

Sound insulation.

Electrical installation in sound insulation walls.





Music, talking, sounds, noise. **Peace and quiet.**

Noise is what we mean by unwanted sound. In our daily lives, we are exposed to very high levels of background noise, and we are becoming more and more sensitive to it. Over 40% of the population complain about the noise their neighbours make. This means that sound insulation is protection against noise pollution, but it also maintains our privacy in both our home and business lives. A personal chat in the doctor's office, negotiating a contract, or a telephone call in a hotel room - nobody should be able to overhear any of these. A school class taking its final exam, a baby sleeping near its celebrating parents, or a patient in a hospital room - they all need peace and quiet.

Building construction sound insulation means privacy, peace and quiet, but also intimacy and a feeling of security. This is just as important in public and commercial buildings as in private life, including in schools, hospitals, old people's homes, conference rooms, hotel rooms or doctors' practices. It's the same situation in terraced houses and apartment blocks. Sound insulation walls are necessary wherever people need privacy or to be able to concentrate.





Good sound insulation is an important factor in the quality of home life and work, which also makes it an important criterion in buildings. According to a current survey, good sound insulation is one of the most important quality features of a house. 82% of the people asked are not prepared to economise on sound insulation, and 94% say that good sound and noise insulation is "important". For 57%, it is "extremely important".

Building owners and planners call for clearly defined criteria and functional solutions in order to implement appropriate sound insulation which is easy to install and prevents exposure to liability.





Regulations and standards. DIN 4109 and VDI 4100.

Sound insulation in structural engineering is regulated by DIN 4109. However, this standard is no longer up-to-date - it only represents the limits of what is tolerable. For a long time, building experts have been making use of new technologies which offer better methods of sound insulation. The latest court judgements, including the one issued by the Federal Supreme Court of Germany, confirm that sound insulation according to DIN 4109 does not conform to the accepted rules of technology.

Modern building materials and manufacturing methods offer much better sound insulation standards than those specified in DIN 4109. In 1994, the VDI (the Association of German Engineers) published a guideline (VDI 4100 - Sound insulation in homes) to which separate reference can be made in tenders. It recommends considerably higher standards than those specified in DIN 4109.

Awareness of sounds from adjacent apartments and allocation to sound insulation levels (VDI 4100 table 1 / E-DIN 4109-10 table A1)

Variables for levels of sound insulation (SSt) Insulation against airborne noise as per table 2-4 / VDI 4100		Acoustic value	SSt I	SSt II	SSt III
from table 2: apartments in apartment blocks	between habitable and external rooms	horizontal	R'w in dB	56	59
		vertical		57	60
	between habitable rooms and external staircases and/or corridors			56	59
from table 3: semi-detached and terraced houses	between habitable rooms and external rooms		R'w in dB	63	68
from table 4*: internally (apartment or house used by owner/tenant)	between habitable rooms	horizontal	R'w in dB	48	48
		vertical		55	55

Requirements acc. to DIN 4109
(* recommendations for normal sound insulation acc. to supplement 2 to DIN 4109)



Technical data.

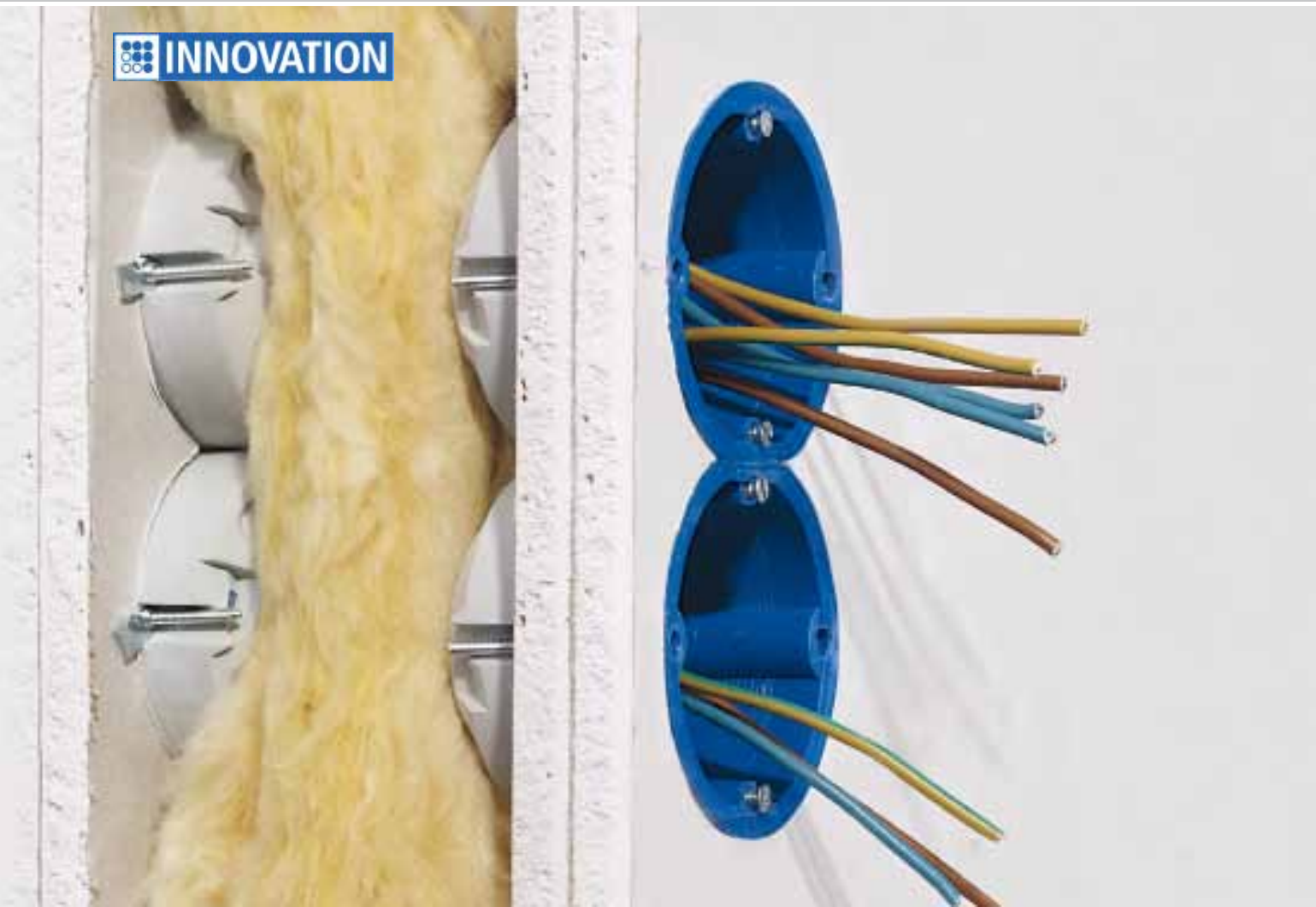
Sound insulation walls.

In most cases, **sound insulation walls** are single or double stud wall constructions with one, two or three layers of planking using plasterboard or mineral fibreboard. The walls are normally insulated with mineral or glass wool and are at least 100 mm thick.

Any weakening of a sound insulation wall, for example caused by an installation opening, affects the acoustic properties. Series of tests have shown that the opposing installation of cavity wall boxes can result in a deterioration of the wall element by up to 15 dB. This means almost four times the impression of noise as perceived subjectively. For example, the sound of a telephone ringing in the next room would be heard much more clearly.

KAISER sound insulation boxes can even be used as up to a 5-way combination in opposing installation without any negative effects on the sound pressure level.



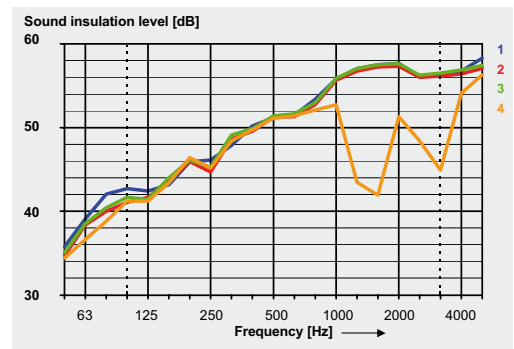


Quiet behind the wall. Sound insulation box.

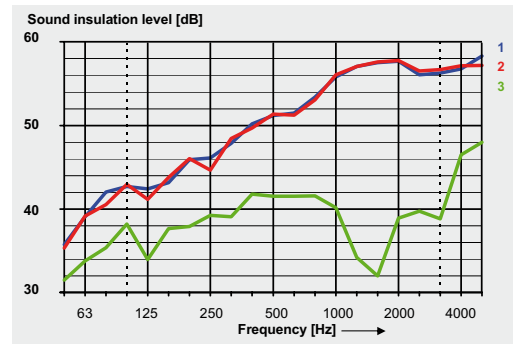


The **innovative one-gang junction box** ensures the constructional demands made on sound insulation walls in spite of installation openings. The specially-developed one-gang junction box with sound insulation sheathing completely absorbs and reflects sound. There is no measurable difference when compared with a wall which has not been opened. The box is also available as a halogen-free version. When fitted with a sound insulation cover, it can also be used as a junction box.

- Maintains the wall's sound insulation function
- Also for retrofitting
- Installation up to 5-way combination
- Also for opposing installation
- Can be used as a junction box when fitted with a sound insulation cover



1 Wall, without installations, 54 dB
 2 Sound insulation box 9069-01, 1-way, with accessory, 54 dB
 3 Sound insulation box 9069-01, 1-way, with cover, 54 dB
 4 One-gang junction box 9064-01, 1-way, with accessory, 48 dB.



1 Wall, without installations, 54 dB
 2 Sound insulation box 9069-01, 5-way, with accessory, 54 dB
 3 One-gang junction box 9064-01, 5-way, with accessory, 38 dB.



- Sound insulation box** | Art. No. 9069-01
- Halogen-free** | Art. No. 9069-77
- Support connector** | Art. No. 9060-88
- Sound insulation cover** | Art. No. 1184-69

The sound insulation test certificate can be downloaded from our website www.kaiser-elektro.de

The **sound insulation box** is fitted just as easily in a \varnothing 74 mm opening as a conventional cavity wall box. The exact-fitting cable entry is created with the universal opening cutter. For combinations with a standard combination distance of 71 mm, simply remove the marked holding ring. Fully-insulated through-wirings can be created with the help of the support connector. When fitted with a sound insulation cover, the box can be used as a junction box.



Systems and solutions for professional electrical installation.

Since 1904, KAISER has been developing systems and products as a basis for good installation. Planners and processors use the practical solutions internationally for their daily tasks in all sectors of installation work.

Product systems



Flush-mounting installation

Products and systems for classic flush-mounting installation



Installation housings

Products and systems for luminaires, loudspeakers and display installations



Cavity wall installation

Products and systems for classic cavity wall installation



Earthing

Products and systems for additional equipotential bonding and areas and rooms which are at special risk



Concrete building installation

Products and systems for concrete building installation for on-site mixed concrete and prefabrication



Cable glands

Plastic or metal products and systems for everyday installations and technical specialities

System solutions



Fire protection

Box, housing and sealing systems for fire-protection walls and ceilings



Sound insulation

Electrical installation in sound insulation walls



Energy efficiency

Electrical installation for energy-saving buildings



Refurbishing

For modernising and renovating private and commercial buildings

Technical information and advice

You will find all further information on products, system solutions and communication media on our website: www.kaiser-elektro.de

For other questions or information, please contact our team of technical consultants, who look forward to talking to you.

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