

Sound absorption coefficient ISO 354

Measurement of sound absorption in reverberation rooms

Client: SAHCO Hesslein GmbH & Co. KG, Kreuzburger Str. 17-19, 90471 Nürnberg
Test specimen: Fabric "Avalon 2194", SAHCO
 Mounting type G-100, flat arrangement

Material details

- manufacturer SAHCO
- fabric type Avalon 2194
- material 100 % Trevira CS
- area specific mass $m'' = 460 \text{ g/m}^2$
- airflow resistance $R_s = 7299 \text{ Pa s/m}$
- thickness $t = 1.1 \text{ mm}$

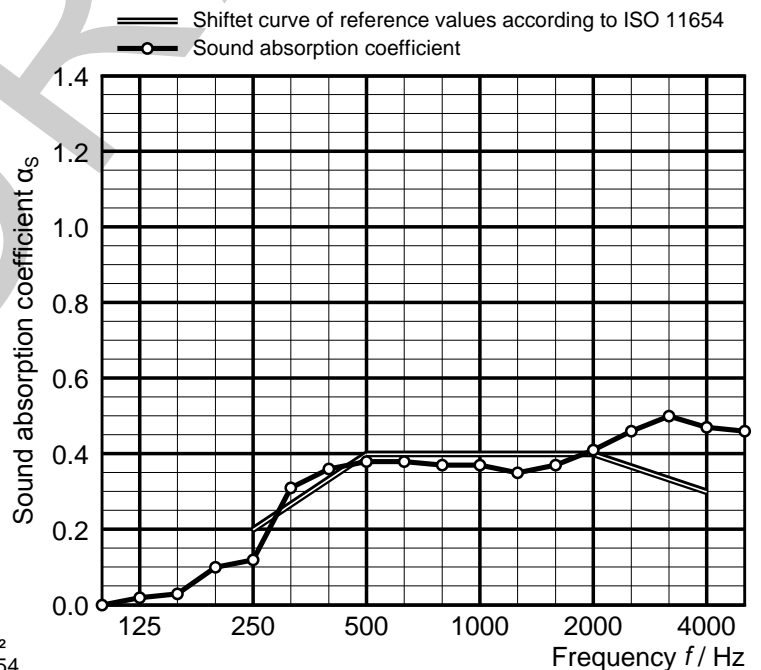
Test arrangement

- test set-up made of 3 curtains: 2 curtains 1.40 m x 3.06 m, 1 curtain 0.76 m x 3.06 m
- mounting type G-100 acc. to ISO 354, flat hanging and 20 mm overlap at curtain splices
- hanging on a metal rail (0.05 m) at the ceiling of the reverberation room in front of a reflective wall, 100 mm clear distance to the wall, arranged without enclosing frame
- total dimensions of the test surface: width x height = 3.52 m x 3.01 m

Room: Hallraum E
 Volume: 199.60 m³
 Size: 10.60 m²
 Date of test: 2016-05-24

	θ [°C]	r. h. [%]	B [kPa]
without specimen	21.7	43.2	94.9
with specimen	21.9	45.9	94.9

Frequency [Hz]	α_s 1/3 octave	α_p octave
100	0.00	0.00
125	0.02	
160	0.03	
200	0.10	0.20
250	0.12	
315	0.31	
400	0.36	
500	0.38	0.35
630	0.38	
800	0.37	
1000	0.37	0.35
1250	0.35	
1600	0.37	
2000	0.41	0.40
2500	0.46	
3150	0.50	
4000	0.47	0.50
5000	0.46	



◦ Equivalent sound absorption area less than 1.0 m²
 α_s Sound absorption coefficient according to ISO 354
 α_p Practical sound absorption coefficient according to ISO 11654

Rating according to ISO 11654: Weighted sound absorption coefficient $\alpha_w = 0.40$ Sound absorption class: D	Rating according to ASTM C423: Noise Reduction Coefficient NRC = 0.30 Sound Absorption Average SAA = 0.33
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Sound absorption coefficient ISO 354

Measurement of sound absorption in reverberation rooms

Client: SAHCO Hesslein GmbH & Co. KG, Kreuzburger Str. 17-19, 90471 Nürnberg
Test specimen: Fabric "Avalon 2194", SAHCO
 Folded arrangement (100 % fabric addition), 100 mm distance to reflective wall

Material details

- manufacturer SAHCO
- fabric type Avalon 2194
- material 100 % Trevira CS
- area specific mass $m'' = 460 \text{ g/m}^2$
- airflow resistance $R_s = 7299 \text{ Pa s/m}$
- thickness $t = 1.1 \text{ mm}$

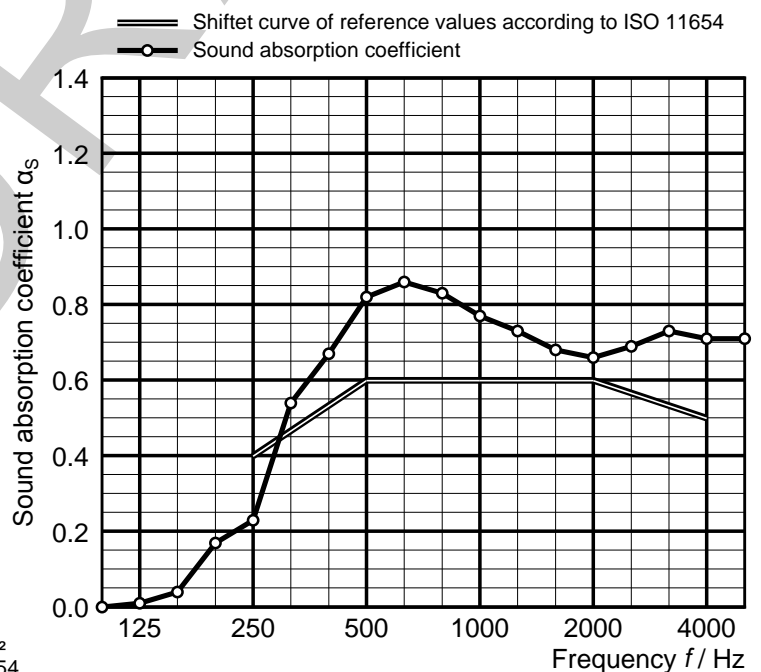
Test arrangement

- test set-up made of 5 curtains (each curtain: width x height = 1.40 m x 3.06 m)
- arranged folded with 100 % fabric addition and 20 mm overlap at curtain splices
- hanging on a metal rail (0.05 m) at the ceiling of the reverberation room in front of a reflective wall, 100 mm clear distance to the wall, arranged without enclosing frame
- total dimensions of the test surface: width x height = 3.69 m x 3.01 m

Room: Hallraum E
 Volume: 199.60 m³
 Size: 11.11 m²
 Date of test: 2016-05-24

	θ [°C]	r. h. [%]	B [kPa]
without specimen	21.7	43.2	94.9
with specimen	21.9	45.6	94.9

Frequency [Hz]	α_s 1/3 octave	α_p octave
100	0.00	0.00
125	0.01	
160	0.04	
200	0.17	0.30
250	0.23	
315	0.54	
400	0.67	
500	0.82	0.80
630	0.86	
800	0.83	0.80
1000	0.77	
1250	0.73	
1600	0.68	
2000	0.66	0.70
2500	0.69	
3150	0.73	0.70
4000	0.71	
5000	0.71	



◦ Equivalent sound absorption area less than 1.0 m²
 α_s Sound absorption coefficient according to ISO 354
 α_p Practical sound absorption coefficient according to ISO 11654

Rating according to ISO 11654: Weighted sound absorption coefficient $\alpha_w = 0.60$ Sound absorption class: C	Rating according to ASTM C423: Noise Reduction Coefficient NRC = 0.60 Sound Absorption Average SAA = 0.64
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