

Quick facts

- Thicker float glass, laminated glass, insulated glass units, and secondary window units all reduce noise levels significantly.
- Compression style windows (awning and casement) will seal better and keep more noise out than sliding style windows (sliding and double hung).
- No matter how good the window is at keeping noise out if it is not installed and sealed properly during construction noise will still penetrate the home.
- The Sound Transmission Class (STC) is a rating system that applies to all building elements and measures how well they reduce noise in a building.

Noise solutions

- Use thicker glass to reduce common traffic and neighbourhood noise.
- Use a secondary window to reduce aircraft noise.

Sound – the basics

The STC rating is measured in decibels (dB) and reflects the amount of noise that is reduced when it passes through the window. So if the noise outside is 70dB and inside it is 40dB, the window is said to have an STC rating of 30.

Normally the human ear cannot detect a 1-2dB change in sound. However a 10dB decrease in the sound is subjectively heard by the human ear as a halving of the sound – eg a 40dB noise seems half as loud as a 50dB noise.

The average spoken conversation makes a 50dB noise, while common street traffic and neighbourhood sounds make about 70dB noise.

Reducing sound

Sound waves are what carry noise into a home. To achieve noise reduction you must disrupt the sound waves as this prevents them entering the home. So how do you disrupt a sound wave?

- Thicker glass – the further the sound wave has to travel through the density of the glass, the more likely it is to drop some of the sound waves. Thicker glass is often the best solution.
- Laminated glass – the vinyl interlayer will impact on the sound waves, but as laminated glass usually comprises two panels of equal thickness glass, the sound waves do not have to alter and therefore travel through more easily.
- Insulated glass units – the key to achieving significant sound wave disruption in an IGU is to have as large an air gap as possible (less than 12mm air gap will provide an STC no better than thick glass); and to have the two panels of glass vary in thickness by at least 50% (so a 10mm panel on one side and a 5mm on the other).
- Secondary window – for heavy traffic and aircraft noise a second window with an air space of at least 100mm is the only viable solution to significantly reduce the noise.

The choice of timber, aluminium or A.T. 2000 Series does not significantly impact on acoustic performance of the window.

Stegbar noise solution range

Glass

Maximum glass thickness available.

| | Aluminium | | Cedar | | A.T. 2000 | |
|--------------|-------------------------|----------------------|-------------|---------------|-----------|------|
| | Residential | Architectural | Residential | Architectural | | |
| Window style | Without glazing adaptor | With glazing adaptor | | | | |
| Awning | 16.38mm | | 25mm | 18mm | 24mm | 14mm |
| Casement | 16.38mm | | 25mm | 18mm | 24mm | 14mm |
| Double Hung | 7.52mm | 16.38mm | 25mm | 18mm | | 16mm |
| Sliding | 7.52mm | | 8.38mm | 18mm | | 16mm |

The STC performance of a sample range of glass.

| Glass type | STC rating |
|--|------------|
| 4mm clear | 29 |
| 5mm clear | 30 |
| 6.38mm laminate | 30 |
| 7.52mm laminate | 35 |
| 10.38mm laminate | 36 |
| IGU 3mm clear/8mm air/4mm clear | 28 |
| Secondary window 6mm clear/100mm space/4mm clear | 46 |

Window style

Use awning and casement windows as the best solution.

Pricing

Windows featuring a Stegbar noise solution will cost more than a basic window glazed with 4mm clear glass. The percentage below should only be used as a rough guide to the likely premium. This is based on a 1m x 1m single lite window, and will vary depending on size and mandatory glass requirements designated by Australian Standards.

- 7.52mm laminate glass – 50%
- 10.38mm laminate glass – 44%



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