



> VIRIDIAN GLASS GUIDE™

# Core Products

Setting the standard for quality glass  
with infinite potential.

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**Products:**

VFloat™

VLam™

VTough™

SuperClear™

**Viridian**  
we ♥ glass



## PRODUCT

# VFloat™

Premium float glass – our foundation product for clear vision & quality

**Start your journey to brighter, more visually spectacular designs with VFloat™.**

**VFloat™ is the starting point in our range. Made using the float process – the benchmark for glass of quality and optical clarity – you can be assured that VFloat™ will make a great contribution to your space.**

VFloat™ sets the standard for quality and vision. It is the name we give our base products that are manufactured using the float glass process.

Glass is produced with brilliant flat surfaces providing clarity, low distortion and high daylight transmission. VFloat™ is manufactured either Clear, Toned or Super Toned.

It is available in a wide range of sizes enabling designers and customers to fill large transparent openings economically.

VFloat™ provides ease of cutting and it is ideal for further processing into a range of products available for general glazing, laminating,

toughening, high performance coating, mirrors and decorative paint finishes.

**VFloat™** Clear provides high light transmission and visibility. It is suitable for conventional and double glazed windows. When safety is required for doors and partitions, it is specified in toughened, laminated, or toughened laminate forms complying with the requirements of Building Codes and Standards.

The toned options offer colour and energy management by reducing solar heat gain, while retaining good daylight transmission and low reflectivity. It also provides reductions in UV.

It can be toughened, laminated or used as a toughened laminate. Similarly it can be incorporated into **ThermoTech™** insulating glass units for enhanced solar and thermal performance. The tone and light transmission will vary depending on the thickness selected and this is a design consideration where colour uniformity is required.

## Considerations

**Thermal strength and safety:** VFloat™ toned glass is designed to improve conditions by reducing glare and solar radiation into buildings. The glass absorbs a proportion of the solar heat, which can lead to glass fracture from thermal stress if adequate precautions are not taken. It is important to note that the edges of solar control glass are not damaged during installation as this increases the risk of thermal fracture.

At an early stage of building design or when specifications are being finalised, Viridian can determine the risk of thermal fracture and can recommend if heat strengthening or toughening of the glass is required.

## Performance Comparison Chart

VFloat™*	VLT	U Value	SHCG
Clear	88	5.8	0.82
Light Grey	61	5.8	0.66
Grey	42	5.8	0.58
Bronze	51	5.8	0.65
Green	75	5.8	0.59
SuperClear™	91	5.8	0.89
SuperGrey™	9	5.8	0.36
SuperBlue™	53	5.8	0.52
SuperGreen™	67	5.8	0.53

\*6mm glass thickness

## Features and Benefits

- Clear for maximum daylight transmission and toned for solar control
- High clarity, low distortion with brilliant flat surfaces
- Wide range of sizes and thickness for optimum utilisation
- Used for glazing, toughening, insulating glass units, laminating and coating

## Applications

When supplied in toughened, laminated, or toughened laminate form as required by Standards :

- Windows
- Doors

## How to Specify

- **Select glass name**  
VFloat™
- **Select thickness – process**  
4mm to 19mm – Annealed
- **Select colour**  
Refer to chart below

## Product Range

	Thickness (mm)							
VFloat™	4	5	6	8	10	12	15	19
Clear	◆	◆	◆	◆	◆	◆	◆	◆
Light Grey			◆					
Grey	◆	◆	◆		◆	◆		
Bronze	◆	◆	◆		◆	◆		
Green	◆	◆	◆		◆			
SuperClear™	◆		◆		◆	◆	◆	◆

VFloat™ is a trademark of Viridian Glass



# Safety Glass

✓ **Safety glass is used extensively in both domestic and commercial buildings**

The term 'Safety glass' is applied to glazing used to reduce the risk of injury from an accidental impact and consequential glass breakage. Safety glass is used extensively in both domestic and commercial buildings, to the requirements of the **Building Codes** and is defined by **Australian Standards**. Viridian offers the following types of safety glass:

- **VLam™** – Laminated safety glass
- **VTough™** – Toughened safety glass
- **VLam™ Toughened** – Toughened laminated safety glass
- **DécorMirror Safe™** – Safety mirror

Critical locations where safety glass must be considered are outlined in Australian Standard AS1288 and New Zealand Standard NZS4223:

- Doors and sidelights
- Glass capable of being mistaken for an opening, and glazing within 500mm of the floor
- Shower and bath enclosures including bathroom windows
- Shopfronts and internal partitions
- Balustrades and stairwells
- Schools and childcare buildings where glass is within 1000mm of the floor
- Special activity buildings, such as gyms and swimming pools

## **Australian Standard AS1288 or New Zealand Standard NZS4223 and AS/NZS2208**

These standards recognise Grade A safety glass. Laminated, toughened, and toughened laminate glass are all rated Grade A manufactured to AS/NZS2208, offering a high level of protection against injury. Laminated glass also offers security and noise control benefits. Australian Standard AS1288 or New Zealand Standard NZS4223 and the respective Building Codes identify minimum areas where safety glass must be used.

Viridian will only warrant **VLam™**, **VTough™** or **DécorMirror Safe™** as Grade A safety glasses when processed and supplied by a Viridian manufacturing facility.



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**VTough™  
toughened  
Grade A safety  
glass is up  
to five times  
stronger than  
annealed glass.**

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### Product Details:

- **VLam™** laminated Grade A safety glass helps to protect from injury caused by sharp splinters of broken glass. If broken, laminated glass sticks to the interlayer and generally stays in the window frame to provide added safety.
- **VTough™** toughened Grade A safety glass is up to five times stronger than annealed glass. On impact, it breaks into small blunt-edged pieces, reducing the risk of injury.
- **VLam™ Toughened** Grade A safety glass is the optimum in safety glass. Each piece of glass is toughened to provide superior structural strength when compared to annealed

glass and then these pieces are bonded together using a PVB interlayer to ensure if the glass breaks the pieces are held together by the interlayer.

- **DécorMirror Safe™** safety mirror glass is a high specification mirror with a special safety backing film to retain broken pieces of mirror if broken from impact.





## PRODUCT

# VLam™

Laminated float glass – the first step in safety, security & noise control

**There's all kinds of specialist glass products out there, but sometimes you just want the best of everything. That's why we created VLam™ to be the starting point for safety, security, UV protection, noise reduction and – well, anything you want.**

**VLam™ offers everything you could need in a glass product for your space, as well as a range of custom options.**

**VLam™** consists of two or more sheets of glass bonded together by heat and pressure with an interlayer.

The result is a durable, adaptable high performance glazing material that can provide solutions to many architectural applications. The laminating process provides almost limitless options in glass configurations. Combinations of solar control glass, special interlayers, Low E and coated glass, as well as decorative glass provide tailored solutions. Toughened laminated glass is also available for large overhead spans and additional safety in balustrades. Glass options for floors are also available.



**The result is a durable, adaptable high performance glazing material that can provide solutions to many architectural applications.**

**Viridian can offer products that are outside of our standard VLam™ range, including bespoke custom laminated products. See page 114 for details.**

## Features and Benefits

**Safety** – laminated glass can resist penetration from accidental impact. If the glass is broken, fragments adhere to the interlayer and are retained in place. **VLam™** provides safety from contact with broken or falling glass, or bodily injury by falling through the glass. In certain applications, toughened laminated glass must be used, such as sloped overhead glass.

**Security** – standard laminated glass provides resistance to penetration from physical attack. By increasing the thickness of the interlayer and its strength, as well as using multiple glass interlayer constructions, products are offered for specialist security applications including bullet resistance (refer to our security glass category).

**Noise control** – **VLam™** provides good noise dampening over the same thickness of float glass. By incorporating **VLam™** into a **ThermoTech™** insulating glass unit, improved noise attenuation can be achieved. For noise reduction, you can use **VLam™ Hush** and its specially developed interlayer.

**UV protection** – the interlayer used in **VLam™** eliminates 99% of ultraviolet radiation. When incorporated with solar control glass, fading can be reduced up to 8.5 times over normal glass.

**Solar control** – **VLam™** can be manufactured with toned solar control glass and interlayers providing glare and solar heat gain reductions. Further to this, **VLam™** can be customised with virtually any Viridian solar control glass for the ideal balance between daylight solar control and thermal insulation.

**Colour and decoration** – translucent and translucent grey interlayers, along with textured glass options are available for privacy and light diffusion. Colour options are also available with our **DécorColour™** range.



## How to Specify

- **Select glass name**  
VLam™
- **Select thickness – process**  
6.38mm to 39.52mm – Laminated  
7.52mm to 39.52mm – Toughened  
Laminate

### Select colour

Refer to range chart



VLam™, if broken the glass is bonded to an interlayer.

## Considerations

- Glass selection, glazing and manufacturing must be in accordance with Australian Standards.
- Interlayer colours are based on but are not identical to 6mm **VFloat™** glass tones.
- The glazing system must allow for water drainage or be completely watertight.
- Certain sealants may cause edge de-lamination such as linseed oil or putty – neutral cure silicone sealants are recommended.
- Viridian does not warrant laminated glass with edges left exposed.

## Product Range

VLam™ Range					
Product	Thickness (mm)				
	6.38	6.76	8.38	10.38	12.38
Clear	◆		◆	◆	◆
Bronze	◆		◆	◆	◆
Green	◆		◆	◆	◆
Grey	◆		◆	◆	◆
SuperGreen™	◆			◆	◆
Translucent	◆		◆	◆	◆
Translucent SuperClear™				◆	◆
Translucent Grey		◆			

Viridian has a range of laminate products which provide different types of end benefits to your project. **VLam™** is the starting point, see below for products which take your performance to the next level.

### Noise

- VLam™ Hush
- ComfortHush™

### Decorative

- DécorColour™
- VLam™ Translucent, VLam™ Translucent Grey

### Solar Control

- VLam™ Grey, Bronze, Green, SuperGreen™
- ComfortPlus™

### Security

- DécorMirror™ Oneway
- IntruderGuard™
- AssaultGuard™
- AssaultGuard™ Ultra
- JailGuard™

### Special applications

- BulletGuard™
- Bespoke Custom Laminated Products

## Applications

- Balustrades
- Facades
- Facade Cladding
- Furniture
- Partitions
- Shower Screens
- Windows
- Doors
- Overhead Glazing

VLam™ is a trademark of Viridian Glass



## PRODUCT

# VTough™

Quality toughened glass – for superior strength, safety & resilience

**Why settle for ordinary glass when there's a tougher option available? VTough™ offers a total glass solution that allows greater scope in your design.**

**Five times stronger than ordinary glass, VTough™ is perfectly suited to a wide range of applications that would normally put ordinary glass at risk of breaking. This includes splashbacks, basketball backboards and lots more. Think of the possibilities!**

Whenever the benefits of ordinary glass need to be combined with extra strength, safety or heat resistance, **VTough™** toughened glass offers a complete and proven solution, allowing designers and specifiers greater scope with glass for building.

**VTough™** toughened glass is a Grade A safety glass manufactured to AS/NZS2208 for use in buildings or AS/NZS2080 safety glass for land vehicles. It is manufactured by heating and then rapidly cooling float glass. As a result, opposing compressive and tensile stresses are set up in the glass, which gives toughened glass four to five times more strength than ordinary glass of the same thickness, combined with much greater resistance to impact. In the unlikely event of breakage, **VTough™** fragments into small blunt-edged pieces, reducing the risk of injury. **VTough™** toughened glass cannot be cut or edgework processed after manufacture.

Virtually all glass types can be supplied in toughened form, the exceptions being some deeply patterned glass, mirrors, wired and glass for leadlighting.

## Considerations

- **Heat soak treatment.** In accordance with the NCC (2016), heat soak testing on toughened glass will be mandatory in certain applications.
- **Tolerances** – as listed in AS/NZS2208, toughened glass is inherently less flat than ordinary glass.
- **Wind load** – toughened glass can be used in larger areas than ordinary glass of the same thickness. This allows a consistent thickness and appearance to be achieved in areas of higher wind load or panel dimensions. Deflection should be checked.
- **Selection and glazing** – glass must be selected and installed in accordance with Australian Standard AS1288. Attention is also drawn to the breakage characteristic of toughened glass and it is the specifier's responsibility to assess suitability for each application.
- **Heat strengthened glass** – this is not a safety glass, but has approximately double the strength of ordinary glass. It is resistant to thermal breakage (temperature differential of 160°C) and if broken, breaks into larger pieces. This glass may have less distortion than fully toughened glass and is used where additional strength without safety is required.



**VTough™ toughened glass offers a complete and proven solution, allowing designers and specifiers greater scope with glass for building.**

## Features and Benefits

- **Strength** – toughened glass allows large, clear spans with minimum fixing. Toughened glass is used with bolt or patch fittings for frameless doors and assemblies, or glass shapes, including holes, that may weaken normal annealed glass. Toughened glass has good resistance to soft body impacts.
- **Thermal resistance** – resists temperature differences of 250°C in a range of -70°C to +300°C. This means that toughened glass can be used in splashbacks and where thermal stress breakage is an issue.
- **VTough™** can be laminated for additional safety, solar control or appearance.
- Wide range of glass types available.
- Manufactured and distributed throughout Australia for ease of availability.

## Applications

- Splashbacks
- Shower Screens
- Partitions
- Spandrels
- Facades
- Wall Cladding
- Furniture
- Balustrades
- Windows
- Doors

## Thickness

- 4mm to 19mm



## How to Specify

- **Select glass name**  
VTough™
- **Select thickness – process**  
4mm to 19mm – Toughened  
4mm to 12mm – Heat Strengthened  
9.52mm to 39.52mm – Toughened/  
Laminate
- **Select colour**  
From VFloat™ range

VTough™ is a trademark of Viridian Glass



## PRODUCT

# SuperClear™

High clarity glass – for crystal clear & colour-true views

**Whether you want flawless colour for a glass feature, or simply the clearest view of outside, SuperClear™ will deliver you the very best look.**

**SuperClear™ eliminates the subtle green tint that usually comes with glass, and offers an almost invisible barrier between you and the world.**

**SuperClear™** brings maximum transparency and clarity by providing a crystal-clear glass unlike the green tint usually found in standard float glass. This is achieved by using silica sand with a low iron content during glass making to reduce the otherwise characteristic green of standard float glass. When painted, **SuperClear™** represents colours, in particular light colours, much more accurately than standard float glass.

The result is readily apparent with thick glass where the edges remain clear and colour transmittance is more accurately processed.

**SuperClear™** is available in laminated, toughened and toughened laminated form. It is particularly useful when glass has an applied design or colour such as **PixaGraphic™** and **Seraphic™** where light colours remain true.

**SuperClear™** can be used to stunning effect in balustrade systems, frameless shower screens and furniture where a processed glass edge is exposed and clarity of vision is desired. The sheer beauty of this product opens up a raft of new possibilities for architects and designers.

The following table shows the light and solar transmission performance for **SuperClear™** and standard float glass.

## ✓ Comparison of light and solar transmission

Glass Thickness	Light Transmission %		SHGC	
	VFloat™ Clear	VFloat™ SuperClear™	VFloat™ Clear	VFloat™ SuperClear™
4mm	89	91	0.85	0.90
6mm	88	91	0.82	0.89
8mm	86	90	0.78	0.88
10mm	85	90	0.75	0.88
12mm	84	90	0.73	0.88
15mm	84	90	0.76	0.86
19mm	82	90	0.72	0.85

✓ **SuperClear™ brings maximum transparency and clarity by providing a crystal-clear glass**

### Features and Benefits

- High clarity, crystal clear, low iron glass for special applications.
- Purity and trueness of colour with minimum colour cast when viewing through the glass.
- Translates light coloured paint more accurately than standard float glass.
- Very high light transmission of 90% and over.
- Can be toughened and laminated.
- Maintains colour consistency over the range of glass thickness.
- Used in **Seraphic™** or **PixaGraphic™** and very thick products such as **DécorFloor™** to minimise natural green tone.

### Applications

- Shower screens
- Balustrades
- Furniture
- Partitions
- Windows
- Doors

### How to Specify

- **Select glass name**  
SuperClear™
- **Select thickness – process**  
4mm to 19mm – Annealed  
4mm to 19mm – Toughened  
4mm to 12mm – Heat Strengthened  
8.38mm to 31.52mm – Laminated  
9.52mm to 31.52mm – Toughened/  
Laminate

