

TECHNICAL PAPER TD180504
HINGED DOORS TO SUIT THE REQUIREMENTS OF BUILDING REGS. APPROVED
DOCUMENT M.

Distributors may be asked to quote for doors to give a specific clear access width, but we have always advised against this practice unless you have actually inspected the site and are aware of final frame positions, hardware choice, operational requirements, etc.

It is not advisable to quote "clear widths" giving the width between frames, as the actual clear width is determined by how far the door leaf can open.

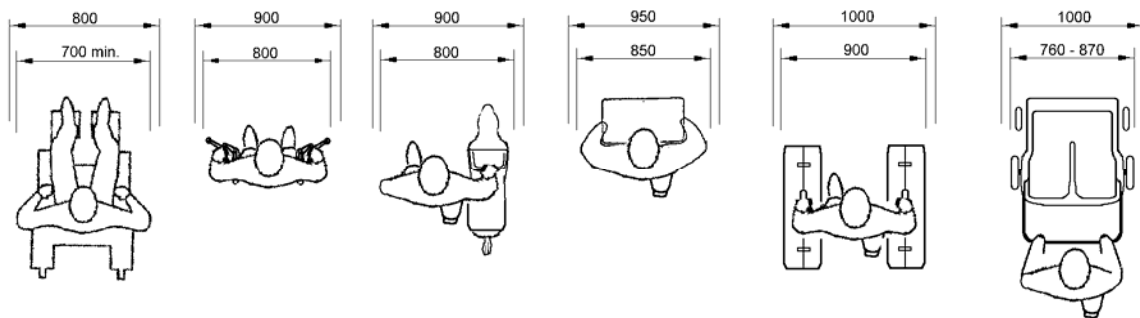
If a door is in a 'corridor situation', with flank walls on both sides, and set back into an external reveal, it may not be possible to open the door beyond 90°.

If the door cannot open sufficiently, the leaf, and any surface-mounted ironmongery, will protrude into the opening and reduce the effective clear width.

Panic hardware protrudes 75mm - 120mm on the inside face (dependent on manufacturer) and standard lever furniture protrudes 60-70mm.

You may also be asked to quote for "...an opening to suit wheelchair access requirements...", but this is no longer the only disability to be given consideration for access widths.

If openings are to be accessed by partially-sighted people, sufficient clearance will also be required to enable a guide dog to accompany the person. If persons on crutches have to negotiate an opening they will require an additional space 250-300mm at each side of their body, requiring an opening width of 900mm or more. The access regulations now include mothers with double-widths buggies, people carrying large or heavy objects, parcels, luggage, etc.



CHANGES IN THE STANDARDS

APPROVED DOCUMENT "M" 2004

The object of the Standard is to make reasonable provision to ensure that buildings are accessible and usable by people, regardless of disability, age or gender.

The problem of projecting hardware has been acknowledged by the Secretary of State and Building Regulations Approved Document 'M' has been up-dated to include revised methods for determining opening widths.

It also includes amendments to suit access requirements of different user groups as given in the examples above, and the Standard also includes amendments to suit the Disability Discrimination Act.

DISABILITY DISCRIMINATION ACT 1995 ("DDA")

The final part becomes mandatory from 1st October 2004 and contains additional guidelines for the widths of principal entrance doors and internal doors, reduced operational forces for the doors, types of hardware and even the shade or colour of hardware which can be used on doors. After October 1st. if clients do not wish to comply with any or all of the requirements contained in the Standard for reasons of privacy or security, it will be necessary for them to define their arguments in a formal Access Statement for the building.

"EFFECTIVE" CLEAR WIDTH.

The old Building Regulations, Parts L and M defined the clear width as the opening dimension from the frame 'stop' on the closing side, to the face of the door leaf when opened to 90°.

This has now been replaced by the term "effective" clear width which is defined in Table 2 of the Standard, "Minimum Effective clear widths of doors" as:-

"...the width of the opening measured at right angles to the wall in which the door is situated from the outside of the door stop on the door closing side to any obstruction on the hinge side, whether this be projecting door opening furniture, a weather board, the door, or the door stop." (See Fig.1 & 2.)

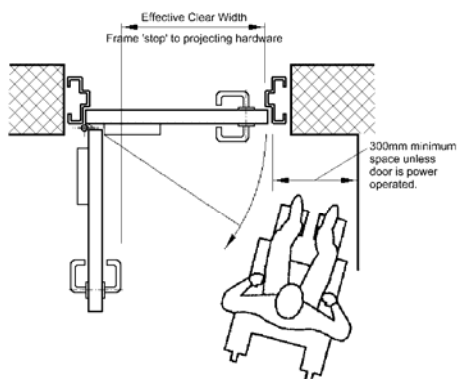


FIG.1 - Door opens 90 degrees.

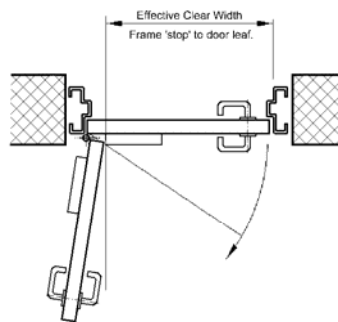


FIG.2 - Door opens beyond 90 degrees.

This new definition would, in theory, allow consideration to be given to doors which could open well beyond 90°, as shown in Fig.3, allowing the complete door leaf to clear the opening.

However, the Standard also refers to BS8300 "Design of Buildings to meet the needs of Disabled People", which confirms that people with disabilities have considerable problems opening doors to much beyond 90°, therefore this practice should not be used.

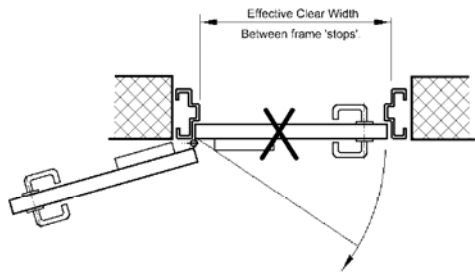


FIG.3. - Door opens to full width.

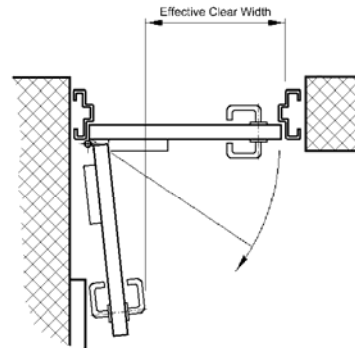


FIG.4 - Door cannot open 90 degrees

It should also be borne in mind that projecting door furniture or projections on corridor walls, etc. may prevent a door opening to 90°, (also illustrated in BS 8300), which would then necessitate a wider structural opening in order to achieve the effective clear width required. (See Fig. 4 above).

In the absence of site-specific information, we should assume that door operating angle is only limited by the type of hardware (door closer or floor stop) and we therefore include worked examples to show actual structural opening sizes required to suit the clear widths given in Table 2 of the Standard for 90° (Fig.1) or, beyond 90° (Fig.2), arrangements.

TABLE 2 : MINIMUM EFFECTIVE CLEAR WIDTHS OF DOORS.			NEW BUILDINGS		EXISTING BUILDINGS	
DIRECTION & WIDTH OF APPROACH	NEW BUILDINGS	EXISTING BUILDINGS	Open to 90 deg. (As FIG.1)	Open beyond 90 deg. (FIG.2)	Open to 90 deg. (As FIG.1)	Open beyond 90 deg. (FIG.2)
Straight-on (without a turn or oblique approach)	800mm	750mm	1050mm	950mm	1000mm	900mm
At right angles to an access route at least 1500mm wide	800mm	750mm	1050mm	950mm	1000mm	900mm
At right angles to an access route at least 1200mm wide	825mm	775mm	1100mm	1000mm	1050mm	950mm
External doors to buildings used by the general public.	1000mm	775mm	1250mm	1150mm	1050mm	950mm

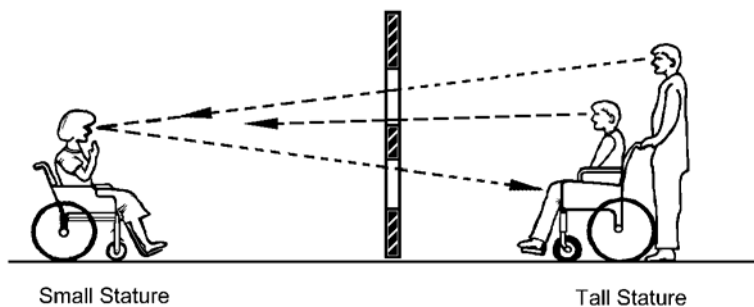
VISION PANELS

Clause 2.12 confirms that:-

"... people should be able to see other people approaching from the opposite direction.... to avoid collision".

This is defined further in 2.13 :-

"...door leaves, and side panels wider than 450mm have vision panels towards the leading edge of the door whose vertical dimensions include at least the minimum zone, or zones, of visibility between 500mm and 1500mm from the floor, if necessary interrupted between 800mm and 1150mm above the floor, e.g. to accommodate an intermediate horizontal rail."



This requirement would be satisfied by inclusion of our full-height (1350mm x 180mm) vision panel, or by inclusion of our standard 200mm x 700mm and 200mm x 500mm vision panels as shown below.

The second option is usually preferable, as it will still leave a solid section across the centre of the door, for increased strength and to avoid sight of horizontal panic bars, locks, etc. from outside. (See Fig.5)

Both window layout options have been fire tested in our doors for up to four hours fire resistance.

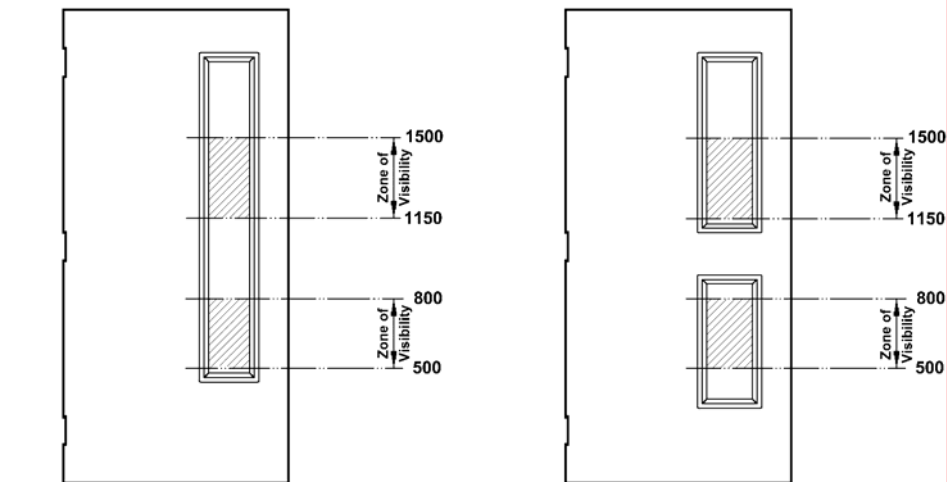


FIG.5 - Std.Window Layout

HARDWARE

Clause 2.16 confirms that:-

"... door furniture on manually operated non-powered doors should be easy to operate by people with limited manual dexterity, and be readily apparent against the background of the door".

This is defined further in 2.17 as:-

- a) "...opening force at the leading edge of the door is no greater than 20N.
- b) "There is an unobstructed space at least 300mm on the pull side of the door between the leading edge of the door and any return wall...."
- c) "...where fitted with a latch, the door opening furniture can be operated with one hand using a closed fist, e.g. a lever handle;..
- d) "all door opening furniture contrasts visually with the surface of the door and is not cold to the touch.."

Considering each sub-section of the Clause separately, :-

a) The Operating Force.

Door Closers.

There are currently no door closers which can be used on external doors which will comply with operating forces required by the DDA and which will guarantee to close the door in external wind-loading conditions, especially now that door widths have been increased in size (larger 'sail' area). Closer manufacturers are looking into this and attempting to find a solution which will satisfy the government requirements.

Where we are requested to provide doors to DDA requirements, but inclusive of a door closer, we will provide a document to accompany the clients Access Statement, clearly defining the limitation and the reasons for it.

Friction Stays.

Friction Stays cannot comply with the DDA requirement without being so loose as to negate their prime function.

Power Operators.

The Standard recommends the use of power operation on external doors where possible.

We are researching several low-energy products at the moment and will provide further information on this once a suitable device has been located to comply with the requirements of the Standard and when we have completed our in-house testing.

Generally, all power-assistance units will require deeper frame headers in order to provide a mounting location for the motor drive system, so opening heights would need to be increased to avoid the risk of the frame header encroaching on the clear access height.

b).Space adjacent to the opening.

This is part of the building design requirement and would be dealt with by your client - Not within our scope.

Protection adjacent to the doorway is also discussed in the Standard, which entails ensuring that visually-impaired persons would not walk into the side of an opening door (e.g. where a door opens into a corridor, etc.) Again this is part of the building design requirement and would be dealt with by the client. – Not within our scope.

This does not mean you should ignore it, as we still have a duty of care to advise the client of this problem if you can see that it exists, and at least ask if he has made any provisions for this requirement.

c).Door opening furniture

For compliance with the Regulation and BS8300, lever furniture is defined as a minimum of 19mm diameter, having a return-to-door (RTD) design for ease of use.

Whilst B.S.8300 is a Code of Practice and therefore not a mandate, it would still be judged as “best practice”, and therefore it would be better to comply with it rather than risk a possible claim in the future.

Our standard SAA levers comply with this requirement, as shown in Fig.6 below. External knobsets will not be permitted in DDA situations.

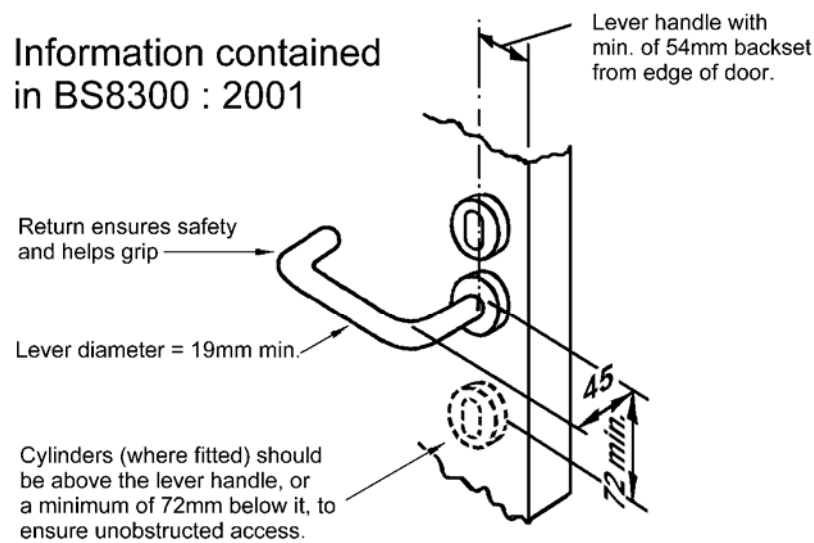


FIG.6

d).Visibility and "Feel".

Currently to be defined.

Visibility is defined as having a difference in light reflectance of at least 30 points. At the moment, the Standard advises that information regarding this is obtainable from Reading University.

No information on "cold to the touch".

Very difficult to define unless there are strict rules on weather conditions at time of measurement and temperature acceptance range.

Individual perception of temperature is subject to variables such as length of time exposed, etc. therefore unless there are tests to determine exact figures, all other views are subjective only.

In the absence of a test standard, some hardware suppliers have carried out their own in-house testing, but at present, it is no guarantee of compliance.

We will keep you advised of any changes as they occur.

In the meantime, please bear all the above information in mind and if in doubt, ...Ask!

Please Note.

This document is issued for general information only and is not intended as a substitute for information contained in the relevant British Standards / Building Regulations. As standards are under constant re-appraisal, it is essential that the full document be consulted to ensure compliance.

Omega Technical Department