

Technical Note No. 61 GLASS TYPES



This Technical Note replaces TN11. It describes the different types of architectural flat glass. It also describes the physical characteristics of each glass type, performance classes of different glasses and relevant Standards.

This Technical Note is one of eight describing the use and performance of glass. They are:

- TN61 Glass types*
- TN62 Specification of insulating glass units*
- TN63 Glass breakage*
- TN65 Thermal fracture of glass*
- TN66 Safety and fragility of glazed roofing: guidance on specification*
- TN67 Safety and fragility of glazed roofing: testing and assessment*
- TN68 Overhead glazing*
- TN69 Selection of glass to prevent falls from height*

This Technical Note should also be read in conjunction with:

- TN7 Threat resistant fenestration*
- TN35 Assessing the appearance of glass*
- TN48 Energy loss through windows*

Introduction

Glass can be used to provide a durable, transparent enclosure to a building. However, basic annealed glass can be treated in a number of ways to improve:

- Appearance - clear, reflective, coloured, patterned, printed;
- Environmental properties - heat loss, solar gain, acoustic isolation;
- Integrity - safety (e.g. human impact or fire resistance), security (e.g. resistance to bandits, blasts or bullets) and strength (e.g. wind or snow loads).

The performance of glass is often dependent on the frame or fixings used to hold it in place. The performance of the whole glazed system needs to be considered when assessing thermal performance and fire performance. The glazing system may also influence the performance of glass when considering security applications, acoustic performance and safety performance.

Glass products are often asymmetric in their construction and performance. Glazing the glass in the correct orientation is imperative for asymmetric products.

Glass and the Building Regulations

The use of glass types, which provide enhanced levels of environmental performance or integrity, is mandatory for particular glazing situations in the UK.

Thermal insulation

Building Regulations AD L1A, AD L1B, AD L2A and AD L2B set limits for carbon emissions from buildings. Carbon emissions are affected by, amongst other things, the area of glass, solar control properties of the glass, light transmission of the glass and the U-value of windows (glass, spacer bar and frame). CWCT TN48 gives advice on U-values of glazing and windows.

Safety (impact)

Approved Document N and BS 6262-4 contain guidance on glazing locations where accidental impact is likely, and selection of appropriate safety glass types. Safety glass should reduce the risk of injury by resisting breakage, breaking safely or breaking with no significant penetration (i.e. by containment). BS EN 12600 gives impact test requirements for three classes of safety glass increasing in severity from 3 to 1.

BS 6206 is the earlier method of test and gives three classes of safety glass increasing in