

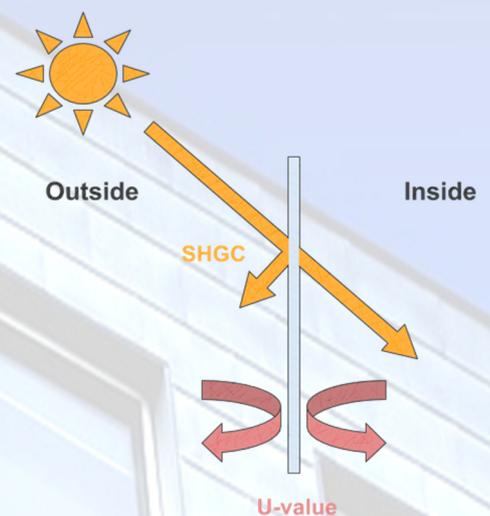
## GLAZING

Cost and aesthetics are the most influencing factor when selecting windows for a new home. There are many other thermal performance factors such as type, size, open-ability, orientation, internal furnishings and external shading devices which are also occasionally considered. The most critical element though, which is often overlooked, is the actual glazing (glass plus frame). This can often be the weakest link in a building's envelope, allowing up to 87% of unwanted heat gain in summer and up to 40% of heat loss during winter.

## THERMAL PROPERTIES

**Solar Heat Gain Coefficient (SHGC)** – The measurement of how readily heat from direct sunlight flows through a glazing system. The SHGC is the fraction of incident solar radiation admitted and subsequently released inward. SHGC is expressed as a number between 0 and 1 and the lower the SHGC, the less solar heat it transmits.

**U-Value** – The measurement of how readily a glazing system conducts heat due to the temperature difference from one side to the other. The lower the U-value, the greater the insulating properties and therefore the greater resistance to heat flow.



## TYPES

### Glass

*Single clear* – Relative to all other glazing options, single-glazed with clear glass allows the highest transfer of energy while permitting the highest amount of daylight transmission. These single clear windows, whilst being the worst in terms of energy efficiency, are almost always the standard with new homes as they are the cheapest.

*Low-e* - Low emissivity glass has a microscopically thin, transparent metal coating that reflects long-wave infrared energy (or heat). When the interior heat energy tries to escape to the colder outside during the winter, the low-e coating reflects the heat back to the inside. The reverse happens during summer.

*Double glazed* - Two or more panels of glass that are separated by an air space, acting as an insulator against heat loss or heat gain. Double glazing also reduces condensation, improves sound reduction and is safer and harder to break the standard glazing.

*Toned* – Also known as tinted glass, metal oxides and colour additives are included during the manufacturing process. Most commonly found in shades of bronze, grey, blue or green, toned glass significantly reduces glare and heat gain from the sun.

## Frames

Window frames can be made from aluminium, timber, PVC, fibreglass, or a combination of these materials. Each offer different advantages, although benefits in one area may be at the expense of a feature better suited for your home.

	Cost	Maintenance	Energy efficiency	Durability
<b>Aluminium</b>	Low	Very low	Poor	Good
<b>Timber</b>	High	High	Very good	Poor
<b>PVC</b>	High	Low	Very good	Very good
<b>Composite</b>	High	Low	Good	Good
<b>Fibreglass</b>	High	Very low	Very good	Very good

## COMPLIANCE

Under the Building Code of Australia (BCA), window manufacturers are required to supply windows and glazed doors that meet Australian Standard (AS) 2047.

It is also of benefit to supply the glazing values from the manufacturer so that an accurate assessment is performed. If details are not provided, an assumption is made that default worst case glazing will be used, which may negatively affect the results.

There are literally thousands of types of glass and frame combinations to choose from and selecting the right ones can be critical to improving the energy efficiency of your home. Further information and specific glazing values can be found on the Window Energy Rating Scheme (WERS) website [www.wers.net](http://www.wers.net)