Simulation of Sound Absorption Coefficient as per ISO 354

Computational model* of absorption measurement in reverberation rooms

Client Kvadrat
Test Specimen Curtains
Type: Flat

Arrangement: Flat hanging G100

1 layer of textile, flat arrangement
Distance to the wall: 100 mm

Front textile: Rumor from Febrik (kvadrat)

Simulated module build-up (from top to bottom):

4 mm	Front textile
100 mm	Air gap
	Concrete surface

Simulation set up:

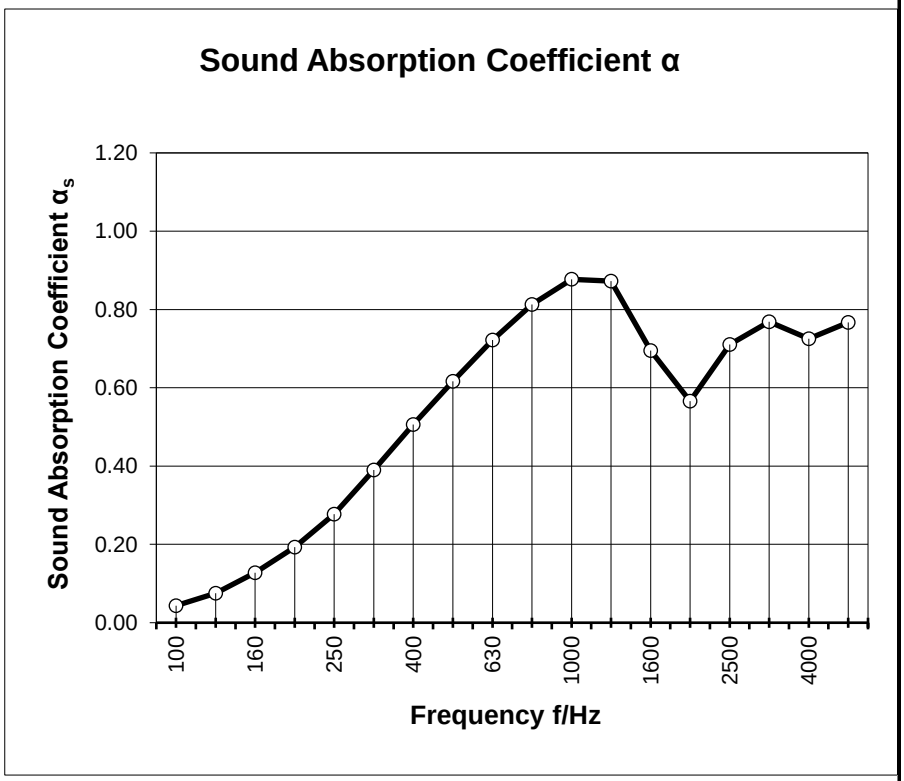
Flat arrangement, 100mm to the wall

No surrounding, enclosing frame

Simulation reproduces the standard ISO 354/11654 measurement - random incidence environment

Date of simulation: 03/01/2024

Frequency [Hz]	αs 1/3 octave	αp octave
100	0.04	
125	0.07	0.10
160	0.13	
200	0.19	
250	0.28	0.30
315	0.39	
400	0.51	
500	0.62	0.60
630	0.72	
800	0.81	
1000	0.88	0.85
1260	0.87	
1600	0.70	
2000	0.57	0.65
2500	0.71	
3160	0.77	
4000	0.73	0.75
5000	0.77	



*Method reproduces conditions, dimensions, build-up in a way results are comparable with measurements in reverberation chamber

αs Sound absorption coefficient to ISO 354

αp Practical sound absorption coefficient to ISO 11654

NRC:	**0.60**
SAA:	**0.6**

Rating according to ISO 11654:

Weighted Sound Absorption Coefficient α_w = 0.6 (MH)

Sound absorption class: C

kvadrat acoustics

Test conducted by Kvadrat SoftCells
Poznańska 3, 62-023 Gądki

Simulation of Sound Absorption Coefficient as per ISO 354

Computational model* of absorption measurement in reverberation rooms

Client Kvadrat
Test Specimen Curtains
Type: Flat

Arrangement: Flat hanging G150

1 layer of textile, flat arrangement
Distance to the wall: 150 mm

Front textile: Rumor from Febrik (kvadrat)

Simulated module build-up (from top to bottom):

4 mm	Front textile
150 mm	Air gap
	Concrete surface

Simulation set up:

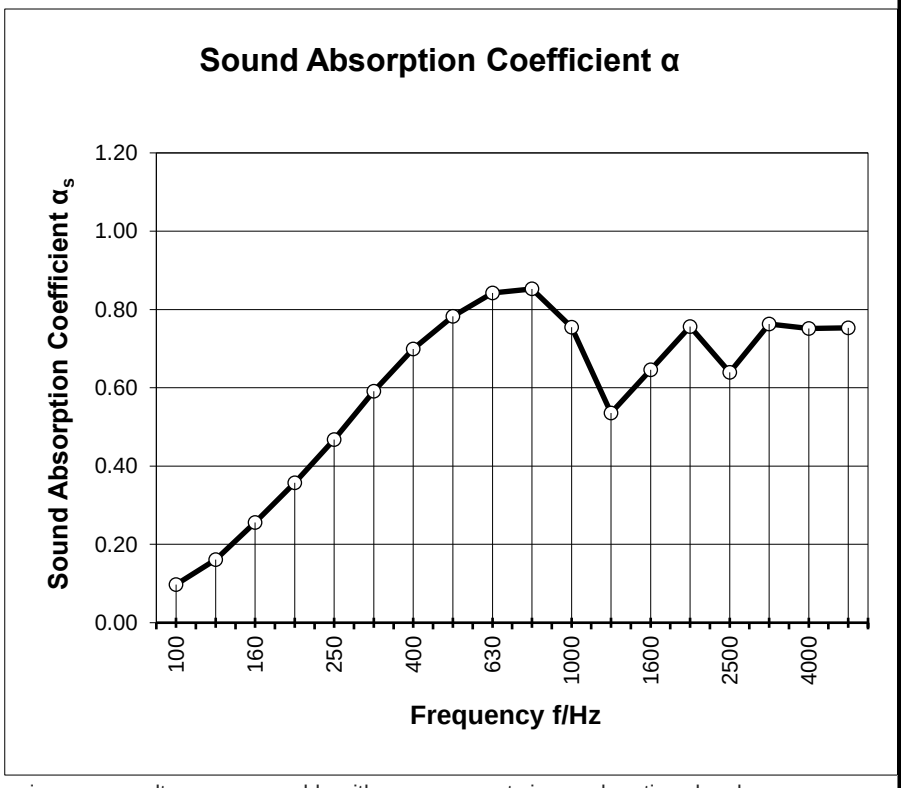
Flat arrangement, 150mm to the wall

No surrounding, enclosing frame

Simulation reproduces the standard ISO 354/11654 measurement - random incidence environment

Date of simulation: 03/01/2024

Frequency [Hz]	αs 1/3 octave	αp octave
100	0.10	
125	0.16	0.15
160	0.26	
200	0.36	
250	0.47	0.45
315	0.59	
400	0.70	
500	0.78	0.75
630	0.84	
800	0.85	
1000	0.75	0.70
1260	0.54	
1600	0.65	
2000	0.76	0.70
2500	0.64	
3160	0.76	
4000	0.75	0.75
5000	0.75	



*Method reproduces conditions, dimensions, build-up in a way results are comparable with measurements in reverberation chamber

αs Sound absorption coefficient to ISO 354

αp Practical sound absorption coefficient to ISO 11654

NRC:	**0.65**
SAA:	**0.66**

Rating according to ISO 11654:

Weighted Sound Absorption Coefficient $\alpha_w = 0.7$

Sound absorption class: C

kvadrat acoustics

Test conducted by Kvadrat SoftCells
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