

## RESIDENTIAL GLASS

EnerSave™ — LoE-i89® — Pilkington Optitherm™ — LoE<sup>3</sup>-366®



---

## *Making an informed decision*

Selecting the right glass for your home is paramount for the energy performance, comfort levels and aesthetics of the building and depends on a number of factors that are often not fully considered such as climate, elevation, aspect and framing system.

---

# *Important factors regarding performance*

## WHAT THE FIGURES MEAN



### **VISIBLE LIGHT TRANSMISSION (VLT)**

In the visible spectrum (380 to 780 nm), VLT measures the percentage of natural light entering a room and visibility from the inside out.



### **U-VALUE**

Measures how much heat is transferred through the glass. The lower the U-Value, the better the insulation properties of the glass.



### **SOLAR HEAT GAIN COEFFICIENT (SHGC)**

Measures how much solar radiation passes through the glass. Dimensionless and varying between 0 and 1, the lower the SHGC the greater the thermal stopping power from direct sunlight.





# *Performance Considerations*



Whilst analysing figures, there are two key things to bear in mind. Firstly, the better the thermal performance of the glass, the better your home will be able to stay naturally cool in summer and warm in winter. Secondly, the higher the light transmission means more natural light is able to enter your home. LoE<sup>3</sup>-366, Pilkington Optitherm and LoE-i89 Clear produce high VLT figures for homes wanting to take advantage of the natural light aspect, whilst LoE-i89 Grey has lower VLT options for houses battling with glare.



## **ENVIRONMENTAL BENEFITS**

Save excessive greenhouse gas emissions by not using power to artificially control building temperatures and lighting.



## **FINANCIAL BENEFITS**

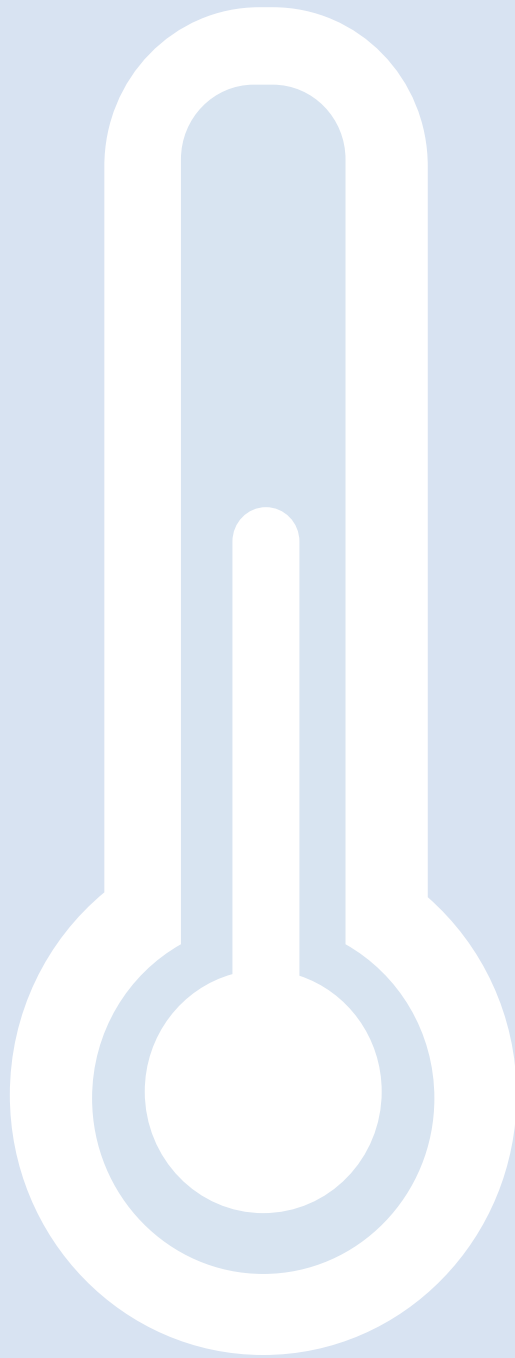
Substantial savings on your energy bill.



## **HEALTH BENEFITS**

Less artificial lighting, air-conditioning and heating means less headaches, sore throats and improved general wellbeing of occupants.





## *Insulated Glass Units (IGU) explained*

IGUs are double glazed units with inherent thermal insulating properties which can also incorporate a Low-E coating for optimum performance. Discover which glass type in what composition is most suitable for your project.







## *What is Low-E glass?*

Low Emissivity (Low-E) glass is essentially an invisible metallic coating applied to the glass surface to enhance its insulating properties, naturally regulating building temperatures. It has long been specified for commercial building and it becoming increasingly adopted to assist with Energy Star ratings in the home.

Glassworks are proud to offer a variety of pioneering Low-E products exclusively to the Australian market from world renowned producers Cardinal Corp and Pilkington, including; LoE<sup>3</sup>-366, LoE-i89 and Pilkington Optitherm, each embodying different properties for different applications.

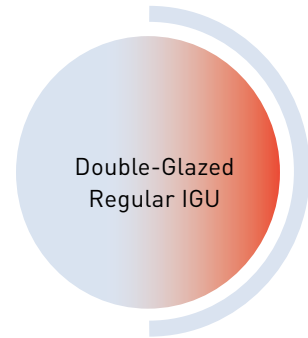
# Levels of performance

Good



Single-Glazed  
Low E

LoE-i89® Clear  
LoE-i89® Grey



Double-Glazed  
Regular IGU

EnerSave™ Clear + Clear



"the good, better, best"

→ Ultimate

Double-Glazed  
Low E

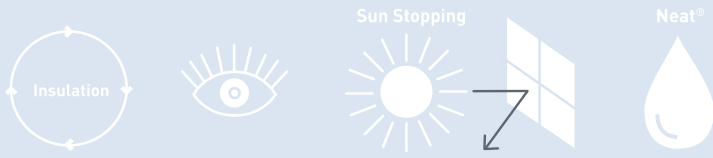
Double-Glazed  
Double-Low E

Pilkington **Optitherm**<sup>™</sup>  
LoE-i89<sup>®</sup> Clear  
LoE-i89<sup>®</sup> Grey  
LoE<sup>3</sup>-366<sup>®</sup>

LoE<sup>3</sup> - 366<sup>®</sup> + LoE-i89<sup>®</sup>



## LoE<sup>3</sup>-366<sup>®</sup>

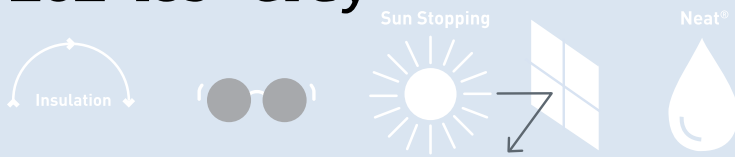


LoE<sup>3</sup>-366<sup>®</sup> is the all-round winning product for ultimate thermal comfort. This is due to its unique triple layer coating which not only boasts great insulation benefits, but also the ability to reduce the beating sun's heat from entering the home – all achieved without compromising visibility or natural light.

When incorporated into an IGU with LoE-i89 Clear, LoE<sup>3</sup>-366 provides the lowest U-Value currently on the Australian market for domestic windows and even greater comfort and energy savings. A true all-round performer, LoE<sup>3</sup>-366 also blocks 95% of the damaging UV spectrum to protect carpets and furnishings from fading. What's more, it also incorporates the Neat<sup>®</sup> easy-clean coating, for naturally cleaner windows.



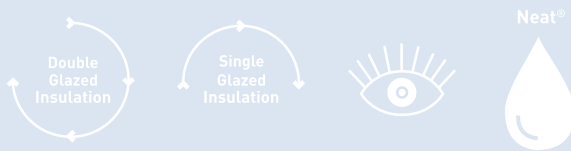
## LoE-i89<sup>®</sup> Grey



LoE-i89 are single glazed low-E products that reflect escaping heat back into the room, making them the economical glass solution all year round, especially during the colder months.

Because LoE-i89 in Clear and Grey performs even when single glazed, it represents an economic solution for energy efficient windows. However, as the figures indicate, its performance is further enhanced when incorporated into an IGU.

## LoE-i89<sup>®</sup> Clear



When choosing between LoE-i89 Clear or Grey, consider that Clear allows for higher levels of natural daylight, whilst Grey is designed to stop the power of the sun and glare, think of it as sunglasses for your home.

Conveniently, both LoE-i89 Clear and Grey come standard with Neat<sup>®</sup> easy-clean coating applied to the external face of the glass, for year-round naturally cleaner windows.



## Pilkington Optitherm<sup>™</sup>



Pilkington Optitherm is a clear Low-E product that has exceptionally high clarity and insulation values. Like LoE-i89 Clear it is designed to allow the natural light and sun to enter the building and provide great insulation benefits. Pilkington Optitherm must be incorporated into an IGU.



## Glass performance figures

	Visible Light Transmittance (VLT)	Solar Heat Gain Coefficient (SHGC)	U-VALUE
4MM <b>i89 CLEAR</b> SINGLE GLAZED	88%	0.75	3.65
4MM <b>i89 GREY</b> SINGLE GLAZED	31%	0.34	3.72
4MM <b>CLEAR</b> , 12MM ARGON, 4MM CLEAR	80%	0.75	2.5
4MM <b>i89 CLEAR</b> , 12MM ARGON, 4MM CLEAR	80%	0.67	1.64
4MM <b>i89 CLEAR</b> , 12MM ARGON, 4MM <b>i89 CLEAR</b>	78%	0.64	1.3
4MM <b>i89 GREY</b> , 12MM ARGON, 4MM CLEAR	28%	0.27	1.68
4MM <b>i89 GREY</b> , 12MM ARGON, 4MM <b>i89 CLEAR</b>	27%	0.25	1.33
4MM <b>PILKINGTON OPTITHERM</b> , 12MM ARGON, 4MM CLEAR	80%	0.61	1.36
4MM <b>LoE<sup>3</sup>-366</b> , 12MM ARGON, 4MM CLEAR	64%	0.27	1.36
4MM <b>LoE<sup>3</sup>-366</b> , 12MM ARGON, 4MM <b>i89 CLEAR</b>	63%	0.27	1.1

# *Recommended Low-E Solutions*

We have the perfect Low-E glass solution to suit your unique requirements or special environmental conditions

Reduce heat load  
+  
Need for natural light  
+  
Insulation  
=  
**LoE<sup>3</sup>-366<sup>®</sup>**

Reduce heat load  
+  
Need to reduce glare  
+  
Insulation  
=  
**LoE- i89 Grey**

Need for winter sun  
+  
Highest clarity  
+  
Insulation  
=  
Pilkington **Optitherm™**  
or **LoE- i89**

8A Kitchen Rd  
Dandenong South 3175  
T +61 3 8788 5888  
F +61 3 8788 5899  
info@glassworksaustr.com  
glassworksaustr.com

**GLASSWORKS**

