Safety

Data Sheet V1

Quick facts

- Minimum requirements for the use of safety glass in homes are specified by two Australian Standards:
  - AS1288 – Glass in buildings: selection and installation
  - AS2208 – Safety glazing: glass in buildings
- All low level glazing (close to the floor), internal and external glass doors, showerscreens, balcony balustrades and overhead glazing must be Grade A Safety glass.
- Grade A Safety glass is available in two forms:
  - Toughened
    - if broken it fragments into small pieces
    - up to 5 times stronger than float glass
    - available from 3mm
  - Laminated
    - if broken the glass sticks to the vinyl interlayer
    - most glass stays in the frame
    - available from 6.38mm
- Safety is not just about meeting Australian Standards. It may be wise to use safety glass in specific applications, for example in a child's bedroom.

Safety solutions

- Use glass specified by Australian Standards. Refer to the R&D section on the Stegbar intranet for detailed guidelines – "AWA guide to using AS1288 2006.pdf." Alternatively ask your Stegbar sales consultant if this information is required.
- Use safety glass in areas where active children and adults are located.

Glass – the basics

Toughened glass

Toughened glass is produced by passing cut-to-size annealed float glass through a heat furnace. This process introduces stress into the glass and produces a glass 4–5 times stronger than annealed float glass. Toughened glass can still be broken, however if this does happen it shatters into small fragments, minimising the risk of injury caused by glass splinters.

Laminated glass

Laminated glass is safety glass that has been manufactured by adhering two or more sheets of glass with a flexible interlayer. The interlayer is made from polyvinyl butyral (PVB) and prevents the glass from disintegrating when broken. The interlayer does not impact the transparency of the glass.

Toughened vs Laminated

- Toughened glass is cheaper because it is only a single panel of glass that is processed, while laminated glass is made up of two panels of glass and a vinyl interlayer that all needs to be adhered together.
- Toughened glass is lighter and therefore will not put as much wear and tear on the operating mechanisms in windows and doors.
- Laminated glass dramatically reduces fading. Toughened toned glass also reduces fading but is less effective than laminated. Refer to the fading data sheet.
- Laminated glass provides a security benefit far in excess of toughened. Refer to the security data sheet.
- While laminated and toughened glass can be used interchangeably to comply with the Australian Standards, selecting the most appropriate type for the location and use is essential. Refer to the child's trampoline example.

Safety precaution

Operative windows that are installed at a distance greater than 1.5m above ground level, where there is a real possibility that a child could fall out of an open window, one of the following precautions is recommended, either:

1. Fit a restrictor – this restrictor limits the window opening to a 105mm gap.
2. Fit a safety screen or a security screen.

In both instances consideration should be given to fitting a "child proof" safety/security screen which is latch operated from inside the window. For further information please speak to a Stegbar sales consultant.

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Warning

- Insect screens are not a safety screen, a child could still fall through as the screen can be pushed out if undersized or if retaining clips have been disengaged. Also the weight of a child could force the mesh out of the screen frame.
- Beds or furniture placed near open windows that are at a distance greater than 1.5m above ground level, young children should not play near as there is a possibility they could fall through them. Refer to the child's trampoline example.

The child's trampoline example

On a second floor window 1m wide by 850mm high, with the bottom sill 800mm above the floor, Australian Standards stipulates the use of ordinary float glass. But this room is going to be a bedroom for a young child and the bed is going to fit perfectly under the window. As most children see every bed as a trampoline, the risk that the child may bump against the window is significant. So what happens in this scenario for each type of glass?

- Float – glass breaks into large sharp splinters and will fall the 2m–3m to the ground outside along with the child.
- Toughened – glass breaks into small fragments and will fall the 2m–3m to the ground outside along with the child.
- Laminated – glass will break, vinyl interlayer will hold it in the frame and the child will bounce back onto the bed.

Stegbar safety solution range

Glass

Glass type	Glass thickness	Interlayer thickness	Glass finish
Laminated	6.38mm	0.38mm	Clear, Tone, Low-E
Laminated	7.52mm	1.52mm	Clear, Tone
Toughened	4mm		Clear, Tone
Toughened	5mm		Clear, Tone
Toughened	6mm		Clear, Tone

Pricing

Windows featuring a Stegbar safety solution will cost more than a basic window glazed with 4mm clear glass. The percentage below should only be used as a rough guide to the likely premium. This is based on a 1m × 1m single lite window, and will vary depending on size and mandatory glass requirements designated by Australian Standards.

- 4mm tone glass – 5%
- 4mm tone high performance glass – 14%
- 6.38mm clear laminated glass – 15%
- 6.38mm tone laminated glass – 30%
- 6.38mm tone high performance laminated glass – 32%

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