



Secondary Glazing

For a warmer, quieter life...



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What is Secondary Glazing?

Secondary glazing brings the benefits of modern, efficient, double-glazed windows to your home without the need to replace your existing windows.

By adding a second pane of aluminium-framed glass inside your existing windows, secondary glazing helps keep the heat in and the noise out. As a result, by fitting secondary glazing you could save around 10% on your household heating bills while making your home environment more comfortable.

Because secondary glazing leaves your existing windows untouched and intact, it's particularly suitable for use in conservation areas and listed buildings. It's great in any building where altering or replacing the primary windows is not possible or not cost-effective, making it ideal for rented accommodation. And even if you already have double-glazed windows, adding secondary will further improve noise reduction and heat retention.

Our aluminium secondary glazing is of the highest quality, lightweight, highly effective and comes with the option of a range of specialist glass for maximum noise reduction and thermal performance. Built to last, it's virtually maintenance-free and will give you many years of trouble-free service.



Incarnation secondary glazing comes in white, silver or brown as standard, or any of 200 RAL colours on request. Aluminium is strong and durable, which means the frames can be designed to be slim without sacrificing strength, so that they blend into the existing windows.

Features...

- Available in white, silver, brown or any RAL colour
- Float, obscure, toughened, laminated, 'K' & acoustic glass options
- Made-to-measure
- Face fix or reveal fix options
- Easy to install
- Can incorporate fly-screens for summer

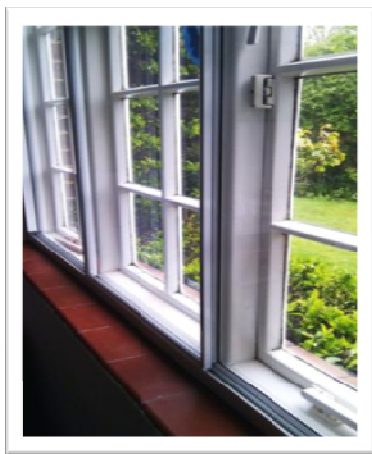
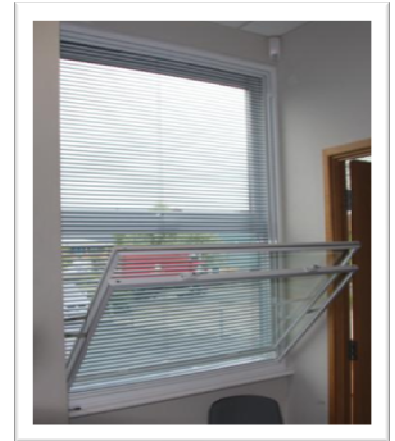
Benefits of Secondary...

- Improved thermal insulation
- Saves money on heating bills
- Highly effective for noise insulation
- Provides added security
- Retains exterior character of your building
- Perfect for conservation properties where alterations are restricted

Available in a wide range of designs...

Vertical Sliding

- Ideal for traditional sash windows
- Optional spring balances to support open sashes in position
- Optional tilt-back facility
- Wide range of frame options available

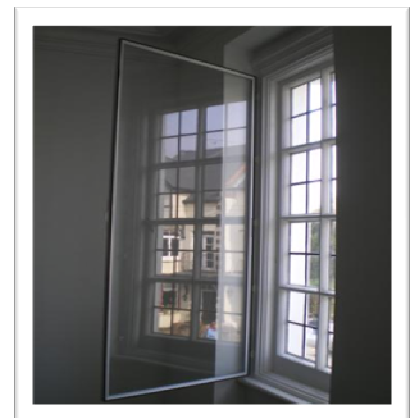


Horizontal Sliding

- Ideal for casement and ribbon windows
- Smooth sliding action using nylon pads or roller wheels
- Triple track option for maximum ventilation
- Wide range of frame options available

Hinged Units

- Suitable for both windows and doors
- Friction or butt hinged, according to requirements
- Perfect for fire escapes
- Ideal for maximum ventilation
- Wide range of frame options available



Lift Outs & Fixed Units

- Perfect for shaped windows
- Useful for situations where access to the external window isn't paramount
- Ideal for bay windows and other specialist applications
- Highly cost effective

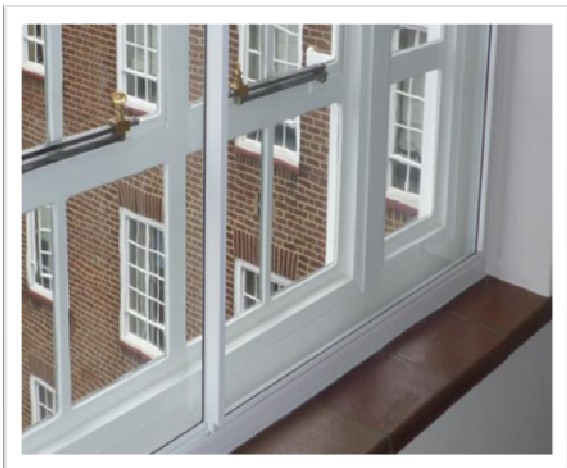
Noise reduction...

Secondary glazing is recognised to be the most effective type of glazing when it comes to reducing noise through windows. Noise from traffic, aircraft and general noise from towns, cities and main roads can be a real disruption to the quality of your living or working environment. Installing secondary glazing is a cost-effective way to significantly reduce this problem. Standard 4mm float glass provides effective noise insulation, but by upgrading to thicker (6mm+) laminated or acoustic glass, noise reduction can be enhanced even further.



Thermal insulation...

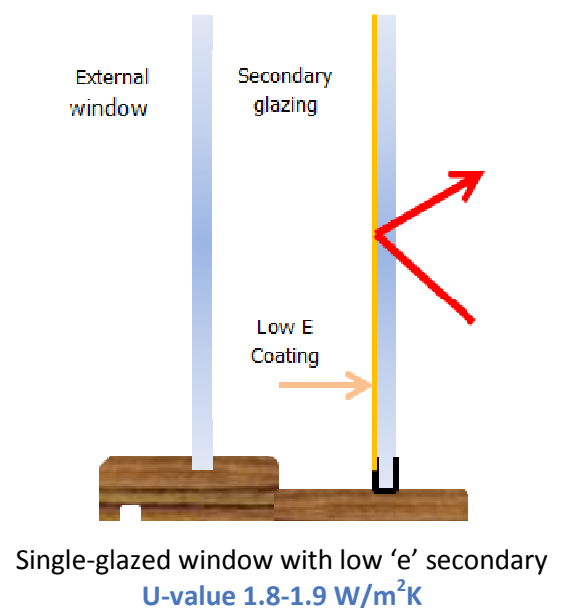
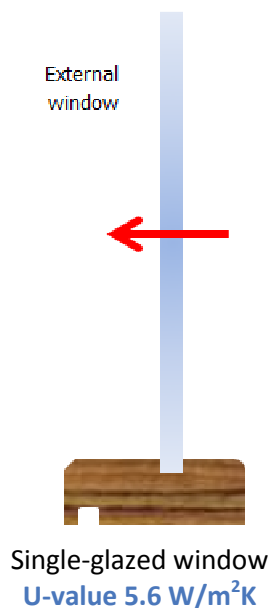
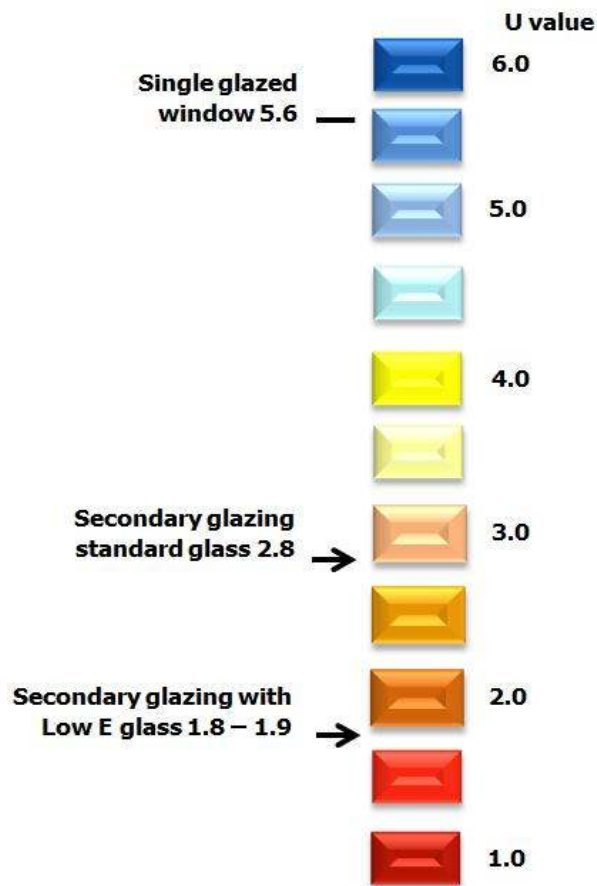
Adding an extra pane of glass to your existing windows can dramatically decrease heat-loss, which is why our secondary glazing can reduce heat-loss through the windows in your home or office by up to 50%. Standard float or toughened glass performs very well at reducing heat-loss, but upgrading to Pilkington 'K' low-e glass will improve thermal performance even more.



The low-down on U-values...

What do we mean by U-values? U-value is a means of comparing the heat lost through various parts of a building. For instance, a part of a building with a U-value of $4 \text{ W/m}^2\text{K}$ will lose twice as much heat to the outside as a part with a U-value of $2 \text{ W/m}^2\text{K}$.

The lower the U-value, the less heat you lose through your windows.



Sound doesn't have to be complicated...

How does sound travel?

Sound travels through the air like ripples on a pond surface when a stone is dropped into it. The sound radiates outwards in all directions from the source, gradually reducing in intensity or until an object stops its progress.

Measuring sound

Sound is described in different ways but primarily in terms of intensity and frequency. The sound intensity is described in dB. A low dB indicates a soft sound; a high dB value indicates a loud sound. Frequency describes how high or low pitched the sound is (Hz).

For instance, if a stereo has its initial volume set to 60dB, decreasing that volume by set amounts will produce the following effects:

- 3dB – the difference is just perceptible
- 5dB – the difference is clearly noticeable
- 10dB – the sound from the stereo is halved

Sound reduction

Loud music remains the main source of noise complaints in England, Scotland & Wales. 70% of people admit to feeling harassed by noise. Secondary glazing is an excellent solution for hotels, pubs & clubs or factories situated close to housing, allowing them to keep the noise in.

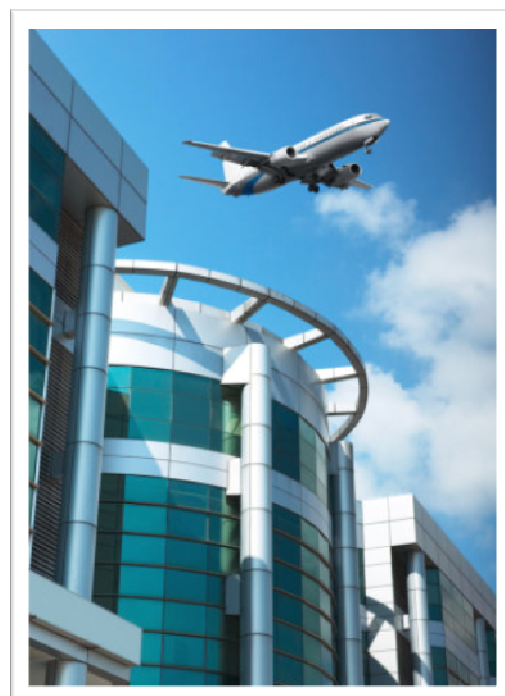
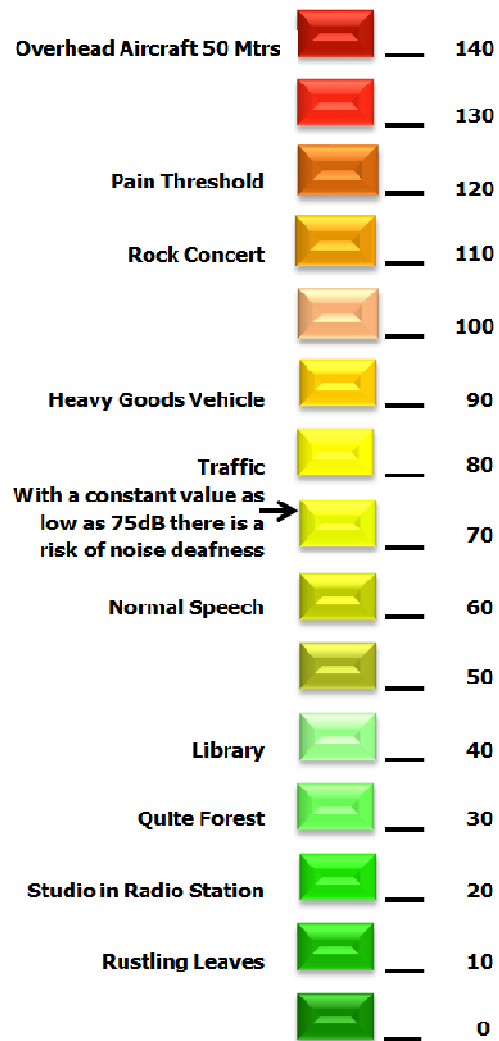
Recommended sound levels

Dwellings

- bedrooms: 30-35dB
- living rooms: 30-40dB

Offices

- private: 35-40dB
- open plan: 45-50dB



New glass technology to reduce sound...

Acoustic laminated glass (Silence) is the latest product to come onto the market. Two sheets of glass are bonded together with a 0.76mm thick layer of special acoustic polyvinyl butyral (PVB). Solaglas estimate a 20% improvement over standard glass. Taking this increase into account when installed into our secondary glazing a reduction of 44-45dBs should be easily achievable.

Sound reduction test...

A three-panel horizontal-sliding secondary glazing unit (1960mm X 1190mm) was sent to the Building Research Establishment in Watford to be tested for acoustic performance (noise reduction).

How was the test carried out?

A cavity wall was built into an aperture between two rooms in the BRE's transmission suite. The specification of the wall was as follows:

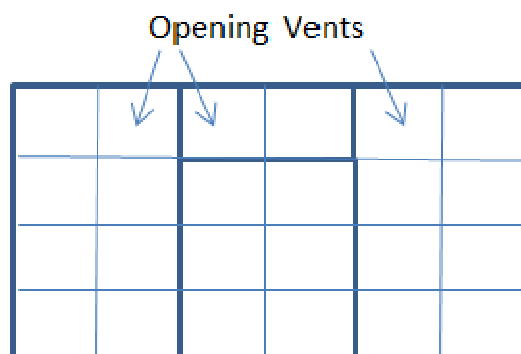
Block thickness: 100mm

Block density: 1800 kg/m²

Cavity spacing: 75-80mm

Finish: plasterboard on dabs (typical new-build method)

An aperture was left in the wall to house a window. A standard Georgian-style casement window with three openers was sourced from a builder merchant, and fitted into the aperture using standard window installation methods.



Finally, secondary glazing was installed behind the window on timber liners, to provide a minimum pane spacing of 100mm.

The set up was then tested for sound reduction using a range of different options:

Test no.	Primary window	Secondary window	Seal	RW	Sound reduction compared to Test 1
1	4mm glass	None	Standard pile	26	n/a
2	4mm glass	4mm glass	Standard pile	39	65%
3	4mm glass	6mm glass	Standard pile	39	65%
4	4mm glass	Laminated	Standard pile	40	70%

Secondary Glazing

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Secondary Glazing Styles

incarnation
window systems

Single panels



Fixed



Lift out



Side hung (left or right)

Horizontal Sliders



Two panel slider



Three panel slider (centre fixed)



Three panel (fully sliding)

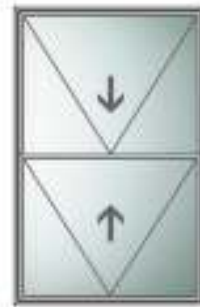


Four panel slider

Vertical Sliders



Vertical slider



Vertical slider with tilt-in





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