



INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a. s.
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CSI Division – Centre of Civil Engineering
Construction Testing Laboratory Zlín, K Cihelně 304, 764 32 Zlín - Louky



Testing laboratory No. 1007.1 accredited by ČIA according to ČSN EN ISO/IEC 17025:2018

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No. 415600438-01

ACCREDITED LABORATORY TEST REPORT No. 415600438-01

Client: RDacoustic s.r.o.
IČ: 04585445

Address: Svazarmovská 1011, 756 61 Rožnov pod Radhoštěm, Czech Republic

Subject of the test: Determination of sound absorption coefficient in a reverberation room according to ČSN EN ISO 354, ČSN EN ISO 11654

Tested material: Silentmax acoustic absorbing panels

Sample received on: 14.03.2021

Report elaborated by: Ing. Miroslav Figalla

Place and date of issue: Zlín, 24.05.2022

Annex: ---




Ing. Jiří Růžička
Head of Construction Testing Laboratory Zlín


Ing. Petra Hrdinová
Head of Accredited Testing Laboratory

Note: The results given in this Test Report apply only to the sample tested by our laboratory!
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Subject of the test:

Table No. I – Description and identification of the test Subject

ITC's identification number	Identification of the test Subject/sample by client	Description
415600438/1	Silentmax acoustic absorbing panels, air gap 50 mm	see. measuring record on page 5

Sampling method used:

The test sample registered under number 415600438/1 was delivered to the laboratory by the customer. The laboratory is not responsible for the sampling procedure.

Documentation delivered by the client:

Description: Silentmax acoustic absorbing panels are made by ecological way from recycled PET fibers. They are chemically and mechanically resistant, non-flammable. The basic size is 2440x1220 mm, thickness 12 mm, the size can be easily adjusted by cutting to the desired size.

Work requested:

Determination of sound absorption coefficient in a reverberation room.

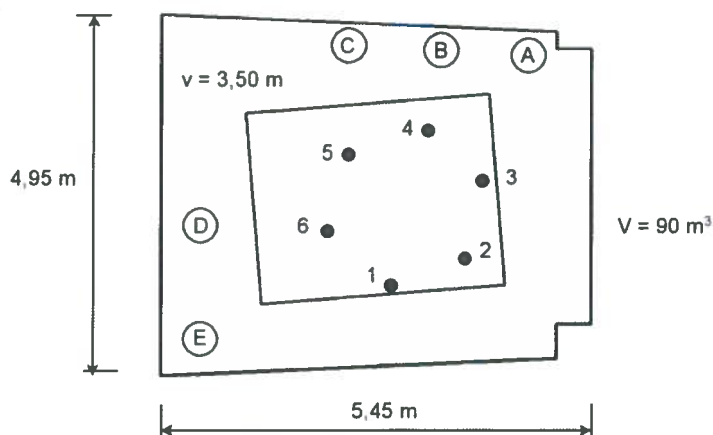
Testing method used:

- Determination of sound absorption coefficient in a reverberation room according to ČSN EN ISO 354, ČSN EN ISO 11654

Test conditions:

According to ČSN EN ISO 354, the sound absorption coefficient is determined from the measurement of the reverberation time in an empty reverberation room and in the same room with a sample. The shape of the reverberation room, location of the sample, positions of the test signal source and the microphone positions are shown in Fig. 1.

Fig. 1. Reverberation room ground plan



A- E... Test signal source positions

1- 6 ... Microphone positions

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Seven diffusive elements were used for the measurement: 1 piece sized 1,0 m x 1,5 m, 3 pieces sized 0,8 m x 1,2 m and 3 pieces sized 1,0 m x 1,0 m.

Measuring equipment:

- Norsonic RTA 840 analyser M 07 2024
- B.K. measuring microphone M 07 2002
- power amplifier AM-39 I 05160
- omnidirectional sound source I 52346

Deviations from the standard test conditions: The volume of the reverberation room and the sample area are smaller than specified in ČSN EN ISO 354, Article 6.

The laboratory is not responsible for information received from customer, which could have influence on the validity of the results.

Testing laboratory:

Tests were made on Workplace no. 1 - K Cihelně 304, 764 32, Zlín – Louky.

Test results:

Table No.2 - Test results

Silentmax acoustic absorbing panels, air gap 50 mm				
Freq. f (Hz)	Reverberation time		Sound absorption coefficient α_s (-)	Practical absorption coefficient α_p (-)
	Empty room T_1 (s)	Room with specimen T_2 (s)		
100	12,17	9,34	0,05	0,10
125	9,27	6,61	0,08	
160	8,03	5,48	0,11	
200	6,20	4,17	0,15	0,25
250	6,03	3,35	0,26	
315	5,81	2,75	0,37	
400	5,71	2,32	0,50	0,60
500	5,63	1,99	0,63	
630	5,75	1,81	0,74	
800	5,19	1,58	0,86	0,95
1000	4,96	1,43	0,97	
1250	4,67	1,41	0,97	
1600	4,30	1,36	0,98	0,95
2000	3,84	1,33	0,96	
2500	3,31	1,27	0,94	
3150	2,78	1,20	0,92	0,95
4000	2,34	1,07	0,99	
5000	1,82	0,96	0,97	

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Silentmax acoustic absorbing panels, air gap 50 mm
Weighted sound absorption coefficient $\alpha_w = 0,55$ (MH)
Classification according to ČSN EN ISO 11654: sound absorption class D
Evaluation according to ASTM C423: NRC = 0,70, SAA = 0,69

Uncertainty of measurement

According to ČSN EN ISO 354, measurement uncertainty is expressed using repeatability indicators r , which are values under which absolute test result differences will lie with 95% probability, where the tests were performed under prescribed conditions. For sound absorption coefficient α_s values, the repeatability indicators r range from 0,01 to 0,05 (-).

Photo documentation of the tested sample



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Measurement of sound absorption coefficient according to ČSN EN ISO 354, ČSN EN 11654

Ref. No.: 26/22

Manufacturer: RDacoustic s.r.o.

Test date: 14.03.2022

Tested material: Silentmax acoustic absorbing panels, air gap 50 mm.

Description: the sample is composed of 2 panels with dimensions of 1240 mm x 2440 mm and 1 panel of 600 mm x 2440 mm. The panel has a fibrous structure, material plastic, thickness 12 mm. The 50 mm air gap is created by metal spacer rollers. Test specimen dimensions: 2440 mm x 3060 mm.

Identification No.: 415600438/1.

Test conditions

Test area: 7,47 m²

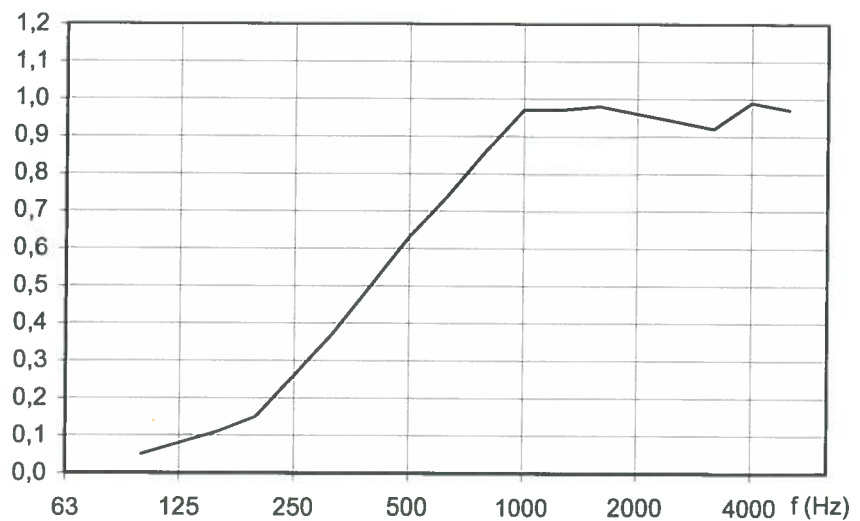
Air temperature: 18,0 - 18,2 °C

Reverberation room volume: 90,3 m³

Relative humidity: 49 - 52 %

Freq. (Hz)	α_s (-)
100	0,05
125	0,08
160	0,11
200	0,15
250	0,26
315	0,37
400	0,50
500	0,63
630	0,74
800	0,86
1000	0,97
1250	0,97
1600	0,98
2000	0,96
2500	0,94
3150	0,92
4000	0,99
5000	0,97

α_s (-)



Classification according to ČSN EN ISO 11654

$\alpha_w = 0,55$ (MH)

Sound absorption class D



Date: 24.05.2022

Prepared by: Ing. Miroslav Figalla

Signature:

..... End of the test report.....

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