Sound absorption coefficient ISO 354

Measurement of sound absorption in reverberation rooms

Client: Sigel GmbH Businessproducts
Bäumenheimer Str. 10, D-86690 Mertingen

Test specimen: Acoustic wall boards Sound Balance

The acoustic wall boards Sound Balance were laid directly onto the floor of the reverberation room. The setup was enclosed by a 64 mm high frame of 19 mm thick MDF panels. The joints between the reverberation room floor and the enclosing frame were sealed with an adhesive tape.

The following wall panels sizes were distributed in the test area of the dimensions length x width = 3.6 m x 2.8 m (without frame):

4 1/2 pieces: 400 mm x 800 mm x 64 mm
6 pieces: 400 mm x 1200 mm x 64 mm
6 pieces: 800 mm x 1200 mm x 64 mm

The wall panels had the following structure (beginning from the front face):

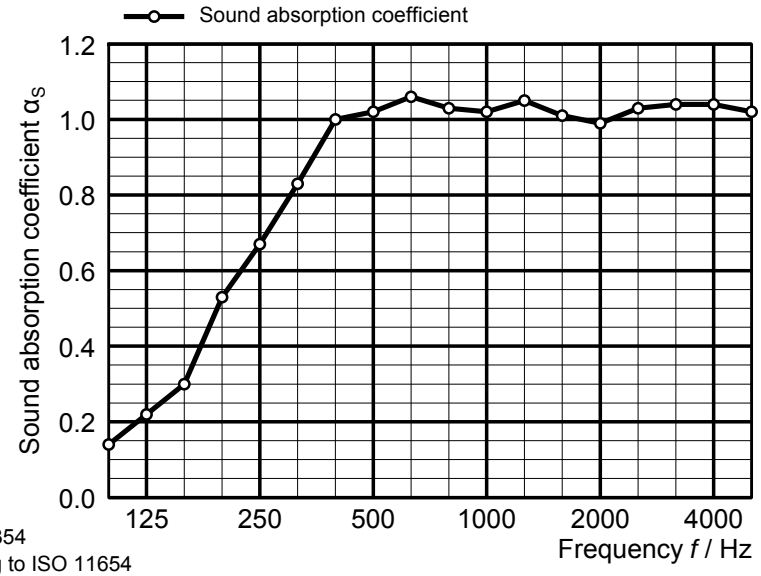
- 1 mm tissue, mass per unit area 227 g/m², specific airflow resistance 166 Pa s/m
- 15 mm PET, gross density 160 kg/m³
- 20 mm polyester nonwoven, 25 mm nominal thickness compressed to 20 mm, at nominal thickness: gross density 18 kg/m³ and specific airflow resistance 67 Pa s/m
- 15 mm PET, gross density 160 kg/m³
- 13 mm air cavity
- floor of reverberation room

The frame of the wall panels consisted of 15 mm thick and 63 mm high PET-panels and was covered with the tissue. The wall panels narrowed to a thickness of 25 mm on the short sides.

Room: reverberation room
Volume: 199.60 m³
Size: 10.08 m²
Date of test: 2018-08-01

	θ [°C]	*r. h.* [%]	*B* [kPa]
without specimen	25.2	59.9	95.5
with specimen	25.6	57.2	95.4

Frequency [Hz]	α_S 1/3 octave	α_p octave
100	0.14	
125	0.22	0.20
160	0.30	
200	0.53	
250	0.67	0.70
315	0.83	
400	1.00	
500	1.02	1.00
630	1.06	
800	1.03	
1000	1.02	1.00
1250	1.05	
1600	1.01	
2000	0.99	1.00
2500	1.03	
3150	1.04	
4000	1.04	1.00
5000	1.02	



α_S Sound absorption coefficient according to ISO 354
α_p Practical sound absorption coefficient according to ISO 11654

Rating according to ISO 11654:	Rating according to ASTM C423:
Weighted sound absorption coefficient α_w = 1.00	**Noise Reduction Coefficient *NRC* = 0.95**
Sound absorption class: A	**Sound Absorption Average *SAA* = 0.94**

MÜLLER-BBM

Planegg, 2018-11-29
No. of test report M136562/3