

Glass Balustrades

Glass is used extensively as a balustrade material in modern buildings. Its safe use at height is made possible by the wide availability of advanced glass types such as toughened and laminated. However when failure of a toughened glass panel occurred in a building recently a risk review was carried out, resulting in remedial action and the agreement of a revised design philosophy to apply to future buildings.

When glass is to be installed at height the main choice is between toughened glass, designed to fail by shattering into small blunt 'dice', or laminated glass, which stays as a single sheet when it fails, but requires a sturdier frame to prevent the whole sheet falling out.

There has been no definitive guidance and either approach would be considered acceptable if a new building were designed today.

After seeking professional opinion, the review team decided on the following risk based approach for our building and recommended the same to be adopted as a design philosophy for all future buildings:



- At or below 5M (this is typically up to first floor level) heat-soaked toughened glass can be used. In the event of failure the small glass 'dice' will not cause significant injury to a person standing below, even if it clumps together as sometimes happens. (The heat-soaking testing process ensures that spontaneous failures due to nickel sulphide inclusions are minimised.)

- Above 5M only laminated glass will be used, in combination with a correctly specified mounting system. Toughened glass will not be used above 5m as the risk of injury to a person standing below would be unacceptable.

The 5M is recommended in guidance from the centre for Window and Cladding Technology (CWCT).

(The 5M measurement is taken from the floor to the TOP of the glass panel.)