

Steel-framed windows and glazed doors

ICS 91.060.50

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling, to Subcommittee B/538/1, Windows, and Subcommittee B/538/2, Doors, upon which the following bodies were represented:

- Architectural and Specialist Door Manufacturers Association
- Association of Building Engineers
- British Plastics Federation
- British Wood Preserving and Damp-Proofing Association
- British Woodworking Federation
- Building Research Establishment
- Centre for Window and Cladding Technology
- Construction Fixings Association
- Consumer Policy Committee of BSI
- Council for Aluminium in Building
- Door and Hardware Federation (DHF)
- Flat Glass Manufacturers' Association
- Glass and Glazing Federation
- Guild of Architectural Ironmongers
- Health and Safety Executive
- Local Authority Organizations Local Government Association
- LHC Building Components and Services
- National House Building Council
- Police Scientific Development Branch
- Royal Institute of British Architects
- Scottish Office — Construction and Building
- Society of Chief Architects of Local Authorities
- Steel Window Association
- Timber Research Association
- Wood Panel Industries Federation
- Co-opted members

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 14 January 2005

© BSI 14 January 2005

First published September 1984
Second edition January 2005

The following BSI references relate to the work on this British Standard:
Committee reference B/538/1 and B/538/2
Draft for comment
04/30100932 DC

Amendments issued since publication

Amd. No.	Date	Comments

ISBN 0 580 44896 7

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Types and handing	3
5 Materials	4
6 Fabrication	5
7 Protective finishes	5
8 Design for installation	6
9 Design for glazing	6
10 Security	7
11 Safety in use	8
12 Safety in fire	8
13 Hygiene, health and environment	9
14 Weathertightness	9
15 Operation and strength	9
16 Sound insulation	10
17 Energy conservation	10
18 Marking	10
Annex A (normative) Specification for handing	11
Annex B (informative) Recommendations for fixings	13
Bibliography	14
Figure 1 — Perimeter design gap	7
Figure A.1 — Drawing conventions for window and door types	12

Foreword

This British Standard has been prepared by Subcommittees B/538/1 and B/538/2. It supersedes BS 6510:1984, which is withdrawn.

This is a full revision of the standard and incorporates the following principal changes from the previous edition:

- a) the removal of requirements for sills and window boards;
- b) the restriction to glazed doors;
- c) an extension of the scope to apply to all profiles;
- d) the addition of requirements for sound insulation and energy conservation;
- e) changes to take into account the forthcoming publication of harmonized European product standard EN 14351 in three parts, currently in preparation as prEN 14351;
- f) information on how the requirements relate to the European Construction Products Directive [1].

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 15 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

1 Scope

This British Standard specifies requirements for the design, fabrication and performance of steel-framed windows and glazed doors.

It is applicable to windows and doors fabricated into frames in a factory from mild steel profiles, hot-rolled or cold-formed, installed vertically into the external face of buildings, as single or multi-light units, in coupled assemblies when appropriate, of the following types:

- a) fixed light;
- b) side-hung open out or in;
- c) top-hung;
- d) bottom-hung;
- e) horizontal pivot;
- f) vertical pivot;
- g) single-leaf hinged or pivoting door;
- h) double-leaf hinged or pivoting door.

It is not applicable to:

- 1) windows or doors in which any frame member is longer than 3 m;
- 2) patent glazing or curtain walls that span across structural floor elements;
- 3) kits despatched in bar form for assembly into frames on site.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 476-22, *Fire tests on building materials and structures — Part 22: Methods for determination of the fire resistance of non-loadbearing elements of construction.*

BS 476-31.1, *Fire tests on building materials and structures — Part 31: Methods for measuring smoke penetration through doorsets and shutter assemblies — Section 31.1: Method of measurement under ambient temperature conditions.*

BS 6206, *Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings.*

BS 6262, *Code of practice for glazing for buildings.*

BS 6262-4, *Glazing for buildings — Part 4: Safety related to human impact.*

BS 6375-1:2004, *Performance of windows — Part 1: Classification for weathertightness and guidance on selection and specification.*

BS 6375-2, *Performance of windows — Part 2: Specification for operation and strength characteristics.*

BS 6497, *Specification for powder organic coatings for application and stoving to hot-dip galvanized hot-rolled steel sections and preformed steel sheet for windows and associated external architectural purposes, and for the finish on galvanized steel sections and preformed sheet coated with powder organic coatings.*

BS 7950:1997, *Specification for enhanced security performance of casement and tilt/turn windows for domestic applications.*

BS 8000-7, *Workmanship on building sites — Part 7: Code of practice for glazing.*

PAS 24-1:1999, *Enhanced security performance requirements for door assemblies — Part 1: Single leaf, external door assemblies to dwellings.*

BS EN 179, *Building hardware — Emergency exit devices operated by a lever handle or push pad — Requirements and test methods.*

BS EN 410, *Glass in building — Determination of luminous and solar characteristics of glazing.*

- BS EN 572 (all parts), *Glass in building — Basic soda lime silicate glass products.*
- BS EN 947, *Hinged or pivoted doors — Determination of the resistance to vertical load.*
- BS EN 948, *Hinged or pivoted doors — Determination of the resistance to static torsion.*
- BS EN 949, *Windows and curtain walling, doors, blinds and shutters — Determination of the resistance to soft and heavy body impact for doors.*
- BS EN 950, *Door leaves — Determination of the resistance to hard body impact.*
- BS EN 1125, *Building hardware — Panic exit devices operated by a horizontal bar — Requirements and test methods.*
- BS EN 1191, *Windows and doors — Resistance to repeated opening and closing — Test method.*
- BS EN 1192:2000, *Doors — Classification of strength requirements.*
- BS EN 1279 (all parts), *Glass in building — Insulating glass units.*
- BS EN 1670:1998, *Building hardware — Corrosion resistance — Requirements and test methods.*
- BS EN 1863-1, *Glass in buildings — Heat strengthened soda lime silicate glass — Part 1: Definition and description.*
- BS EN 10025:1993, *Hot rolled products of non-alloy structural steels — Technical delivery conditions.*
- BS EN 10142:2000, *Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming — Technical delivery conditions.*
- BS EN 12046-1, *Operating forces — Test method — Part 1: Windows.*
- BS EN 12046-2, *Operating forces — Test method — Part 2: Doors.*
- BS EN 12150-1, *Glass in building — Thermally toughened soda lime silicate safety glass — Part 1: Definition and description.*
- BS EN 12337-1, *Glass in building — Chemically strengthened soda lime silicate glass — Part 1: Definition and description.*
- BS EN 12365-1, *Building hardware — Gasket and weatherstripping for doors, windows, shutters and curtain walling — Part 1: Performance requirements and classification.*
- BS EN 12400:2002, *Windows and pedestrian doors — Mechanical durability — Requirements and classification.*
- BS EN 12519:2004, *Windows and pedestrian doors — Terminology.*
- BS EN 12600, *Glass in building — Pendulum test — Impact test method and classification for flat glass.*
- BS EN 13049:2003, *Windows — Soft and heavy body impact — Test method, safety requirements and classification.*
- BS EN 13115:2001, *Windows — Classification of mechanical properties — Racking, torsion and operating forces.*
- BS EN 13141-1, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 1: Externally and internally mounted air transfer devices.*
- BS EN 13142, *Ventilation for buildings — Components/products for residential ventilation — Required and optional performance characteristics.*
- BS EN 13501-2, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services.*
- BS EN 14608, *Windows — Determination of the resistance to racking.*
- BS EN 14609, *Windows — Determination of the resistance to static torsion.*
- BS EN 22063, *Metallic and other inorganic coatings — Thermal spraying — Zinc, aluminium and their alloys.*
- BS EN ISO 140-3, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 3: Laboratory measurement of airborne sound insulation of building elements.*
- BS EN ISO 717-1, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation.*