# Double or Triple Glazing – Is there much difference? – Do I need it?

I have trawled the internet and spoken with my suppliers to gather information for this document. There is a lot of scientific jargon available on this subject, and I have tried my best to simplify it and offer the core components to help you decide if triple glazing is for you. Although my energy ratings figures are correct as of August 2022, things change over time and this guide is my own interpretation of bits taken from much longer and in depth sources.

## Does triple glazing reduce outside noise?

The honest answer is yes and no. When triple glazing is compared to double glazing, it certainly has soundproofing benefits. Triple glazing can reduce noise due to having an added layer giving an extra barrier of noise protection. However, triple glazing doesn't stop the vibration of sound due to the space between the glass panes, so an alternative option would be double glazed with acoustic glass.

Acoustic glass is 6.8mm thick and has a laminated layer between the panes that stop the vibrations of noise, so will deflect different frequencies of sound. Triple glazing with 3 layers of 4mm glass will only deflect the same frequences of sound. In this instance, acoustic glass is better.

The price difference between acoustic glass and triple glazing is marginal, however acoustic glass incorporated into a triple glazed unit will reduce noise even further, but that is at a much greater cost.

## Is triple glazing more energy efficient than double glazing?

In most cases, yes, but you really need to know the difference between 'Energy Efficiency' and 'Thermal Efficiency' before making any decisions on what to go for.

Energy efficiency is a rating given to windows in the same way electrical appliances in your home are rated. Usually with a rainbow sticker and a recognisable alphabetical comparison chart. Windows are rated from A++ down to E. The calculation for a window energy rating looks at the window as a whole, and is classified by not only how much heat can escape from the inside to outside, but also how much heat it can let in to your property through solar gain.

Thermal efficiency is rated by a u-value. This is a calculation that determines solely how a window suffers heat loss from inside your home. The lower the u-value, the better the window is at retaining heat inside the building, meaning a good thermally efficient window with a low u-value will save more money on heating bills.

## Do I need an energy efficient window or a thermally efficient window, or both?

To give some perspective, a u-value calculation would have a number followed by W/m2K.

If you have old single glazing, you are likely to have a u-value of around 5.0W/m2K , whilst older double glazing would be around 2.8W/m2K
As standard, my double glazed PVCu casement windows are A rated, and offer a u-value of 1.34W/m2K. This more than doubles your thermal efficiency, and is also very energy efficient.

I can offer a better, more thermally efficient double glazed casement with an energy rating of D and a u-value of 1.24W/m2K. Now you might say, hang on a minute, a D rating is much worse than A, so how is that better? Remember, the energy efficiency rating is based on heat loss out AND solar gain in from the sun. With that in mind, the low u-value will retain more heat and thus save more money on your heating bills, but will deflect the suns rays making it cooler in your home during the summer months.

In summary:

If you want to retain as much heat as possible inside your home, you need to look for the lowest u-value.

If you want as much heat from the sun as possible to enter your home, you need to look for an A or A+ window energy rating.

If you want to reduce the heat from the sun entering your home, you need to find a low u-value and low energy rating like C or D.

## Is triple glazing worth the extra cost?

Assuming you already have double glazing, the u-value would be around 2.8W/m2K. A new double glazed window would reduce that to 1.34W/m2K, which is quite a difference already. If you opted for triple glazing, the u-value would reduce to 0.99W/m2K. Is that enough of a difference to warrant the extra price tag?

Pros would be:
Slightly better thermal efficiency.
Slightly better soundproofing at certain noise frequencies.

Cons would be:
The extra weight of the glass could reduce the allowable window opener size.
The more panes of glass there are, the more light transmittance is reduced.
Cost is considerably more.

My personal thoughts on double glazing vs triple glazing are:
If I had a new house, built with modern materials, I would opt for triple as the rest of the house would match the thermal efficiency, but if I had an older house which wasn’t as thermally efficient, I would opt for the double as heat loss would still be evident throughout the fabric of the rest of the building.