

BS 6510:2010



BSI Standards Publication

Steel-framed windows and glazed doors – Specification

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Summary of pages

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Foreword

Publishing information

This British Standard is published by BSI and came into effect on 30 November 2010. It was prepared by Subcommittees B/538/1, *Windows*, and B/538/2, *Doors*, under the authority of Technical Committee B/538, *Doors, windows, shutters, hardware and curtain walling*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This British Standard supersedes BS 6510:2005, which is withdrawn.

Relationship with other publications

This British Standard is related to the following standards.

- BS EN 14351-1 is the harmonized European product standard for windows and external pedestrian doors without resistance to fire and smoke leakage characteristics. It gives a list of performance characteristics and classifications of performance, but does not give guidance on determining the appropriate classification for any specific application.
- BS 6375 is the national application document in the UK, giving performance requirements and guidance for the selection of appropriate classes of performance from BS EN 14351-1.
- BS 8213-4 provides guidance on the survey and installation of replacement windows and external pedestrian doors.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- changes taking into account the publication of the harmonized European standard BS EN 14351 to remove any conflict between the standards¹⁾;
- inclusion of references to the BS 6375 series of standards;
- updating of other references in the text.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

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 cannot confer immunity from legal obligations.

¹⁾ At the time of publication of this edition of BS 6510, only BS EN 14351-1 has been published. Part 2 is in preparation and is expected to be circulated for formal vote shortly. Part 3 (also in preparation) has been redesignated prEN 16034.

1 Scope

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

NOTE Performance requirements common to all windows and external pedestrian doors are specified in BS 6375.

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 (all parts), *Glazing for buildings*

BS 6375-1, *Performance of windows and doors – Part 1: Classification for weathertightness and guidance on selection and specification*

BS 6375-2, *Performance of windows and doors – Part 2: Classification for operation and strength characteristics and guidance on selection and specification*

BS 6375-3, *Performance of windows and doors – Part 3: Classification for additional performance characteristics and guidance on selection and specification*

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, *Specification for enhanced security performance of windows for domestic applications*

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

PAS 24, *Enhanced security performance requirements for door assemblies*

BS EN 179, *Building hardware – Emergency exit devices operated by a lever handle or push pad, for use on escape routes – 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 1125, *Building hardware – Panic exit devices operated by a horizontal bar, for use on escape routes – Requirements and test methods*

BS EN 1279 (all parts), *Glass in building – Insulating glass units*

BS EN 1670:2007, *Building hardware – Corrosion resistance – Requirements and test methods*

BS EN 1863 (both parts), *Glass in buildings – Heat strengthened soda lime silicate glass*

BS EN 10025-2, *Hot rolled products of non-alloy structural steels – Part 2: Technical delivery conditions for non-alloy structural steels*

BS EN 10111, *Continuously hot rolled low carbon steel sheet and strip for cold forming – Technical delivery conditions*

BS EN 10346:2009, *Continuously hot-dip coated steel flat products – Technical delivery conditions*

BS EN 12150 (both parts), *Glass in building – Thermally toughened soda lime silicate safety glass*

BS EN 12337 (both parts), *Glass in building – Chemically strengthened soda lime silicate glass*

BS EN 12365-1, *Building hardware – Gaskets and weatherstripping for doors, windows, shutters and curtain walling – Part 1: Performance requirements and classification*

BS EN 12519, *Windows and pedestrian doors – Terminology*

BS EN 12600, *Glass in building – Pendulum test – Impact test method and classification for flat glass*

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 13438, *Paints and varnishes – Powder organic coatings for galvanized or sherardised steel products for construction purposes*

BS EN 14449, *Glass in building – Laminated glass and laminated safety glass – Evaluation of conformity/product standard*

BS EN 14600, *Doorsets and openable windows with fire resisting and/or smoke control characteristics – Requirements and classification*

BS EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods*

BS EN ISO 2063, *Thermal spraying – Metallic and other inorganic coatings – Zinc, aluminium and their alloys*

BS EN ISO 9227, *Corrosion tests in artificial atmospheres – Salt spray tests*

BS EN ISO 12543 (all parts), *Glass in building – Laminated glass and laminated safety glass*

BS EN ISO 12944 (all parts), *Paints and varnishes – Corrosion protection of steel structures by protective paint systems*

3 Terms and definitions

For the purposes of this British Standard, the terms and definitions given in BS EN 12519 and the following apply.

3.1 coupled assembly

two or more windows and/or doors mechanically joined to fill an opening

NOTE This was previously known as a composite assembly.

3.2 fixing

item that is used to secure separate units of a coupled assembly to each other, or to secure a window or door into the structure of a building

3.3 glazed door

doorset, comprising leaf and frame, which has more than half its face area glazed

3.4 hardware

fitting attached to a window or door that is used to operate and/or secure it

NOTE Hardware used to close a window is often known as a fastener.

3.5 multi-light window

window incorporating two or more lights, opening and/or fixed, within one perimeter frame

3.6 ventilation device

ventilator other than an opening light incorporated into a window or door

NOTE 1 A permanent ventilation device provides continuous ventilation. A controlled device can be closed and may be adjusted to provide ventilation.

NOTE 2 A ventilation device is referred to as an “air transfer device” in BS EN 13142 and is frequently referred to as a “trickle ventilator” or “background ventilator” in the UK.

3.7 weatherseal

resilient material designed to reduce air infiltration and water penetration

NOTE This is sometimes called a weatherstrip.

4 Handling

The handling shall be in accordance with the specification provided.

Where the manufacturer is specifying the handling, the specification shall conform to Annex A.

NOTE Where the manufacturer is not specifying the handling, care should be taken to check the handling designation to avoid confusion with the conventions of BS EN 12519. See the Note to A.1.

5 Materials

5.1 Steel

Frame profiles shall be:

- a) hot-rolled from mild steel conforming to BS EN 10025-2; or
- b) cold-formed from mild steel conforming to BS EN 10111; or
- c) cold-formed from zinc-coated steel strip conforming to BS EN 10346:2009, designation Z200 or Z275.

After rolling or forming the frame profiles shall be cold-straightened.

5.2 Hardware

Metallic materials used for hardware shall have at least the equivalent corrosion resistance to BS EN 1670:2007, grade 3 (96 h) when subjected to a neutral salt spray test as specified in BS EN ISO 9227. Tests shall be carried out on complete hardware items as supplied.

NOTE 1 For environments in very polluted localities such as those subject to combinations of industrial and coastal pollution, BS EN 1670:2007, grade 4 (240 h) should be used.

NOTE 2 Requirements and test methods for window and door hardware are specified in BS EN 13126.

NOTE 3 Changes to hardware such as hinges, pivots, handles, stays, bolts or catches can have an effect on the performance of the window.

5.3 Weatherseals and glazing gaskets

Weatherseals and glazing gaskets shall meet the requirements of BS EN 12365-1.

NOTE Guidance on the application of BS EN 12365-1 to the selection of appropriate materials is provided in DD 8455.