



> VIRIDIAN GLASS GUIDE

# Security

Enjoy all that natural light has to offer with peace of mind that your building is protected.

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**Products:**

- DécorMirror™ Oneway
- IntruderGuard™ & AssaultGuard™
- AssaultGuard™ Ultra
- JailGuard™
- BulletGuard™
- Bespoke Custom Laminate Solutions

**Viridian**  
we ♥ glass





# Security glass for all threat levels

Whether it's a house window, a shop front or a security facility, Viridian has a security glass that provides the benefits of daylight and transparency with the peace of mind of security – all day, every day.

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## Security Glass has been Developed to Resist:

- Physical attack from burglary and forced entry
- Ballistic attack

Viridian security glass comprises multiple layers of glass and special or thick interlayers, used for durability and resistance to attack. The thickness and type of interlayer provides resistance to penetration.

As with all security glass, the window frame system must also be capable of withstanding attack and retaining the glass.

Security glass can be configured to include solar and thermal control and decorative glass (subject to suitability of application and final product selection).

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**Glass thickness and weight have been reduced and light transmissions, as well as visual clarity, have been improved.**

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## Ballistic Attack

Bullet resistant glass has become increasingly more advanced over time. Glass thickness and weight have been reduced and light transmissions, as well as visual clarity, have been improved.

The range of glass available correlates to the level of ballistic attack performance defined in Australian Standard AS2343. The glass construction is a combination of all glass or glass and polycarbonate and is designed to provide transparency, abrasion and bullet resistance.

The glass thickness range is 32mm to 45mm and is designed to resist an attack from a specified distance for a limited number of strikes. The natural green tone of the glass is apparent at this thickness and can be minimised by specifying **SuperClear™**.

For test details, performance and maximum sizes, please contact Viridian.





## PRODUCT

# DécorMirror™ Oneway

One-way security mirror – for discreet monitoring & reduced sound transmission

**Oneway mirrors are the kind of thing we commonly see in the movies. However, they serve a very real role in our society, for interrogation rooms, market research and many more practical purposes.**

**We created DécorMirror™ Oneway to provide a oneway mirror that offers high quality vision and effectively provides discreet, unobtrusive monitoring. It has the appearance of a mirror on the subject side, while providing privacy for observers.**

**DécorMirror™ Oneway** is reflecting coated glass that has the appearance of a mirror on the subject side, while providing privacy for observers. It is also laminated to provide protection from human impact and reduces noise transmission.

## ✓ **DécorMirror™ Oneway provides protection from human impact and reduces noise transmission.**

### Considerations

- To achieve privacy for observers, a light ratio of 1:7 is recommended, where the subject side is brightly illuminated and the observer side is dimly lit. Bright lighting sources must be avoided in the observer's area and spotlights directed away from the **DécorMirror™ Oneway** surface. We recommend using dark furnishing colours and that dark clothing be worn in the observation area.
- **DécorMirror™ Oneway** is normally used for internal applications. For external applications and natural lighting situations where variable lighting conditions exist, the **DécorMirror™ Oneway** performance can be affected.
- Glazing should be in accordance with the Australian Standard AS1288, and Viridian recommendations for laminated glass.
- The bronzed silver reflective surface must be installed to the subject side.

### Features and Benefits

- A safe and effective observation mirror for discreet monitoring.
- Appearance of a mirror.
- Laminated for safety.
- Low observer area lighting compared to subject area.
- Coating protected from scratching.
- Noise attenuation.
- Grade A Safety Glass.

### Applications

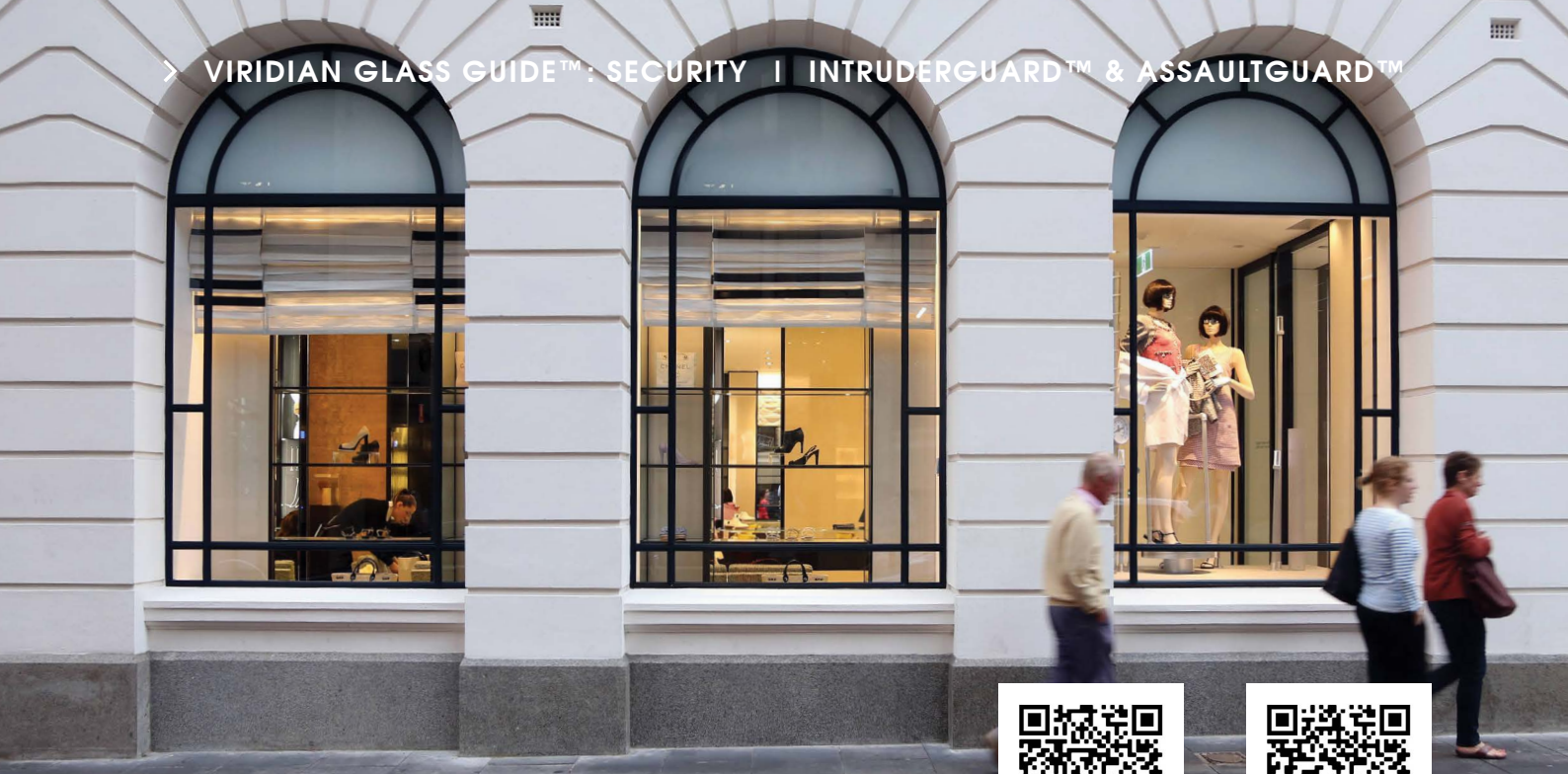
- Windows

### How to Specify

- **Select glass name**  
DécorMirror™ Oneway
- **Select thickness – process**  
8.76mm

## ✓ **A safe and effective observation mirror for discreet monitoring**

DécorMirror™ is a trademark of Viridian Glass



IntruderGuard™



AssaultGuard™

## PRODUCT

# IntruderGuard™ & AssaultGuard™

Security laminated glass – for transparent home security

**Want that extra level of protection for the weak spots of your building without detracting from the design visually? Then IntruderGuard™ and AssaultGuard™ are the solution for you.**

**IntruderGuard™ and AssaultGuard™ looks like normal glass but provides a barrier to forced entry that is 20 times harder to break through than standard float glass. So you can stay safe while still having the look that you love.**

**IntruderGuard™ and AssaultGuard™** are specifically developed to offer a resilient and enduring barrier for vulnerable entry points across a broad range of applications. As a specialised laminated glass, they provide extra resistance to penetration thanks to its interlayer four times thicker than normal.

**IntruderGuard™** is a security glass for residential buildings and **AssaultGuard™** is typically used in commercial applications such as vulnerable shopfronts, windows and doorways susceptible to break in. It is also used in a variety of other 'at risk' applications such as pay booths, jewellers counters and display counters, providing enough resistance against 'smash and grab' theft. It is designed to resist attack from a variety of hand tools used for forced entry such as hammers, crowbars and wood splitters.

**AssaultGuard™ Ultra** can be used if a high level of security is required,

## Features and Benefits

- Resists penetration and forced entry – glass may break but interlayer retains integrity and continues to act as barrier.
- Withstands repeated blows from heavy objects such as bricks, hammers and crowbars.
- Reduces UV radiation by 99% reducing fading up to 8.5 times over normal glass.
- Reduces unwanted noise compared to standard glass.
- **IntruderGuard™** and **AssaultGuard™** are a laminated Grade A safety glass (AS/NZ2208).
- Can be supplied with solar control and privacy options and incorporated into a double glazed unit.

## Considerations

- **IntruderGuard™** should be incorporated with window frames and locks of sufficient strength.
- Consider incorporating **SuperClear™** to enhance the high light transmission often required in retail applications.

## Applications

- Windows
- Doors
- Facades
- Overhead Glazing
- Partitions



**Withstands repeated blows from heavy objects such as bricks, hammers and crowbars.**

## Maximum Size

- IntruderGuard™  
7.52mm: 3660mm x 2440mm
- AssaultGuard™:  
4600mm x 2760mm

## How to Specify

- **Select glass name**  
IntruderGuard™  
AssaultGuard™
- **Select thickness - process**  
IntruderGuard™ - 7.52mm – Laminated  
AssaultGuard™ - 9.52mm – Laminated  
AssaultGuard™ - 11.52mm – Laminated  
AssaultGuard™ - 13.52mm – Laminated
- **Select colour**  
Clear  
Other tones available by special order - PVB  
Interlayer options include: Grey, Bronze, Green and White Translucent

IntruderGuard™ and AssaultGuard™ are trademarks of Viridian Glass





## PRODUCT

# AssaultGuard™ Ultra

Specialist security laminate – defined protection levels for high threat facilities

If you need a lightweight glass product that offers maximum security to meet your design requirements, then look no further than Viridian AssaultGuard™ Ultra.

Specially developed for use in areas like police stations and mental health facilities, AssaultGuard™ Ultra is the step up from AssaultGuard™ for delivering security.

Products within the AssaultGuard Ultra™ range are designed to withstand a variety of attacks. AssaultGuard™ Ultra products are manufactured using a variety of glass types and thicknesses combined with specialised security interlayers. (Spall films can be applied post installation to non-Low E coated glass products). It has demonstrated a strong resilience to concentrated attacks.

Additionally, if stringent energy efficiency requirements are specified, AssaultGuard™ Ultra can be supplied in a range of toned and Low E combinations or combined with our ThermoTech™ Insulated Glass Unit (IGU) range.

- AssaultGuard™ Ultra 10 – Minimum Security Glass:** AssaultGuard™ Ultra 10 is the base product in the range and ideal for use in low to medium risk facilities, such as observation or holding cells, police station detention areas, mental health institutes, banks, high-risk display cases (museums, art galleries, etc.) and pay offices.
- AssaultGuard™ Ultra 12 – Medium Security Glass:** AssaultGuard™ Ultra 12 is the mid-range product in the range. It is typically used in medium to high risk areas in facilities as well as juvenile justice centers, remand centers, high risk police detention areas and mental health facilities.
- AssaultGuard™ Ultra 14 – Premium Security Glass:** AssaultGuard™ Ultra 14 is the highest performing product in the range. It is specifically designed for applications requiring client observation where excellent integrity of product is required. This maximum security glass is typically used in maximum risk areas in facilities such as juvenile justice centers, remand centers and acute or forensic mental health facilities.



## Features and Benefits

- Conforms to AS/NZ2208 for safety glazing material.
- May be specified in a range of single and double glazed configurations.
- Can be used for both internal and external applications.
- Internal testing coupled with market recognition indicates prolonged impact resistance in non-rated security applications where design considerations may prevent the use of ordinary glass.
- Now part of a standard product range, making it easier to specify and purchase.
- Block 99% of unwanted UV light.

## Applications

- Windows
- Doors
- Facades
- Overhead Glazing
- Partitions

## Maximum Size

- **AssaultGuard™ Ultra Non-coated:**  
10mm, 12mm :2500mm x 1500mm  
14mm: 3660mm x 2130mm
- **AssaultGuard™ Ultra E:**  
10mm: 2000mm x 1000mm  
12mm: 2440mm x 1220mm  
14mm: 3500mm x 2130mm

## How to Specify

- **Select glass name**  
AssaultGuard™ Ultra
- **Select coated or non-coated**
- **Select thickness - process**  
Nominate the level of security to determine thickness:  
**AssaultGuard™ Ultra 10**  
**AssaultGuard™ Ultra 12**  
**AssaultGuard™ Ultra 14**
- **Select colour**  
Refer to table

### Product range

|                    |                          | Clear | Neutral | Green | Grey |
|--------------------|--------------------------|-------|---------|-------|------|
| Non Coated Range   | AssaultGuard™ Ultra 10   | ◆     |         | ◆     | ◆    |
|                    | AssaultGuard™ Ultra 12   | ◆     |         | ◆     | ◆    |
|                    | AssaultGuard™ Ultra 14   | ◆     |         | ◆     | ◆    |
| Low E Coated Range | AssaultGuard™ Ultra E 10 | ◆     | ◆       | ◆     | ◆    |
|                    | AssaultGuard™ Ultra E 12 | ◆     | ◆       | ◆     | ◆    |
|                    | AssaultGuard™ Ultra E 14 | ◆     | ◆       | ◆     | ◆    |

AssaultGuard™ Ultra is a trademark of Viridian Glass



## PRODUCT

# JailGuard™

Specialist security laminate – specially designed for use in correctional facilities

**As the name suggests, JailGuard™ is specialised security glass that is tough enough to meet the standards of correctional facilities.**

**JailGuard™ is designed to resist attacks from all the typical hand tools that might be found within correctional facilities such as police stations, jails, remand centres and more.**

JailGuard™ products are manufactured using a variety of glass types and thicknesses combined with high-end security interlayers. **JailGuard™** can also incorporate low spall films if required.

Products within the **JailGuard™** range are designed to withstand a variety of attacks from hand tools and typical implements such as brooms, mop buckets, billiard balls and other objects found within correctional institutes. Simulated attack conditions using axes, wood splitters, crowbars and other hand tools have shown products within the **JailGuard™** range capable of resisting penetration for extended periods.

**JailGuard™** is available in different levels of security:

**JailGuard™ 10**

**JailGuard™ 20\***

**JailGuard™ 30**

\*Formerly **JailGuard™ 22**



## Features and Benefits

- **JailGuard™** is independently tested. Test data and video results are available for review.
- Conforms to AS/NZS2208 for safety glazing material.
- May be specified in a choice of configurations – Clear, Toned, Low E and **DécorMirror™ Oneway** (subject to configuration and attack level).
- Can be used for both internal and external applications.

## Applications

- Windows
- Doors

## How to Specify

- **Select glass name**  
JailGuard™
- **Select thickness – process**  
Nominate the level of security to determine thickness  
**JailGuard™ 10**  
**JailGuard™ 20\***  
**JailGuard™ 30**  
**JailGuard™ E 10**  
**JailGuard™ E 20\***  
**JailGuard™ E 30**
- **Select colour**  
Clear, Low E Clear, Low E Neutral



JailGuard™ is a trademark of Viridian Glass





## PRODUCT

# BulletGuard™

Specialist security laminate – for protecting against firearm attacks

**In buildings like banks, embassies and police stations, an extreme level of protection is needed to ensure the safety of people within. Our Viridian BulletGuard™ range delivers just that.**

**Our lightweight BulletGuard™ range protects from the threat of firearm attacks – as you have probably already guessed. What makes it extra special is that it also delivers excellent daylight transmission and clarity. So you can still enjoy the very best of natural light entering your space.**

**BulletGuard™** is a highly specialised range of products manufactured with the specific purpose of resisting penetration by projectiles discharged from firearms. All products within the **BulletGuard™** range are manufactured to meet

the stringent requirements of the Australian and New Zealand Standard AS/NZS2343.

The **BulletGuard™** range of products are multiple compositions consisting of glass, highly specialised scratch resistant polycarbonates, polyurethane, specifically developed security interlayers and security films. The components used in the manufacture of **BulletGuard™** products retain a high level of light transmission and a high degree of visual integrity following an attack.

One of the keys to the success of **BulletGuard™** products is weight. In many applications where bullet resistant glass is required it is preferable to keep weight to a minimum, especially in armoured and defence vehicles. Even in building installation it is preferable to keep weight to a minimum, as additional weight requires additional structural support.

## Considerations

- Allow adequate edge clearance for glazing, normally 6mm all round.
- Allow for a minimum of 15mm edge cover. Viridian recommends 20mm.
- Ensure the frame and supporting structure is strongly constructed to provide adequate protection for the glass. It is most important to consider the weight of the glass used and to provide suitable resistance to penetration to edge attack. The frame and the glass should be considered together as a bullet resistant unit.
- Setting blocks, 6mm minimum, and distance pieces, 2mm minimum, are essential. They must be installed to prevent glass contact with the frame. Avoid glass to metal contact.
- The glazing system must not allow water traps to occur.

With an ever-increasing diversity of product types, complex glass standards and regulatory building code changes, correct product selection is becoming more difficult and ever more important. Please consult with Viridian to discuss specific requirements for **BulletGuard™** applications.

## Applications

- Windows
- Doors

## Maximum Size

- 2000mm x 1000mm

## How to Specify

Please consult with Viridian to discuss specific requirements for **BulletGuard™** applications

## Performance Data

| Attack level | Weapon and calibre | Ammunition                                   | Range | Number of strikes | Weight (kg/m²) approx. |
|--------------|--------------------|--|-------|-------------------|------------------------|
| G0/G1        | Handgun            | 10.2g soft point                             | 3m    | 3                 | 57.84                  |
|              | 357 Magnum         | semi-jacketed, flat nose                     |       |                   |                        |
| G2           | Handgun            | 15.6g soft point                             | 3m    | 3                 | 70.36                  |
|              | 44mm Magnum        | semi-jacketed, flat nose                     |       |                   |                        |
| S1           | Shotgun 12 gauge   | 12 gauge 70mm<br>28.35g single slug          | 3m    | 2                 | 93.40                  |
| R1           | Rifle 5.56mm       | M 193 5.56                                   | 10m   | 3                 | 120.73                 |
|              | 3.6g               | 3.6 full metal case                          |       |                   |                        |
| R2           | Rifle 7.62mm       | NATO standard 7.62mm<br>9.3g full metal case | 10m   | 3                 | 120.73                 |

Notes: Chart based on Standards. The standard defines three broad attack level categories: 1. "G" Resistant to handgun attack. 2. "S" Resistant to shotgun attack. "R" Resistant to rifle attack. R1. Rifle 5.56mm Si. Shotgun 12 gauge G2. Handgun 44 magnum R2. Rifle 7.62mm.

**BulletGuard™** is a trademark of Viridian Glass





## PRODUCT

# Bespoke Custom Laminated Solutions

Viridian's bespoke custom lamination capabilities allows us to create a wide range of glass solutions for highly specialised applications.

**Depending on your specific project requirements, Viridian can manufacture specific types of laminated glass to application, risk or engineering requirements.**

Manufactured in Australia from high quality components, Viridian's custom laminated products are protected by the Viridian Glass Warranty and supported with in house engineering support for certain types of applications.

You can also choose to add extra processes, coatings, speciality interlayers or painted finishes to enhance energy efficiency and acoustic comfort, or add aesthetic and design elements.



## Features and Benefits

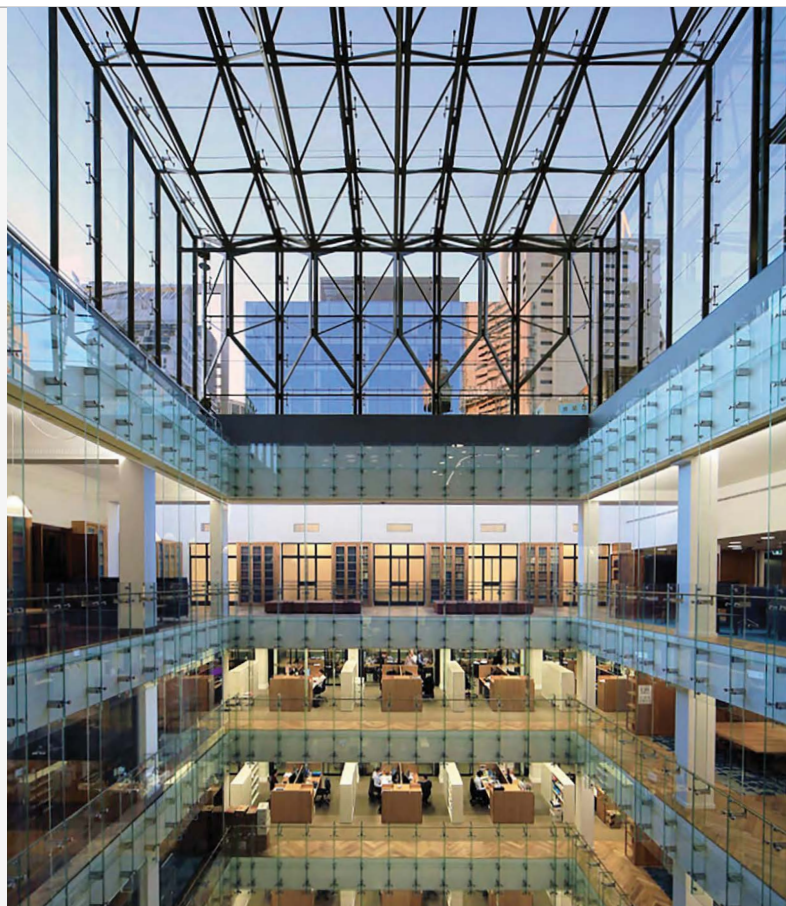
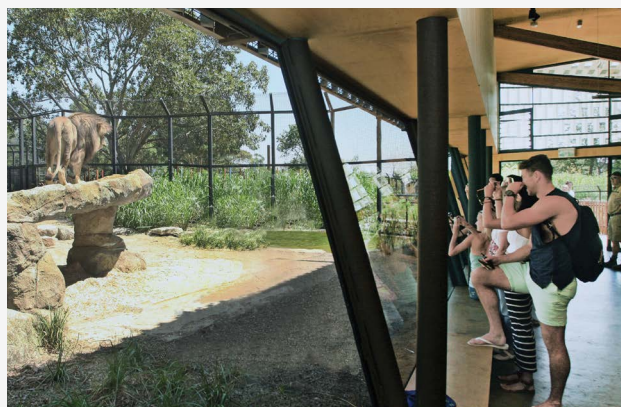
- Viridian offers extensive knowledge and experience that assures high quality and safe products.
- Protected by the Viridian Glass Warranty.
- Options to add benefits to the product to enhance acoustics or energy efficiency for specific requirements.
- May also be able to introduce pattern and colour elements if required for specific design or aesthetic requests.

## Applications

- High security applications
- Defence applications
- Facades
- Balustrades
- Overhead glazing
- Engineered applications

## Maximum Size

Various – Please contact Viridian



## How to Specify

- **Select glass name**  
VLam™ Custom Laminate
- **Nominate thickness**  
9.52mm – 49.56mm
- **Nominate processing**  
Heat Strengthened, Toughened and Heat Soaking
- **Nominate colour**  
Clear, Light Grey, Grey, Green, Bronze, SuperClear™, SuperGreen™
- **Nominate interlayer type and thickness**  
PVB or SGP
- **Nominate performance**  
Low E coated or non-coated single glass or high performance double glazed options

