

Sound absorption coefficient ISO 354

Measurement of sound absorption in reverberation rooms

Client: Annette Douglas Textiles AG
Klosterstrasse 42, 5430 Wettingen, Switzerland

Test specimen: Curtain fabric CLOUD
Ruched curtain with 150 mm wall distance, 100 % fabric addition

Curtain fabric:

Information provided by the client

- designation CLOUD

Properties determined by the testing laboratory at one A4-sized sample from test material:

- area specific mass $m' = 113 \text{ g/m}^2$
- airflow resistance $R_S = 117 \text{ Pa s/m}$
- thickness $t = 0.37 \text{ mm}$

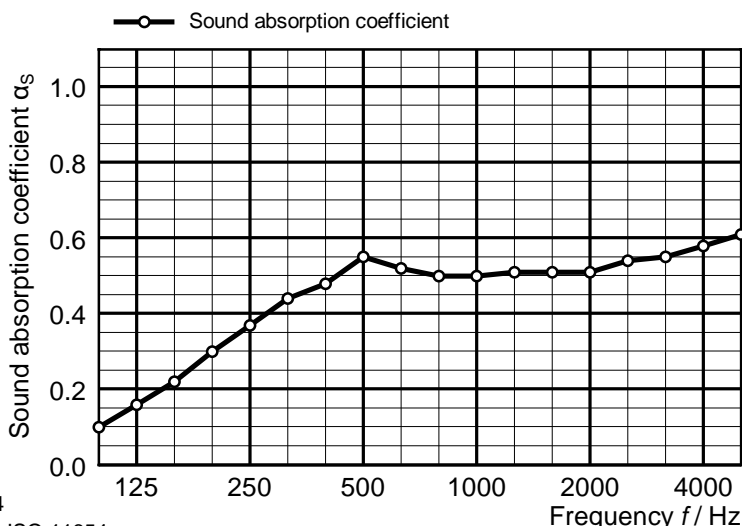
Test arrangement:

- arranged in style of mounting type G-150 acc. to DIN EN ISO 354
- curtain fabric hanging ruched in front of a reflecting wall
- fixed directly underneath the ceiling of the reverberation room, suspended from a metal rail (height 60 mm), distance to the back wall 150 mm
- test arrangement without enclosing frame
- two curtain webs, fabric dimensions each $W \times H = 3510 \text{ mm} \times 3000 \text{ mm}$, arranged ruched with 100 % fabric addition and with 20 mm overlap at vertical web joint
- test surface width x height = 3.50 m x 2.94 m (starting at the lower edge of the metal rail)

Room: E
Volume: 199.60 m³
Size: 10.29 m²
Date of test: 2021-01-04

Frequency [Hz]	α_s 1/3 octave	α_p octave
100	0.10	
125	0.16	0.15
160	0.22	
200	0.30	
250	0.37	0.35
315	0.44	
400	0.48	
500	0.55	0.50
630	0.52	
800	0.50	
1000	0.50	0.50
1250	0.51	
1600	0.51	
2000	0.51	0.50
2500	0.54	
3150	0.55	
4000	0.58	0.60
5000	0.61	

	θ [°C]	r. h. [%]	B [kPa]
without specimen	19.0	35.0	94.5
with specimen	19.2	34.2	94.5



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

<p>Rating according to ISO 11654: Weighted sound absorption coefficient $\alpha_w = 0.50$ Sound absorption class: D</p>	<p>Rating according to ASTM C423: Noise Reduction Coefficient NRC = 0.50 Sound Absorption Average SAA = 0.48</p>
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Sound absorption coefficient ISO 354

Measurement of sound absorption in reverberation rooms

Client: Annette Douglas Textiles AG
Klosterstrasse 42, 5430 Wettingen, Switzerland

Test specimen: Curtain fabric CLOUD
arranged hanging flat with 150 mm wall distance

Curtain fabric:

Information provided by the client

- designation CLOUD

Properties determined by the testing laboratory at one A4-sized sample from test material:

- area specific mass $m' = 113 \text{ g/m}^2$
- airflow resistance $R_S = 117 \text{ Pa s/m}$
- thickness $t = 0.37 \text{ mm}$

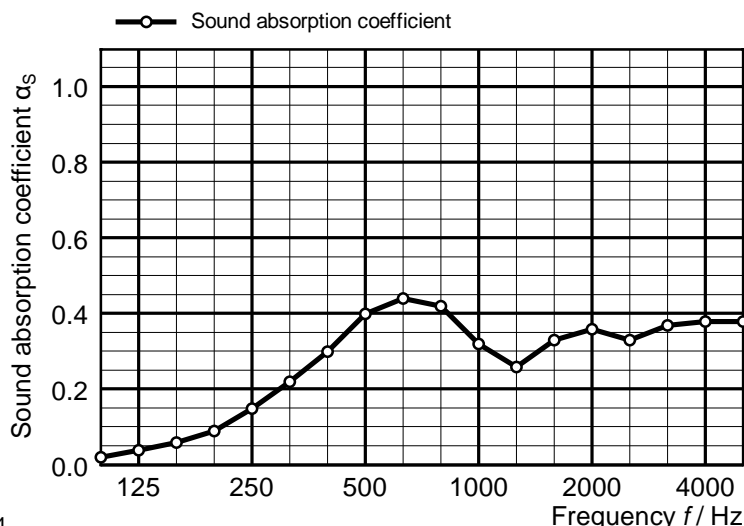
Test arrangement:

- mounting type G-150 acc. to DIN EN ISO 354
- curtain fabric hanging flat in front of a reflecting wall
- fixed directly underneath the ceiling of the reverberation room, suspended from a metal rail (height 60 mm), distance to the back wall 150 mm
- test arrangement without enclosing frame
- fabric dimensions $W \times H = 3510 \text{ mm} \times 3000 \text{ mm}$
- test surface width x height = 3.51 m x 2.94 m (starting at the lower edge of the metal rail)

Room: E
Volume: 199.60 m³
Size: 10.32 m²
Date of test: 2021-01-04

Frequency [Hz]	α_s 1/3 octave	α_p octave
100	◦ 0.02	
125	◦ 0.04	0.05
160	◦ 0.06	
200	◦ 0.09	
250	0.15	0.15
315	0.22	
400	0.30	
500	0.40	0.40
630	0.44	
800	0.42	
1000	0.32	0.35
1250	0.26	
1600	0.33	
2000	0.36	0.35
2500	0.33	
3150	0.37	
4000	0.38	0.40
5000	0.38	

	θ [°C]	r. h. [%]	B [kPa]
without specimen	19.6	35.0	94.5
with specimen	19.0	34.8	94.5



◦ 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

<p>Rating according to ISO 11654: Weighted sound absorption coefficient $\alpha_w = 0.35$ Sound absorption class: D</p>	<p>Rating according to ASTM C423: Noise Reduction Coefficient $NRC = 0.30$ Sound Absorption Average $SAA = 0.30$</p>
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