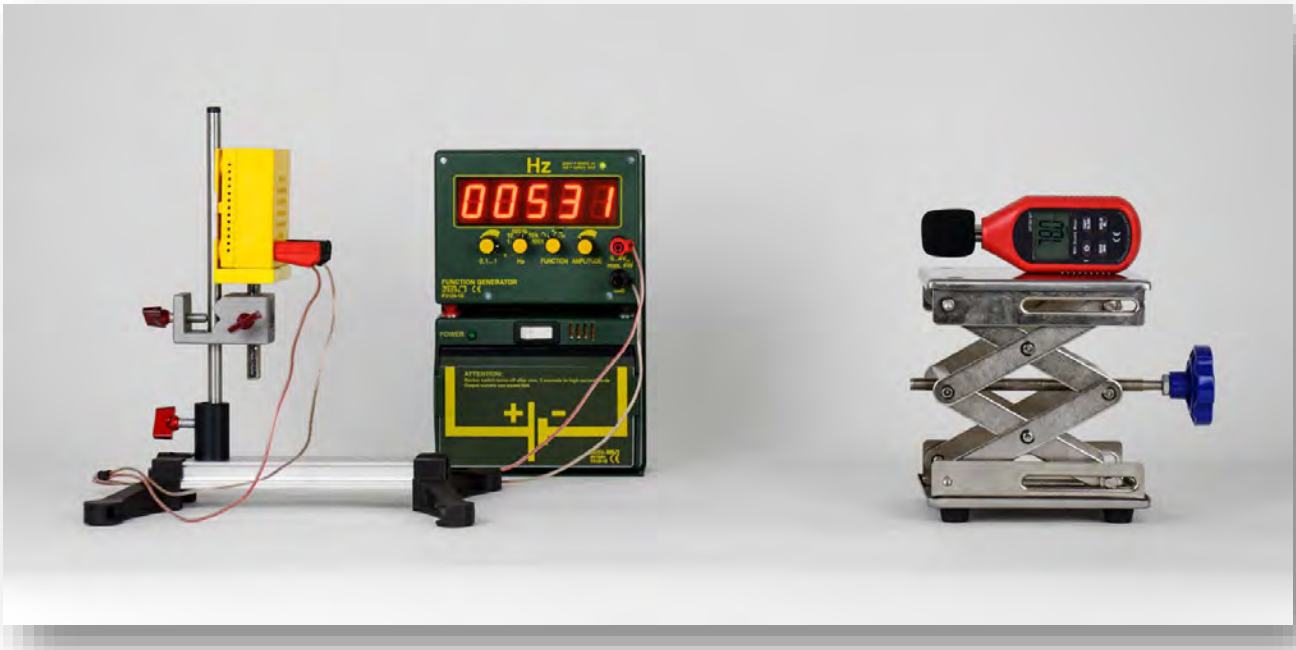
SOUND ABSORPTION (SOUND INSULATION)

AKD 05.10



Material:

Item Code	Qty.	Description
C7235-2B	1	Lab-jack small, 150x150 mm
DG520-1E	1	Connecting lead, double, 100 cm
DS090-3K	1	"Sepp" support base, 260 x 220 mm
DS095-3K	1	Bosshead cross-pattern, demo 03
DS617-1H	1	Holder for MBCs "compact""
DT812-DB	1	Sound level meter "mini" BT
MB240-1LS	1	MBC Loudspeaker with nose
P3120-1B	1	Rechargeable battery, "inno", 6V/10 Ah
P3120-1G	1	Function generator with digital display "inno"
P3120-4A	1	L-shaped assembly platform
P7240-1C	1	Support rod, round, L=250 mm, D=10 mm
P7806-1GV	1	Storage box - lid, II, with fleece

SOUND ABSORPTION (SOUND INSULATION)

AKD 05.10

Goal:
Vehicles on motorways cause a lot of noise, especially large vehicles such as lorries and fast-moving vehicles. If you live near a busy road, this noise is not only unpleasant, but can also be harmful to your health. With this experiment, we would like to demonstrate the function and effect of noise barriers.

Setup:
The stand rod is attached to the stand base. The holder for building blocks is fixed in the cross sleeve and this is attached to the stand rod. The function generator is plugged into the battery and connected to the speaker using the double cable. The loudspeaker is placed on the holder. The laboratory lifting table, on which the sound level meter is placed, is set up at some distance.

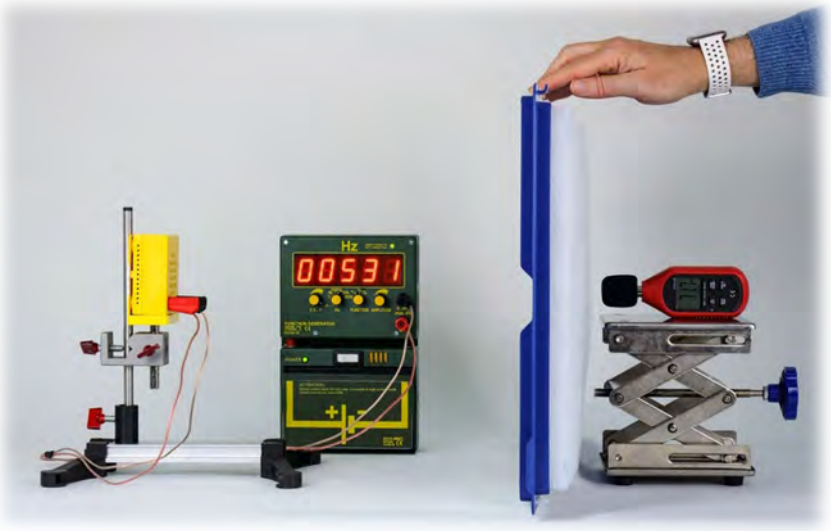
Experiment 1:
The sound level meter is switched on and a frequency of 1000 Hz is set on the function generator. A measurement is carried out without a ‘wall’.

Result:
Bei den obigen Einstellungen wird ein Geräuschpegel von rund 78 dB angezeigt.

SOUND ABSORPTION (SOUND INSULATION)

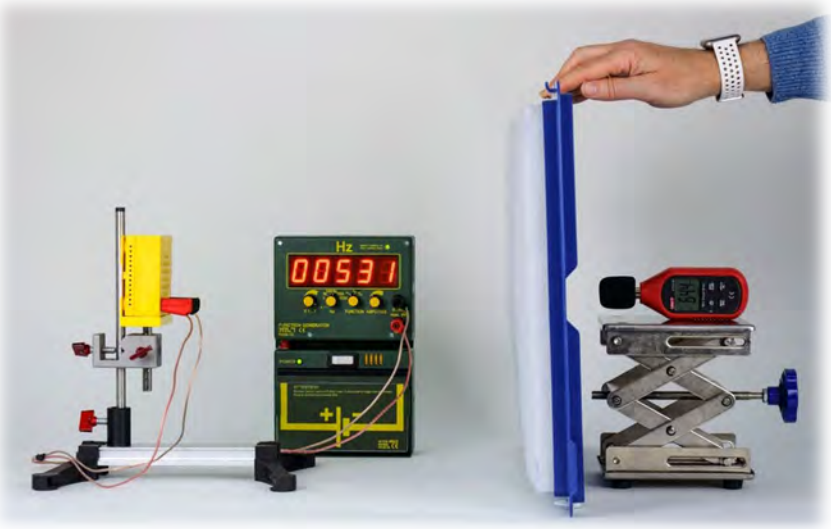
AKD 05.10

Experiment 2:
Now place the speaker cover with fleece between the speaker and the sound level meter. The smooth side of the cover should face the sound source. The effect on the sound level meter is observed.



Result:
The wall shields the noise.
With the above settings, a noise level of around 71 dB is displayed.

Experiment 3:
Now turn the cover so that the fleece is facing the sound source. Once again, the effect on the sound level meter is observed.



Result:
The fleece has a positive effect on the shielding effect.
With the above settings, a noise level of around 64 dB is displayed.

SOUND ABSORPTION (SOUND INSULATION)

AKD 05.10

Experiment 4:
The next step is to check whether diffraction occurs in sound waves. To do this, take the sound level meter in your hand and move it vertically up and down behind the panel.

Result:
Sound diffraction takes place. The noise level is greatly attenuated.

Hinweis:
The topic of ‘noise protection’ does not only concern car traffic, of course. Other examples of noise protection in practice include.

- Soundproof cabins as office space
- Ear protection
- Soundproof windows

The decibels in the results are guide values for the settings in the images. The results may vary depending on the amplitude and frequency.