

Saint-Gobain Acoustic insulation glazing



Protect yourself from exterior noise

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Reducing urban noise is a vital need!

We spend 90% of our time indoors. Moreover, in 2030, 60% of people will live in urban areas.

Noise is a high factor of stress, especially when it is experienced in the intimacy of the home. It is possible to maintain a quiet interior space using efficient glazing adapted to the noise context where the home is located.

Noises can be very different. This ranges from loud voices and laughing from passers-by in a shopping street to schoolchildren or the deafening noise of aircraft near an airport, as well as traffic and worksites.

Standard double-glazing units are generally not enough. There is a very broad range of solutions to match the level of acoustic insulation glazing needed depending on the type of exterior noise pollution. The more the home is exposed, the more it is useful and important to select glazing with high acoustic abatement. Double-glazing that includes acoustic insulation glazing [laminated glass](#) can significantly reduce the noise entering the home through closed windows. Additionally, this type of glazing automatically provides an additional benefit because the technique of laminated glass also protects people against cutting themselves if the glass is

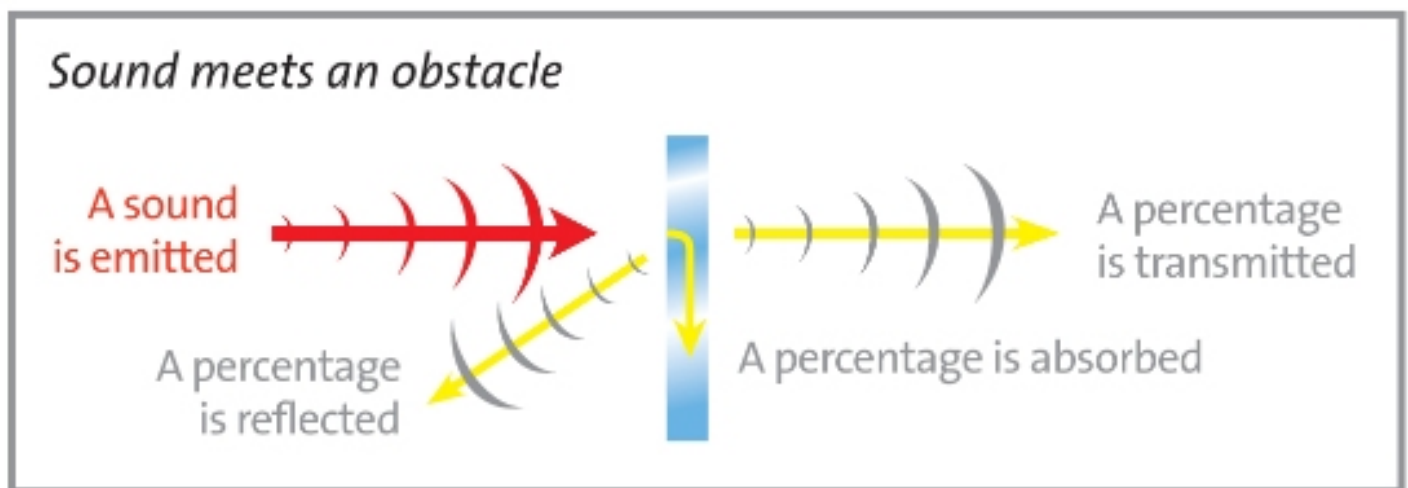
broken.

While thermal insulation above all depends on the emissivity of the insulating coatings and the width of the gap, acoustic insulation glazing is achieved by using thick glass as its mass absorbs the phonic vibrations. The “thick” glass used can be monolithic or laminated with a safety film.

These solutions provide results but have the disadvantage of making the windows heavier and sometimes reducing the thermal performance. So, the total thickness of insulating glazing is dependent on the depth of the window rabbet (generally 24 or 28 mm). To install the glazing, increasing the thickness of the glass accordingly reduces the width of the gap containing the inert gas (e.g. argon) at the cost of thermal comfort.

Improving acoustic insulation

Acoustic glass works by reducing a sound wave's energy. The acoustic insulation properties of a window are measured with the 'R' sound reduction index. For example, a window with an R of 20 decibels should reduce a 60 dB outside traffic noise level to 40 dB within the room.



Noise pollution can be in any combination of low, medium or high frequency sounds. Some types of frequencies are easier to block or reduce. High pitched sounds (carried by short sound waves) are easier to absorb but reducing low frequency noise such as traffic can be more difficult. It is important to select the acoustic insulation properties of the window required according to the frequency or pitch of the noise to be blocked, as well as the desired number of decibels to be reduced.

Improving the sound insulation of a double glazing window can be achieved by:

- Having the widest possible cavity between panes of glass
- Using thicker glass
- Differing the thicknesses of the two glass panes used
- Using an efficient insulating window frame
- Using specially laminated acoustic glass

Acoustic glass is a sandwich of two or more sheets of glass, heat or pressure bonded together with one or more acoustic polyvinyl butyral (PVB) interlayers. The interlayers act as a noise damper, weakening the energy of the sound waves as they travel through the glass.

Acoustic glass is a perfect solution for insuring exceptional levels of sound insulation. It not only provides insulation for impact and airborne noise but also maintains the safety and security properties of laminated

glass.

Acoustic glass can be functional to both commercial and domestic buildings when applied to products such as windows, patio doors, skylights, conservatories and internal screens and partitions. It can also be incorporated within double glazing window ranging in thickness from 26mm - 40mm, as well as single glazed applications from 6.8mm to 12.8 mm in thickness.

In general, the acoustic attenuation of a glazing is obtained by asymmetric thickness of glass. One can obtain this effect with a thicker monolithic glass with additional weight and glazing thickness. A standard laminated glass gives similar effect with the additional benefit of safety.

SGG STADIP SILENCE is Saint-Gobain's best solution for acoustic insulation glazing. It reduces 3 dB acoustic compared with laminated glass of a similar thickness. At equal weight, the acoustic comfort is therefore significantly improved.

Good to know!

The acoustic performance of glass is not affected by:

- filling insulation glazing with argon to improve the thermal insulation
- the deposit on one of the panes of glass of a solar control or thermal insulation coating
- glass tempering
- the position of the two panes of glass, whether they are placed on the interior or exterior of the insulation glazing.

The acoustic qualities of windows are determined by the glazing but also by the type of frame, assembly, shutters and how the entire unit is installed. Acoustic insulation glazing must be mounted in an effective and well-installed frame.

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