

Internal and external wood doorsets, door leaves and frames —

Part 1: Specification for dimensional requirements

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Confirmed
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Cooperating organizations

The Timber Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

British Plastics Federation
 British Woodworking Federation*
 Department of the Environment (Building Research Establishment Princes Risborough Laboratory)*
 Department of the Environment (Construction Industry Directorate)
 Department of the Environment (Housing and Construction)*
 Fibre Building Board Development Organization Limited*
 Forestry Commission
 Institute of Wood Science
 Institution of Civil Engineers
 Institution of Municipal Engineers
 Institution of Structural Engineers
 National Federation of Building Trades Employers
 National Sawmilling Association
 Royal Institute of British Architects*
 Royal Institution of Chartered Surveyors
 The Softwood Agents' and Brokers' Association
 Timber Packaging and Pallet Confederation
 Timber Research and Development Association*
 Timber Trade Federation

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Asbestos Cement Manufacturers' Association
 Association of Builders' Hardware Manufacturers
 British Lock Manufacturers' Association
 Department of the Environment (Interdepartmental Construction Development Group)¹⁾
 Department of the Environment (PSA)
 Flat Glass Manufacturers' Association
 Greater London Council
 Guild of Architectural Ironmongers
 Institute of Carpenters
 Institution of Fire Engineers
 Joinery Managers' Association Limited
 Modular Society for Advancement in Building
 North Group London Housing Consortium

This British Standard, having been prepared under the direction of the Timber Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 June 1980

¹⁾ Now disbanded

Amendments issued since publication

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 Committee reference TIB/23
 Draft for comment 78/12956 DC

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Foreword

This revision of BS 4787-1 has been prepared under the direction of the Timber Standards Committee. BS 4787-1 was first published in 1972. Since then, experience has shown that minor amendments to the permissible deviations are desirable; these are made in this revised edition. Work sizes for external doors and doorsets have also been amended to facilitate the combination of doors with windows. The opportunity has been taken to remove tables of work sizes for glazed openings, standard code references for door types and other parts of the 1972 edition no longer considered to be appropriate. The possible provision of ancillary items (e.g. blockings, architraves etc.) has again been included in Appendix A.

This first Part of BS 4787 deals only with metric dimensional requirements. It takes full account of the recommendations for dimensional co-ordination given in BS 4011, BS 4330 and PD 6444. It also takes account of BS 4471 and BS 1186-1 and BS 1186-2 and BS 6262, and of draft international standards currently being prepared insofar as they are relevant.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of this British Standard specifies the metric sizes for dimensionally co-ordinated internal and external wood doorsets, door leaves and frames.

The provision of ancillaries is covered in Appendix A.

2 References

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

3 Definitions

For the purposes of this standard, the following definitions apply. For the definition of other terms, see BS 565, BS 3589 and ISO 1804.

3.1

doorset

an assembly, comprising a fixed part (the door frame) and one or more movable parts (the door leaves) and their hardware, the function of which is to allow or prevent access. The doorset may include sill, overpanel and side panel

NOTE The doorset may be supplied in component form.

3.2

external

exposed to the effects of the weather

3.3

internal

not exposed to the effects of the weather

3.4

sill

the bottom horizontal member of a door frame

3.5

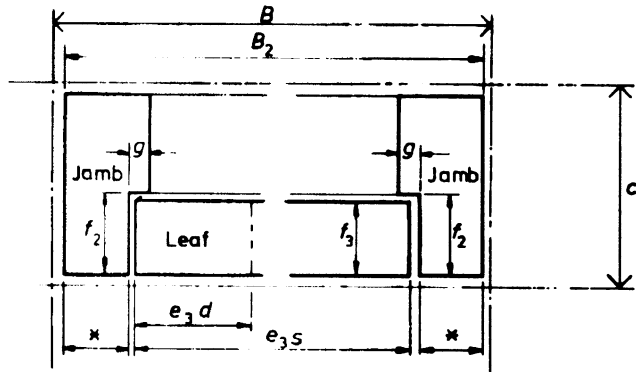
ceiling height set

a doorset which includes a space above the transom over the door. It may or may not extend to the ceiling

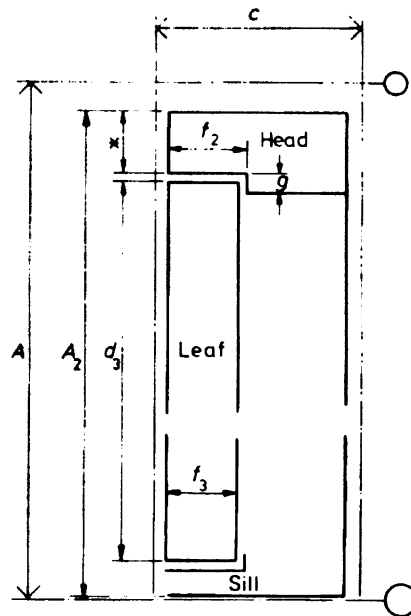
4 Sizing conventions

4.1 The margin shown at head and jambs (the distance between the joint face of the frame and the reference line) of each type of doorset includes an allowance for erection, positioning and jointing, as normally required in building practice. Permissible deviations given for individual components do *not* imply that these would necessarily produce a perfect fit between doors and frames.

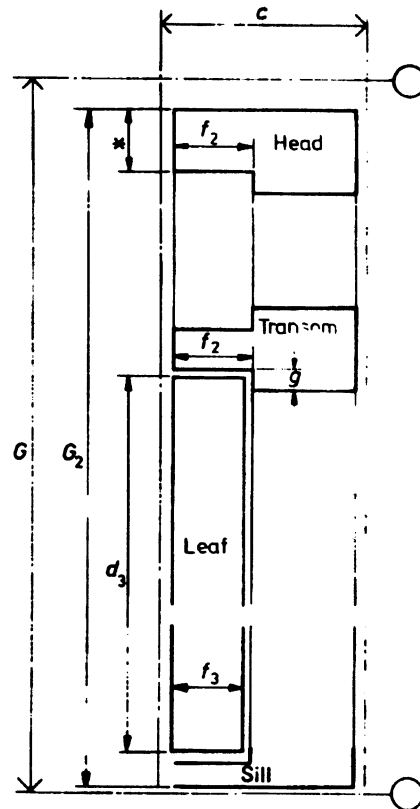
4.2 All sizes specified in this standard are as at the time of handing over the doorset, door or frame to the purchaser and are at the moisture content agreed between the manufacturer and the purchaser at the time of order as specified in BS 1186-1.



(a) Plan all sets



(b) Section door-leaf height set



(c) Section ceiling height set

*All dimensions marked with an asterisk are equal.

Figure 1 — Key to dimensions only

5 Sizes of doorsets, door leaves and frames

5.1 Co-ordinating and work sizes of internal doorsets. The sizes of internal doorsets and their component parts shall be as given in Table 1.

Table 1 — Sizes of internal doorsets and their component parts

Dimension (see Figure 1)		Size	Permissible deviation
Symbol	Description		
<i>A</i>	Co-ordinating dimension: height of door leaf height sets	mm 2 100	mm
<i>G</i>	Co-ordinating dimension: height of ceiling height set	2 300 2 350 2 400 2 700 3 000	
<i>B</i>	Co-ordinating dimension: width of all doorsets (S. single leaf set, D. double leaf set)	600 S 700 S 800 S and D 900 S and D 1 000 S and D 1 200 D 1 500 D 1 800 D 2 100 D	
<i>A</i> ₂	Work size: height of door leaf height set	2 090	± 2.0
<i>G</i> ₂	Work size: height of ceiling height set	2 285 2 335 2 385 2 685 2 985	} ± 2.0
<i>B</i> ₂	Work size: width of all doorsets (S. single leaf set, D double leaf set)	590 S 690 S 790 S and D 890 S and D 990 S and D 1 190 D 1 490 D 1 790 D 2 090 D	} ± 2.0
<i>d</i> ₃	Door leaf height for all doorsets	2 040	± 1.5
<i>e</i> _{3s}	Width of door leaf used in single leaf sets (F. flush leaf, P. panel leaf)	526 F 626 F 726 F and P 826 F and P 926 F and P	} ± 1.5
<i>e</i> _{3d}	Width of one leaf of an equal double leaf doorset (F. flush leaf, P. panel leaf) (Dimensions of pairs of doors assume square meeting stiles with 2 mm clearance between leaves. If rebated meeting stiles are required, then leaf width is to be 6.5 mm wider than stated, to allow for a 13 mm rebate.)	362 F 412 F 462 F 562 F and P 712 F and P 862 F and P 1 012 F and P	} ± 1.5

Table 1 — Sizes of internal doorsets and their component parts

Dimension (see Figure 1)		Size	Permissible deviation						
Symbol	Description								
f_3	Door leaf thickness	mm	mm						
		40 44	} + 1.0 - 2.0						
g	Doorstop width (solid or otherwise)	13	± 2.0						
f_2	Rebate depth	42 46	} ± 0.5						
	Clearance between: <table style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding-right: 5px;">leaf and jamb</td> <td rowspan="4" style="font-size: 2em; vertical-align: middle;">}</td> <td rowspan="4" style="padding-left: 10px;">These measurements to be taken at sill and either head or transom</td> </tr> <tr> <td>leaf and head</td> </tr> <tr> <td>leaf and transom</td> </tr> <tr> <td>leaf and sill</td> </tr> </table> (When the door leaf and frame are supplied separately, provision for these clearances will be required to be made on site.)	leaf and jamb	}	These measurements to be taken at sill and either head or transom	leaf and head	leaf and transom	leaf and sill	2 at each side 2 2 3	} + 1.0 - 0.5
leaf and jamb	}	These measurements to be taken at sill and either head or transom							
leaf and head									
leaf and transom									
leaf and sill									
NOTE 1 The thickness dimension C is not of great importance in the doorset, but consideration should be given to its relationship to standardized sizes of sawn timber (see BS 4471) and to the finished thicknesses of partitions. NOTE 2 Where smoke seals are to be fitted, other clearance sizes and related permissible deviations between door leaf and jamb, head, transom and sill may be specified.									

Table 2 — Sizes of external doorsets and their component parts

Dimension (see Figure 1)		Size	Permissible deviation
Symbol	Description		
		mm	mm
A	Co-ordinating dimension: height of door leaf height sets	2 100	
G	Co-ordinating dimension: height of ceiling height set	2 300 2 350 2 400 2 700 3 000	
B	Co-ordinating dimension: width of all doorsets (S. single leaf set, D. double leaf set)	900 S 1 000 S 1 200 D 1 500 D 1 800 D 2 100 D	
A_2	Work size: height of door leaf height set	2 095	± 2.0
G_2	Work size: height of ceiling height set	2 295 2 345 2 395 2 695 2 995	} ± 2.0

5.2 Co-ordinating and work sizes of external doorsets. The sizes of external doorsets and their component parts shall be as given in Table 2.

Table 2 — Sizes of external doorsets and their component parts

Dimension (see Figure 1)		Size	Permissible deviation
Symbol	Description		
B_2	Work size: width of all doorsets (S. single leaf set, D. double leaf set)	mm	mm
		895 S	} ± 2.0
		995 S	
		1 195 D	
		1 495 D	
		1 795 D	
2 095 D			
d_3	Door leaf height for all doorsets	1 994	± 1.5
e_{3s}	Width of door leaf in single leaf sets (F. flush leaf, P. panel leaf)	806 F and P 906 F and P	} ± 1.5
e_{3d}	Width of one leaf of a double leaf doorset (F. flush leaf, P. panel leaf) (Dimensions of pairs of doors assume square meeting stiles with 2 mm clearance between leaves. If rebated meeting stiles are required, then leaf width is to be 6.5 mm wider than stated, to allow for a 13 mm rebate.)	552 F and P 702 F and P 852 F and P 1 002 F and P	} ± 1.5
f_3	Door leaf thickness	40 44	} ± 1.5
g	Doorstop width (solid or otherwise)	13	+ 2.0 - 0
f_2	Rebate depth	43 47	} - 0.5
	Clearance between: leaf and jamb leaf and head leaf and transom leaf and sill (When the door leaf and frame are supplied separately, provision for these clearances will be required to be made on site.)	These measurements to be taken at sill and either head or transom 1.5 at each side 1.5 1.5 1.5	} + 1.0 - 0.5

NOTE 1 The thickness dimension C is not of great importance in the doorset, but consideration should be given to its relationship to standardized sizes of sawn timber (see BS 4471) and to the finished thicknesses of partitions.

NOTE 2 Where smoke seals are to be fitted, other clearance sizes and related permissible deviations between door leaf and jamb, head, transom and sill may be specified.

5.3 Sizes of internal and external door leaves (for single doors). The sizes, in millimetres, of internal door leaves for single doors shall be as follows:

- 526 × 2 040 × 40 or 44
- 626 × 2 040 × 40 or 44
- 726 × 2 040 × 40 or 44
- 826 × 2 040 × 40 or 44
- 926 × 2 040 × 40 or 44

The sizes, in millimetres, of external door leaves for single doors shall be as follows:

- 806 × 1 994 × 40 or 44
- 906 × 1 994 × 40 or 44

NOTE These sizes have been extracted from Table 1 and Table 2 for the convenience of the user of this standard.

6 Sizes of glazing openings

6.1 Glazing openings in flush door leaves.

Glazing openings in flush door leaves are not standardized, but the minimum sizes for the members shown in Figure 2 shall be as follows:

- M_1 : 100 mm;
- M_2 : 250 mm.

6.2 Work sizes of glazing openings in internal and external panel door leaves

6.2.1 Glazing openings in panel door leaves are not standardized, but the minimum sizes for the members shown in Figure 3 shall be as follows:

- M_1 : 85 mm;
- M_2 : 175 mm;
- M_3 : 22 mm.

6.2.2 In a two panel door the height to the top of the mid-rail (H_1) shall be as follows:

- H_1 : 910 ± 2.0 mm.

NOTE This requirement will ensure that the mid-rail aligns with the sight line of the sill of a standard 1 200 mm high window having a lintel common with that of the door frame.

7 Fire resisting doorsets

Only the co-ordinating dimensions A , G , and B of Table 1 and Table 2 shall apply to fire resisting doorsets. The permissible deviations given for clearance between door leaf and frame shall also apply except where smoke seals are fitted (see note 2 to Table 1 and Table 2).

8 Deviations from plane, squareness and local surface flatness

8.1 Deviations from plane in a door leaf, when measured in accordance with BS 5277, shall not exceed the following:

- bow in the Length: 4 mm;
- cup (horizontal bow): 2 mm;
- deviation from true plane (twist): 6 mm.

8.2 Deviations from squareness in a door leaf, when measured in accordance with BS 5278, shall not exceed 1.5 mm in 500 mm.

8.3 Deviations from local surface flatness in any position or direction in a door leaf, when measured with a 200 mm bridge, shall not exceed 0.50 mm.

9 Fixing positions for hardware

9.1 Position of lock/latch. The centre line of the lock/latch cavity shall be positioned centrally in the height of the leaf unless otherwise specified.

9.2 Position of lock/latch block. The position of blocking for the lock/latch shall be clearly indicated.

9.3 Position of hinges. The centre lines of hinges shall be spaced equidistant from the centre line of the height, with a permissible deviation of ± 1.0 mm. On external doors or door leaves exceeding 20 kg in weight, a third hinge shall be provided on the centre line.

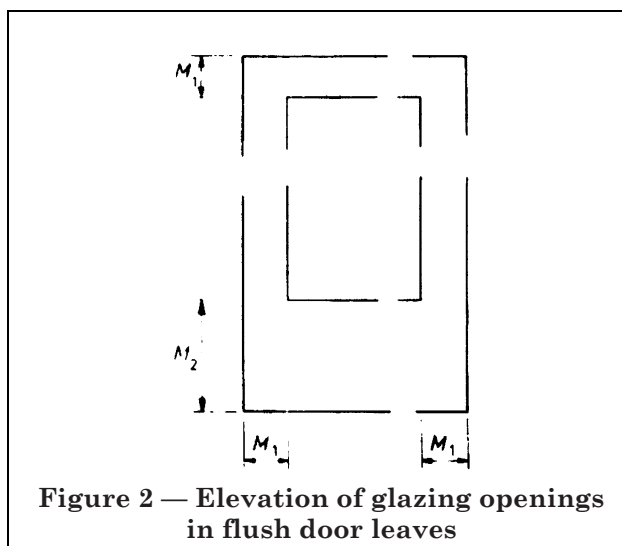


Figure 2 — Elevation of glazing openings in flush door leaves

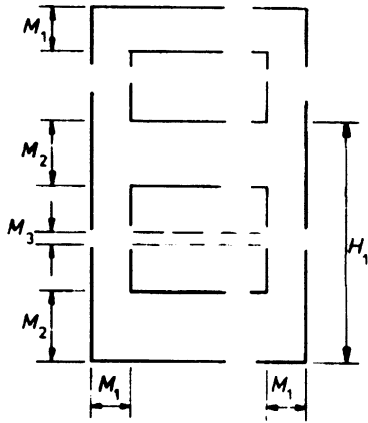


Figure 3 — Elevation of glazing openings
in panel door leaves

Appendix A Ancillaries

When agreed between the manufacturer and the purchaser at the time of order, provision may be made for the following ancillaries.

- a) Blockings in flush door leaves to receive special items of hardware, e.g. overhead closers, security fittings and letter plates.
- b) Architraves and cover strips to master the gaps between the doorset frame and adjacent components. These are covered in BS 584. Other suitable material or design solutions may be used.
- c) Water bars.
- d) Pre-drilled fixing holes. If pre-drilled fixing holes are specified without giving their position, they should be provided at 150 mm, 750 mm, 1 350 mm and 1 950 mm from the bottom of the frame.

For doorsets with work size ceiling heights of 2 685 mm and 2 985 mm, a pre-drilled hole additional to those given above should be provided at 2 550 mm from the bottom of the frame.

- e) The omission of the sill. When omitted, full length packing pieces are required above the head of the frame to maintain the work size heights given in Table 1 and Table 2.

NOTE External door frames (excluding hardwood sills) should be supplied primed unless otherwise specified.

Publications referred to

- BS 565, *Glossary of terms relating to timber and woodwork.*
- BS 584, *Wood trim (softwood).*
- BS 1186, *Quality of timber and workmanship in joinery.*
- BS 1186-1, *Quality of timber.*
- BS 1186-2, *Quality of workmanship²⁾.*
- BS 3589, *Glossary of general building terms.*
- BS 4011, *Recommendations for the co-ordination of dimensions in building. Co-ordinating sizes for building components and assemblies²⁾.*
- BS 4330, *Recommendations for the co-ordination of dimensions in building. Controlling dimensions²⁾.*
- BS 4471, *Specification for dimensions for softwood.*
- BS 4471-1, *Sizes of sawn and planed timber.*
- BS 4471-2, *Small resawn sections.*
- BS 5277, *Doors. Measurement of defects of general flatness of door leaves.*
- BS 5278, *Doors. Measurement of dimensions and of defects of squareness of door leaves.*
- BS 6262, *Code of practice for glazing for buildings²⁾.*
- PD 6444, *Recommendations for the co-ordination of dimensions in building²⁾.*
- PD 6444-1, *Basic spaces for structure, external envelope and internal sub-division (Functional Groups 1, 2 and 3).*
- ISO 1804, *Doors — Terminology.*

²⁾ Referred to in the foreword only.

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