

# Laminated Glass

## CAUTION: Applying Window Film to Laminated Glass

Laminated glass features two panes of glass that are fused together by a Poly Vinyl Butylene interlayer film. The (PVB) interlayer film tends to hold broken glass together, providing an effective barrier to entry, and reducing the likelihood of flying or falling glass. It is also used where effective noise reduction is required.

Glass breakage can occur for many reasons. The major concern of applying window film to laminated glass is thermal stress breakage. Thermal stress fractures occur as a result of glass being exposed to sunlight or interior heating where there is an uneven temperature distribution across the surface of the glass panel.

Since applied window film is an absorber of the sun's radiation, and laminated glass is constructed of two layers of glass, these factors combined have a tendency to further exacerbate the problem of uneven temperature gradients and ultimately create a higher risk of glass breakage caused by thermal stress.

The danger with laminated glass is that when the sun's energy is absorbed, the surface gets warmer. As things get warmer, they expand. With laminated glass there is one layer (inside the film) getting warmer than the outside layer. The inside layer of glass then expands more than the outside layer, but neither can move independently because they are glued together. The two pieces of glass fight each other until one wins and the other breaks.

No manufacturer of window film will recommend applying solar control film to laminated glass, nor will they offer any warranty against glass breakage.

However, if the application of a solar control film to laminated glass is unavoidable, we would strongly advise that only solar control window films with a Solar Energy Absorbance figure of less than 50% be selected. *This figure is based on film specification data derived from window film applied to 3mm (1/8") clear glass.*

Typically, these films will be higher on Solar Energy Reflectance performance which will provide a more reflective or 'mirror-like' external appearance. *The use of dark, non-reflective window films should be avoided at all times.*

## FURTHER INFORMATION

*Refer to the UltraGard 'Film to Glass Guide'*

**DISTRIBUTED IN AUSTRALIA BY:**  
GTS Films Pty Ltd  
Unit 9/24 Anzac Avenue  
Smeaton Grange NSW 2567

P (02) 4647 9199  
E sales@gtsfilms.com.au

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[www.UltraGard.com.au](http://www.UltraGard.com.au)