

Selection of glass to prevent falls from height

This Technical Note reviews the requirements for barriers provided to prevent falls from height and gives guidance on how these requirements should be applied to the design of glass barriers and the selection of glass for use in barriers.

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

Introduction

In buildings, barriers are required at changes of level to prevent people from falling. Barriers may be in the form of balustrades or full height walls and in both cases glass is commonly used as an infill material. Glass may also be used as the primary structural material both in glass walls and balustrades.

Barriers are required to be designed to resist static loads however where glass is used in barriers, it is also necessary to consider impact loads.

Requirements for barriers are given in the Building Regulations and in BS 6180.

The requirements set out in these documents are quite complex and can lead to confusion. There have also been cases of barriers which comply with these documents proving unsatisfactory in service.

This Technical Note reviews the requirements for barriers protecting people from a fall and gives guidance on how these requirements should be applied to the design of glass barriers and the selection of glass for use in barriers.

Scope

This Technical Note is concerned with glass barriers protecting people against a fall. Protection against falling is required in domestic

premises where there is a change in level of 600mm and in other buildings where there is a change in level of 380mm. It includes glazed walls, balustrades with a metal frame and glass infill and freestanding glass balustrades where the glass is the primary structural material. These three types of glass barrier are described in BS 6180.

Walls and balustrades where there is no change in level may be designed to the same standards but the following variations may apply:

- Loads may be applied from both sides and it is necessary to design for both directions of loading
- Glass may not be required to provide containment
- Walls may be required to provide security

Partitions are defined as non loadbearing internal dividing walls. Requirements for partitions are given in BS 5234. The requirements of BS 5234 differ from those of BS 6180. This Technical Note applies to internal dividing walls which separate spaces at different levels.

The requirements discussed in this Technical Note apply to lift enclosures however there are additional requirements relating to the operation of the lift that must be considered which are set out in BS EN 81. There is a specific requirement in BS EN 81 that glass in