



CHOOSING THE RIGHT GLASS



Choosing Glass

Choosing the right glazing can add light, life, warmth and comfort to your home.

Your windows are a key factor in your home's insulation and will help keep you and your family comfortable whether it's hot or cool outside.

Windows are much more than just part of your home's structure. They bring the outdoors inside by allowing natural light to enhance living spaces and open up views of your surroundings.

If you want to lower your energy bills, you'll want to pay attention to your choice of glass.

With numerous glazing options available, all with different purposes, choosing the right glass is very important. One option is adding high-tech coatings to your window glass to improve performance. These coatings allow you to keep heat inside your home, while others keep heat, noise, light and glare out. The right glazing options help create optimum conditions inside your home.

DID YOU KNOW?

18 - 21°C is the optimum recommended room temperature range.





Glass Types

Clear Float Glass is the most commonly used type of glass in New Zealand homes. This type of glass allows the easy transfer of heat, light and noise. This means your home is less energy efficient and noise is easily let in from streets and neighbouring properties.

ANNEALED FLOAT GLASS

Factories initially produce a product called Annealed Float Glass. This often goes on to get further treatments or coatings to become different types of glass.

Annealed Glass is very fragile, breaking easily on impact, shattering into large, sharp pieces.

LAMINATED GLASS

Laminated Glass is made from two sheets of glass that are joined with a plastic or resin interlayer.

Laminated Glass provides many benefits, noise reduction, minimizing fading (99%UV blocked), safety and security.

Laminated Glass absorbs damaging ultraviolet light and reduces noise, and has a similar impact strength resistance to Annealed Float Glass. However, it does not shatter and spread when broken, instead remaining intact on its plastic or resin interlayer, therefore being a safer option.

Because Laminated Glass provides high levels of safety it is very durable and can be used in most situations.

TOUGHENED SAFETY GLASS

Toughened Glass (sometimes called tempered glass) is much stronger than standard glass. It is also up to five times stronger than Annealed Float Glass, offering the highest impact resistance.

Due to its design, it can withstand strong direct impacts. If it does break, it does so into relatively safe, blunt granules.

IMPORTANT NOTE: Under the Building Code, safety glass is required to be used in some areas. If you are unsure about the requirements of your job, please contact us.

MIRROR GLASS

The mirror effect is produced by applying a silver metal coating to one side of the glass and sealing it with a protective layer. In some situations, a vinyl backing can be used for additional safety.

This type of glass is reflective and primarily used for all kinds of mirrors.

LOW IRON GLASS

As the name suggests, Low Iron Glasses contain less iron content than standard Clear Float Glass (approximately one quarter).

Low Iron Glass has an extra clear appearance and offers more transparency than the slightly green-tinted clear glass.

The crystal-clear appearance of Low Iron Glass allows true colour display and greater clarity. It is a perfect option for use over light coloured paint for kitchen splashbacks.

LOW E GLASS

Low E Glass is a transparent coating that is applied to the inside pane of a Double Glazed Unit to save heating energy.

Low E (Low-emissivity) glass allows light and heat in, but helps to stop heat from escaping. This glass is perfect for use in double glazed window units to increase insulation.

TINTED GLASS

This type of glass helps keep out direct sunlight, therefore reducing heat and fabric fading (79%-94% UV blocked).

If you are lucky enough to live in an area with a high number of annual sunshine hours, choosing this glass option will also help keep out the Summer heat, making your home more comfortable on hot days.

OBSCURE/PRIVACY GLASS

This type of glass is patterned or frosted, creating a blurred effect and preventing it from been clearly seen through. It is used where light but not transparency is desired, helping to maintain privacy.

It can be utilised in a number of areas including bathrooms, office partitions, exterior doors and windows.

Double Glazing

What is double glazing?

A Double Glazing Unit is made from two panes of glass separated by a layer of air.

Also known as an Insulating Glass Unit (IGU) they can be made from two different types of glass depending on the specific requirements of your home.

Single glazed windows are the most significant source of heat loss in a home. The more glass surface area you have, the more heat you stand to lose. In a well-insulated home, approximately 51% of heat is lost through single-glazed windows.

However, heat loss through windows can be halved using double glazing. In a double glazed window the gap between the two panes of glass is filled with air. Air is a poor conductor of heat, so heat loss is reduced.

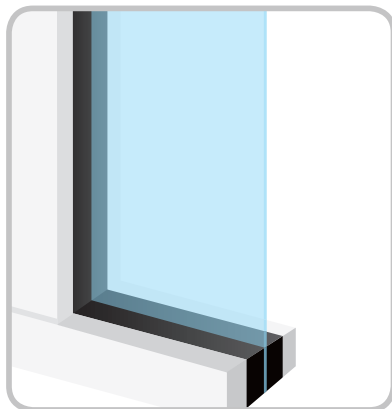
Double glazing a window can half the heat loss compared with a single-glazed window. You can reduce heat loss further by using different glass types (such as Low E Glass) or by choosing units which use argon gas instead of air to fill the space between the two panes of glass.

Since 2007, New Zealand building standards have specified that new homes must be fitted with double glazing. When double glazing is combined with ceiling, wall and floor insulation you will reduce your energy use, save money on your energy bills and improve the comfort of your home. The overall result for you and your family is a healthier home.

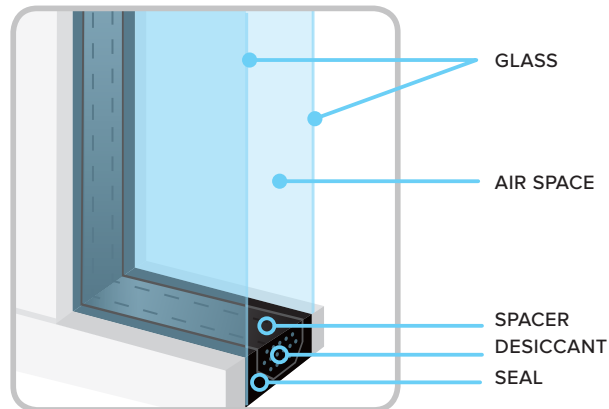
BENEFITS

- A cozy, comfortable home all year round - warmer in winter and comfortably cool in summer
- Healthier home with less condensation - warmer houses have dryer windows and a dryer home is much healthier
- Quieter nights - creating a shield against external noises
- Lower energy bills - double glazing offers superior energy efficiency
- Increased security - double glazed windows are much harder to break
- Reduces draughts - well insulated, warm homes aren't draughty
- Adds value to your property - indicates to potential buyers that the house is well insulated
- Reduces fading of furniture and furnishings - minimises the impact of the sun's harsh ultraviolet rays

SINGLE GLAZED WINDOW



DOUBLE GLAZED WINDOW

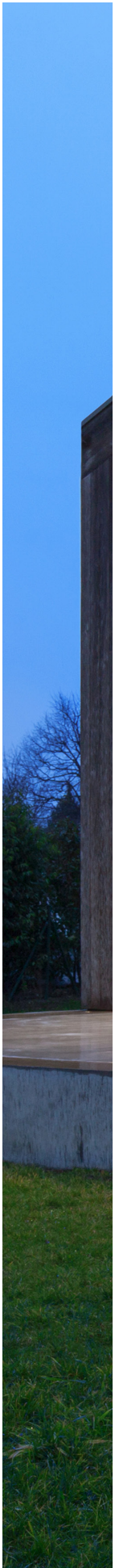


Triple Glazing

Three Panes of Glass

Triple glazing takes window insulation one step further. A Triple Glazing Unit comprises of three panes of glass separated by air gaps. Triple glazing provides high levels of heat retention and noise reduction.

Triple glazing is a great option to further enhance thermal performance. It is available for certain architectural designed window frame systems.





Retrofit Double Glazing

What is retrofit double glazing (RFDG)?

Retrofit double glazing means that you don't need to do away with your existing aluminium or wooden windows to get better quality insulation in your home.

Retrofit double glazing converts your existing windows into double glazed windows. It is an excellent choice if you want to upgrade to double glazing without replacing your existing windows.

With a small change to your original frames the single glazing can be removed and replaced with new insulated, energy efficient, double glazed panels.

Retrofit also offers a more affordable alternative when compared with completely replacing your windows.

Retrofit Double Glazing Wooden Windows

There's no doubt that wooden/timber-framed windows are beautiful, however the downside is they can be drafty. Wooden windows can contribute to heat loss, letting in drafts, noise and ongoing condensation problems.

You can have the best of both worlds, with minimal change to the appearance of your windows by retrofitting double glazed panels into your existing timber windows.

Retrofit Double Glazing Aluminium Windows

Your existing aluminium window frames can be converted into double glazed windows.

With minimal changes to the appearance of your windows, you can experience the benefits of double glazing.

Why use Low-E?

Low-Emissivity (low-E) Glass

Windows reflect, take in, and transfer heat, so Low E coatings are very important to the performance of a window.

Low E is a common abbreviation of "Low Emissivity". Low Emissivity means a surface that gives off low levels of radiant heat. Therefore, a glass window with a Low E coating will reduce the amount of heat transfer.

This glass has an incredibly thin, clear coating—even thinner than a human hair—that reflects heat. A Low E coating will reduce the amount of ultraviolet and infrared light coming through the glass window, but it will not compromise the amount of visible light that is transferred.

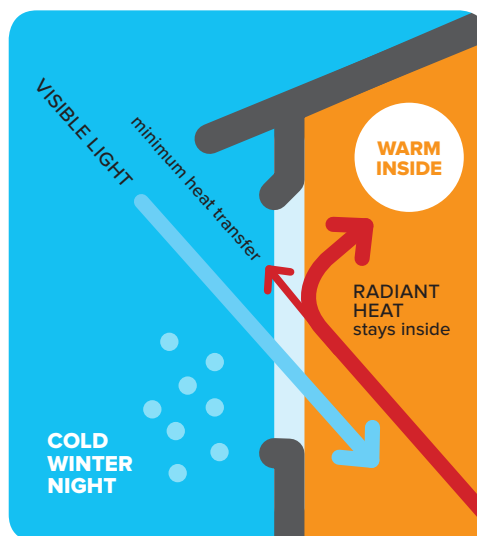
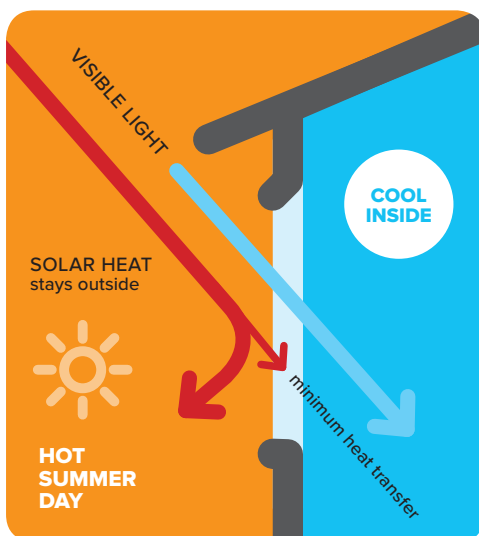
Low E coatings can reflect radiant heat - either from outside or inside, therefore reducing the heating and cooling costs of your home.

If you lower the emissivity of your window's glass surfaces you will raise the level of insulation of that window.

BENEFITS

- Significantly reduces heating loss compared with double glazed windows without Low E Glass
- Aligned with the NZ Building Code – improves the minimum energy performance standard of windows
- Reduces the heating and cooling costs of your home
- Less condensation – Low E Glass keeps the internal pane of glass warmer therefore reducing the occurrence of condensation
- Improved comfort – your home is warmer in the winter and cooler in the summer
- Healthier home - reduced condensation, improved warmth and a drier home
- Reduces fading of fabrics, carpet, and furniture caused by the sun's UV light
- Enhances natural light - allows natural light to brighten up your home
- Provides remarkable clarity - the Low E coating does not affect clarity, so you can enjoy the view

LOW-E COATING





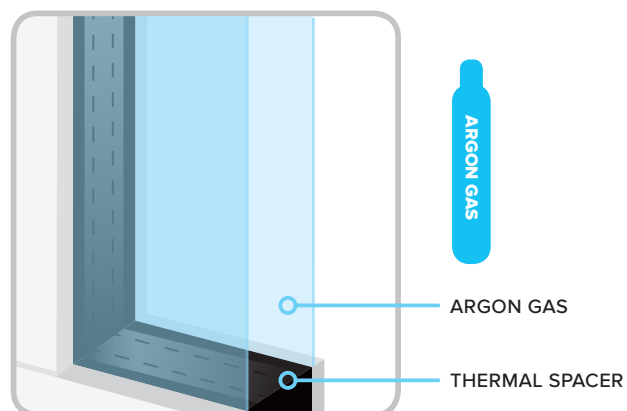
Thermal Insulation (Argon Gas)

Boost the insulation benefits of double glazing by combining argon gas and Low E glass. This will create high performance double glazing.

What is Argon Gas?

Argon gas is a naturally occurring, non-harmful gas. When argon gas is inserted between the panes of glass it increases the insulating performance of your double glazing. Argon gas is denser than air, so adding it to the air between the two panes improves thermal insulation efficiency. When a glazing unit features Low E glass and argon gas it brings the temperature of the window closer to room temperature. This combination eliminates air currents and drafts that occur when differing temperatures meet.

ARGON GAS

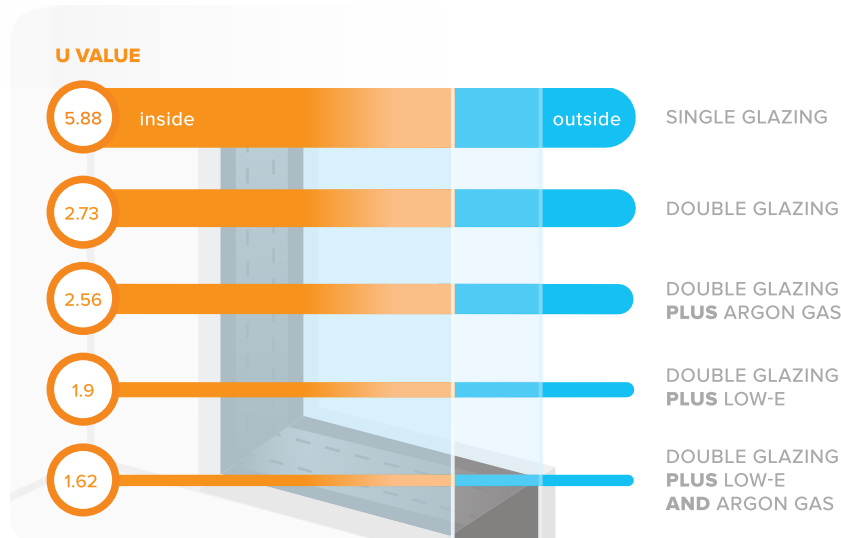


Double Glazing Glass Types & Performance

OUTER		SPACE	INNER		VLT	UV	U	R	
THICKNESS	GLASS TYPE	AIR	THICKNESS	GLASS TYPE	VISIBLE LIGHT TRANSMISSION %	UV ELIMINATION %	U VALUE	R VALUE	SHADING CO-EFFICIENT
STANDARD									
4 mm	Clear	12	4 mm	Clear	80	48	2.73	0.37	0.86
5 mm	Clear	12	5 mm	Clear	79	50	2.72	0.37	0.84
6 mm	Clear	12	6 mm	Clear	78	53	2.7	0.37	0.82
5 mm	Clear	12	6.4 mm	Clear Laminate	79	99	2.68	0.37	0.82
ARGON GAS UNITS		*	ARGON						
4 mm	Clear	12	4 mm	Clear	80	48	2.56	0.39	0.83
5 mm	Clear	12	5 mm	Clear	79	50	2.55	0.39	0.84
6 mm	Clear	12	6 mm	Clear	78	53	2.54	0.39	0.82
LOW-E UNITS		***	AIR						
4 mm	Clear	12	4 mm	Low-E	74	58	1.9	0.53	0.81
5 mm	Clear	12	4 mm	Low-E	73	59	1.89	0.53	0.79
6 mm	Clear	12	6 mm	Low-E	73	63	1.89	0.53	0.77
6.4 mm	Clear Laminate	12	6 mm	Low-E	73	99	1.88	0.53	0.75
LOW-E UNITS & ARGON GAS UNITS		****	ARGON						
4 mm	Clear	12	4 mm	Low-E	74	58	1.62	0.62	0.81
5 mm	Clear	12	4 mm	Low-E	73	59	1.62	0.62	0.8
6 mm	Clear	12	6 mm	Low-E	73	63	1.61	0.62	0.78
6.4 mm	Clear Laminate	12	4 mm	Low-E	73	99	1.6	0.62	0.75

* QUALITY RATING

HEAT LOSS REDUCTION Insulation Comparison



Get to know your glass

Here is a list of explanations of common glass terminology so you are not left in the dark.

VISIBLE LIGHT TRANSMISSION (VLT)

The amount of visible light that passes through the glass. This is normally identified as a percentage. The higher the VLT percentage, the more daylight in a room.

UV ELIMINATION %

This is the percentage of ultraviolet rays that your glass blocks. The higher the percentage the less UV passes through the glass.

U-VALUE

This measures the difference between the indoor and outdoor temperatures, or how much heat passes through your glass. A lower U-value means lower heat transfer and better insulation of your home.

R-VALUE

The R-value tells you how well the total window system insulates. This includes the types of glass, spacer, and joinery being used. Higher R-values are better, indicating that less heat is being lost through the window, resulting in better insulation.

SHADING CO-EFFICIENT

Shading co-efficient is a measure of the effective solar rejection performance of a given glass type. A lower shading co-efficient indicates higher restriction of the transfer of solar heat.

LOW EMISSIVITY (LOW E) GLASS

A Low E coating reduces the amount of heat transfer through a pane of glass. Low E coatings can reflect radiant heat - either from outside or inside, therefore reducing the heating and cooling costs of your home.

ARGON

Argon gas is a naturally occurring, non-harmful gas. When Argon gas is inserted between the panes of glass it increases the insulating performance of your double glazing



Stake Glass

About Us

We are an independent, locally-owned and operated glass processor.

We provide our customers with the highest quality, innovative glass solutions for commercial and residential applications.

Our customers include:

- Glaziers
- Window and door fabricators
- Quantity Surveyors
- Residential builders
- Commercial builders
- Architects

The Team

The team at Stake Glass are locals and being based in Christchurch we have a range of glass solutions to suit you and your customers' needs.

Stake Glass have assembled a respected and highly sought-after local team with decades of glass experience and technical expertise in glass products for all applications, using only quality glass and the best manufacturing processes.

Our Specialties

- Double glazing
- Low E coating
- Safety glass
- Specialty glass
- Balustrades
- Splashbacks
- Frameless pool fences
- Mirrors
- Annealed glass

Our Goal

To deliver **Quality Glass Solutions** to you.
On time, every time.







LOCATION

3 Distribution Lane
Sockburn
P.O Box 8806
Christchurch 8042

PHONE

03 348 7778

www.stakeglass.co.nz

