

Glazing Performance

Glass plays a unique and important role in building design and the environment. It affects design, appearance, thermal performance and comfort. The selection of the right glass is a crucial component of the design process.

There are three main areas to consider when thinking about windows and glazing for your project:

- Natural light - You want to enjoy natural light while controlling UV and glare
- Solar heat gain - Homes benefit from the natural warming effect of solar heat, but you also want to maintain a comfortable temperature inside and not overheat in summer
- Thermal insulation - Heat flows relatively easily through ordinary glass. In low winter temperatures, you want to select glass that reduces heat loss to the outside, saving on heating costs while reducing greenhouse gases. In high summer temperatures you may want to restrict heat gain to the inside and save on cooling costs

Low E – low-emissivity glass will allow the sun's heat and light to pass through the glass into the building, but it will prevent the heat from leaving the room. This considerably reduces heat loss and therefore improves the comfort levels in your home. It also helps in summer by reducing solar heat gain.

Argon Gas – is a colourless, odourless, non-flammable, non-reactive, inert gas. Argon gas fills are used to reduce heat loss in double glazed units by slowing down convection inside the air space. Argon gas works well with Low E coated glazing.

GLASS TYPE	NOMINAL THICKNESS	FADING REDUCTION COEFFICIENT	HEAT LOSS REDUCTION %	PERCEIVED SOUND REDUCTION %
4mm Clear Float		0.96	0%	10%
6.38mm Laminate		0.45	3%	35%
IGU's (Double Glazing)				
Standard IGU	4 12 4	0.78	52%	20%
Clear - Laminate	5 12 6.4	0.40	54%	55%
Argon Gas	4 12 4	0.78	56%	20%
Low E	4 12 4	0.66	68%	20%
Argon Gas & Low E	5 12 4	0.65	72%	20%
Tinted IGU's (Double Glazing)				
Grey (Standard)	5 12 4	0.39	54%	22%
Bronze (Standard)	5 12 4	0.42	54%	22%
Green (Standard)	5 12 6	0.50	54%	22%
Arctic Blue (Standard)	6 12 6	0.43	54%	22%
Grey (Standard) Clear Laminate	6 12 6.4	0.22	54%	55%

Nominal Thickness – the glass thickness or the makeup of a ThermoTech unit. The first number is the outer glass thickness, +12mm gap, then the thickness of the inner.

Fading Reduction Coefficient – the ratio of fading reduction of a glass type when compared to the fading protection of 3mm float. The FRC of 3mm clear float is by definition 1.0 and represents the minimum fading protection offered by standard glazing. The lower the fading reduction coefficient, the better the fading protection offered.

Heat Loss Reduction – ratio of the difference in heat loss through the glass with reference to glass type. It is expressed as a percentage and is based on 4mm clear float as 0%.

Perceived Sound Reduction – sound reduction in decibels which incorporates a correction for the ear's response. A 10db increase is perceived as twice as loud whereas a 10db decrease is perceived as half as loud. Base is 3mm clear float.