Sound reduction glass

What is sound reduction glass?

Sound reduction glass, as the name suggests, is (generally) a type of laminated glass fitted with a sound-blocking interlayer film. Manufacturing this specialty glass is a delicate task, wherein both the thickness of the glass as well as the space separating the panes in an insulating glass unit are carefully considered, as sound insulation properties are strongly dependent on both.

Where can I use sound reduction glass?

Sound reduction glass is suitable for apartments and private houses as well as office buildings. In other words, it can be used virtually anywhere where additional sound insulation is needed. While sound reduction glass is primarily used in insulating glass units, it can also be used in the form of single panes. However, the sound damping effect is, of course, greater in insulating glass units.

Technical details

The technical aspects behind sound reduction glass are relatively complex, but what is important to know is that sound insulation is better when using panes with different thicknesses. Laminating multiple panes together yields a lower flexural rigidity and significantly reduces sound vibrations above 1,000 Hz. Two 4 mm panes of glass laminated together are better at damping high-frequency sounds than a single monolithic 8 mm pane.

Sound insulation is divided into three categories: Rw, Rw+C, and Rw+Ctr in the frequency range 100–3,150 Hz.

Rw: general mid-frequency ambient noise (speech, music, radio, TV).

Rw+C: mid-/high-frequency noise (high-speed road and rail traffic).

Rw+Ctr: low-/mid-frequency noise (heavy traffic, air traffic, dance music, certain industrial activities).

Thus, the sound level generated by a noise source and the sound reduction properties of glass depend on the specific frequencies.

Sound insulation

When defining the sound insulation characteristics of a structure, it is important to consider the ability of humans to perceive differences in sound insulation. The table below gives a general picture of the perceptibility of mid-frequency and low-frequency sounds.

Change in sound level	Tested difference: mid-frequency sound	Tested difference: low-frequency sound
± 1 dB	No perceptible difference	Barely perceptible difference

± 3 dB	Barely perceptible difference	Perceptible difference
± 5-6 dB	Perceptible difference	Double difference
± 8-10 dB	Double difference	

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