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technical update

BS 8300:2009

The publication of BS 8300 in October 2001 thrust the issue of Accessibility for All to the top of the agenda for many specifiers and clients. Unfortunately this original Code of Practice also created many concerns, often identifying issues and problems, without providing solutions or guidance on how to solve them. This was further exacerbated by the amendment of Approved Document M – Access To And Use Of Buildings, in 2004, as this included conflicting guidance, most noticeably concerning opening forces and visual contrast.

BS 8300 was amended in June 2005 in an effort to clarify some of these more critical conflicts of guidance. This was supported by the addition of an FAQ section to the Approved Document M website, which mirrored the guidance relating to LRV's, opening forces, and effective clear widths, found in the amended BS 8300. However, it was felt that a better understanding of the impact this Code of Practice has on users, designers, specifiers and manufacturers, and the availability of new information and data, warranted a complete overhaul of the Code. Consequently, the BS 8300 BSI committee was reconvened early 2006.

In February 2009 a fully revised version of the Code of Practice was published, following a comprehensive overview of the content. This document includes heavily modified guidance on ironmongery and doors. Much of it relates to a relaxation in design, allowing a more flexible approach to the specification. There is also more information provided on means of escape, with reference to the new BS 9999.

The following is a summary of the changes relating to architectural ironmongery and doors:

1 SCOPE

With the original document there was some confusion as to whether this guidance applied to domestic dwellings. The new Code of Practice specifically identifies that the guidance does not apply to individual dwellings, residential buildings designed specifically for the needs of severely disabled people, or temporary structures.

2 ACCESS ROUTES TO AND AROUND BUILDINGS

5.10.2 Handrail design

The document no longer stipulates that handrails should be oval or circular. Equal acceptance is now given to non-circular handrails with a broad horizontal face.

5.10.3 Handrail dimensions and spacing

The profile dimension of circular handrails has been amended to between 32mm and 45mm, oval profiles remain 50mm wide x 38mm.

5.10.4 Handrail fixing

Reference to loading recommendations in BS 6399-1 has been added, along with more general fixing guidance.

5.10.5 Handrail materials

Handrails should not become excessively cold or hot to the touch. The use of surfaces which have a low thermal conductivity such as timber or nylon sleeved tube are suggested.

6 ENTERING A BUILDING

6.2 Threshold

The guidance has been re-written to clarify that the cumulative height of the threshold, including an upstand, is 15mm. An upstand of more than 5mm high should be chamfered or pencil rounded.

6.3 Entrance doors and lobbies

The guidance originally identified as being relevant to 'Principle' entrances doors has now been broadened to encompass ALL entrance doors to a building, even those designed to be held closed when not in use.

6.3.5 Power-operated revolving doors

These are not considered accessible; therefore a complementary accessible door should be provided immediately adjacent to the revolving door.

6.3.6.2 Dimensions of lobbies

The guidance now recommends the use of double leaf swing doors wherever possible.

6.4.1 Effective clear width through a doorway

Table 2- Effective clear widths of doors has been amended as follows:

Direction of approach of wheelchair	Min. effective clear width of door leaf (mm)	
	New Buildings	**Existing buildings**
Straight-on (without turn or oblique approach)	800	750
At right angles from an access route at least 1500mm wide	800	750
At right angles from an access route at least 1200mm wide	825	775
At right angles from an access route at least 900mm wide	N/A	800
External doors and internal lobby doors at the entrance of buildings used by the general public.	1000	775

// The main change relates to reference to 'New buildings' and 'Existing buildings', rather than 'Preferred' and 'Minimum' as used in the original document, and the addition of guidance on external doors and internal lobby doors. //

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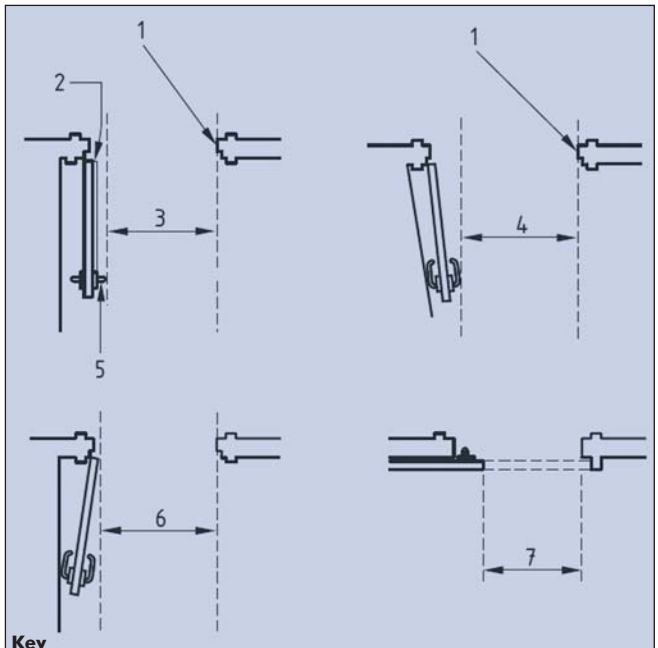
An accompanying note identifies that effective clear widths of 800mm and 825mm are achievable with 926mm wide doors, provided doors open beyond 90°, and the projection of any door furniture does not reduce effective clear width.

Figure 11 *demonstrates how the effective clear width can be achieved.*

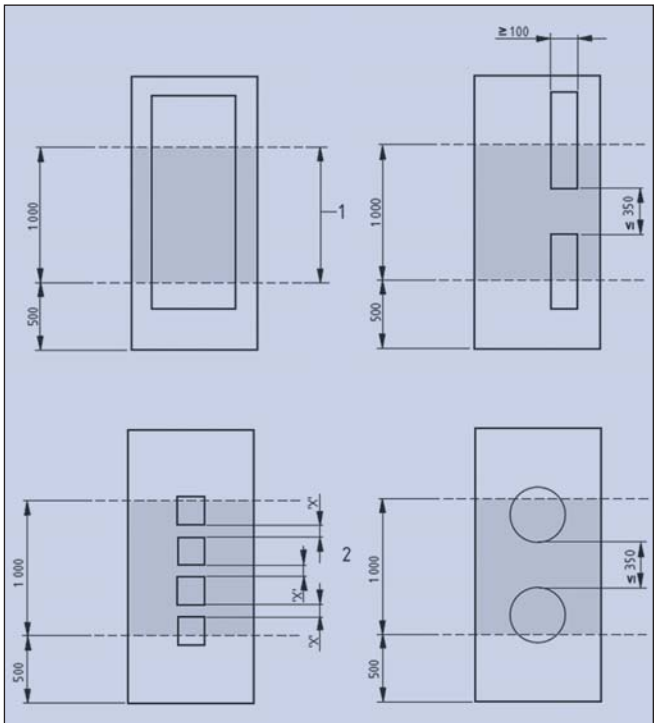


Key
1 Door stop or edge of other door of a double doorset
2 Weather board if provided
3 Effective clear width (door stop to projecting door furniture), with door open at 90°
4 Effective clear width (door stop to projecting door furniture), with door open less than 90°
5 Door furniture
6 Effective clear width (door stop to door leaf), with door open beyond 90°
7 Effective clear width (door stop to door leaf), with sliding door

6.4.2 Vision panels

The main area of concern was the restrictive nature of the permissible vision panel designs, resulting in only very institutional-type designs being acceptable. The new document allows the area of glass described in the original standard to be achieved using multiple panels and alternative shapes. This allows much more design freedom - a real advantage to the specifier as vision panels are often used as a signature for the building.

Figure 13 – *Minimum zones of visibility and examples of acceptable vision panel configurations, show how alternative vision panel designs can still meet the requirements of BS 8300.*



Key
1 Minimum zone of visibility between 500mm and 1500mm above floor level, with maximum interruption of 350mm vertically within the zone
2 Maximum obstruction (X+X+X) no more than 350mm

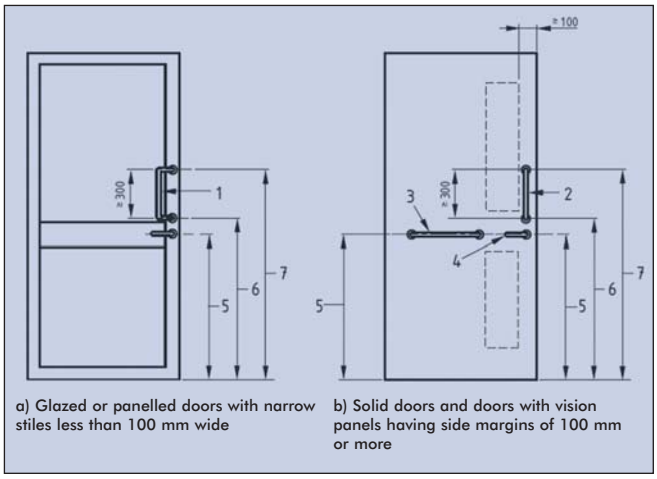
6.5.1 Manual door opening and closing furniture

This section and the associated diagrams have been heavily modified. Again the aim was to remove some of the confusion, and, where possible, to relax the requirements to allow a more flexible approach to the design and use of door opening furniture. The changes relate to lever and pull handle positions, sizes and designs:

- The Code of Practice now specifically deplores the use of knob furniture and small symmetrical turn buttons (thumbturns) in favour of levers.
- The torque force required to operate keys and cylinder turns should not exceed 0.5N.m.

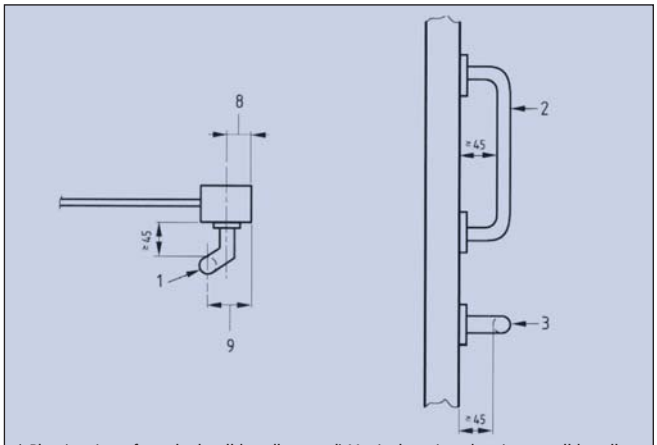
- Suggestion that turnable pad handles may be selected for use with multi-point locking systems.
- As a principle, pull handles should not be fitted to the push side of doors.
- Where a lever handle intercepts the viewing panel, any projecting glazing beads should not interfere with the operation of the lever handle or reduce the effective clearance behind it.
- Handle to contrast visually with the face of door. Note 2 suggests an LRV difference of 15 points is acceptable (see notes on informative Annex B below)

Figure 14 – *Location of door opening and closing furniture identifies the key dimensions and positions.*



a) Glazed or panelled doors with narrow stiles less than 100 mm wide

b) Solid doors and doors with vision panels having side margins of 100 mm or more



c) Plan/section of cranked pull handle on a narrow style

d) Vertical section showing a pull handle and horizontal pull rail

Key
1 Cranked pull handle, 19 mm to 35 mm diameter
2 Vertical pull handle, 19 mm to 35 mm diameter
3 Horizontal pull rail to help people close the door behind them
4 Lever handle
5 800 mm to 1050 mm (900 mm preferred)
6 Bottom end of pull handle no lower than 700 mm and no higher than 1000 mm above the floor
7 Top end of pull handle no lower than 1300 mm above the floor
8 Fixing centres close to door edge
9 Doors with narrow stiles require cranked pull handles with an offset of not less than 50 mm from the door edge

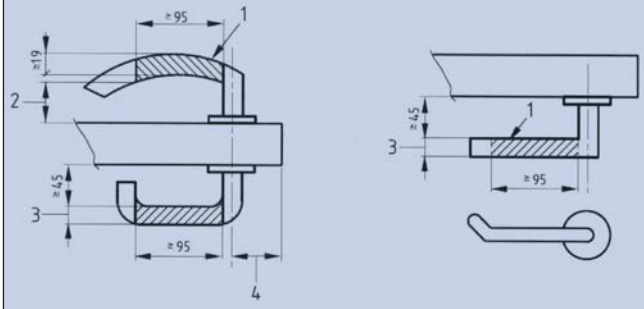
NOTE 1 The lever handles and pull handles shown on this drawing will not necessarily be used on the same face of a door
NOTE 2 Although the conventional "D" pull handle is shown in the figure, other patterns of pull handle are acceptable, provided they conform to the dimensional critera

Figure 17 in the original BS 8300 described the principles for door furniture. Although the intention was for guidance and demonstration purposes only, in reality many specifiers and manufacturers alike have been unwilling to stray beyond the dimensions and shapes actually shown. Consequently pull handles have invariably been 400mm high, round bar design.

The revised guidance moves away from fixed positions for the vertical pull handles, giving only minimum heights for the top fixing of 1300mm, and maximum height of 1000mm and minimum height of 700mm for the bottom fixing, effectively allowing a minimum 300mm pull handle. The diameter (or cross-section) of a pull handle remains at 19mm- 35mm. Although a conventional "D" shape is shown, other shapes of pull handle are acceptable, as long as they meet the dimensional criteria.

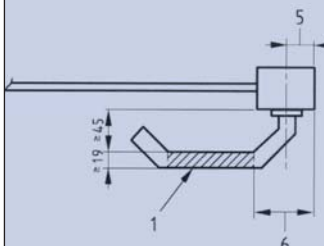
The fixing height for lever furniture has also been changed to 800-1050mm, with 900mm being the preferred position. This change addresses some of the conflicts in the earlier document, and accommodates the handle positions identified in HTM 59. The requirement for 400mm high kickplates has also been removed, as this was considered to be unnecessarily restrictive.

Figure 15 – *Examples of lever furniture showing dimensions, illustrates how the guidance dimensions can be applied to other styles of lever furniture*



a) Lever handles returned towards the door for solid doors and those with side margins 100 mm or wider

b) Cranked lever handle for solid doors and those with side margins 100 mm or wider



c) Plan/section of cranked pull handle on a narrow style

Key
1 Hand grip zone (shaded) of at least 95 mm (applies to all types of lever handle)
2 Hand grip zone at least 45 mm from face of door
3 Lever diameter at least 19 mm
4 lock/latch backset at least 54 mm from door edge
5 Reduced lock/latch backset to suit narrow stile
6 Start of hand grip zone at least 63.5 mm set back from door edge

NOTE Lever designs are indicative only

Figure 17 in the original BS 8300 resulted in a very restricted choice of levers, invariably limited to round-bar, return-to-door on the majority of projects. In reality, this style was intended as one example of a desirable design, with others offering similar criteria also being acceptable. In an effort to address this, four examples of how the dimensions can be exemplified in other designs have been added. This should greatly increase the choice of acceptable variations. Cranked pull handles and lever furniture for narrow stile doors have also been included.

6.5.2 Controlled closing devices

The guidance on opening forces and controlled closing devices remains unchanged.

6.5.4 Lock and latches

Reference to BS EN 12209, BS EN 1303, BS 8621 and BS 10621 has been added.

6.5.5 Door bolts

Approval for the use of lever-action flush bolts has been added.

6.5.6 Panic and emergency exit hardware

Panic exit devices to BS EN 1125:2008 have been referenced, requiring a maximum operating force of 220N.

Emergency exit devices to BS EN 179:2008 have been referenced, requiring a maximum operating force of 70N for lever handles and 150N for push pad.

6.6.1 Door entry systems

When located on the adjacent wall, the position of the activation unit has been amended to within 200mm of the door frame, at a height of 900mm to 1050mm.

6.6.2 Entry phones

Recommendations have been added requiring a means of indicating the call is acknowledged and the lock released, both audibly and visibly.

6.6.3 Digital locks

The use of digital locks, preferably operated by levers, has been included.

7 HORIZONTAL CIRCULATION

7.2.5 Doors leading into corridors

The recommendation for a horizontal pull handle or other operating furniture on the internal face of outward opening doors has been added to this section.

The use of reduced-swing (sliding-folding) doors has been identified as being beneficial in reducing the extent the door swings into the room, thus facilitating manoeuvring in and out.

Where doors are held open, the leading edge of the door must contrast visually with the face of the door. Two examples of how this could be achieved are now given:

- A contrasting intumescent seal of a minimum 15mm wide fitted in the edge of the door
- A self-adhesive contrasting strip at least 1 m long, starting at least 500mm from ffl, covering at least 60% of the door edge thickness.

The requirement that the architrave (or door frame if no architrave is present), should contrast with the wall surface is also identified here.

7.2.6 Doors across corridors

Self-closing and pivoted doors on escape routes should conform to the recommendations of BS 9999.

7.3 Doors fitted with controlled door closing devices

The guidance on opening forces and controlled closing devices remains unchanged.

8 VERTICAL CIRCULATION

8.1.3 Handrails to steps and stairs

Conform to recommendations given in 5.10.4 and, where relevant, 5.10.5 (see above).

8.2.2 Handrails to ramps

Conform to recommendations given in 5.10.4 and, where relevant, 5.10.5 (see above).

9 SURFACES AND COMMUNICATION AIDS

9.2.3.1 Design and size of lettering and symbols

Table 4 – Text x-heights for different types of sign has been amended, requiring a minimum height of 150mm for long distance, 50-100mm for medium distance, and 15-25mm for room signs.

9.2.3.2 Visual contrast

Note 1 gives specific guidance on visual contrast, suggesting a difference in LRV of 70 points between letters, symbols or pictograms and the signboard, and between the signboard and the background, to ensure good visual contrast.

12 INDIVIDUAL ROOMS

This section has been significantly re-ordered, with new sub-clauses covering accessible baby changing facilities and 'Changing Places' sanitary accommodation (for severely disabled children and adults requiring special equipment, such as tables and hoists, for changing incontinence pads).

Again the use of reduced-swing doors has been identified as being beneficial in reducing the extent the door swings into the room, thus facilitating manoeuvring in and out in sanitary accommodation.

ANNEX B (informative) Using light reflective values (LRV's) to assess visual contrast

This is an area of considerable change, resulting in amendments to the guidance in BS 8300 and the creation of a new standard, BS 8493: 2008 – Light reflectance value (LRV) – Method of test.

The main change in the guidance relates to the LRV points difference between door opening furniture and the face of the door. On the basis that the door opening furniture is a 3-D form (giving light and shade), generally has a shiny finish, and is limited in its possible location, a relaxation to 15 points difference has been agreed. Elsewhere the contrast remains generally 30 points.

In reality, this is not as straightforward as it seems as BS 8493 requires a flat measurement area of at least 7mm diameter. Therefore, technically, this test method cannot be used to establish the LRV of curved surfaces such as lever handles. However, clients are still likely to require an estimate of the LRV of a handle. Consequently figures taken from a flat sample of similar material may be beneficial, along with an understanding that the manufacturing method and finish are likely to be different, which could affect the result.

The test standard does require measurements to be taken from multiple samples; the quantity and size of the sample depending on the degree of variation in pattern/colour and the extent of the surface texture. Early measurements taken by manufacturers suggest that this 15 point requirement does still restrict the use of some metal furniture with selected veneers, but should make the selection process of door finish and handle material a little easier.

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