

Performance of windows —

Part 2: Specification for operation and strength characteristics

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/15 upon which the following bodies were represented:

- Aluminium Window Association
- Association of Builders' Hardware Manufacturers
- British Plastics Federation
- British Precast Concrete Federation Ltd.
- British Wood Preserving Association
- British Woodworking Federation
- Building Employers Confederation
- 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
- Guild of Architectural Ironmongers
- Health and Safety Executive
- Institution of Fire Engineers
- London Housing Consortium
- National House-Building Council
- Royal Institute of British Architects
- Steel Window Association
- Timber Research and Development Association
- Coopted member

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Foreword

This British Standard has been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee.

It is the intention that the performance requirements for the operation and strength of windows will in future be specified in the window product standards by reference to this standard. Further Parts of BS 6375 will be published in due course dealing with other attributes.

An endurance test will be introduced as soon as it is possible to establish the test methods and the related performance criteria.

Part 1 of BS 6375, published in 1983, gives a classification of windows for weathertightness in terms of test pressure levels for air permeability, watertightness and wind resistance and also gives guidance on selection and specification.

Two acceptance levels for tests on top hung and side hung windows on variable geometry hinges (test 5) have been included as they are considered necessary at the time of Amendment No. 1 of this standard. In view of the continual developments in the hardware and window frame section design, however, it is hoped that in due course it will not be necessary to retain both levels and the Technical Committee responsible for this standard will keep this situation under constant review.

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.

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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.

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Introduction

The maximum forces permitted to operate the sash of a window which are specified in this standard have been derived from test data on the strength of users supplied by the Princes Risborough Laboratory¹⁾. A person's ability to operate a window will depend not only on the height of the window and/or the person but also on whether any items of furniture or fittings (e.g. a sink unit) obstruct or restrict the access to the window. The operating characteristics of a window should therefore be given careful consideration if it is to be installed at a high level or access to it is obstructed or restricted.

The operating forces given in this standard are considered to be capable of being applied by the majority of people. However, where windows are to be operated by young children, old people, or the infirm, special consideration will need to be given to the selection of the window and its operation, e.g. window type, size, position and its hardware.

1 Scope

This Part of BS 6375 specifies performance requirements for the operation and strength of windows in their glazed and fully finished condition including hardware.

Test methods are given in Appendix A.

NOTE 1 A classification of performance for the wind resistance strength of windows is given in BS 6375-1.

NOTE 2 The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purpose of this Part of BS 6375 the following definitions apply.

2.1

window

any part of an external wall that consists predominantly of transparent or translucent sheet material contained within a frame or frames, with any necessary intermediate frame members or coupling members

2.2

hardware

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

2.3

fastener

an item of hardware that is used to secure the sash in the closed position

2.4

sash

the moveable glazed element of a window

2.5

stile

a vertical framing member of the sash

2.6

rail

a horizontal framing member of the sash

2.7

restricted opening device

an item of hardware or a part of an item of hardware that, for safety, limits the initial opening of a sash to a predetermined amount

NOTE See also 11.5 of CP 153-1:1969)

¹⁾ Department of the Environment. Building Research Establishment.

2.8

location device

an item of hardware or a part of an item of hardware that holds a sash in an open position for cleaning or maintenance purposes

2.9

maximum opening stop

an item of hardware or a part of an item of hardware that is neither a restricted opening device nor a location device but which limits the maximum opening of a sash

3 Window types

The requirements of this Part of BS 6375 shall apply to the following window types:

- a) hinged: side hung (open out and open in), top hung (open out), bottom hung (open in), and tilt and turn;
- b) projecting: side hung (open out and open in) and top hung (open out and reversible);
- c) pivoted: horizontal and vertical (hung centrally or off-centre);
- d) sliding: horizontal and vertical.

4 Glazing and glass

When the design wind pressure is known, the windows shall be glazed with glass of a type and minimum thickness in accordance with BS 6262. Where the design wind pressure is not known, the window shall be glazed for a design wind pressure of 600 Pa. In both cases, if the manufacturer has specified a greater minimum thickness this shall be used.

5 Testing

5.1 Test methods

The methods of test shall be as specified in Appendix A.

5.2 Schedule of test requirements

The tests for each window type shall be as given in Table 1.

5.3 Sequence of tests

The tests shall be carried out in the sequence in which they appear in Table 1. For tilt and turn windows, the window shall be first set to operate in the turn (side hung) mode and the tests specified for the appropriate side hung window carried out. The window shall then be set to operate in the tilt (bottom hung) mode and the tests specified for bottom hung windows carried out.

6 Performance

6.1 Operation: tests 1 and 2

6.1.1 *Operation of fastener to secure the sash in the closed position: test 1.* When tested in accordance with the method described in **A.2**:

- a) wedge action fasteners shall engage in the designed position (usually between the first 30 % to 60 % of the wedge length);
- b) bolt action and espagnolette bolt systems shall fully engage;
- c) automatic fasteners (e.g. spring bolts) shall fully engage.