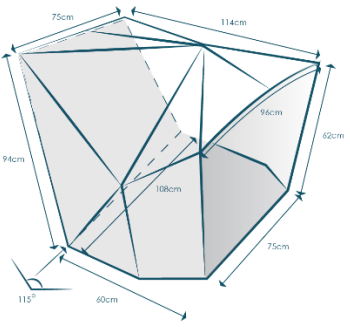


Measurement of Sound Absorption in a Reverberation Room

Date	7 th July 2021	Reference	20210707_HabiCave
Performed by	PC Sound & Acoustics Søndermarken 10 7620 Lemvig, Denmark VAT nr. DK38996738 peter.chapman@mail.dk +45 20612924	At	Sound Hub Denmark Peter Bangs vej 17 7620 Struer, Denmark VAT nr. DK39483467 info@soundhub.dk +45 96127600
Standards	DS/EN ISO 354:2003, DS/EN ISO 11654:1997		
Differences	Test chamber is 82 m ³ which is less than the 150 m ³ described by ISO 354. The test sample size is reduced (<10 m ²) due to the smaller test chamber.		

Test Sample

Manufacturer	Anne Mygind ApS, Elisabeths Vænge 11, 8660 Skanderborg, Denmark	
Description	<p>HabiCave comprised a wooden platform with roof of felt made from recycled plastic. Inside there is a padded seat and back.</p>	
Sample area	Surface area of the two sides, top and back has been used, 2.86 m ²	
Installation	Freestanding on floor as application	
Edges	-	

Test Chamber

Volume	82,4 m ³
Dimensions	4,56 x 5,72 x 3,16 m
Surface Area	117,1 m ²
Diffusers	4 units 2.44 x 1.22 m and 3 units 1.2 x 0.8 m hanging diagonally, 14.8 m ² in total
Sound Source	Omni-directional, 2 positions
Microphones	6 positions for each loudspeaker position

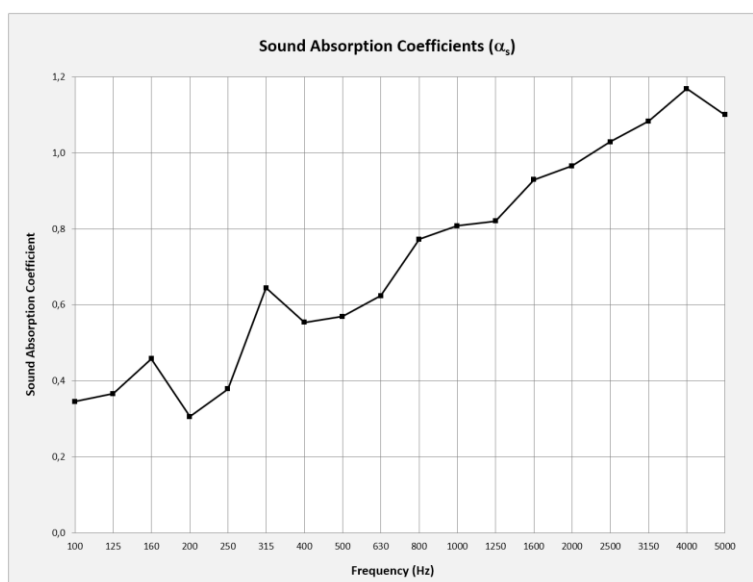
Average Environmental Test Conditions

Temperature	25,7 °C
Humidity	49,6 %
Air Pressure	1038 hPa

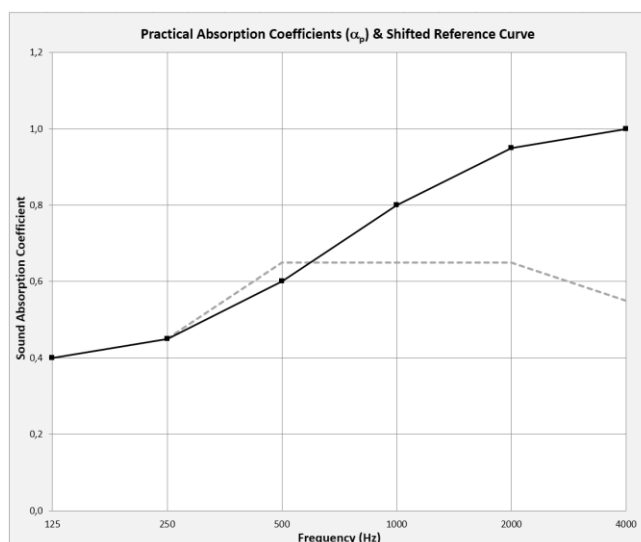
Test Results

Test Sample: **HabiCave**

The results are presented according to DS/EN ISO 11654:1997 including the size of the graphs.



Frequency (Hz)	T ₁ (s)	T ₂ (s)	α _s
100	3,99	3,05	0,35
125	3,78	2,89	0,37
160	3,50	2,58	0,46
200	3,18	2,61	0,31
250	3,29	2,58	0,38
315	3,16	2,18	0,64
400	2,88	2,13	0,55
500	2,90	2,13	0,57
630	2,84	2,04	0,62
800	2,47	1,68	0,77
1000	2,12	1,54	0,81
1250	2,18	1,56	0,82
1600	2,13	1,48	0,93
2000	1,98	1,40	0,96
2500	1,80	1,28	1,03
3150	1,60	1,16	1,08
4000	1,47	1,07	1,17
5000	1,33	1,01	1,10



Frequency (Hz)	Reference Curve	α _p	Shape Indicator
100		0,40	
250	0,45	0,45	
500	0,65	0,60	
1000	0,65	0,80	
2000	0,65	0,95	H
4000	0,55	1,00	H

α _w =	0,65	H
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Sound Absorption Class	C
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Noise Reduction Coefficient	0,70
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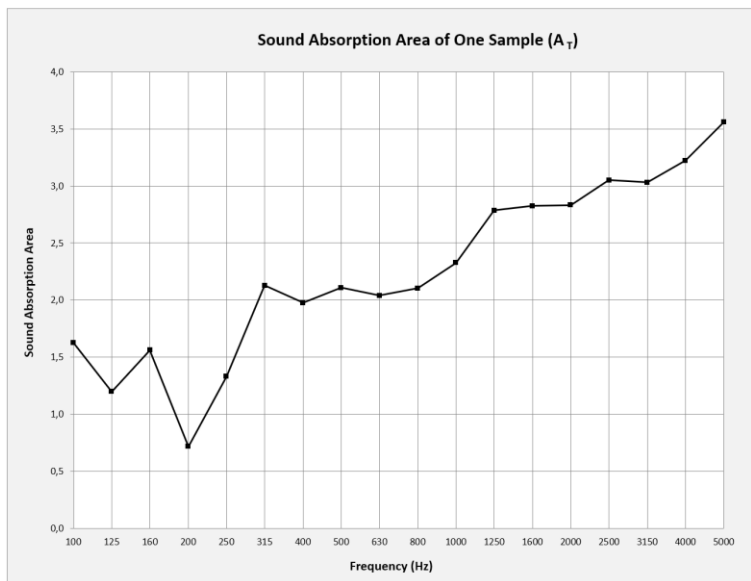
Test Results

Test Sample

HabiCave

The results are presented according to DS/EN ISO 11654:1997 including the size of the graphs.

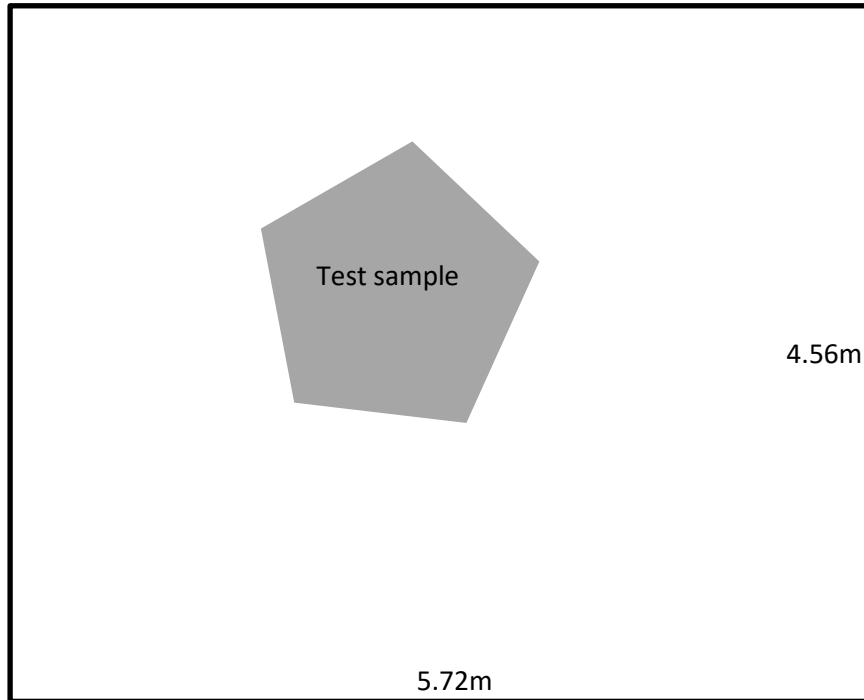
When a product is a free standing piece of furniture with a given size, then it is advantageous to use the SOUND ABSORPTION AREA for the product. This data is stated below. The sound absorption area A_T is equal to the absorption coefficient α_s multiplied by the surface area of the product.



Frequency (Hz)	A_T		
100	1,63		
125	1,20		
160	1,56		
200	0,72		
250	1,33		
315	2,13		
400	1,97		
500	2,11		
630	2,04		
800	2,10		
1000	2,33		
1250	2,79		
1600	2,83		
2000	2,83		
2500	3,05		
3150	3,03		
4000	3,22		
5000	3,56		

Test Setup

Test chamber plan view:



Test chamber front view:

