

BS 644:2012



BSI Standards Publication

Timber windows and doorsets – Fully finished factory-assembled windows and doorsets of various types – Specification

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 December 2012. It was prepared by Subcommittee 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This British Standard supersedes BS 644:2009, which is withdrawn.

Relationship with other publications

The requirements for raw materials and properties are given in BS EN 942:2007 and BS EN 14220:2006.

This British Standard is also related to the following other standards.

- BS EN 14351-1 is the harmonized European product standard for windows and external pedestrian doorsets 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.
- The performance aspects in BS 6375 are referred to in BS 644.
- Guidance on the survey and installation of windows is given in BS 8213-4.

Information about this document

This is a full revision of the standard. The principal change is to the scope of the standard, which has been expanded to cover external pedestrian doorsets.

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 Scope

This British Standard specifies requirements for the design, construction and performance of fully finished and glazed factory-assembled timber windows and external pedestrian doorsets of various types.

This British Standard applies to windows and doorsets that have been treated with either opaque or non-opaque finishes or that are designed to support an externally fixed covering of another material, and that have been factory-glazed. It does not apply to windows or doorsets supplied as kits for site assembly.

This British Standard does not apply to composite doorsets as defined in BS 8529:2010, but does cover doorsets that are predominantly timber-framed (stile and rail construction) with replaceable composite panels.

It applies to windows and doorsets fabricated in a factory, to be installed vertically ($\pm 15^\circ$) into the external face of buildings, as single or multi-light units, or in coupled assemblies when appropriate, of the following types:

- a) windows:
 - 1) hinged: side-hung (open in or out), top-hung (open out), bottom-hung (open in), tilt and turn or turn before tilt;
 - 2) projecting: side-hung (open in, open out or reversible) and top-hung (open out or reversible);
 - 3) pivoted: horizontal and vertical (hung centrally or off-centre);
 - 4) sliding: horizontal and vertical;
 - 5) fixed light (direct glazed frames);
 - 6) fixed casement;
 - 7) parallel opening;
 - 8) double opening French casement windows;
- b) doorsets:
 - 1) single leaf, single-swing or double-swing doors with or without side lights and top lights;
 - 2) double leaf, single-swing or double-swing doors with or without side lights and top panels;
 - 3) single track sliding doors;
 - 4) single track sliding folding doors;
 - 5) inward or outward opening doors.

It is applicable to assemblies in which any frame member is not longer than 3 m. It does not apply to curtain walls that span across horizontal structural members of floors but is applicable to windows or doorsets within a curtain walling system.

It is applicable to assemblies up to the factory gate.

NOTE Guidance on the evaluation of conformity is given in Annex A. Guidance on durability and recycling is given in Annex B.

2 Normative references

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

Standards publications

BS 1186-2, *Timber for and workmanship in joinery – Part 2: Specification for workmanship*

BS 3987, *Specification for anodic oxidation coatings on wrought aluminium for external architectural applications*

BS 4255-1, *Rubber used in preformed gaskets for weather exclusion from buildings – Part 1: Specification for non-cellular gaskets*

BS 4842, *Specification for liquid organic coatings for application to aluminium alloy extrusions, sheet and preformed sections for external architectural purposes, and for the finish on aluminium alloy extrusions, sheet and preformed sections coated with liquid organic coatings*

BS 6100-1 (BS ISO 6707-1), *Building and civil engineering – Vocabulary – Part 1: General terms*

BS 6100-12, *Building and civil engineering – Vocabulary – Part 12: Plant, equipment and persons*

BS 6262-1, *Glazing for buildings – Part 1: General methodology for the selection of glazing*

BS 6262-2, *Glazing for buildings – Part 2: Code of practice for energy, light and sound*

BS 6262-3, *Glazing for buildings – Part 3: Code of practice for fire, security and wind loading*

BS 6262-4, *Glazing for buildings – Part 4: Code of practice for safety related to human impact*

BS 6262-7, *Glazing for buildings – Part 7: Code of practice for the provision of information*

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 6496, *Specification for powder organic coatings for application and stoving to aluminium alloy extrusions, sheet and preformed sections for external architectural purposes, and for the finish on aluminium alloy extrusions, sheet and preformed sections coated with powder organic coatings*

BS 7412, *Specification for windows and doorsets made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles*

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

BS 8529:2010, *Composite doorsets – Domestic external doorsets – Specification*

BS 8417, *Preservation of wood – Code of practice*

BS EN 1991-1-4, *Eurocode 1: Actions on structures – Part 1-4: General actions – Wind actions*

BS EN 204:2001, *Classification of thermoplastic wood adhesives for non-structural applications*

BS EN 330, *Wood preservatives – Field test method for determining the relative protective effectiveness of a wood preservative for use under a coating and exposed out-of-ground contact – L-joint method*

BS EN 350-2:1994, *Durability of wood and wood-based products – Natural durability of solid wood – Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe*

BS EN 351-1:2007, *Durability of wood and wood-based products – Preservative-treated solid wood – Part 1: Classification of preservative penetration and retention*

BS EN 485 (both parts), *Aluminium and aluminium alloys – Sheet, strip and plate*

BS EN 599-1:2009, *Durability of wood and wood-based products – Efficacy of preventive wood preservatives as determined by biological tests – Part 1: Specification according to use class*

BS EN 755-2:2008, *Aluminium and aluminium alloys – Extruded rod, bar, tube and profiles – Part 2: Mechanical properties*

BS EN 755-9:2008, *Aluminium and aluminium alloys – Extruded rod/bar, tube and profiles – Part 9: Profiles, tolerances on dimensions and form*

BS EN 927-1, *Paints and varnishes – Coating materials and coating systems for exterior wood – Part 1: Classification and selection*

BS EN 927-2:2006, *Paints and varnishes – Coating materials and coating systems for exterior wood – Part 2: Performance specification*

BS EN 942:2007, *Timber in joinery – General requirements*

BS EN 951, *Door leaves – Method for measurement of height, width, thickness and squareness*

BS EN 952, *Door leaves – General and local flatness – Measurement method*

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

BS EN 1529:2000, *Door leaves – Height, width, thickness and squareness – Tolerance classes*

BS EN 1530:2000, *Door leaves – General and local flatness – Tolerance classes*

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

BS EN 1982, *Copper and copper alloys – Ingots and castings*

BS EN 12020-1:2008, *Aluminium and aluminium alloys – Extruded precision profiles in alloys EN AW-6060 and EN AW-6063 – Part 1: Technical conditions for inspection and delivery*

BS EN 12020-2:2008, *Aluminium and aluminium alloys – Extruded precision profiles in alloys EN AW-6060 and EN AW-6063 – Part 2: Tolerances on dimensions and form*

BS EN 12165, *Copper and copper alloys – Wrought and unwrought forging stock*

BS EN 12206-1, *Paints and varnishes – Coating of aluminium and aluminium alloys for architectural purposes – Part 1: Coatings prepared from coating powder*

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

BS EN 12420, *Copper and copper alloys – Forgings*

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

BS EN 12608, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors – Classification, requirements and test methods*

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 13307-1, *Timber blanks and semi-finished profiles for non-structural uses – Part 1: Requirements*

BS EN 13986, *Wood-based panels for use in construction – Characteristics, evaluation of conformity and marking*

BS EN 14220:2006, *Timber and wood-based materials in external windows, external door leaves and external doorframes – Requirements and specifications*

BS EN ISO 4042, *Fasteners – Electroplated coatings*

BS EN ISO 7599, *Anodizing of aluminium and its alloys – General specifications for anodic oxidation coatings on aluminium*

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

PD 6484, *Commentary on corrosion at bimetallic contacts and its alleviation*

Other publications

[N1]BRITISH WOODWORKING FEDERATION. *Guide to the selection, application and testing of end grain sealants for timber windows*. BWF guide Note 18. London: British Woodworking Federation, 2002.

[N2]KELLY, D.J. and GARVIN, S.L. *Factory glazed windows*. BRE Digest 497, Part 1. Watford: Building Research Establishment, 2006.

3 Terms and definitions

For the purposes of this British Standard, the terms and definitions given in BS 6100-1, BS 6100-12, BS EN 12519 and the following apply.

3.1 casement

framed window light that is hinged, pivoted or fixed

3.2 fixing

component that is used to secure separate parts of a window or doorset assembly to each other, to secure an item of hardware to a window part, or to secure a completed window assembly into the structure of a building

3.3 glazing gasket

plastic or synthetic rubber member used between the glazing and the frame and/or between the glazing and the glazing bead

3.4 hardware

device attached to a structural member to facilitate opening, closing or making the product secure in the frame

3.5 insulating glass unit

assembly consisting of at least two panes of glass, separated by one or more spacers, hermetically sealed along the periphery, mechanically stable and durable

NOTE Systems are available where the spacer and hermetic seal are included within a single edge sealing system.

[SOURCE: BS EN 1279-1:2004, 3.1]

3.6 multi-light

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

3.7 range

group of assemblies with defined limits of size, type, configuration, hardware, glazing, construction and security features

3.8 sash

framed opening light that slides

3.9 ventilation device

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

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.

3.10 weatherseal

resilient material designed to reduce air infiltration and water penetration

NOTE This is sometimes called a weatherstrip.

4 Handing

The handing shall be in accordance with the specification provided.

Where the manufacturer is specifying the handing, the specification shall conform to Annex C.

NOTE 1 Where the manufacturer is not specifying the handing, care should be taken to check the handing designation. See Annex C, Note to C.1.

NOTE 2 Further advice on window and doorset specification is given in Annex D.

5 Components

5.1 Timber**5.1.1 Quality**

Timber shall be of a species classified as suitable for its purpose in accordance with BS EN 942:2007, National Annex NA. The timber for window frames, door frames, casements, sashes and door leaves shall be of the classes given in BS EN 14220:2006, Table A.17, or better.

Timber blanks, sawn or planed part-finished profiles consisting of laminated or solid material with or without butt joints or finger joints, shall conform to BS EN 13307-1.