TECHNICAL BRIEFING - WATER CONSERVATION: GLAZING STRATEGIES TO REDUCE RELIANCE ON WATER

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Introduction
Glass technologies that can be incorporated as part of a sustainable approach to water saving are:

- **Self-Cleaning Glass** – reduced reliance on cleaning without the need for detergents.
- **Fire Protection Glass** - used in passive fire protection making reliance on sprinklers and water supply less essential.

Self Cleaning Glass
Viridian **Renew™** self-cleaning glass has a special dual action coating that helps keep the glass free from organic dirt, saving time, cost, water and detergents, all associated with window cleaning, for the life of the window.
The cleaning costs associated with large buildings over the life of the building are very significant. Viridian **Renew™** provides quick payback on investment.

Product Description
Viridian **Renew™** has a specially developed, completely transparent exterior coating applied to clear glass during manufacture. This has an innovative dual cleaning action which, once exposed to daylight, reacts with the UV rays to:

- Firstly, break down and disintegrate organic dirt deposits such as bird droppings and tree sap.
- Secondly, when water hits the glass Viridian **Renew™** is hydrophilic, washing dirt away without spots or streaks.

Viridian **Renew™,** during dry spells and cloudy days, will continue to break down organic dirt. However, the lack of rainfall will prevent the hydrophilic washing, which can instead be carried out simply by hosing with water.

Viridian **Renew™** works continuously with dirt being washed away whenever it rains. The coating can take 5 to 7 days after glazing, to activate.

Viridian **Renew™** can be combined with other glass as a solar control laminate (Viridian **VLam™**) or as an insulating glass unit (Viridian ThermoTech™) for thermal comfort.

Features

- Transparent with virtually identical properties to clear glass of the same thickness.
- Durable – the Viridian **Renew™** coating lasts the lifetime of the window and uses Viridian pyrolytic coating technology. It can be laminated, toughened, curved, incorporated into insulating glass units and is stored and handled similarly to normal glass.
- It can be combined with virtually all Viridian solar control, thermal insulation and decorative glass.
- Laminated for safety and noise reduction

Viridian **Renew™** can be used in almost any exterior application. It can be installed at any angle, ranging from vertical or sloped roofs not less than 10 degrees to the horizontal (30 degrees is recommended). It is especially useful for inaccessible windows and windows that are unsafe to clean, where dirt collects, such as roof-lights.
If rain cannot reach the glass, dirt deposits are less likely to be washed away, so the glass may need hosing. It is not suitable for interior use.

Considerations
Where sealants are used in structural silicone or weather seals, careful attention to window design and selection is required. Gaskets for the window system must be Neoprene or Butyl based tapes. For areas that have "hard water" and sea salt spray, special attention to selection is also required.
Please consult with Viridian for recommendations and refer to Viridian **Tech**Direct bulletins.

Applications
- Residential and commercial windows
- Roof lights that are inaccessible

Benefits
- Saves cleaning time and costs
- Safety from accessing unsafe areas
- Reduced water and detergent use
- Range of laminated and insulating glass options, providing energy management
- Safety, noise reduction and security

Fire Protection Glass – Pyrostop†

The relationship between water and fire is long established, as is the reliance in Australia on water-based systems to not only extinguish the fire, but also to try and prevent the spread of the fire. This is an interesting approach, even when considered purely from an environmental perspective, in a country where minimising water use is an absolute priority and where restrictions on its use are widespread. When further considering this approach, especially the role of water-based drencher systems in controlling fire spread, from a performance and technical perspective, the reliance on water as a means of controlling fire spread becomes increasingly fragile. Recent destructive fires in both Spain and South America, where the water supply was not available to support a fire protection strategy reliant on water-based systems, are but two high profile examples where the fallibility of such an approach is exposed.

One internationally recognised method of saving lives, preventing fire spread and also protecting the building structure itself if a fire occurs, is installing passive, glazed fire-resistant systems that offer protection not only from flames, smoke and hot gases, but also crucially, from the heat of the fire itself.

Pyrostop† is the fire-resistant glass used in such systems; systems that are not only fully tested and certified, but have also proved themselves to be absolutely effective in real fire situations. The protection from the heat of the fire, which is offered by **Pyrostop**†, is a crucial characteristic not only in preventing fire spread, but also in protecting the building occupants escaping the fire and the firefighters entering the building to extinguish the fire.

In the event of fire, the special clear interlayers within the glass foam, turn opaque and bond the glass layers together to give a resilient heat and integrity barrier. The function of the interlayer is absolutely consistent and rapid. It is triggered when the interlayer temperature reaches 110ºC. With three interlayers, for example, the radiant heat on the protected side is reduced to tolerable, safe levels, shown by measurement to be no more than the normal summer solar heat intensity. Performance determined by testing, measurement and technology considerations are backed up by practical experience in fires that demonstrate the technology as being both robust and reliable.

The intumescent action in the special laminate structure also reduces panic by visually blocking out the effects of the fire. Such enhanced performance characteristics are critically important in holding back fire, protecting occupants and firefighters, and also in protecting the building from fire long after the occupants have fled.

In a fire, minimising manageable risk and removing doubt and uncertainty simply saves lives and assets. To be able to do that through technical know-how and proven performance excellence is a major step forward. To be able to do that without the reliance on scarce natural resources should be a prerequisite.

Fully tested and certified solutions are available to meet the various fire resistance levels of –/30/30 through -/120/120 required by the BCA. The solution is purely passive in nature, requiring no ongoing maintenance and no ongoing cost implications. To minimise lead times, the product is also stocked in Australia.

Further information
Please visit viridianglass.com or freecall 1800 810 403

For Viridian disclaimer and warranty details please visit our website viridianglass.com

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Viridian New World Glass

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