treehouse

the highest quality confirmed by tests

bejot:

Collaboration with the world of science

We have been working on a development of the office acoustic solutions and products since 2012. We cooperate with the best research centres as regards to innovative solutions and technologies.

AGH Akademia Górniczo-Hutnicza im. Stanisława Staszica w Krakowie

Uniwersytet im. Adama Mickiewicza w Poznaniu

Politechnika Poznańska

Wydział Technologii Drewna
Uniwersytet Przyrodniczy w Poznaniu

UAP | Poznań

be:certified
be:silent
be:focus

Treehouse - the highest acoustic quality confirmed by the tests conducted by the Laboratory of Technical Acoustics of the AGH University of Science and Technology in Cracow!

The high acoustic qualities of the Treehouse booths have been confirmed by an independent research and scientific centre. The booths have received the tests certificates according to the latest international standards, so we can be sure that we deliver a product of the highest quality that guarantees high comfort of work.

The Treehouse has been created to separate a space in a noisy office, at the airport or in the public area that is dedicated only to You and enables to concentrate and quieten down for a little bit. It is an answer to the needs of the modern world, full of hustle and bustle, where a man needs a dash of calm and respite.

Treehouse is the perfect place to meet in a smaller group in a quiet atmosphere. While being isolated from the surrounding world, where you can work in silence, hold a teleconference or carry out a loud brainstorm without disturbing the persons in the office. The Treehouse is a mini conference room in the centre of the office.

How does silence sound?

For the safety reasons and as total quiet is unnatural and unhealthy, we have developed the treehouse with an optimal acoustic insulating power; it effectively reduces distracting noise while not suppressing safety signals (e.g. a fire alarm).

Sound sources

24 dB*
300 µPa
rustling of leaves

55 dB*
11 000 µPa
office

80 dB*
200 000 µPa
crowded street

120 dB*
20 000 000 µPa
airplane

What can good acoustics change?

increase efficiency and precision**

reduces stress**

lowers elevated blood pressure and heart rate**

improves concentration**

reduces discomfort caused by conversations**

How does noise affect us?

67%

decrease in accuracy at work**

64%

of workers feel uncomfortable because of noise in the office**

30%

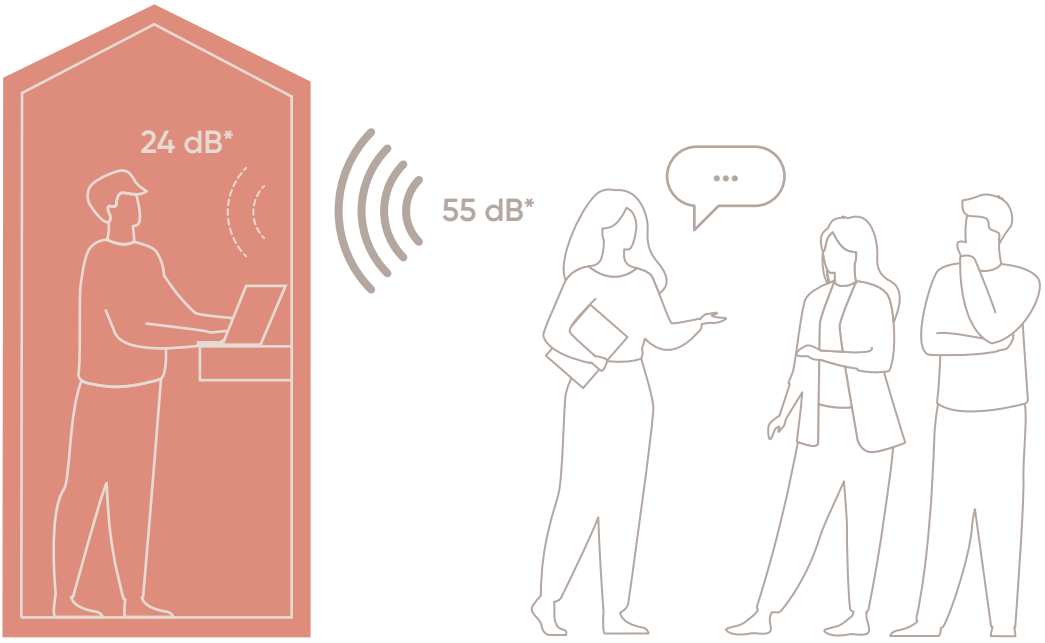
decrease in employee productivity**

15 min.

on average it takes 15 minutes to regain full concentration**

* FIS, *A guide to office acoustics*, 2015
** Evidence Space, *Improving employee productivity by reducing noise*, British Gypsum, Coventry, 2015

01



*55 dB -> 24 dB ≈ **6-fold** reduction in perceived loudness

Acoustic insulating power of the booth

According to standards: PN-EN ISO 11957:2010 and PN-EN ISO 717-1:2013

Optimal acoustic insulation improves comfort and productivity, facilitates conversation and videoconferencing, reduces fatigue and limits excess stimuli.

24 dB
300 µPa

55 dB
11 000 µPa

tested
product

A parameter of acoustic insulation measures a difference between the noise outside a booth and the sound intensity inside it. It indicates by how many decibels the booth dampens the noise coming from the office. The higher the parameter, the more comfortable holding phone calls, conferences and meetings inside the booth can be.

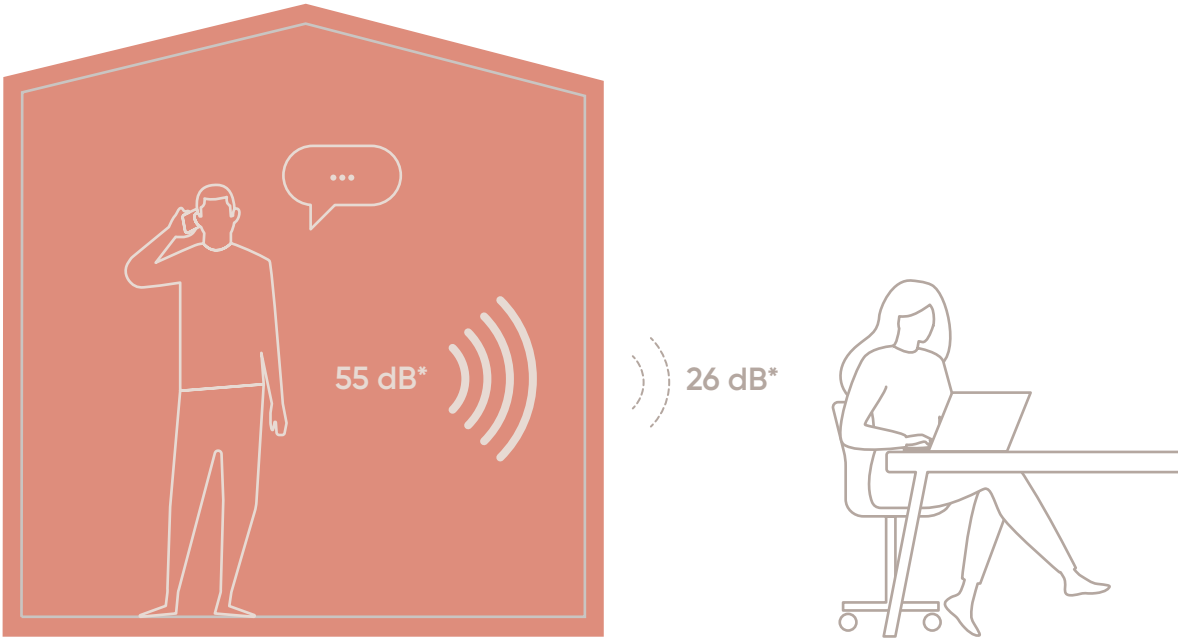
As a result of tests carried out by an independent research and development centre, we have achieved a very high weighted acoustic insulating power index for the Treehouse booths, which puts us at the forefront of the acoustic furniture manufacturers on the market.

Weighted acoustic insulating power index: 31 dB**

The higher the value, the better the dampening of the noise outside.

** Test results for TH Standing Single (THS 1T G2).

02



*55 dB -> 26 dB ≈ **6-fold** reduction in perceived loudness

Reduction in speech loudness

According to standards: ISO 23351-1:2020

The loudness of a conversation conducted by a person inside the Treehouse booth is reduced by half (dB), whereas the perceived difference in loudness reduction is as many as 6 times! Due to the aforementioned a confidentiality of the conversation inside the booth is maintained.

26 dB
400 µPa

55 dB
11 000 µPa

tested
product

The parameter of speech loudness reduction indicates to what extent the booth dampens the voice of the person talking inside it (e.g., on the phone), i.e., by how many dB quieter his/her voice can be heard outside the booth. The speech level during a conversation is on average approx. 55 dB, by reducing it by circa 29 dB it will only be heard at the level of 26 dB outside. This is a value below the standard office background sound level, which is approx. 35-40dB. Thus, under the usual office conditions, the voice of a person talking on the phone in a booth blends into the office background sound, so that the content of the conversation is not understood outside.

Reduction of speech loudness: 29.2 dB**

The higher this value, the lower an audibility of a conversation coming from the booth.

** Test results for TH Standing Single (THS 1T G2).

03

Reverberation time inside the booth

According to standards: PN-EN ISO 3382-2

The Treehouse booth is characterised by a short reverberation time. Thanks to this, our interlocutor will understand us well during the phone call or a tel-econference. Also, the unpleasant flutter echo, the so-called "chatter effect", will not be heard inside it.

tested
product

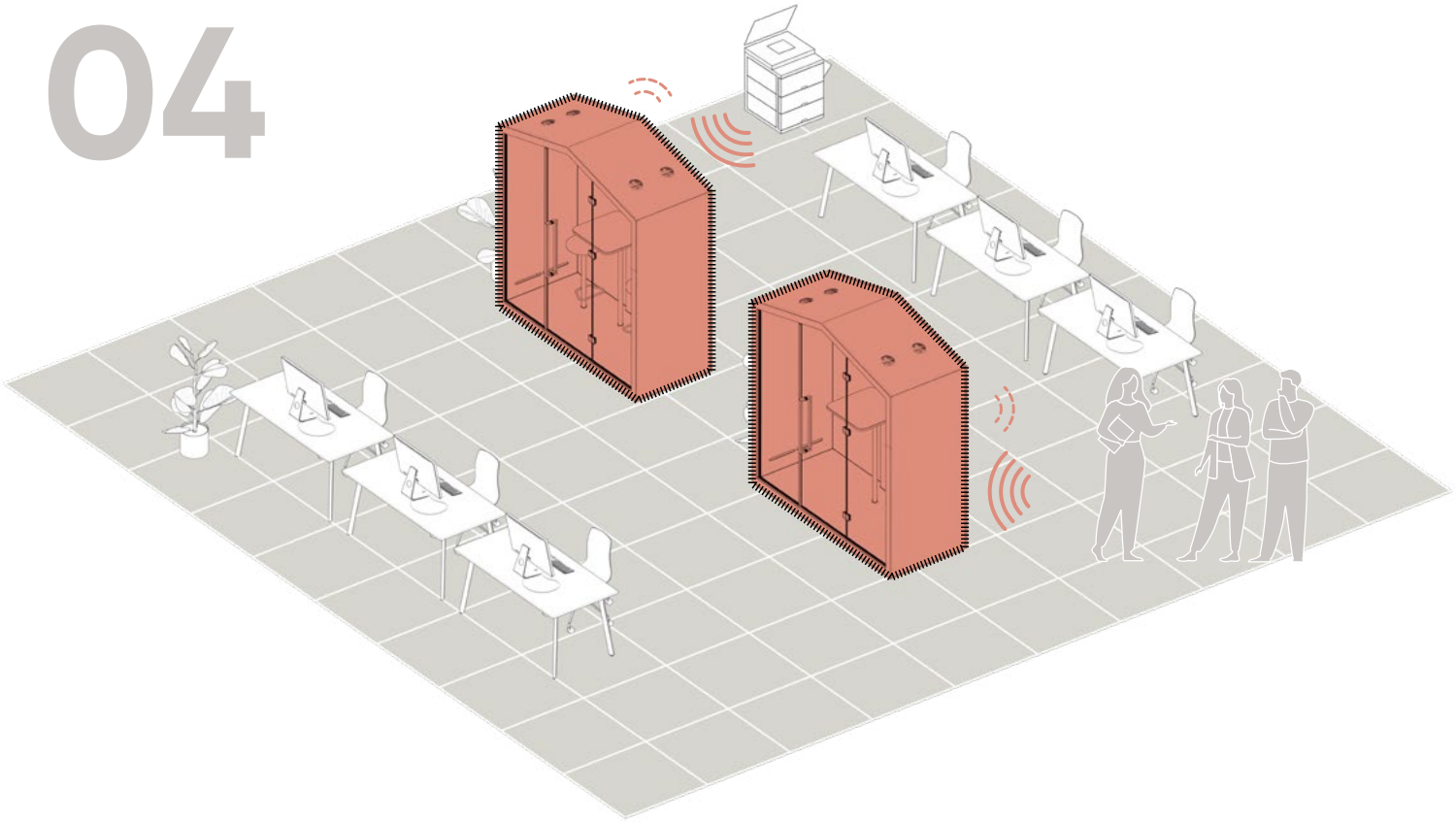
Reverberation time is one of the most popular parameters describing room acoustics. Its length has an influence on the intelligibility of speech. The reverberation time tells us how long a sound fades away in a room. In the case of speech, e.g., in an office or a conference room, too long a reverberation time can reduce speech intelligibility. Long reverberations cause that one word can blur the next one. Speech is clearer in rooms with short reverberation times.
Speech is pronounced in the rooms with a short reverberation time. The use of materials, characterised by high sound absorption, makes that a sound wave reflected from such a material has less energy than one reflected from a hard material.

Reverberation time inside the booth: 0.13 s*

The lower this value is, the more comfortable holding the phone calls and video conferences is (recommended value for closed rooms <0.6 s).

* Test results for TH Standing Single (THS 1T G2).

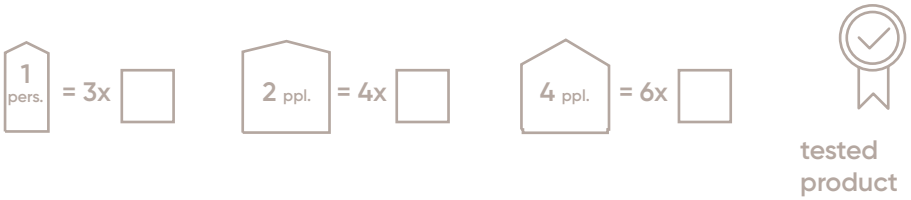
04



Sound absorption coefficient

According to standards: PN-EN ISO 354:2005 and ISO 20189:2018

The Treehouse acoustic booth, in an upholstered version on the outside, improves the acoustic conditions in the room in which it stands. One booth can replace several Selva wall or ceiling panels.



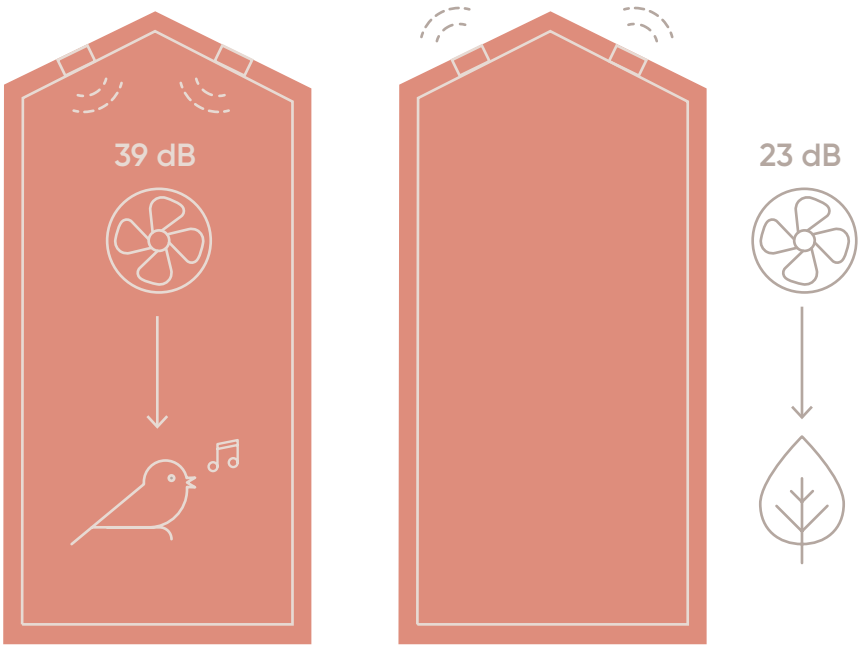
The upholstered panels of the Treehouse, in comparison to most booths on the market (which are usually finished with a hard, highly reflective material), are filled with a special acoustic fleece that reduces a quantity of reflections in the room. Thus, they reduce the noise prevailing in the office. The surface of the product plays a key role in improving room acoustics. The Treehouse THS1 introduces approximately 5 m2 of acoustically absorbing surface area into the room, which is the equivalent of, for example, three large Selva Wall panels with the dimensions of 1200 x 1200 mm. With larger booths (e.g., Treehouse TH4) it can be the equivalent of up to six large Selva panels.

Sound absorption coefficient: 0.45*

The higher the value, the greater the noise and reverberation reduction in the room in which the booth stands.

* Test results for TH Standing Single (THS 1T G2).

05



Noise level of the fans outside and inside the booth

According to standards: PN-EN ISO 3741-1:2011

The Treehouse booths are equipped with an efficient ventilation system. The quiet fans with a high airflow have been used. The air volume has been adjusted to provide optimum comfort for the user.

23 dB
300 µPa

39 dB
1 800 µPa

tested
product

Thanks to the high quality of the fans, the sound they generate outside is practically inaudible to other office users.

The level of 23 dB can be compared to the rustle of leaves, what causes that the sound practically blends into the acoustic background of the office space.

Sound level of the fans outside the booth: 23.3 dB*
(comparable to the gentle leaves rustling)

The ventilating ducts in the Treehouse booths have been dampened and the fans have been selected so that they do not generate excessive noise inside the booth.

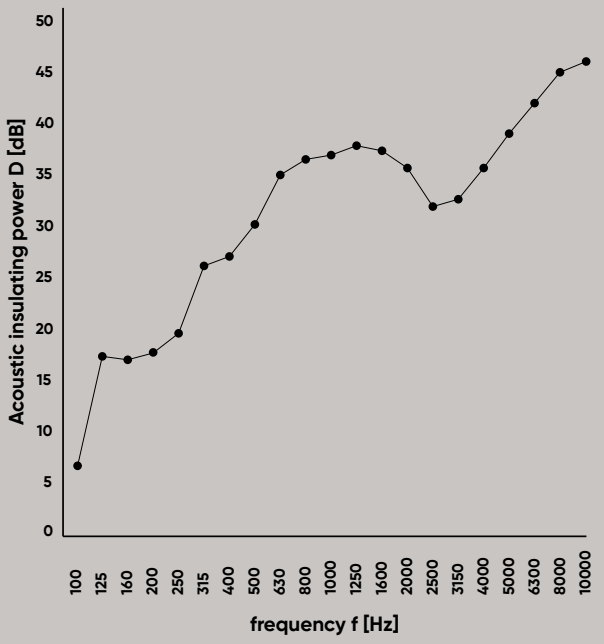
Only a quiet, unobtrusive rustle is heard in the Treehouse booths, allowing for comfortable conducting of the conversations.

Sound level of the fans inside the booth: 39 dB*
(comparable to the quiet singing of birds)

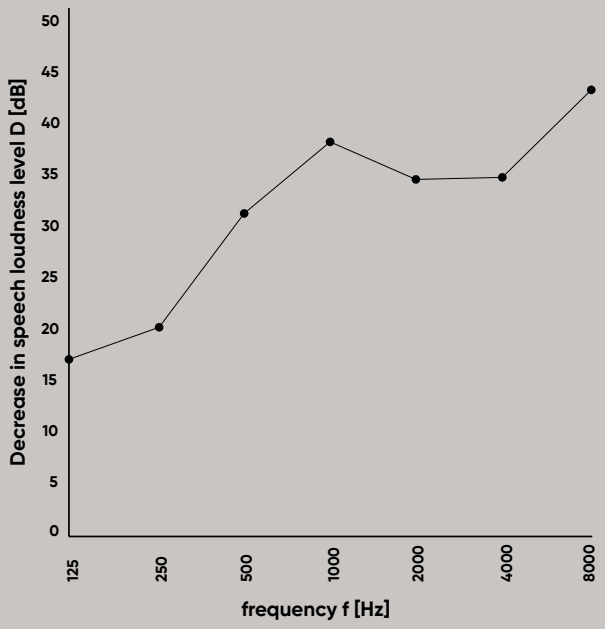
* Test results for TH Standing Single (THS 1T G2).

Results of the acoustic tests

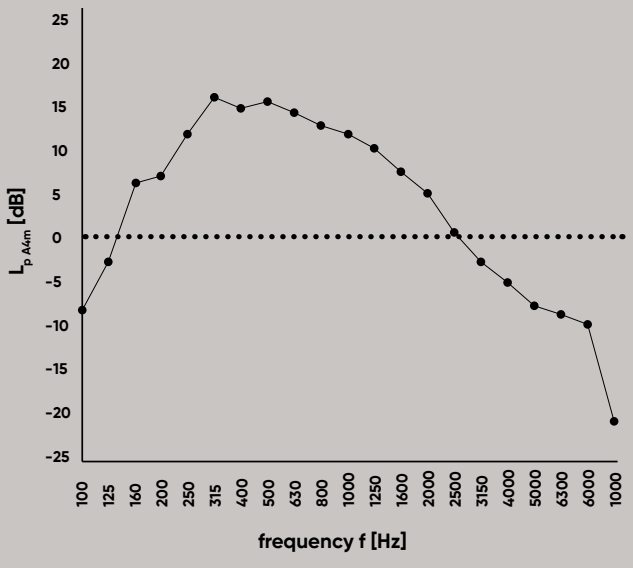
Weighted acoustic insulating power index



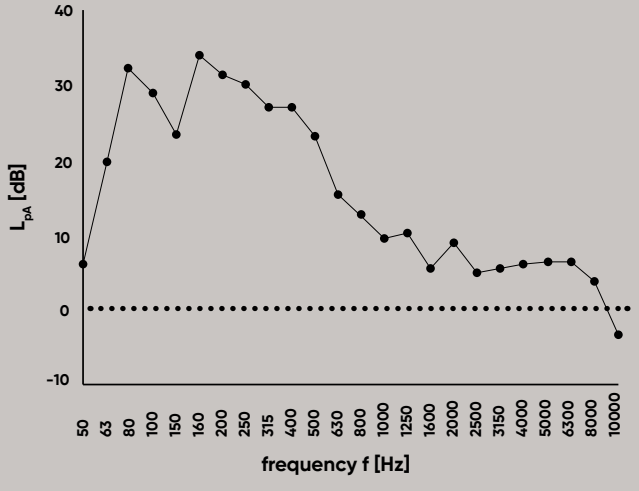
Reduction in speech loudness level



Sound level of ventilation outside the booth



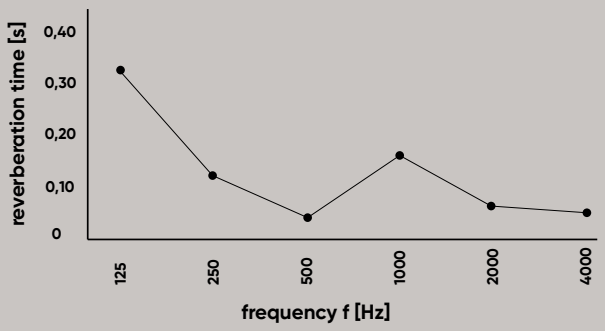
Sound level of ventilation inside the booth



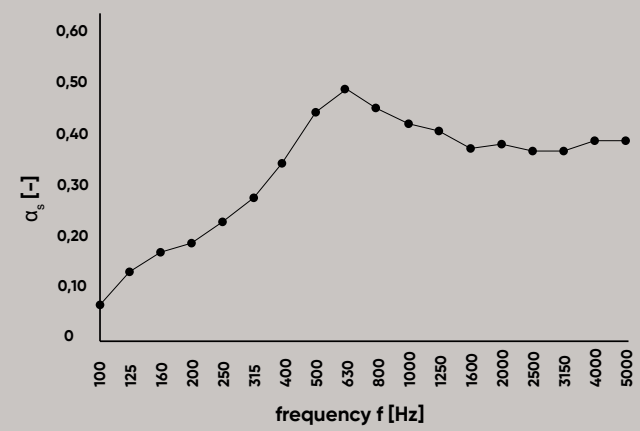
Tested parameter	Acoustic insulating power of the booth DS,W	Reduction in speech loudness level DS,A	Reverberation time inside the booth	Sound absorption coefficient	Noise level of the fans outside the booth	Noise level of the fans inside the booth
Result for Treehouse acoustic booth	31 dB	29.2 dB **B class (25-30dB)**	0.13	0.45	23.3 dB	39 dB
Recommended value	≥ 28 dB	≥ 25 dB	≤ 0.6	≥ 0.3	≤ 30 dB	≤ 42 dB
Explanation	The higher the value, the better the dampening the noise from the outside.	The higher the value, the less audible the conversation coming from the booth.	The lower this value is, the more comfortable holding the phone calls and video conferences is.	The higher the value, the greater the reduction in the noise and reverberation in the room, where the booth stands.	The lower the value, the less audible the sound of the fans outside.	The lower the value, the less audible the sound of the fans inside the booth.
Standard	PN-EN ISO 11957:2010 PN-EN ISO 717-1:2013	ISO 23351-1:2020	PN-EN ISO 3382-2	PN-EN ISO 354:2005 ISO 20189:2018	PN-EN ISO 3741-1:2011	PN-EN ISO 3741-1:2011

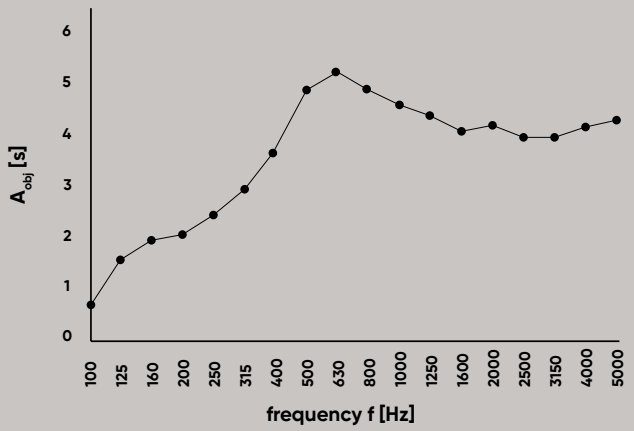
Test results for TH Standing Single (THS 1T G2).

Reverberation time inside the booth



Absorption





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