



What's the difference between

**LAMINATED
AND
TOUGHENED**
SAFETY GLASS

A photograph of a modern office interior, viewed through glass partitions. In the center, a black and silver swivel office chair is visible. The background shows office desks, a printer, and other office equipment. The lighting is bright and even. The overall aesthetic is clean and professional.

While both
are types of
safety glass
and are
superior to
standard
glass.

Laminated Glass and Toughened Glass differ from
each other significantly in a variety of ways.

What is Toughened Safety Glass?

Toughened glass or as others know it as tempered glass is in fact five times stronger than your average piece of glass (float glass).

When broken, toughened glass crumbles into small granular chunks of a similar size and shape, which is less likely to cause injury, if you were to compare it to an ordinary glass.

When ordinary glass is broken the glass splinters into random, jagged shards which is why toughened safety glass is recommended for areas in which human impact may occur.



Toughened glass is formulated by a controlled process of heating the glass to a temperature close to 600 degrees then once heated the glass needs to be very quickly cooled by using a compressed air.

This cooling process causes the surface to contract which forms a rigid outer layer over the glass. This toughening process is what makes the glass stronger than conventional glass and able to resist the impact of stress and temperature changes.

Different types of Glass Breaking



**REGULAR
GLASS**



Breaks easily,
producing long,
sharp splinters.



**TOUGHENED
GLASS**



Shatters completely
under high levels of
impact energy and few
pieces remain in the
frame.



**LAMINATED
GLASS**



May crack under
pressure, but tends to
remain integral, adhering
to the plastic vinyl
interlayer.






What is Laminated Safety Glass?

Laminated glass is commonly used as a safety glass when security and injury are of concern.


Laminated safety glass technically has the same strength as regular glass but has a plastic interlayer between two panes of glass, holding them together. The PVB plastic interlayer is a tough resin which will hold the shards in place should the glass break.

This tough plastic resin situated between both pieces of glass provides a safe double-layered design which is why it is classified as one of our safety glasses. When laminated safety glass is smashed it forms a spider web affect in the glass and holds within the frame as depicted in the centre image above. For safety reasons, laminated glass must comply with Australian Standards 1288:2006 Glass in Buildings.



The difference between the two types of safety glass is that toughened glass is a lot harder to smash than the laminated glass. Toughened glass when smashed doesn't hold within the frame like laminated glass does it is broken up into hundreds of tiny pebble like pieces.

Toughened safety glass is manufactured in a completely different way to laminated glass. The way in which toughened glass is made is through the extreme heating and then blasting the glass with cool compressed air whereas laminated safety glass is basically two pieces of glass stuck together with a PVB plastic interlayer that runs through the middle of the two pieces of glass that have been stuck together.





You
Think
We
Create

Diverse Glazing Group



21 Roper Street, O'Connor | 57 Gordon Road, Mandurah Ph: (08) 6149 1299

 diverseglazinggroup.com.au

 enquiry@diverseglazinggroup.com.au