

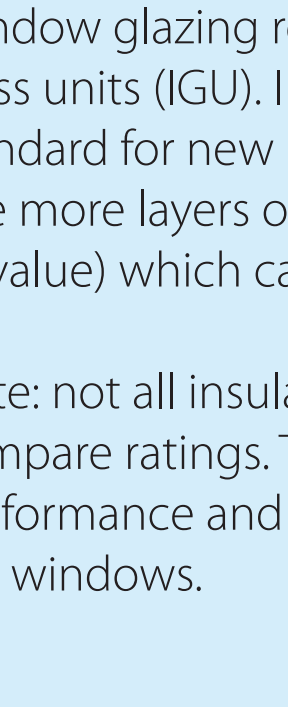
# Window Glass

The average home owner will often overlook the potential benefits of choosing glass options. However, with the right glass option, you can significantly increase the comfort, security, functionality of your home, as well as potentially decrease your heating and cooling costs.

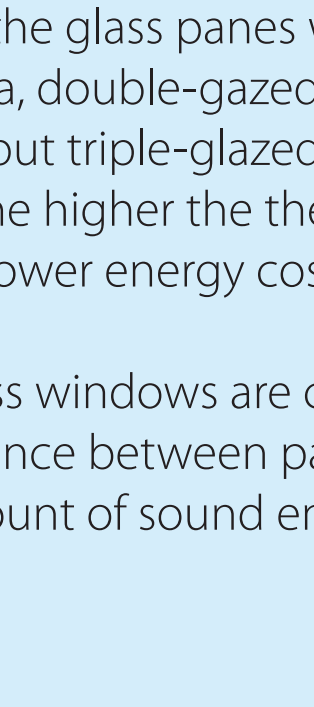
## Glass

Advancements in window technology, have taken window selection for the home to a whole new level by providing options and solutions that can be applied on a per room basis. Glass can be ordered in various thicknesses, tints, coatings and strengths.

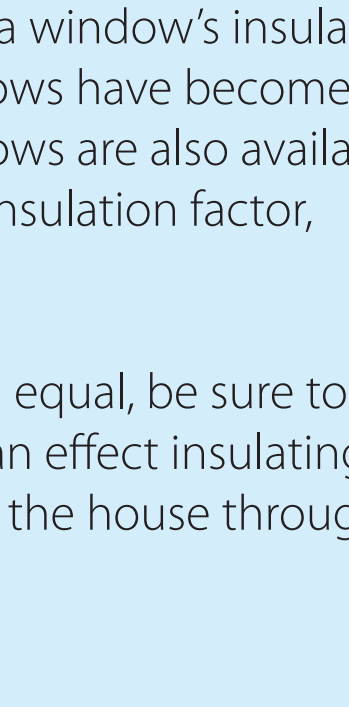
## Glazing



Single-glazed



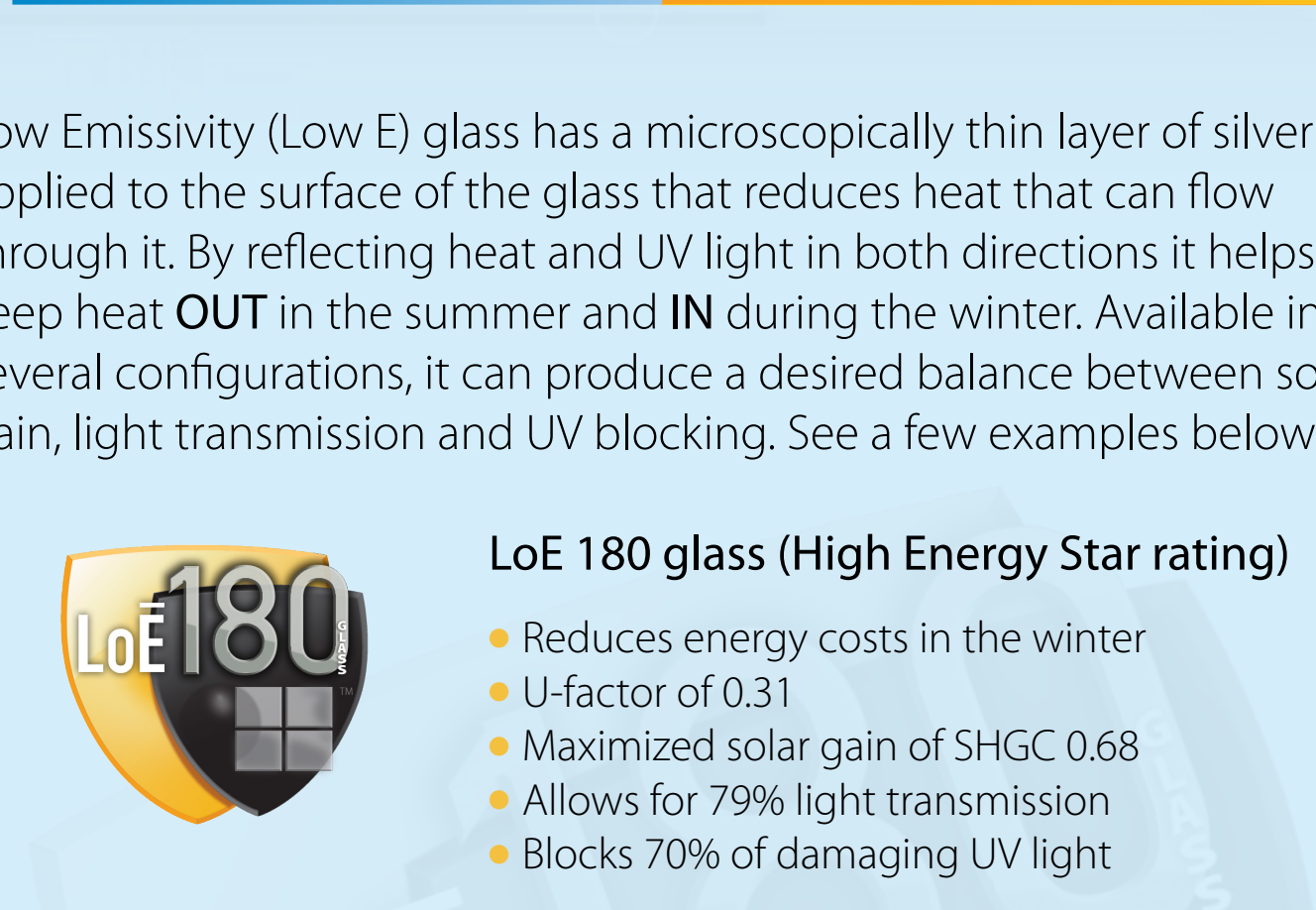
Double-glazed



Triple-glazed

Window glazing refers to the glass panes within a window's insulated glass units (IGU). In Canada, double-glazed windows have become the standard for new homes, but triple-glazed windows are also available. The more layers of glass the higher the thermal insulation factor, (R-value) which can help lower energy costs.

## Low E Glass

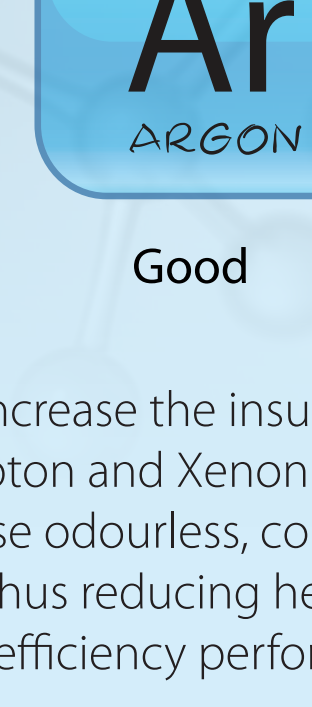


Low Emissivity (Low E) glass has a microscopically thin layer of silver applied to the surface of the glass that reduces heat that can flow through it. By reflecting heat and UV light in both directions it helps keep heat **OUT** in the summer and **IN** during the winter. Available in several configurations, it can produce a desired balance between solar gain, light transmission and UV blocking. See a few examples below.



### LoE 180 glass (High Energy Star rating)

- Reduces energy costs in the winter
- U-factor of 0.31
- Maximized solar gain of SHGC 0.68
- Allows for 79% light transmission
- Blocks 70% of damaging UV light



### LoE 272 glass (Balanced option)

- Moderate solar gain (winter)
- Reflects heat gain (summer)
- U-factor of 0.30
- Maximized solar gain of SHGC 0.41
- Allows for 72% light transmission
- Blocks 84% of damaging UV light



### LoE 366 glass (Best insulation - Ottawa)

- Keeps heat and sun out (summer)
- Keeps heating (or air conditioning) inside the home (year round)
- U-factor of 0.29
- Maximized solar gain of SHGC 0.27
- Allows for 65% light transmission
- Blocks 95% of damaging UV light

## Between-the-glass Gas Fills



Good



Better



Best

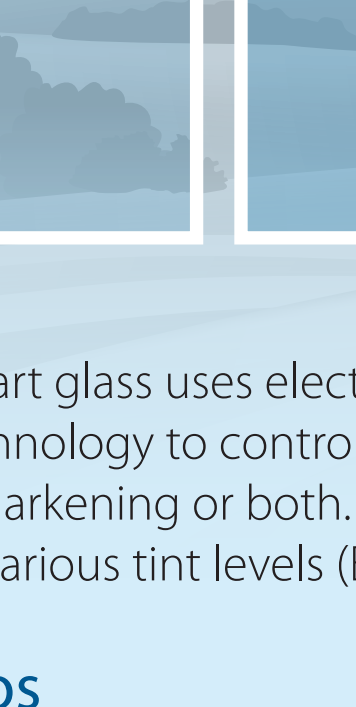
To increase the insulation of a window, inert gasses such as Argon Krypton and Xenon are used to fill the spaces between glass panes. These odourless, colourless, non-toxic gasses are less conductive than air, thus reducing heat transfer (lowering the U-factor) and improving the efficiency performance of the window.

## Privacy Glass

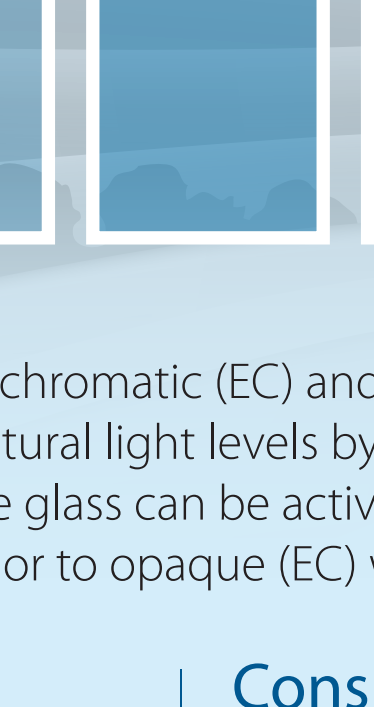


Many window manufacturers offer an assortment of obscure glass (textured) options to provide privacy. There are 4-5 standard patterns, but many manufacturers offer more.

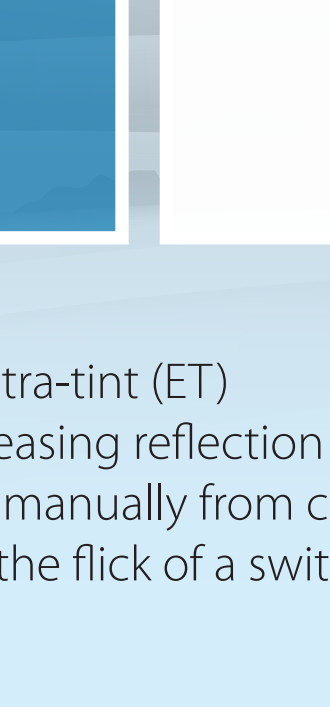
## Glass Safety & Security



Annealed



Tempered



Laminated

There are several types of processed glass to help protect your property. However, depending on your requirements the options could significantly increase your costs.

### Annealed glass (typical window glass)

- not difficult to break - multi-glazing adds extra layers of protection
- forced entry is dangerous, difficult and loud

### Tempered glass

- 5 times stronger than regular glass (shatters when broken)
- forced entry is extremely difficult and loud

### Laminated glass

- holds in place rather (adheres to interlayer)
- forced entry is very difficult

## Tints



Factory tinted-glass is available in grey, green, bronze and blue colours that can effect the amount of light (visual transmittance) able to pass through a material without being reflected or absorbed.

Every colour or combination of glass type will affect visible transmittance (VT), solar heat gain coefficient, reflectivity, and other properties.

### Pros

- reduces heat, brightness, and glare in the summer
- provides visual privacy during the day
- filters some UV light

### Cons

- no heat gain in winter
- no insulating properties
- difficult to see outdoors at night
- adds significant cost to window with very little ROI

## Smart Glass



Smart glass uses electro-chromatic (EC) and electra-tint (ET) technology to control natural light levels by increasing reflection or darkening or both. The glass can be activated manually from clear to various tint levels (ET) or to opaque (EC) with the flick of a switch.

### Pros

- reduces heat loss, cost saving
- blocks UV rays
- adds privacy
- on-demand control
- easy to use and maintain
- programmable

### Cons

- not readily available (residential)
- complex installation
- significant cost
- requires electrical hookup
- consumes electricity

## Between-the-glass Window Treatments



Integrated insulating blinds & shades that function between the panes of dual-glazed windows are now being offered by some window manufacturers and offer:

- cordless operation
- remote mechanical operation (App driven solutions)
- dust-free protection
- do away with costly exterior window treatment

[www.bayviewwindows.ca](http://www.bayviewwindows.ca)

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