

TECHNICAL SALES BULLETIN 021

06th May 2019

Safety Glass (Laminated/Toughened)

When selecting safety glass for an application, whether decorative or functional, two choices often arise: toughened or laminated glass.

Both are recognised as “safety glazing materials” as set out in SANS 1263-1. As such they can be used in locations which may be deemed hazardous as per SANS 10400-N.

Both toughened safety glass and laminated safety glass each have distinct and different advantages.

Armourplate Toughened Safety Glass

Toughening process leaves the glass hardened (combination of high compressive stresses setting on the surface and balancing tensile stresses forming in the centre of the glass) and therefore more resistant to breakage than it was before the toughening process. If it does break, the glass shatters into small pieces that are less likely to cause injury, when compared to annealed monolithic glass. There are a range of toughened products available to offer safety and solar control, varying in thicknesses depending on required application. Toughened glass is used in applications such as, showers, frameless doors, balustrading etc.

Pro's

- Superior strength and resistant to higher loads (windload etc.)
- Resistance to thermal shock.
- Can be used in bolted applications.

Con's

- If broken, there is no containment, leaving the building open. (security risk)
- Monolithic TSG (Toughened Safety Glass) offers limited protection against damaging UV Rays.
- Toughened Safety Glass cannot be cut/modified after being toughened.



Intruderprufe Laminated Safety Glass

Laminated glass is basically a glass sandwich. It is made of two or more plies of glass with an interlayer between. The glass will tend to stay together if one or both plies are broken – thus qualifying as a safety glazing material. It also offers improved security for this reason. There are ranges of interlayers that offer varying properties (from colour, impact resistance to sound dampening...)

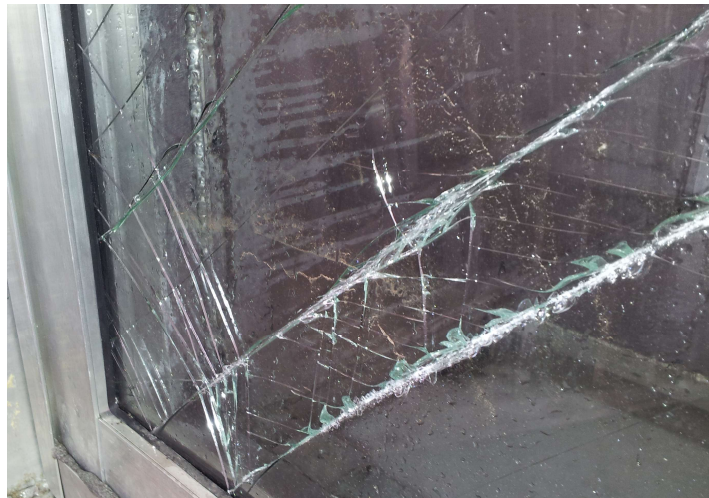
The other key advantage to laminated glass is that it blocks 95% or more of the UV-light transmission. Certain thicker, multi-laminated forms of laminated glass can even qualify as bullet and burglar resistant glass

Pro's

- Penetration resistance and added security
- Wide range of products available
- Sound control
- UV resistance

Con's

- Risk of thermal stress breakage (if used in incorrect applications).
- Some interlayer's are subject to moisture attack at glass edges (delamination)
- Increased risk of breakage during handling & installation.



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