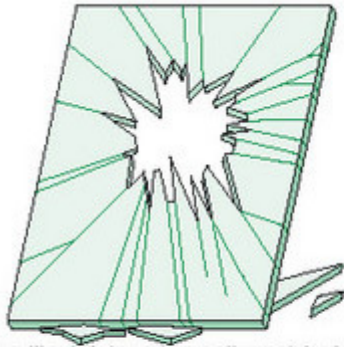
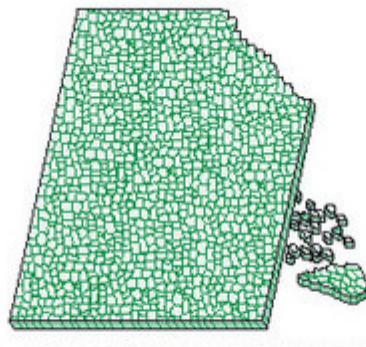


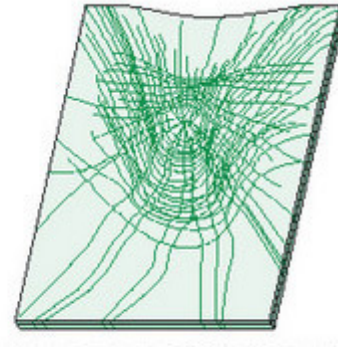
# Safety glass



Tavaline klaas puruneb teravateks kildudeks, mis võivad põhjustada vigastusi.



Karastatud klaasi purunedes tekivad väiksed graanuli taolised tükid, mis ei ole ohtlikud võrreldes tavalise klaasi kildudega.



Lamineeritud turvaklaasil püsivad purunenud klaasi killud kinni turvakilel ja vähendavad löikehaavade tekkimise riski.

## What is safety glass?

There are two types of safety glass: toughened and laminated. Where regular float glass forms sharp shards upon breakage, toughened safety glass breaks into small pellet-like pieces that do not pose a risk of injury. Laminated safety glass breaks like float glass, except that its shards remain bonded to the safety film, which reduces the risk of cuts.

**Toughened glass** is five times stronger than clear float glass; it is produced by heating the glass to 600–650 degrees, followed by rapid cooling. Toughened glass resists loading significantly better than clear float glass, fulfilling even 1(C)3-1(C)1 safety glass requirements.

**Laminated safety glass** is made safe through lamination, which involves laminating two (or more) panes of glass together using PVB films. PVB film makes the glass tough and shatter-resistant, and if the glass should shatter, the shards will stay fixed to the PVB film. Laminated safety glass is available in a variety of colours.

**Bullet-proof and anti-vandal glass** is multi-layered laminated glass that functions like laminated glass, but withstands significantly greater loading. Higher security classes are

achieved with thicker glass and films, which offer remarkable protection against planned break-ins.

## **Where can I use safety glass?**

Safety glass can be used to design well-lit, transparent, and secure interiors, but is also suitable for outdoor applications. Toughened and laminated glass can be combined to create bulletproof and anti-theft glass. Safety glass is also suitable for locations subject to particularly high weight loads (stairs, glass floors, etc.). The most common areas of application for safety glass are exterior façades, roofs, floors, doors, stairway and balcony barriers, balcony glazing systems, partition walls, shower enclosures, bathroom furnishings, furniture, etc.

## **Technical details**

At normal thicknesses, lamination does not affect the optical characteristics of the glass. Laminated glass also protects against UV radiation, letting through only 2% of UV radiation at most. Anti-vandal glass falls under security classes P6B–P8B. Bulletproof glass falls under security classes BR1–BR7 and SG1–SG2, as it is capable of withstanding especially strong forces.

## **Completed projects:**