GUIDANCE NOTE No 6

Safety glass and the changes to BS 6262-4

Introduction

BS 6262:1982 formerly CP152 gives recommendations for the vertical use of glass and plastic glazing sheet materials for the external walls and interiors of buildings. BS 6262-4 Code of Practice for safety, in locations likely to be subject to accidental human impact, was revised in 2005 and a summary of the main changes is given below.

Main Change

BS 6262-4:2005 was revised to take account of the following

- Publication of harmonised European standards for glass
- Withdrawal of BS 6206:1981 for the classification of safety glass
- Publication of BS EN 12600:2002 Impact Test Method and Classification

It also draws attention to the National Building Regulations where,

England and Wales call for compliance to the Department of Communities and Local Government Approved Document N1 similarly Northern Ireland call for compliance to the Department of Finance and Personnel Technical Booklet V. Both refer to BS 6206:1981 for the specification and classification of safety glass and safety plastics used in glazing, albeit most of this British Standard has been withdrawn with the exception of the classification of safety plastics in glazing. As far as we are aware, neither the DCLG nor DFPNI are not currently amending their documents to make them consistent with BS 6262-4:2005

Scotland call for compliance to the Scottish Technical Handbook Section 4 both for Domestic and Non Domestic uses, which refer to the later standard BS 6262-4:2005

Definition

Safety glass is defined as a glass conforming to the relevant standard

Toughened Safety Glass

- BS EN 12150 :2000 - Glass in Building - Thermally toughened soda lime silicate safety glass
- BS EN 13024 :2002 - Glass in Building - Thermally toughened borosilicate safety glass
- BS EN 14179 :2005 - Glass in Building - Heat soaked thermally toughened soda lime silicate safety glass
- BS EN 14321 :2005 - Glass in Building - Thermally toughened alkaline earth silicate safety glass

The above standards make reference to BS EN 12600 stating test specimens subjected to pendulum body impact resistance shall be tested and classified in accordance with BS EN 12600. In order to comply with BS 6262-4:2005 they must be tested to and classified according to BS EN 12600.

Curved toughened glass is not included in these standards as there is insufficient data available, but the information given on thickness, edge working and fragmentation is applicable.

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Wired Glass

- BS EN 572-3 :2004 - Glass in building - Basic soda lime silicate glass products. Polished Wire Glass
- BS EN 572-6 :2004 - Glass in building - Basic soda lime silicate glass products. Wired Patterned Glass

Where the glass has an impact performance classification in accordance with BS EN 12600

Laminated Safety Glass

- BS EN 14449 :2005 - Glass in Building - Laminated glass and Laminated safety glass

Laminated safety glass shall fulfil the definition and requirements for laminated safety glass as defined in BS EN ISO 12543-2:1998. Laminated glass that is intended for bullet resistance, explosion resistance or protection from burglary are subject to additional classification in standards other than BS EN 12600.

The standards for safety glass refer to BS EN 12600:2002 for the pendulum impact test method and classification.

The classification takes the form of;

α (β) Φ

α is the highest drop height class, at which the product did not break, or broke in accordance with BS EN 12600:2002 clause 4 a) or b)

Classification	Drop Height mm
3	190
2	450
1	1200

(β) is the mode of breakage, either A, B, or C

A is intended to convey a breakage typical of annealed glass
B is intended to convey a breakage typical of laminated safety glass and wired safety glass
C is intended to convey a breakage typical of toughened safety glass

Φ is the highest drop height class at which the product did not break, or broke in accordance with BS EN 12600:2002 clause 4 a)

The second and third parts of the classification are not required for the classification marking of safety glass in accordance with BS 6262-4:2005, but the full designation may be required to meet other regulatory requirements.

When a glass product breaks at a drop height of 190 mm and the breakage is not in accordance with a) of clause 4, then the value of Φ shall be zero.

Marking of safety glass to BS 6262-4

When safety glass is installed in a critical location, it should be indelibly marked so that it is clearly visible after the installation, and it should be marked with,

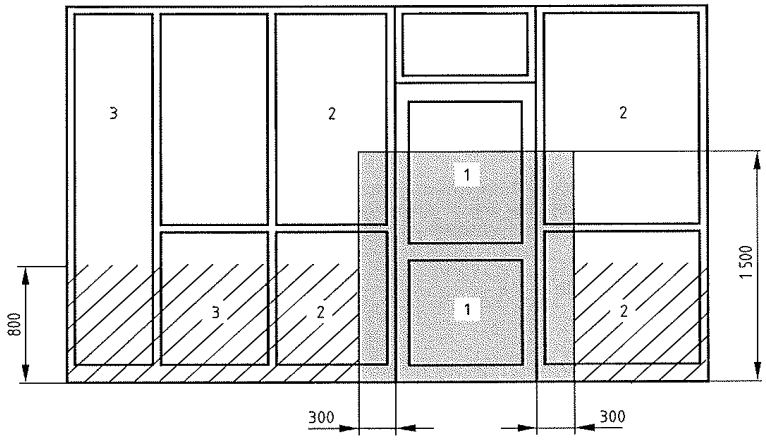
- The name or trade mark of the manufacturer, merchant or installer
- The product standard that the safety glass conforms to, ie EN 14449, EN 12150
- The first digit of the classification according to BS EN 12600:2002

When the product is designed to be impacted from one side only, ie a safety backed mirror then the full classification should take the form of,

α_0 (β) Φ

When an insulating glass unit is installed in a critical location with pedestrian access to both sides, then both panes of the unit should meet the regulations for safety glass. However where pedestrian access is limited to one side only, eg above ground floor, then only the accessible side needs to conform to the safety glass regulation. Care must be taken to install the unit the correct way round.

Critical Location



Area 1 Doors
For glazing wholly, or partly, within 1500mm from floor or ground level, if the minor dimension of the pane is less than 900mm the minimum recommended classification is 2 (β) Φ if the minor dimension of the pane is equal to or greater than 900mm the minimum recommended classification is 3 (β) Φ

Area 2 Door side panels
For glazing wholly, or partly, within 300 mm from the edge of a door and wholly, or partly, within 1500mm from floor or ground level, if the minor dimension of the pane is less than 900mm the minimum recommended classification is 2 (β) Φ if the minor dimension of the pane is equal to or greater than 900mm the minimum recommended classification is 3 (β) Φ

However, if the smaller dimension of the pane is 250mm or less and its area is 0.5 m² or less then glass not classified in accordance with BS EN 12600 may be used, provided that its nominal thickness in accordance with BS 952-1 is not less than 6 mm.

Area 3 Low level glazed areas
For glazing wholly, or partly within 800mm from floor or ground level, excluding doors and door side panels dealt with above the minimum recommended classification irrespective of pane size is 3 (β) Φ unless either:

a) the smaller dimension of the pane is 250mm or less and its area is 0.5 m² or less, in which case glass not classified in accordance with BS EN 12600 may be used, provided that its nominal thickness in accordance with BS 952-1 is not less than 6 mm or
b) the pane forms part of a frontage of a building that is not a dwelling, in which case the recommendations from BS 6262-4 below may be used.

Nominal thickness (mm)	Maximum pane size (mm)
8	1100 x 1100
10	2250 x 2250
12	4500 x 4500
15 mm or thicker	no limits

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