

Aluminium alloy windows

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Committees responsible for this British Standard

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Association of Building Engineers
Association of Building Hardware Manufacturers
British Plastics Federation
British Wood Preserving and Damp-Proofing
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
Flat Glass Manufacturers' Association
Glass and Glazing Federation
Guild of Architectural Ironmongers
Health and Safety Executive
LHC Building Components and Services
National House-Building Council (NHBC)
Police Scientific Development Branch
Royal Institute of British Architects
Scottish Office – Construction and Building
Society of Chief Architects in Local Authorities (SCALA)
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Timber Research and Development Association
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Foreword

This British Standard has been prepared by Subcommittee B/538/1. It supersedes BS 4873:1986, which is withdrawn.

This revision of BS 4873 incorporates changes which have recently been made to supporting standards, particularly BS 6375-1, and also makes reference to enhanced security performance for aluminium windows as given in BS 7950.

A European product standard for windows and doors, currently in preparation as prEN 14351-1, is due to be published within the next two years. It will in due course be published unchanged as a British Standard and will consequently require this standard to be withdrawn.

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

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 13 and a back cover.

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1 Scope

This British Standard specifies requirements for the design, construction and performance of aluminium alloy windows intended to be installed vertically, including materials and glazing.

It is applicable to the following window types, which can be in multi-light form:

- a) hinged-side-hung (open in or out), top-hung (open out), bottom-hung (open in), tilt and turn;
- b) projecting-side-hung (open out or reversible) and top-hung (open out or reversible);
- c) pivoted-horizontal and -vertical (hung centrally or off-centre including reversible);
- d) sliding-horizontal and -vertical (including tilting sash to vertical);
- e) fixed lights;
- f) louvred-adjustable.

It is also applicable to windows that are used for replacement purposes and those that have thermally improved frames.

It is not applicable to:

- 1) windows in which any frame member is longer than 3 m;
- 2) fixed louvres;
- 3) secondary windows applied to convert existing single windows into double or coupled windows;
- 4) windows with frames designed to be glazed with security glazing conforming to BS EN 1063 or BS 5544;
- 5) the thermal properties of thermally improved frames.

NOTE Advisory notes on materials and construction are given in Annex A, and details of optional features to be agreed between the manufacturer and the purchaser are given in Annex B.

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 952-1, *Glass for glazing — Part 1: Classification*.

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 5713, *Specification for hermetically sealed flat double glazing units*.

BS 6100-1.0, *Glossary of building and civil engineering terms — Part 1: General and miscellaneous — Section 1.0: General*.

BS 6100-1.5.1, *Glossary of building and civil engineering terms — Part 1: General and miscellaneous — Section 1.5: Operations; associated plant and equipment — Subsection 1.5.1: Co-ordination of dimensions; tolerances and accuracy*.

BS 6100-1.6, *Glossary of building and civil engineering terms — Part 1: General and miscellaneous — Section 1.6: Persons*.

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

BS 6338:1982 (ISO 4520:1981), *Specification for chromate conversion coatings on electroplated zinc and cadmium coatings*.

BS 6375 (both parts), *Performance of windows*.

BS 6399-2, *Loading for buildings — Part 2: Code of practice for wind loads.*

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

BS EN 485-2:1995, *Aluminium and aluminium alloys — Sheet, strip and plate — Part 2: Mechanical properties.*

BS EN 755-9:2001, *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles — Part 9: Profiles, tolerances on dimensions and form.*

BS EN 1670:1998, *Building hardware — Corrosion resistance — Requirements and test methods.*

BS EN 12329:2000, *Corrosion protection of metal — Electrodeposited coatings of zinc with supplementary treatment on iron or steel.*

BS EN 22063:1994, *Metallic and other inorganic coatings — Thermal spraying — Zinc, aluminium and their alloys.*

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

BS EN ISO 3506-1:1998, *Mechanical properties of corrosion-resistant stainless-steel fasteners — Bolts, screws and studs.*

BS EN ISO 3506-2:1998, *Mechanical properties of corrosion-resistant stainless-steel fasteners — Nuts.*

BS ISO 11600, *Building construction — Jointing products — Classification and requirements for sealants.*

3 Terms and definitions

For the purposes of this British Standard, the definitions given in BS 6100-1.0, BS 6100-1.5.1 and BS 6100-1.6 and the following apply.

3.1

aluminium alloy window

window incorporating aluminium alloy framing members and glazing rebates

NOTE This is abbreviated to “window” throughout the text.

3.2

bearing device

wheel, roller, skid or other device fitted at the head or sill of a horizontally sliding window to support the weight of the sash and to facilitate movement

3.3

casement

window, or part of a window, that opens on hinges, pivots or variable geometry stays

NOTE This definition is a modification of that given in BS 6100-1.0.

3.4

coupled window

glazed frame with another glazed frame hinged or fastened to it, so that both open together for ventilation and can be separated for cleaning purposes

3.5

design wind pressure

wind pressure that can be expected on a surface of a building having taken into account the S_a , S_d and S_b factors and the shape of the building by applying pressure coefficients to the dynamic pressure of the wind

NOTE See BS 6399-2.

3.6

double window

two separate glazed frames superimposed in the same wall opening