

BRITISH STANDARD

Windows, doors and rooflights –

Part 4: Code of practice for the survey and installation of windows and external doorsets

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Foreword

Publishing information

This part of BS 8213 is published by BSI and came into effect on 30 March 2007. 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This part of BS 8213 supersedes BS 8213-4:1990, which is withdrawn.

Relationship with other publications

BS 8213 is published in two parts:

- Part 1: *Design for safety in use and during cleaning of windows, including door-height windows and roof windows – Code of practice*;
- Part 4: *Code of practice for the survey and installation of windows and external doorsets*.

This part of BS 8213 is intended to supplement British and European product standards for windows and doorsets.

Information about this document

This is a full revision of the standard. It brings up to date the guidance given in the previous edition and takes into account the publication of a number of European Standards published since 1990.

Use of this document

As a code of practice, this part of BS 8213 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this part of BS 8213 is expected to be able to justify any course of action that deviates from its recommendations.

Due to the wide variety of installation conditions, it is not possible to cover all applications completely. This part of BS 8213 gives guidance on those good building practices that are expected to ensure satisfactory installation.

Windows and external doorsets are available in a range of materials, each material having a unique performance characteristic. The surveyor and installer need to be aware of the material being used, and any additional manufacturer's recommendations for survey and installation.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

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.

Attention is drawn to the Building Regulations 2000 and subsequent amendments [1], the Building (Scotland) Regulations 2004 [2] and the Building Regulations (Northern Ireland) 2000 [3], and to the need for Building Regulations approval for the majority of window and external doorset installations.

1 Scope

This part of BS 8213 gives recommendations for the surveying and installation of non-loadbearing windows and external doorsets of any material, to be installed vertically (within 15°) into the external face of buildings. It gives guidance on the good practices necessary for the successful surveying and installation of windows and external doorsets in both new build and replacement situations. It is primarily aimed at installations in dwellings but much of the guidance given is relevant to other types of installation.

The guidance contained in this part of BS 8213 may also be applied to door assemblies, but does not cover the site assembly of individual components.

This part of BS 8213 does not apply to load-bearing windows, load-bearing doorsets or roof windows. It does not cover curtain or ribbon walling, although its guidance also applies to separate window and door elements within those particular types of assemblies. It does not cover good business practice issues such as warranties, complaints, etc.

NOTE For roof windows or when the windows and external doorsets to be installed fall outside the scope of this part of BS 8213, e.g. non-rectangular products, it is necessary to seek specialist advice from the manufacturer.

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 6100-1, *Building and civil engineering – Vocabulary – Part 1: General terms*

BS 6262 (all parts), *Glazing for buildings*

BS 7619, *Specification for extruded cellular unplasticized PVC (PVC-UE) profiles*

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

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

BS EN ISO 11600, *Building construction – Jointing products – Classification and requirements for sealants*

3 Terms and definitions

For the purposes of this part of BS 8213, the terms and definitions given in BS 6100-1 and the following apply.

NOTE For consistency with the terminology in BS 6100, the phrase “sub-sill” is used in place of the more commonly but incorrectly used word “sill”.

3.1 bow window

type of bay window, usually carrying only light loads, which does not form an extension to the floor area of the room

3.2 door assembly

complete assembly as installed, including door frame and one or more leaves together with its essential hardware supplied from separate sources
[BS EN 12519]

3.3 doorset

complete unit consisting of a door frame and a door leaf or leaves, supplied with all essential parts from a single source
[BS EN 12519]

NOTE For the purposes of this part of BS 8213, the word “doorset” refers to external doorsets only.

3.4 dormer window

vertical, or near-vertical (within 15°), window built into and projecting from a pitched roof structure

3.5 DPM (damp-proof membrane)

device, usually comprising a layer or strip of impermeable material, placed within a wall, chimney or similar construction to prevent the passage of moisture

3.6 finishing

final covering and treatment of surfaces and their intersections

3.7 fixing

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

3.8 frame

surround to a door leaf, window, etc., enabling it to be fixed into position

3.9 installation packer

packing piece used in gaps at fixing points to obtain rigid fixing and prevent distortion

NOTE This is also known as a fixing packer.

3.10 installer

company and/or individual carrying out the works

3.11 lintel

beam supporting loads over an opening

3.12 manufacturing size

overall dimensions, which result from making the appropriate deductions from the structural opening size

NOTE 1 This is also known as “work size”.

NOTE 2 It should be identified whether this includes or excludes any add-ons or extension pieces.

3.13 oriel window

multi-sided window projecting from an upper storey, and generally supported by brackets

3.14 structural opening

aperture in a wall into which a window or doorset is to be installed

3.15 structural opening size

size of the maximum rectangular shape that can be fitted within a structural opening

3.16 structure

organized combination of connected parts designed to provide some measure of rigidity, or construction works having such an arrangement

3.17 surveyor

qualified or otherwise competent person who is capable of surveying for window and doorset installation, advising on suitable design, carrying out the risk assessment as necessary, and assessing the quality of the finished installation

3.18 system supplier

original source of the design and/or supply of components used in the fabrication of a window or doorset

4 Materials

4.1 Fixings

Fixings should be at least as corrosion-resistant as BS EN 1670:1998, Grade 3.

4.2 Sealants

The purpose of perimeter sealants is to repel water and prevent air leakage in the face of differential movement between the aperture and the window or doorset. Suitable sealants exhibit and retain flexibility and adhesion over this period. It is essential that sealants are compatible with the frame material and the substrate.

The movement class for the sealant will depend on the substrate material, the frame material and the dimensions of the joint between the frame and the opening.

Sealants should be tested and classified in accordance with BS EN ISO 11600. Unless an unusual and specific known requirement determines otherwise, they should be of low modulus and high elasticity, with movement capability of at least 20%. These characteristics should be identified on their packaging as class 20LM or 25LM.

NOTE 1 A guide to the use of BS EN ISO 11600 is given on The British Adhesives and Sealants Association website at www.basa.uk.com.

If a situation arises where the anticipated movement exceeds the performance criteria of a class 25 sealant, then the sealant manufacturer should be contacted for specific advice on sealant selection.

NOTE 2 If in doubt, sealant manufacturers can be consulted on sealant adhesion to specific substrates and materials and on whether primers are required. They can also propose sealant/primer systems, which will minimize the potential for staining. A comprehensive list of UK sealant manufacturers can be found at www.basa.uk.com.

4.3 Finishing trims

All trims should be compatible with the material of the frame and should be colour matched where specified. Finishing trims, where used externally, should be good exterior quality materials used in accordance with the manufacturer's instructions.

Cellular extruded PVC-UE trims should conform to BS 7619.

5 Surveying for replacement windows and doorsets

5.1 General

NOTE 1 Attention is drawn to the legal requirement to identify the need for any planning permission, e.g. for listed buildings or in conservation areas.

NOTE 2 An example of a surveyor's checklist is given in Annex A.

Good surveying is the basis of ensuring a quality installation. Surveyors should be fully trained in window and doorset installation techniques, and in the manufacturer's recommendations for the particular system being used.

In order to demonstrate compliance with Building Regulations (see Note 3), it is advisable to record the style of the window or doorset being replaced along with the size of any opening lights and the positions of any mullions and transoms. Ideally, this would be with the use of photographs and witnessed by the purchaser and countersigned. The surveyor should inform the purchaser of any enhancements that could be made with respect to any apparent security issues.

NOTE 3 Attention is drawn to the Building Regulations 2000 and subsequent amendments [1], the Building (Scotland) Regulations 2004 [2] and the Building Regulations (Northern Ireland) 2000 [3].

A risk assessment should be carried out for the suitability of the window or doorset design. The responsibility for this lies with the designer of the window or doorset, and it should be carried out by a competent person (commonly the surveyor). Suitable written records should be retained.

NOTE 4 Information on the safety of windows (including door-height windows) in use and during cleaning is given in BS 8213-1. In the case of domestic replacement windows and doorsets, the designer is the person or organization taking the order from the purchaser.

A risk assessment for the installation process should also be carried out by a competent person.

NOTE 5 Attention is drawn to the Construction (Design and Management) Regulations 1994 [4] and the Control of Substances Hazardous to Health Regulations 2002 [5].

When a load-bearing situation is suspected or confirmed then it is essential that the system supplier's recommendations are followed.

5.2 Suitability of the aperture

The surveyor should check for any apparent defects and deficiencies around the structural opening. If any defects are found, then the purchaser should be notified, and agreement reached as to who is responsible for rectifying these defects prior to the new windows or doorsets being installed.

NOTE For large replacement contracts, it can be advisable to remove one window or doorset to check the condition of the reveals and existing DPM, in so far as this is possible.

5.3 Services in the aperture

The presence of any electrical or specialist items such as television aerials and telephone wires in the aperture should be noted. Wherever possible such services should be routed around, and not through, the outer frame of the window or doorset. When this is not possible, a solution should be agreed with the purchaser which does not compromise the performance of the product.

The presence of any curtain tracks in the aperture should be noted. This is particularly important for inward opening or pivoting windows and net curtains. These could either cause problems during installation, or interfere with the function of the window or doorset after installation. Action to prevent any problems should be agreed with the purchaser prior to the installation.

5.4 Weathertightness

The surveyor should determine the design wind load for the application, and then determine whether the windows and doorsets are suitable for that exposure. BS 6375-1 gives guidance on selection and specification of windows and doorsets.

Where any doubts exist, the manufacturer should be consulted.

5.5 Lintels

The surveyor should take reasonable steps to check that there is a lintel or other means of supporting the structure above the window or doorset. Where no such support exists and the load is carried on the existing window or doorset, then alternative means of providing this support should be provided.

5.6 Bow, oriel and dormer windows

Where bow, oriel or dormer windows have low applied loads, no special structural calculations are necessary. Where any doubts exist, the structure should be assumed to be load-bearing and reference made to the system supplier's instructions.

5.7 Coupled/combination frames

Where windows and/or doorsets are to be coupled, the surveyor should determine the method to be used, taking into account wind and dead loads, visual appearance and position of the coupling.

5.8 Opening type and direction

The surveyor should confirm with the purchaser whether the window or door is to be inward or outward opening and the handing. On outward opening doors, it is strongly recommended that a restriction device, e.g. a door stop positioned as close to the opening stile as possible, is fitted to help avoid damage caused by sudden wind gusts.

The protrusion of outward opening windows into the path of pedestrians should be taken into account.

5.9 Doorsets

The following additional aspects should be taken into consideration for doorsets:

- thresholds – consideration should be given to the type of threshold and any protection for it that might be required;

NOTE 1 Attention is drawn to Part M of the Building Regulations 2000 [1], the Building (Scotland) Regulations 2004 [2] and the Building Regulations (Northern Ireland) 2000 [3].

- letterplates – the size and location of any letterplate should be confirmed with the purchaser;

NOTE 2 Reference may be made to BS EN 13724.

- hardware – any requirements for additional hardware such as trickle vents, cat flaps, spy holes, etc., should be clearly specified;
- side panels – on doorsets with side panels, it might be necessary to take mullion bounce into account and stiffen the mullion to limit this. Any such stiffening should be clearly specified.