

Energy efficiency

A man and a woman are smiling and embracing in a modern, bright interior. The man is wearing a blue and white striped shirt and grey trousers. The woman is wearing a white top and light-colored pants. They are standing near a large glass door or window that looks out onto a green landscape. In the foreground, there is a dark coffee table with a vase of flowers and some magazines. A pink chair is partially visible on the right.

Creating a beautifully  
comfortable home  
with glass

**Viridian**<sup>™</sup>  
New World Glass

[viridianglass.com](http://viridianglass.com)

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# 4 STEPS TO A MORE COMFORTABLE AND ENERGY EFFICIENT HOME

*"we didn't do much research into windows for our project, but afterwards regretted the fact as windows were so important to the end result."*

Hazle and David,  
home-owners, Templestowe.

Modern high performance glass can make your home comfortable and more energy efficient, all year round. This brochure will help you to talk to an architect, builder or window supplier about the specific needs of your project.

Windows are a fundamental and uniquely powerful design element of a home. More than any other component, windows set the tone of your home by providing views, ventilation, daylight and a sense of spaciousness. They also have a critical role in your home's comfort and energy consumption. Advancements in glass technology have dramatically increased the energy benefits and comfort levels possible in your home.

## 1 What makes a comfortable home

Central heating and air conditioning makes a home more comfortable, but of course uses energy, costs money and creates greenhouse gases. It's better to keep a home at the right temperature through good design and choice of the right performance glass to keep your home warmer in winter and cooler in summer.

## 2 How glass works

Glass is the only building material that not only insulates us from temperature extremes, it can also control the passage of light and heat into and out of our homes. A better understanding of how glass works can help you to make the right selection for your windows.

**There are 3 main areas to consider when thinking about windows and glazing for your home:**

### > Natural light.

By choosing the right performance glass you can enjoy your views and natural light while controlling UV and glare.

### > Solar heat gain.

Solar heat is generated when sunlight passes through a window and heats the surfaces and air inside a home. Depending where you live homes can benefit from the natural warming effect of solar heat during winter and its reduction during summer. Good design and the appropriate selection of performance glass for the window's orientation can keep the home cooler in summer and warmer in winter.

### > Thermal conductivity.

When there's a difference in temperature between the inside and outside of your home you have heat flow. The greater the difference between the outside and inside temperature, the greater the heat flow, especially through windows using ordinary single glazing. The right performance glass dramatically improves the insulation and energy efficiency performance of the window.

## 3 Orientation and style

**Where you live largely determines the main task your windows need to perform.**

By understanding your climate's heating and cooling needs, you can determine your overall glass selection priorities.

And because we don't always have complete control over our home's orientation, performance glass can also help to overcome site limitations so you can still enjoy your views without compromising your home's energy efficiency.

## 4 Choose the right glass for your home

**Viridian offers a range of single and double glazed energy efficient performance glass products for all types of homes.**

**Viridian VFloat™ Toned and Viridian VFloat™ Supertoned glass** is the first step in solar control for hotter climates or demanding window orientations, offering brilliant clarity while reducing glare. Whilst providing greater solar control performance, it offers no improvement over the insulating properties of ordinary glass for cooler climates.

- > Reduces heat entering through windows
- > Colour right through the glass
- > Available in a range of tones
- > Glare reduction

Available in:

- > **Viridian VFloat™ Toned** – Green, Grey and Bronze
- > **Viridian VFloat™ Supertoned** – SuperGreen™, SuperBlue™ and SuperGrey™

**Viridian ComfortPlus™** is a laminated single glazed Low E glass, featuring the latest in glass technology to help provide year round comfort. Australia's leading choice in single glazed energy efficient glass offers not only the solar control advantages of toned glass, but is enhanced by the addition of a Low E (low-emissivity) coating to provide up to 39% better insulation than ordinary glass. Designed for cooler climates ComfortPlus Clear offers a reduction in solar control performance compared to ComfortPlus Green, Grey and Neutral to assist passive solar heat gain.

# Let the light in

- > All seasons comfort
- > Grade A safety glass for peace of mind
- > Insulation and choice of solar control performance
- > Reduces fading by blocking 99% of UV penetration

Available in:

- > Clear            > Neutral
- > Green           > Grey

**Viridian ThermoTech™ double glazing** – the ultimate in glass choice. With greater insulating performance than any of the single glazed options, with up to a 54%<sup>2</sup> improvement in insulation over ordinary single glazing. Featuring two pieces of glass separated by a hermetically sealed air or argon gas filled gap. **Viridian ThermoTech E™** featuring Low E glass offers even greater performance with up to 30%<sup>2</sup> better insulation than an equivalent insulated glass unit using ordinary glass. Viridian ThermoTech gives you the freedom

to tune its performance for your solar control and insulation needs, by choosing different glass combinations and air gaps.

- > Superior insulation performance
- > Ultimate flexibility and choice in glass options
- > Suitable for hot and cold climates
- > Greatly reduces occurrence of condensation and thermal draughts near the window

### Make the right selection

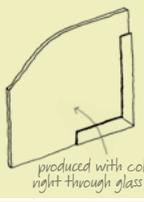
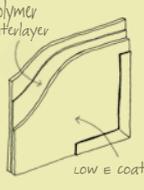
To get the most out of your home's potential and to decide your specific glazing needs, involve your building designer, architect, builder or window supplier early in the design process. To learn more about making the right glass choices visit [viridianglass.com](http://viridianglass.com) or for more specific advice on the right windows and doors for your building project talk to your window supplier.

### AT A GLANCE

- > Windows are a fundamental and uniquely powerful design element of a home.
- > We're only truly comfortable within a narrow temperature range.
- > Good insulation including windows smooths out the temperature extremes.
- > Where you live, the site conditions and its climate helps to determine your window needs.
- > Performance glass windows are a critical part of a well designed, energy efficient home.
- > Modern Performance glass and good home design can let you enjoy natural light and your views while helping to control unwanted heat gain or loss.
- > Viridian offers a range of single and double glazed energy efficient glass products with different performance characteristics.
- > Speak to your window supplier to discuss your specific performance window's needs.

### Product Selection

Use this selection table to compare the bands of performance of different glass configurations; it is a guide only and does not seek to show absolute performance data.

SELECTION TABLE		Attributes <sup>1</sup>	Glare Reduction	Solar Heat Reduction	Insulation
	Ordinary Glass	> 4mm – 6mm			
	Viridian VFloat – Toned	> 4mm – 6mm > Toned offers up to 32% <sup>3</sup> greater solar heat reduction than ordinary glass	■ ■	■	
	Viridian VFloat – Supertoned	> Supertoned offers up to 59% <sup>4</sup> greater solar heat reduction than ordinary glass	■ ■ ■	■ ■ ■	
	Viridian ComfortPlus – Clear	> 6.38mm Grade A safety glass > Up to 39% <sup>1</sup> better insulation than ordinary glass		■	■
	Viridian ComfortPlus – Green / Grey / Neutral	> Green & Grey offers up to 41% <sup>1</sup> , Neutral up to 40% <sup>1</sup> greater solar heat reduction than ordinary glass	■ ■	■ ■ ■	■
	Viridian ThermoTech – Clear	> Unit thickness 12mm – 58mm > Up to 54% <sup>2</sup> better insulation than ordinary glass			■ ■
	Viridian ThermoTech – Toned & Supertoned		■ ■ ■	■ ■ ■	■ ■
	Viridian ThermoTech E – Clear	> Unit thickness 12mm – 58mm > Up to 68% <sup>2</sup> better insulation than ordinary glass	■	■	■ ■ ■
	Viridian ThermoTech E – Toned & Supertoned		■ ■ ■	■ ■ ■	■ ■ ■

First step in solar heat reduction for sunny climates

High solar heat reduction for hot climates or demanding orientations, with no improvement in insulation

Good insulation with lower solar heat reduction for passive solar heating in cooler climates on northern orientations

High solar heat reduction with good insulation and glare reduction for greater comfort in hot climates or demanding orientations

Excellent insulation with lower solar heat reduction for passive solar heating in cooler climates on northern orientation

High solar heat reduction and superior insulation for outstanding comfort in hot climates or demanding orientations

<sup>1</sup> Where a category includes multiple colours and grades (e.g. ComfortPlus Green/Grey/Neutral), performance will differ by product. The performance indicated in the table is that of the highest performing product in that category for that characteristic. See the Viridian website for detailed performance data for each product.

<sup>2</sup> Not all products will be appropriate for all applications, and some may require special assessment or processing in certain environments.

<sup>3</sup> Viridian recommends that any glass product selections should be viewed in application; always consult your window provider or glazier for advice on specific designs and applications. <sup>4</sup> Other products and options that are not described in this brochure are available and may be more suitable for your needs.

<sup>5</sup> Solar Control performance is based on Solar Heat Gain Coefficient (SHGC) and insulation is based on U Value performance respectively. Ordinary glass is based on 4mm clear float glass. <sup>1</sup> Viridian ComfortPlus™ is based on 6.38mm, <sup>2</sup> Viridian ThermoTech E™ and Viridian ThermoTech are based on a unit with 12mm airgap, <sup>3</sup> Toned glass is based on 6mm Viridian VFloat Grey™, <sup>4</sup> Supertoned glass is based on 6mm Viridian VFloat SuperGrey™. All performance data is calculated using LBL window 5.2 software, NFRC 100 – 2001 conditions have been used. For further glass performance data for Viridian products visit [viridianglass.com](http://viridianglass.com)

## Category guides

This Energy Efficient guide is designed to help you understand the range of performance glass available to help reduce your energy consumption and increase the comfort of your home.

### Energy Efficiency

- > Double glazing
- > Coated glass (Low E glass)
- > Solar control toned glass

### Sanctuary

- > Safety glass for peace of mind
- > Noise reducing windows
- > Laminated security glass windows
- > Bushfire resistant windows
- > Storm resistant windows
- > Privacy screening
- > Self cleaning glass

### Interiors and Design Applications

#### Natural Light

- > Internal glass walls and screens
- > Screens and partitions
- > Internal glass doors

#### Luxury Surfaces

- > Splashbacks and mirrors
- > Wardrobe doors
- > Feature walls and design inlays

#### Clear Defined Spaces

- > Shower screens and enclosures
- > Pool fences
- > Balustrades
- > Stairs and flooring

To learn more about how Viridian glass can enhance your living space talk to your building professional, designer, window supplier or visit [viridianglass.com](http://viridianglass.com)

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05/10 Disegno VIR4136. Acknowledgements: The Johnstone House by Lippmann Associates, photography courtesy of Peter Hyatt, [hyatt.net.au](http://hyatt.net.au)

The international standard of measurement used is NFRC 100–2001 conditions. All relevant guidelines of the National Fenestration Rating Council (NFRC) have been adopted as the Technical Protocols and Procedures of the Australian Fenestration Rating Council (AFRC).

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