

Glass for glazing —

Part 1: Classification

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Committees responsible for this British Standard

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- Association of Building Engineers
- Department of the Environment (Building Research Establishment)
- Department of the Environment (Property and Buildings Directorate)
- Flat Glass Manufacturers' Association
- Glass and Glazing Federation
- Royal Institute of British Architects
- Co-opted member

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Foreword

This Part of BS 952 was prepared by Subcommittee B/520/1. It has been used for many years as a valuable source of background and contractual information by architects, specifiers and other glass users.

The first edition of this British Standard was published in 1941 and it has since been revised in 1953, 1964 and 1978, principally to take account of product developments. This present revision, which has been prepared under the direction of the Sector Board for Building and Civil Engineering, supersedes the 1978 edition, which is withdrawn. It brings up to date the information on glass types, thicknesses, mass/unit area and normally available maximum sizes. New sections have been added covering coated glass, borosilicate glass and glass ceramics to reflect the increasing use of these products.

Work is currently in progress within CEN/TC 129, Glass in building, to produce European Standards for the various glass types. The first product standards, dealing with basic soda lime-silicate glasses (BS EN 572-1 to BS EN 572-7), have recently been published. Further standards covering all of the major processed glass products and glass compositions will be published as European Standards over the next few years and adopted as British Standards, thus augmenting the information within this standard.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 21 and a back cover.

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Section 1. General

1.1 Scope

This Part of BS 952 classifies glass for use in building into three glass compositions: the commonly used soda lime-silicate glass, borosilicate glass and glass ceramics. Terms and definitions, together with details of nominal thickness, thickness tolerance, mass/unit area and the normally available maximum sizes are given.

1.2 Normative references

This Part of BS 952 incorporates, by reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to, or revisions of, any of the cited publication apply to this Part of BS 952 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

1.3 Definitions

For the purposes of this British Standard, the following definitions apply.

1.3.1

annealed glass

glass that has been subjected to controlled cooling to reduce the presence of residual stresses in the glass thus allowing easy cutting. It is ordinary glass which includes float glass, sheet glass, patterned glass and wired glass and is independent of the glass composition

1.3.2

off-line coating

process whereby individual pieces of glass, e.g. annealed, toughened, heat strengthened or laminated, are coated

1.3.3

on-line coating

process whereby the coating is applied to the surface of a continually moving ribbon of glass during the manufacturing process, prior to the glass being initially cut

1.3.4

safety glass

glass which when tested in accordance with BS 6206 either does not break, or breaks safely, and affords protection from cutting and piercing injuries in the event of accidental human impact

1.3.5

security glass

glass that affords protection against a specified level of attack [see 4.3.3b)]

1.3.6

translucent glass

glass that transmits light with varying degrees of diffusion so that vision is not clear

NOTE The diffusion may be produced either by patterning the surface during manufacture, or by surface treatment after manufacture, i.e. sandblasting, acid etching, etc. These processes are dealt with in BS 952-2.

1.3.7

transparent glass

glass that transmits light and permits clear vision through it

1.4 Materials

1.4.1 General

All glasses for use in building (see 1.4.2, 1.4.3 and 1.4.4) should be such that the physical and chemical characteristics can be considered constant over time. They should be:

- a) insensitive to photochemical effects, i.e. the spectral properties (transmission of light and solar energy) are not modified by direct or indirect solar radiation.
- b) insensitive to attack from the environment, i.e. surface deterioration will not develop after glazing under normal conditions of use, provided the glass is cleaned at reasonable intervals.

1.4.2 Soda lime-silicate glass (see BS EN 572-1)

The proportions by mass of the principal constituents of all the soda lime-silicate glass products covered by BS EN 572 and this standard are:

Silicon dioxide	SiO ₂	69 % to 74 %
Calcium oxide	CaO	5 % to 12 %
Sodium oxide	Na ₂ O	12 % to 16 %
Magnesium oxide	MgO	0 % to 6 %
Aluminium oxide	Al ₂ O ₃	0 % to 3 %

1.4.3 Borosilicate glass

The proportions by mass of the principal constituents of all the borosilicate glass products covered by this standard are:

Silicon dioxide	SiO ₂	70 % to 87 %
Boron oxide	B ₂ O ₃	7 % to 15 %
Sodium oxide	Na ₂ O	
Potassium oxide	K ₂ O	1 % to 8 %
Aluminium oxide	Al ₂ O ₃	
Others		0 % to 8 %

1.4.4 Glass ceramics

The proportions by mass of the principal constituents of all the glass ceramic products covered by this standard are:

Silicon dioxide	SiO ₂	50 % to 80 %
Aluminium oxide	Al ₂ O ₃	15 % to 27 %
Lithium oxide	Li ₂ O	0 % to 5 %
Zinc oxide	ZnO	1 % to 5 %
Titanium dioxide	TiO ₂	0 % to 5 %
Zirconium dioxide	ZrO ₂	0 % to 5 %
Magnesium oxide	MgO	
Calcium oxide	CaO	0 % to 8 %
Barium oxide	BaO	
Sodium oxide	Na ₂ O	
Potassium oxide	K ₂ O	0 % to 2 %
Others		0 % to 5 %

1.5 Dimensions

1.5.1 Thickness

1.5.1.1 *General*

The methods for the determination of glass thickness are given in the relevant product standard, e.g. BS EN 572-2 for soda lime-silicate float glass.

1.5.1.2 *Tolerances*

The tolerances on thickness are given in the appropriate product standard. They are reproduced in this standard in tables relating to the availability of that particular product.

1.5.2 Length, width and squareness

1.5.2.1 *General*

The method for the determination of length, width and squareness are given in the relevant product standard, e.g. BS EN 572-2 for soda lime-silicate float glass.

1.5.2.2 *Tolerances*

These are given in the relevant product standard. They can relate to both stock and finished sizes depending on the product. They are not reproduced in this standard.

