

Specification for

Aluminium alloy windows

UDC 692.82:669.715

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Elements and Components (of Diverse Materials) for Buildings Standards Committee (ECB/-) to Technical Committee ECB/42 upon which the following bodies were represented:

- Aluminium Federation
- Aluminium Window Association
- Association of Builders Hardware Manufacturers
- British Standards Society
- Cold Rolled Sections Association
- Consumer Standards Advisory Committee of BSI
- Department of the Environment (Property Services Agency)
- Department of the Environment (Building Research Establishment, Princes Risborough Laboratory)
- Flat Glass Manufacturers' Association
- Glass and Glazing Federation
- Incorporated Association of Architects and Surveyors
- London Housing Consortium
- Royal Institute of British Architects
- Steel Window Association

This British Standard, having been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee, was published under the authority of the Board of BSI and comes into effect on 31 December 1986

© BSI 03-1999

First published August 1972
First revision December 1986

The following BSI references relate to the work on this standard:
Committee reference ECB/42
Draft for comment 85/10257 DC

Amendments issued since publication

Amd. No.	Date of issue	Comments

ISBN 0 580 15612 5

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Definitions	1
3 Window types and handing	2
4 Materials	3
5 Construction	7
6 Work sizes and manufacturing tolerances	8
7 Glazing	8
8 Security	8
9 Safety	8
10 Weathertightness performance	9
Appendix A Advisory notes on materials and construction	10
Appendix B Optional features	11
Appendix C Recommendations for marking	11
Figure 1 — Window types and handing	5
Figure 2 — Illustrations of window types and handing for working drawings	6
Table 1 — Exposure categories	9
Publications referred to	12

Foreword

This British Standard, having been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee, supersedes BS 4873:1972 which is withdrawn.

The standard specifies the types of aluminium window now in use and follows the general format of the 1972 edition.

The principal new features of this standard are as follows:

- a) the provision of a powder organic coating as an additional choice of finish to aluminium members;
- b) the specification of weathertightness performance requirements by reference to BS 6375-1.

Account has also been taken of the considerably increased use of multi-light windows since 1972 and reference is now included to fixed lights, louvred and tilt and turn windows.

The specification of timber has been deleted from the standard. When the 1972 edition was published some types of aluminium window were manufactured in combination with timber which formed an important structural element of the window. Such windows are no longer produced and when wood surrounds are used they are not considered to be an integral part of the window; some advisory notes are however included in Appendix A.

Performance requirements for the operation and strength of windows have not been included as it is the intention that in future they will be specified in the window product standards by reference to BS 6375-2¹⁾ (see also **A.1.1**).

A related British Standard is BS 5286.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their 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 13 and a back cover.

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

¹⁾ In preparation.

1 Scope

This British Standard specifies materials, construction, finishes, hardware and weathertightness performance requirements for aluminium alloy windows and double windows intended to be installed vertically, including glass and glazing. Windows that are used for replacement purposes and those that have thermally improved frames are included but the standard excludes the following:

- a) windows in which any frame member is longer than 3 m;
- b) fixed louvres;
- c) secondary windows applied to convert existing windows into double or coupled windows;
- d) windows with frames designed to be glazed with glass complying with BS 5051 or BS 5544;
- e) the thermal properties of thermally improved frames.

Advisory notes on materials and construction are given in Appendix A and details of optional features to be agreed between the manufacturer and the purchaser are given in Appendix B. Recommendations for marking are given in Appendix C.

NOTE The titles of the publications referred to in this standard are listed on page 12.

2 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 apply together with the following.

NOTE The definition given in 2.3 is a modification of that given in BS 6100-1.0.

2.1

aluminium alloy window

a window incorporating aluminium alloy structural elements and glazing rebates

2.2

bearing device

a 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 facilitate movement

2.3

casement

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

2.4

coupled window

one 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

2.5

design wind pressure

the wind pressure that can be expected on a surface of a building having taken into account the S_1 , S_2 and S_3 factors and the shape of the building by applying pressure coefficients to the dynamic pressure of the wind

NOTE See CP 3:Chapter V-2.

2.6

double window

two separate glazed frames superimposed in the same wall opening

2.7

fixing

any item that is used to secure separate members of a window assembly to each other, to secure an item of hardware to a window member, or to secure a completed window assembly into the structure of a building

2.8

glazing gasket

plastics or synthetic rubber members, used between the glass and the frame and/or the glass and the bead

2.9

hardware

fittings attached to the window that are used to operate and/or secure it

2.10

insulating glass unit

two or more panes spaced apart and hermetically sealed in a factory

2.11

multi-light window

a window incorporating opening and/or fixed lights within one perimeter frame

2.12

sash

a movable frame of a horizontally or vertically sliding window

2.13

secondary window

a window either fitted into the same wall opening as an existing window, or applied to an existing window, to provide improved thermal and/or sound insulation

2.14

thermally improved frame

a frame of an aluminium alloy window (2.1) that incorporates an insulating material to improve the thermal performance

NOTE It may be of the thermal barrier type, where the inner and outer faces are separated by the insulating material, or of the thermal clad type, where the insulating material is applied to the face or faces of the frame.

2.15

weathertightness

performance in respect of air permeability, watertightness and wind resistance

2.16

weatherstripping

material around opening lights to reduce air and/or water penetration

3 Window types and handing

NOTE Window types and examples of handing are shown in Figure 1 and Figure 2.

3.1 Window types

The requirements of this British Standard shall apply to the following window types:

- a) hinged: side hung (open in or out), top hung (open out), bottom hung (open in), and tilt and turn;
- b) projecting: side hung (open in or open out) 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.

NOTE Windows can be in multi-light form.

3.2 Handing

In specifying the handing it shall be stated whether the window is viewed from the outside or inside.

The handing of a multi-light or a horizontally sliding window is related to the position of the largest opening light. The arrangement of the multi-light shall be shown on a diagram.

The handing of side hung and tilt and turn casements is related to the position of the hinges.

The handing of a vertically pivoted window is described by the position of the pivots in relation to the opening out portion and the proportion opening outwards shall be stated.