B: Instruments of Traceability

Specimen: Acoustic Blanket, Producer's Choice - dual layer (Modified Type G-115 Mounting, specimen undersized) (See Full Report)

Description	Model	Serial Number	Date of Certification	Calibration Due
System 1	Type 3160-A-042	3160-106968	2019-06-25	2020-06-25
Bruel & Kjaer Mic And Preamp A	Type 4943-B-001	2311428	2019-09-27	2020-09-27
Bruel & Kjaer Pistonphone	Type 4228	2781248	2019-08-09	2020-08-09
Omega Digital Temp., Humid. And Pressure Recorder	OM-CP-PRHTemp2000	P97844	2019-02-08	2020-02-08

APPENDIX C: Revisions to Original Test Report

Specimen: Acoustic Blanket, Producer's Choice - dual layer (Modified Type G-115 Mounting, specimen undersized) (See Full Report)

Date	Revision
2020-01-08	Original report issued

END

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