

Next generation
high performance glass.



Why choose Metro triple glazing?

Elevate your home to the next level with unmatched thermal, solar and acoustic performance.

It is perfect for

- Achieving the highest levels of home energy efficiency - such as Passive House performance standards or cutting edge Low Carbon design.
- Homes where windows are a key design feature, without sacrificing thermal performance.
- Regions with more extreme weather conditions.

Crafted for New Zealand conditions

- Because we manufacture locally, our glass technology is designed for New Zealand's diverse regional climate.
- Our world class manufacturing technology means our triple glazed units are carefully engineered using the latest technology in Low E glass, which amplifies both thermal insulation and solar control performance.

Trusted, local supply

Unlike imported glass systems, Metro triple glazing is processed right here in New Zealand. This ensures faster turnaround times, confidence in our supply chain and quality assurance practices, and guarantees compliance with New Zealand's safety and regulatory standards. Plus you'll have peace of mind that our sales service is handled locally, by an expert team you can trust.

Advantages of Metro triple glazing



Design freedom

Windows are usually the biggest source of heat transfer in a home and the bigger the window the more heat is lost or gained. However, when you choose Metro’s triple glazing, its exceptional performance means you can design unique window-dominant spaces, that easily surpass H1 compliance for energy efficiency, resulting in spectacular living spaces without sacrificing comfort and liveability.



Up to 82%* higher thermal performance

A window’s rate of thermal transfer from the warm interior to the colder outdoor environment is measured by its U-value. The lower the U-value the more heat is retained in a home.

Our triple glazing has U-values between 0.5 and 0.6, which is up to 82%* higher than standard double glazing at 2.8. This means homes are almost impervious to even the worst winter days, providing uncompromised living comfort all year round.



Up to 73%* better solar control

Our Low E triple glazing protects homes from the hottest of summer days with up to 73%* better solar control, helping to keep a home at a more comfortable temperature, and also helping to reduce energy costs to cool a home.



Significantly higher acoustic control

The additional glass pane and gas layer in triple glazed windows help to dampen outside noise, making them a great choice for urban homes, those near transportation hubs, or for those who just want to be able to ‘turn off’ the outside world when they’re in their home.

If stronger noise reduction is important for your home a laminate can be added to your glass, which further increases sound control. Please talk to your designer or Metro Glass representative to find out more.



Sustainable comfort

Metro’s Low E triple glazing significantly reduces the energy demand for heating and cooling a home, by maintaining a more consistent temperature year round. This reduces a home’s carbon footprint, saving on financial and environmental costs, and provides a more eco-friendly choice aligned with sustainable and energy-efficient building practices.



Safety and security

Enhance your home’s security with Metro triple glazing, offering three panes of glass protection, making it more difficult to break through. Deterring unwanted intruders and ensuring your home is safe and secure.

*Compared to standard double glazing.



Performance redefined with Metro triple glazing

Our glass is specifically crafted to meet your unique design needs. Each one uses different Low E coating technology to deliver differently on three key performance measures:

- Exceptional thermal performance (U-value and R-value): preventing heat loss through the window
- Stronger solar control: limiting unwanted heat gain from the sun, and reducing the damage it can cause to furnishings
- Greater choice in natural light preference (VLT): you can choose between letting in high levels of natural light or a tinted appearance for privacy

Choosing the perfect glass for your build

Our three triple glazing Low E brands have different strengths, so choosing the right one means considering the build's location, climate and environment, and your client's requirements.

ThermaLight™ Triple Glazing - Low E

Supreme thermal comfort and light filled spaces.

- Provides 79%* better heat retention
- Lets in 70% of visual light, for beautifully light filled spaces
- Enjoy the benefits of passive heat gain, with naturally sun warmed rooms

SolarPro™ Light Triple Glazing - Low E

Maximise solar, thermal and natural light.

- Perfect for large sunny windows or any situation where a high amount of sunlight could lead to overheating
- Reduces solar heat gain by 54%* making it ideal for areas with hot, sunny climates
- 82%* better heat retention
- Lets in 66% of natural light from the sun to pass through

SolarPro™ Plus Triple Glazing - Low E

Our strongest solar protection, with a tinted appearance for privacy.

- Reduces solar heat gain by 73%, ideal for very sunny locations, or where overheating could be an issue*
- 79%* better heat retention
- Ideal for areas with strong sunlight or glare
- Fading protection - helps protect furnishings from sun damage & fading
- Has a neutral grey hue. The colour is consistent even when used across different thicknesses, unlike other tinted glass which gets darker as the glass gets thicker

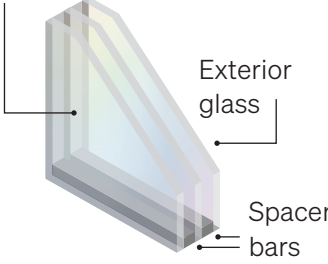
*Compared to standard double glazing

Double glazing vs triple glazing Low E

U value Insulation value. (Lower means more heat retained)	 Double Glazing (Standard) 2.8	 Triple Glazing ThermoLight™ 0.6	 Triple Glazing SolarPro™ Light 0.5	 Triple Glazing SolarPro™ Plus 0.6
Solar factor Proportion of heat from sun entering. (Lower means less solar heat)	77%	49%	36%	21%
Visible light (Higher means more natural light)	82%	70%	66%	36%
Privacy Do you need your windows to have a tinted appearance for privacy?	NO	NO	NO	YES
Colour hue We meticulously select glass with subtle natural hues and reflectivity. They give your home beauty and elegance through a stylish, modern aesthetic.	CLEAR	CLEAR	NEUTRAL TONE	GREY TONE
Sound reduction Our triple glazing products all reduce sound levels in your home. If stronger noise reduction is important we can add a laminate to your Low E glass. Please talk to your designer or Metro Glass representative to find out more.	GOOD	GOOD	GOOD	GOOD
Advantages	Energy efficient Cost effective	Maximum energy efficiency Very high natural light	Maximum energy efficiency High natural light High solar control	High energy efficiency Maximum solar control Tinted for privacy

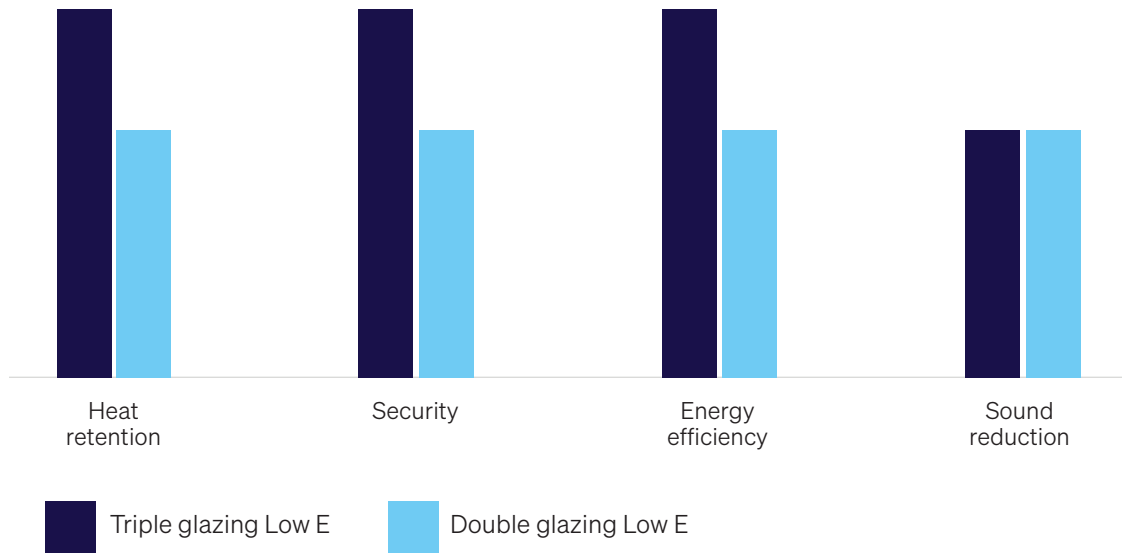
Triple glazing unit

Triple glazing



- In a triple glazed unit the extra pane of glass provides an additional layer of argon gas and Low E coating, which amplifies the insulation properties of the triple glazing unit.
- The additional layer of glass also provides an added layer of security, making it harder to break in to.

Benefits of triple glazing vs double glazing



Our careful selection and placement of surface coatings, as well as the glass panes in our triple glazed units, amplify the performance features of the system. This enables better matching to your climatic conditions. When paired with high performing window framing materials, R-values of up to 1.0 can be achieved for the window system.



Performance data

			EN673		EN410					
			Heat Loss & Condensation	Visibility			Heat Gain		Fading	Sound Transmission
Window R Value			Ug ²	VLT ³	VLR-E ³	VLR-I ³	SF ³	LSG ^{3,4}	Tdw-ISO ^{4,5}	STC
	TGU Make-up (mm)	Finished Unit Thickness (mm)	U Value Insulation value, lower is better	Visible Light Transmission Higher % means more daylight transmitted	External Reflectance Higher values mean more reflection seen	Internal Reflectance Lower the number the easier to see through the glass	Solar Factor (g) Lower number means less solar heat coming in	Selectivity Higher number means more natural light and less solar heat	Damage Weighted Transmission Lower values mean better fading protection	Sound Transmission Class Higher number means better overall sound reduction
	4 - 14 - 4 - 14 - 4	42mm	0.6	70%	16%	15%	49%	1.43	0.57	30
	4 - 16 - 4 - 16 - 4	46mm	0.6	70%	16%	15%	49%	1.43	0.57	32
	4 - 18 - 4 - 18 - 4	50mm	0.5	70%	16%	15%	49%	1.43	0.57	34
	4 - 14 - 4 - 14 - 4	42mm	0.6	66%	15%	16%	36%	1.84	0.50	30
	4 - 16 - 4 - 16 - 4	46mm	0.5	66%	15%	16%	36%	1.84	0.50	32
	4 - 18 - 4 - 18 - 4	50mm	0.5	66%	15%	16%	35%	1.89	0.50	34
	4 - 14 - 4 - 14 - 4	42mm	0.6	36%	12%	15%	21%	1.71	0.27	30
	4 - 16 - 4 - 16 - 4	46mm	0.6	36%	12%	15%	21%	1.71	0.27	32
	4 - 18 - 4 - 18 - 4	50mm	0.5	36%	12%	15%	21%	1.71	0.27	34

All Metro Low E Double Glazing units have argon filled thermal spacers. Please contact Metro Performance Glass before inputting performance data into any building calculations or modelling and request a project specific data report which will ensure correct and verified performance data is available for use. **Metro Performance Glass** triple glazed unit make ups are designed with the single Low E to surface 2 and for two Low E coated surfaces they will be to surface 2 and surface 4 as described above the tabulation for the make-up. If a Laminate is added this would be to surface 5-6 so the inside of the Triple glazed unit. The exception to this layup philosophy is in the case of a tint and Low E mix triple glazing unit, which will see the Tint positioned outermost to surface 1-2 and the Low E coating to surface 4 (for two Low E coated surfaces this would be surface 3 and 5). For the middle pane Metro recommend it should ideally be heat-treated (not annealed) to reduce the risk of thermal breakage - please discuss with Metro Glass your thermal risk assessment to confirm an appropriate make-up. **Ug Value** is centre of glass (in W/m².K) calculated for glass oriented vertically, with proprietary software using CEN boundary conditions. Cavity infills based on air or argon = (90% argon, 10% air mix). **SC, SF, VLT, VLR-E, VLR-I, Tdw-ISO** calculated with proprietary software using CEN boundary conditions. **LSG** = VLT / SF (If the LSG is greater than 1.0, then the glass transmits more light than total solar heat). **Tdw-ISO** is a damage-weighted transmittance from the International Standards Organization (ISO) based on the contribution to fading at each wavelength from 300nm to 700nm that include the UV and Visible parts of the solar spectrum. **Tolerances** - stated performance values can vary based on variations during production, use of float glass substrates on the basis of availability etc. Allowable variation is 3 basis points above or below (+/- 3) the specified values for VLT, VLR-E, VLR-I and SF and +/- 0.1 for U-Value.



Why Metro Glass is the trusted choice for your glass solutions.

- 1/ **Our track record**
 - We're the leading supplier of quality glass in New Zealand, with branches nationwide. For over 35 years we've been pioneers in keeping New Zealanders warm, safe and dry through better technology.
 - We introduced Low E technology to New Zealand back in the early 1990's, when double glazing was seen as a luxury.
- 2/ **10 year warranty**
 - Your glass will be in place for a long time. We back our products and materials with a 10 year warranty.
- 3/ **Quality**
 - Our long term success is thanks to our commitment to quality. From our stringent checking and testing of raw materials, to our state of the art processing and providing expert technical advice, we make sure our products meet and beat rigorous industry standard of durability, safety and performance.
- 4/ **Innovation**
 - We continuously invest in new technology and processes to enhance energy efficiency, aesthetics and functionality. SunX™ solar control glass is our latest advance in that space.
- 5/ **Sustainability**
 - Recycling: Over 99% of the waste glass from our plants is recycled right here in New Zealand - going into products such as home insulation and bottles. In addition, the glass products we sell, contain an average of 22% recycled content.
 - Declare Red List Free Certified: our double and triple glazing glass contains no toxic ingredients.
 - Toitu Envirocare Carbon Reduce Certified: Metro Glass have measured and monitored carbon emissions, externally verified by Toitu, to ensure a decrease in our environmental impact over time.
 - We independently audit our suppliers to ensure alignment on sustainability and corporate social responsibility practices.
 - Environmental Product Declaration: EPD reports are available for all of the glass materials that make up our core products. They tell a product's life story from sourcing to gate, and their impact on the environment.
- Important considerations
- 1/ **Frame compatibility**

Triple glazed units require a larger glazing pocket than double glazed units, so you'll need to check whether your window frame and building design can accommodate this requirement.

2/ **Weight**

Triple glazing units are heavier than double glazing units by around 30-50% this will affect handling and installation requirements, and may affect building structure and foundation design.

3/ **Thermal breakage risk**

Heat build up in glass can lead to thermal breakage. This risk can be reduced by using heat treated glass.

4/ **Solar control colour appearance**

Metro SolarPro™ Plus has a neutral grey tone which is part of the Low E coating. The advantage of this is that unlike other tinted glass that gets darker as the glass gets thicker, SolarPro™ Plus provides a consistent colour, even when used across different glass thicknesses, meaning your home will look great from all angles.

5/ **External condensation**

Dew on the outer surface is a natural occurrence, commonly seen in both high performance double glazing and triple glazing. This particularly occurs in homes that have no eaves, are sheltered from prevailing breezies, and/or have high humidity/cold conditions overnight.
- 10 Metro Performance Glass
- Metro Performance Glass 11

Why specify Metro Glass?

We've led the New Zealand glass industry with some of the biggest innovations for more than 35 years, we back our products and materials with a 10 year warranty. When you choose Metro Glass you can be confident you are choosing the best quality and performance for your needs.

If you're building or renovating, windows are critical for creating a comfortable, light-filled and peaceful home. Talk to us today about how our Low E triple glazing options can give you the perfect fit for your location and your home.

Call us 0800 545 800, or visit us at www.metroglass.co.nz

Low E
Triple Glazing

