

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.

Technical and Test Institute for Construction Prague

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Central Laboratory, Nemanická 441, 370 10 České Budějovice **Teplice Testing Facility**

TEST REPORT

Test Laboratory No.. 1018.3 accredited according to ČSN EN ISO/IEC 17025 by the Czech Institute for Accreditation

040-061936

on test of sound absorption capacity according to ČSN EN ISO

Customer:

AVETON PRODUCTS s.r.o.

Address:

Krátkého 211/2, Vysočany, 190 00 Prague 9

ID No.:

08237336

Manufacturer:

Hlavenka Glass s.r.o.

Address:

Libětice 38, 386 01, Strakonice

Test samples:

GLASIO 110 with MW GLASIO 110 without MW GLASIO 65 with MW GLASIO 65 without MW

GLASIO 20

Contract No.:

Z040 17 0350,

Number of Annexes: Number of report pages including the front page: 6

Prepared by:

Approved by:

BNIUSTAL

Ing. Pavel Rubáš, PhD

Test Technician - Speciali

Ing. Pavel Bartoš

Deputy Head of the Testing Laboratory

Copy No.:

Declaration: 1) The test results presented in this Report relate to the tested object only and do not replace any other documents.

2) This Report may not be reproduced in any form other than in its entirety without the written consent of the Testing Laboratory.

3) Evaluation of the results according to the standards was done above the framework of the activities of an accredited test laboratory

Technický a zkušební ústav stavební Praha, s. p., Central Laboratory České Budějovice **Teplice Testing Laboratory** Phone: +420 417 719 017

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Tolstého 447, 415 03 Teplice 931/0100

Bank details: Komerční banka, Praha 1

Incorporated in the Commercial Register administered by the Municipal Court in Prague, section ALX, file 711, Company Identification No.: 00015679, VAT ID No.: CZ00015679

Number of copies: 3

In Teplice, on 2 September 2019

Testing laboratory stamp No. 1018.3

1. General

Based on the order of 21 August 2019, the sound absorption tests were performed for GLASIO samples according to ČSN EN ISO 354 and ČSN ISO 11654 (total of 4 samples).

2. Test Sample

The test samples were recorded at Testing Laboratory No.. 1018.3 on 28 August 2018 under the following record numbers:

Sample
GLASIO 110 without MW
VZ040191922
GLASIO 110 with MW
VZ040191923
GLASIO 65 without MW
VZ040191924

GLASIO 65 with MW VZ040191925 GLASIO contact VZ040191926

3. Performed Tests

Date of sample installation: 28 August 2018 Test performance date: 28 August 2018 Test conducted by: Ing. Pavel Rubáš, PhD Performed tests (general simplified title):

determination of sound absorption capacity according to ČSN EN ISO 354:2003

Data declared by the manufacturer:

GLASIO 110 without MW

VZ040191924

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 110 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

GLASIO 110 with MW

VZ040191925

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. An absorbent pad was attached to the back side of the acoustic panels in the form of mineral wool with a thickness of 80 mm, with a density of 40 kg/m³, wrapped in the PE foil with a thickness of 30 μ m. The total layout thickness of the sample was 110 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

GLASIO 65 without MW

VZ040191922

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore included 21 panels of three rows and seven columns. The panels were laid on the base places places directly on the floor of the testing laboratory.

The total layout thickness of the sample was 65 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

GLASIO 65 with MW

VZ040191923

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. An absorbent pad was attached to the back side of the acoustic panels in the form of mineral wool with a thickness of 40 mm, with a density of 40 kg/m^3 , wrapped in the PE foil with a thickness of $30 \text{ }\mu\text{m}$. The total layout thickness of the sample was 65 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

GLASIO 20

VZ040191926

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the spacer pads with a thickness of 3 mm placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 20 mm. The sample was not enclosed around the circumference.

Sample preparation and installation method:

The sample was visually inspected upon acceptance and its type checked according to the specification. The sample composition was found to correspond to the submitted description. Installation performed by the staff of TZÚS Praha, s.p. The samples were placed on the floor of the chamber D1.

Data on sample composition were taken from the specification provided by the manufacturer. The mentioned technical parameters are intended for inspection and documentary purposes and are only informative in character.

Test rooms:

D1 (reverberation chamber TZÚS 2015)

Technical description of test:

Measurement was done in an anechoic chamber according to ČSN EN ISO 354. Measurement is done by omnidirectional impact of the sound waves on the sample and is based on measurement of the reverberation time of the empty chamber and the chamber containing the tested sample. The difference in measurements is used to specify the equivalent absorption area of the sample and the sound absorption coefficient α_s . The measurement was done in one third octave bands from 100 to 5000 Hz.

The results of the test are the values of sound absorption coefficient α_{si} in one third octave bands from 100 to 5000 Hz. The main result of testing that is objectively related to the tested structure is **the single digit variable of the weighted sound absorption** α_{w} .

The average reverberation time in the reverberant chamber is determined by measurement with a test sample installed and without a test sample. The equivalent absorption area A₁, in square metres, of an empty reverberant chamber is calculated using the formula:



$$A_1 = \frac{55,3V}{cT_1} - 4Vm_1$$

Where

V is the volume of the empty reverberant chamber in cubic metres;

speed of sound transmission in the air in metres per second (for the usual laboratory temperatures in the range t = 15 °C to 30 °C, the value is calculated as c = 331+ 0.6t (m/s);

T₁ reverberation time, in seconds, of an empty reverberant chamber;

m₁ attenuation coefficient in air, in m⁻¹, calculated according to ISO 9613-1 with respect to climatic conditions that existed in the empty reverberant chamber during measurement.

The value of m_1 can be calculated from the damping factor α , which is used in ISO 9613-1, according to the formula:

$$m = \frac{\alpha}{10 \lg (e)}$$

The equivalent absorption area A2, in square metres, of the reverberant chamber containing a test sample is calculated using the formula:

$$A_2 = \frac{55,3V}{cT_2} - 4Vm_2$$

Where

V and c have the same meaning as in the previous paragraph;

T₂ reverberation time, in seconds, of the reverberant chamber after the test sample has been placed;

m₂ attenuation coefficient in air, in m⁻¹, calculated according to ISO 9613-1 with respect to climatic conditions that existed in the reverberant chamber including the sample.

The equivalent absorption area A, in square metres, is calculated using the formula:

$$A_{\rm T} = A_2 - A_1 = 55.3 \, V \left(\frac{1}{c_2 T_2} - \frac{1}{c_1 T_1} \right) - 4 V \left(m_2 - m_1 \right)$$

Where

c₁ is the speed of sound propagation in air at temperature t₁;

c₂ is the speed of sound propagation in air at temperature t₂;

 A_1 , V, T_1 , m_1 , A_2 , T_2 and m_2 have the same meanings as in the preceding paragraphs.

The sound absorption coefficient of the sample scalculated using the formula:

$$\alpha_s = \frac{A_T}{S}$$

Where

A_T is the equivalent absorption area A, in square metres

S is the area covered by the test sample in square metres

4. Applicable Standards

4.1 Test standards

ČSN EN ISO 354:2003

Acoustics - Measurement of sound absorption in a

reverberation room

4.2 Referenced standards

ČSN EN ISO 11654:1998

Acoustics - Sound absorbers for buildings - Assessment of

sound absorption

VDI 3755:2015-01

Sound insulation and sound absorption

Deviations from the test procedures: -----

5. Instrumentation and Measurement Apparatus Used

- Norsonic type 118 integrating sound level meter, accuracy class 1, compliant with standards IEC 60651, 60804, 61672-1, 61260, basic memory for 2,500,000 pieces of data. Serial number 32127, 8012-OL-10181-18, valid till: 20/03/2020
- Norsonic type 118 integrating sound level meter, accuracy class 1, compliant with standards IEC 60651, 60804, 61672-1, 61260, basic memory for 2,500,000 pieces of data. Serial number 31991, 8012-OL-10183-16, valid till: 20/03/2020
- Norsonic microphone type 1225 and pre-amp type 1205, serial No. 92003, test sheet No. ... test sheet: 8012-OL-10182-18, valid till: 20/03/2020
- Norsonic microphone type 1225 and pre-amp type 1205, serial No. 72839, test sheet No. ... test sheet: 8012-OL-10184-18, valid till: 20/03/2020
- Norsonic acoustic calibrator type 1251, serial number 31612. This meter complies with the requirements of IEC 942, 8012-KL-10185-18, valid till: 20/03/2020
- Testo 608-H1 thermometer/hygrometer, serial number 445815, calibration certificate KLT-10K-886 effective till 07/11/2020.
- Digital barometer VOLTCRAFT DL180-THP, serial number 10052467, calibration certificate 1485/11 valid until 28/06/2020.
- Apparatus for semi-circular noise field excitation Norsonic type 250 (120 dB) The instruments and meters are calibrated pursuant to the valid metrological plan of the Teplice testing laboratory.



6. Test Results

The test results are given in the annexes; applicable single-digit values and descriptions are given in table 1.

Table 1a Single-digit value, class and verbal assessment according to ČSN EN ISO 11654:1998 and VDI 3755:2015-01

			Weighted sound absorption α_w
Sample	Unit	Class	Verbal description VDI 3755:2015- 01
GLASIO 110 without MW			0.40
VZ040191922		D	absorbent
GLASIO 110 with MW		D	0.45 (LM)
VZ040191923			absorbent
GLASIO 65 without MW		D	0.40
VZ040191924			absorbent
GLASIO 65 with MW		_	0.50 (LM)
VZ040191925		D	absorbent
GLASIO 20	A		0.15 (H)
VZ040191926		Α	low absorbent



Measurement of sound absorption coefficient in a reverberation room

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2019

Description:

GLASIO 110 without MW

VZ040191922

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 110 mm. The sample was enclosed all the way around the

circumference using the reflective railing made of wood-based material.

Object:

GLASIO 110 bez MW

Surface area:

Empty reverberation room:

Reverberation room with object:

9,45 m2

Relative humidity:

60,4 % 25,0 °C Relative humidity: Temperature:

61,6 % 24,6 °C

Reverberation room volume:

206,2 m3

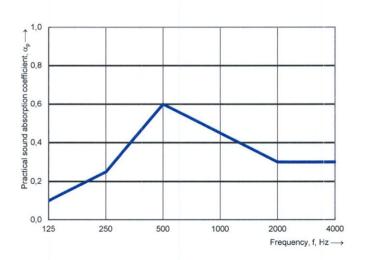
Temperature: Barometric Pressure:

994 kPa

Barometric Pressure:

994 kPa

Frequency	α_{p}
f	
[Hz]	
125	0,10
250	0,25
500	0,60
1000	0,45
2000	0,30
4000	0,30



Weighted sound absorption coefficient according to ISO 11654

 $\alpha_{\rm w} = 0.40$

NRC = 0,40

No. of test report:



Measurement of sound absorption coefficient in a reverberation room

Client:

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2019

Description:

GLASIO 110 without MW

VZ040191922

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 110 mm. The sample was enclosed all the way around the

circumference using the reflective railing made of wood-based material.

Object:

GLASIO 110 bez MW

Surface area:

Empty reverberation room:

Reverberation room with object:

Surface area.

9,45 m2

Relative humidity:

60,4 % 25,0 °C Relative humidity: Temperature: 61,6 % 24,6 °C

Reverberation room volume:

206,2 m3

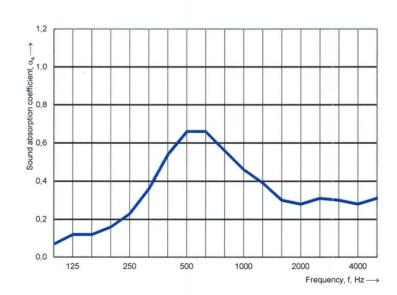
Temperature:
Barometric Pressure:

994 kPa

Barometric Pressure:

994 kPa

Frequency	α_{s}
f	
[Hz]	
100	0,07
125	0,12
160	0,12
200	0,16
250	0,23
315	0,36
400	0,54
500	0,66
630	0,66
800	0,56
1000	0,46
1250	0,39
1600	0,30
2000	0,28
2500	0,31
3150	0,30
4000	0,28
5000	0,31



No. of test report:



Measurement of sound absorption coefficient in a reverberation room

Client:

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2019

Description:

GLASIO 110 with MW

VZ040191923

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. An absorbent pad was attached to the back side of the acoustic panels in the form of mineral wool with a thickness of 80 mm, with a density of 40 kg/m³, wrapped in the PE foil with a thickness of 30 µm. The total layout thickness of the sample was 110 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

Object:

GLASIO 110 s MW

5000

Empty reverberation room:

Reverberation room with object:

Surface area:

9,45 m2

Relative humidity: Temperature: 60,4 % 25,0 °C Relative humidity:

Temperature:

60,9 %

Reverberation room volume:

206,2 m3

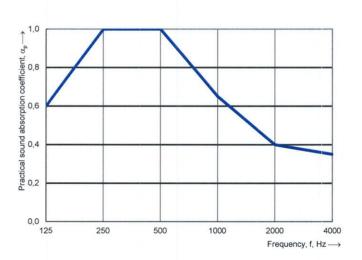
Barometric Pressure:

994 kPa

Barometric Pressure:

24,4 °C 993 kPa

Frequency	α_{p}
f	
[Hz]	
125	0,60
250	1,00
500	1,00
1000	0,65
2000	0,40
4000	0,35



Weighted sound absorption coefficient according to ISO 11654

 $\alpha_{\rm w}$ = 0,45 (LM)

NRC = 0,75

No. of test report:



Measurement of sound absorption coefficient in a reverberation room

Client:

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2019

Description:

GLASIO 110 with MW

VZ040191923

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. An absorbent pad was attached to the back side of the acoustic panels in the form of mineral wool with a thickness of 80 mm, with a density of 40 kg/m³, wrapped in the PE foil with a thickness of 30 µm. The total layout thickness of the sample was 110 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

Object:

GLASIO 110 s MW

2002

9,45 m2

Empty reverberation room:

Reverberation room with object:

Surface area:

000 0 m2

Relative humidity:

60,4 % 25,0 °C Relative humidity:

Temperature:

60,9 % 24,4 °C

Reverberation room volume:

206,2 m3

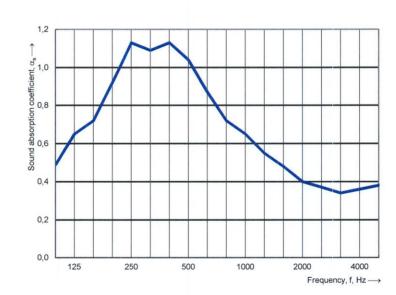
Temperature:
Barometric Pressure:

994 kPa

Barometric Pressure:

993 kPa

Frequency	α_{s}
f	
[Hz]	
100	0,49
125	0,65
160	0,72
200	0,92
250	1,13
315	1,09
400	1,13
500	1,04
630	0,87
800	0,72
1000	0,65
1250	0,55
1600	0,48
2000	0,40
2500	0,37
3150	0,34
4000	0,36
5000	0,38



No of test report:



Measurement of sound absorption coefficient in a reverberation room

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9 Description:

GLASIO 65 without MW

VZ040191924

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 65 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

Object:

GLASIO 65 without MW

Empty reverberation room:

Reverberation room with object:

Date of test:

28.08.2019

Surface area:

9,45 m2

Relative humidity:

60,4 % 25,0 °C Relative humidity:

60,9 %

Reverberation room volume:

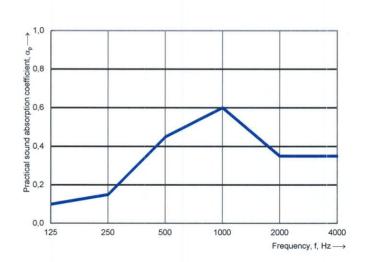
206,2 m3

Temperature: Barometric Pressure:

994 kPa

Temperature: Barometric Pressure: 24,4 °C 993 kPa

Frequency	α_{p}
f	
[Hz]	
125	0,10
250	0,15
500	0,45
1000	0,60
2000	0,35
4000	0,35



Weighted sound absorption coefficient according to ISO 11654

 $\alpha_{\rm w} = 0.40$

NRC = 0,40

No. of test report:



Measurement of sound absorption coefficient in a reverberation room

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Prague 9

Date of test: 28.08.2019

Description:

GLASIO 65 without MW

VZ040191924

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 65 mm. The sample was enclosed all the way around the

circumference using the reflective railing made of wood-based material.

Object:

GLASIO 65 bez MW

Surface area: 9,45 m2 Empty reverberation room: Relative humidity:

Reverberation room with object:

Reverberation room volume:

Temperature:

60,4 % 25,0 °C Relative humidity:

61,5 % 24,8 °C

206,2 m3

Barometric Pressure:

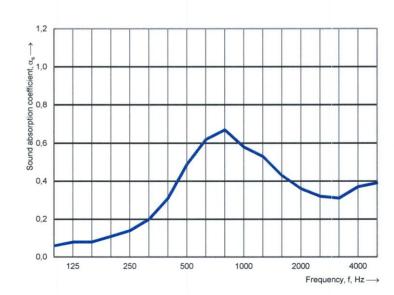
994 kPa

Barometric Pressure:

Temperature:

994 kPa

Frequency	α_{s}
f	
[Hz]	
100	0,06
125	0,08
160	0,08
200	0,11
250	0,14
315	0,20
400	0,31
500	0,49
630	0,62
800	0,67
1000	0,58
1250	0,53
1600	0,43
2000	0,36
2500	0,32
3150	0,31
4000	0,37
5000	0,39



No of test report:



Measurement of sound absorption coefficient in a reverberation room

Client:

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2018

Description:

GLASIO 65 with MW

VZ040191925

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. An absorbent pad was attached to the back side of the acoustic panels in the form of mineral wool with a thickness of 40 mm, with a density of 40 kg/m³, wrapped in the PE foil with a thickness of 30 µm. The total layout thickness of the sample was 65 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

Object:

GLASIO 65 s MW

Empty reverberation room:

Reverberation room with object:

Surface area:

9,45 m2

Relative humidity:

60,4 % 25,0 °C Relative humidity: Temperature: 62,2 %

Reverberation room volume:

206,2 m3

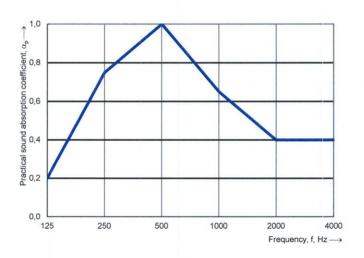
Temperature:
Barometric Pressure:

994 kPa

Barometric Pressure:

24,2 °C 993 kPa

	Frequency	α_{p}
1	f	
L	[Hz]	
	125	0,20
1	250	0,75
L	500	1,00
	1000	0,65
١	2000	0,40
1	4000	0,40



Weighted sound absorption coefficient according to ISO 11654

 $\alpha_w = 0.50$ (LM)

NRC = 0,70

No. of test report:



Measurement of sound absorption coefficient in a reverberation room

Client:

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2018

Description:

GLASIO 65 with MW

VZ040191925

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the base blocks placed directly on the floor of the testing laboratory. An absorbent pad was attached to the back side of the acoustic panels in the form of mineral wool with a thickness of 40 mm, with a density of 40 kg/m³, wrapped in the PE foil with a thickness of 30 µm. The total layout thickness of the sample was 65 mm. The sample was enclosed all the way around the circumference using the reflective railing made of wood-based material.

Object:

GLASIO 65 s MW

Empty reverberation room:

Reverberation room with object:

Surface area:

9,45 m2

Relative humidity:

60,4 % 25,0 °C Relative humidity: Temperature: 62,2 %

Reverberation room volume:

206,2 m3

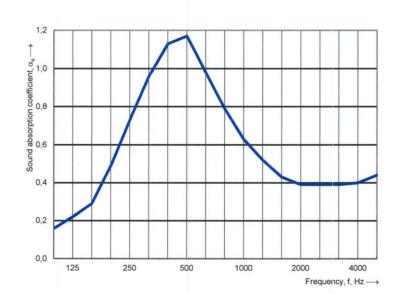
Temperature:
Barometric Pressure:

994 kPa

Barometric Pressure:

24,2 °C 993 kPa

Frequency	α_{s}
f	
[Hz]	
100	0,16
125	0,22
160	0,29
200	0,49
250	0,73
315	0,96
400	1,13
500	1,17
630	0,98
800	0,79
1000	0,63
1250	0,52
1600	0,43
2000	0,39
2500	0,39
3150	0,39
4000	0,40
5000	0,44



No of test report:



Measurement of sound absorption coefficient in a reverberation room

Client:

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2019

Description:

GLASIO 20

VZ040191926

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the spacer pads with a thickness of 3 mm placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 20 mm. The sample was not enclosed

around the circumference.

Object:

GLASIO 20

Empty reverberation room:

Reverberation room with object:

Surface area

9,45 m2

Relative humidity: Temperature: 60,4 % 25,0 °C Relative humidity: Temperature: 61,9 %

Reverberation room volume:

206,2 m3

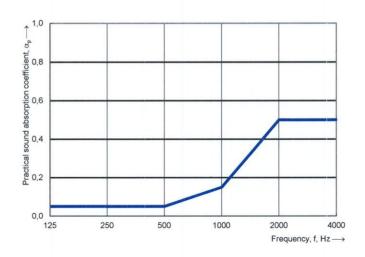
Barometric Pressure:

994 kPa

Barometric Pressure:

24,0 °C 993 kPa

Frequency	α_{p}
f	
[Hz]	
125	0,05
250	0,05
500	0,05
1000	0,15
2000	0,50
4000	0,50



Weighted sound absorption coefficient according to ISO 11654

 $\alpha_{\rm w} = 0.15$ (H)

NRC = 0,20

No. of test report:



Measurement of sound absorption coefficient in a reverberation room

AVETON PRODUCTS s.r.o., Krátkého 211/2, Vysočany, 190 00 Praha 9

Date of test:

28.08.2019

Description:

GLASIO 20

VZ040191926

The test sample comprised glass acoustic panels GLASIO with a format of 1000x450 mm and a thickness of 17 mm. This, therefore, included 21 panels of three rows and seven columns. The panels were laid on the spacer pads with a thickness of 3 mm placed directly on the floor of the testing laboratory. The total layout thickness of the sample was 20 mm. The sample was not enclosed

around the circumference.

Obejct:

GLASIO 20

Empty reverberation room:

Reverberation room with object:

9,45 m2

Relative humidity: Temperature:

60,4 % 25,0 °C Relative humidity: Temperature:

61,9 % 24,0 °C

Reverberation room volume:

206,2 m3

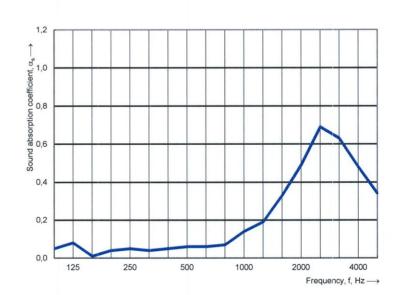
Barometric Pressure:

994 kPa

Barometric Pressure:

993 kPa

Frequency	α_{s}
f	
[Hz]	
100	0,05
125	0,08
160	0,01
200	0,04
250	0,05
315	0,04
400	0,05
500	0,06
630	0,06
800	0,07
1000	0,14
1250	0,19
1600	0,33
2000	0,49
2500	0,69
3150	0,63
4000	0,48
5000	0,34



No of test report:



Photographic Documentation of the Test

