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White Paper.

A guide to issues in the Document M and DDA Disability Discrimination Act relating to the fenestration industry.

Building Regulations **Document M**

Access to and use of Buildings

Smart Systems Ltd/

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CONTENTS

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INTRODUCTION

Building Regulations Document M covers the access to and the use of buildings. Document M gives recommendations for typical building situations. These recommendations are not obligations but are intended to set a reference point for a typical acceptable level for the legal obligation of service providers to offer a duty of care to make 'reasonable adjustments' as not to discriminate against disabled people.

This document summarises the most recent publications of the standards; highlighting the prominent areas of relevance to the fenestration industry, in particular to the specific recommendations and requirements made in the building regulations Document M.

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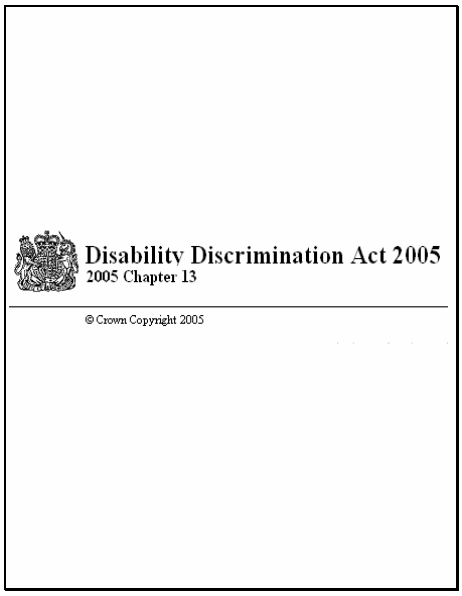
DDA Disability Discrimination Act



The purpose of the DDA is to prevent discrimination against disabled people.

Under the DDA, it is unlawful for service providers to treat disabled people less favourably than other people for a reason related to their disability. Service providers now have to make 'reasonable adjustments' to the way they deliver their services so that disabled people can use them.

A Service provider under DDA are all organizations that provide goods, facilities or services to the public, including services that are provided for free.

Reasonable Adjustment
What is considered a 'reasonable adjustment' for a large organisation like a bank may be different to a reasonable adjustment for a small local shop. It is about what is practical in the service provider's individual situation and what resources the business may have. A service provider will not be required or forced to make changes which are impractical or beyond their means.

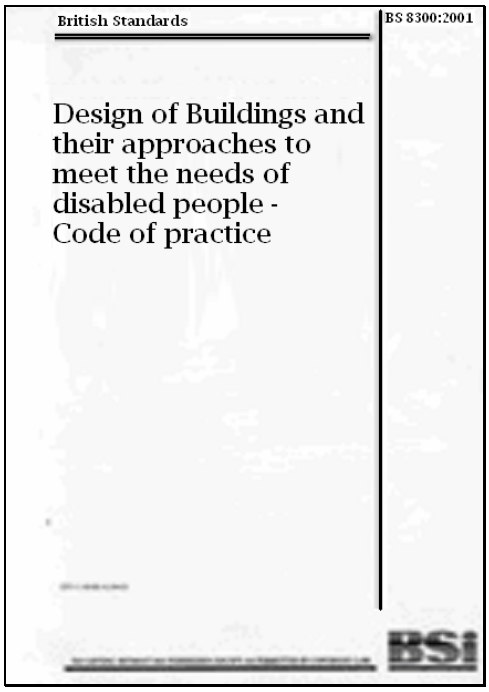
Whilst DDA provides a legal obligation to provide a duty of care and to provide reasonable adjustments it is not a building code and does not explicitly state what level of adjustment is termed as being reasonable, or set any specific requirements to prevent discrimination against disabled people.

Typical common interpretations of reasonable adjustments, dependent greatly on the type of organisation, may include:

- installing an induction loop for people who are hearing impaired
- giving the option to book tickets by email as well as by phone
- providing disability awareness training for staff who have contact with the public
- providing larger, well-defined signage for people with impaired vision
- putting in a ramp at the entrance to a building instead of, or as well as, steps

Disability Discrimination:
Failure or refusal to provide a service, providing a service of a lesser standard or failure to offering an alternative service to a disabled person, unless it can be justified, is classified as discrimination.

BS 8300:2001



BS 8300:2001 'Design of buildings and their approaches to meet the needs of disabled people' this supersedes BS 5619:1978 and BS 5810:1979.

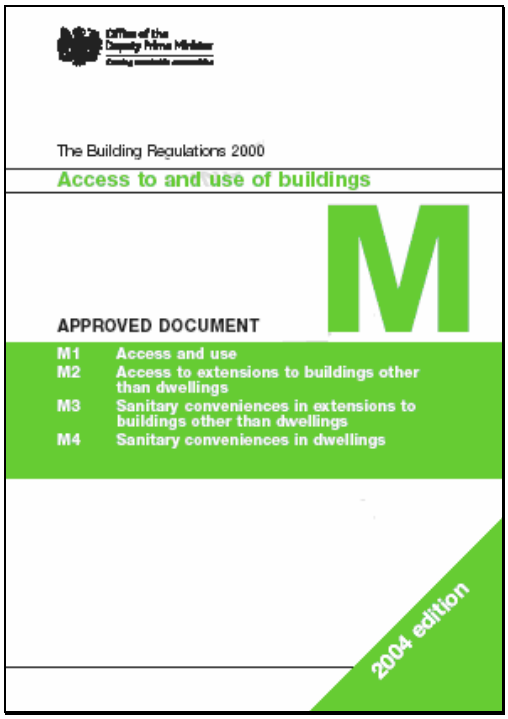
This British Standard alongside the Building Regulations Approved Document M (refer to page 8) gives guidance on good practices for domestic and commercial buildings and their approaches, such that they are convenient to use by disabled people.

BS 8300:2001 and Building regulations Document M

The recommendations in the BS are based on research commissioned in 1997 and 2001 by the DETR, although Document M publication in 2005 supersedes the BS, the BS contains additional material, not considered apt or appropriate for the AD M. Also, in some instances the recommendation in AD M conflict with the guidance in BS.

Compliance with the recommendations in the BS, therefore, while ensuring good practice, is not necessarily equivalent to compliance with the guidance in AD M. Where the recommendations in the BS are of a higher standard then this clearly would be acceptable to AD M. The BSI committee responsible for BS 8300:2001 intends to publish a consolidation of the BS and AD M in the near future, harmonising the standards. Where this new standard post-dates the publication of AD M and where the recommendation is based on new or re-evaluated research this may be considered acceptable alternative to the guidance given in AD M.

Building Regulations



Document M provides explicit guidance based on certain clearance sizes and standards which if adhered to are felt as 'reasonable provision.'

The explicit guidance in Document M is only meant as guidance and not the sole route for satisfying the legal duties stated in the DDA, it is perfectly acceptable to make reasonable adjustments or even enhancements to the guidance stated in Doc M.

There is no legal obligation to adopt a particular solution contained in an approved document if a service provider prefers to meet the relevant requirement in some other way.

Compliance to Approved Document M

'In the Secretary of State's view the requirements of part M will be met by making reasonable provision to ensure that buildings are accessible and usable. People regardless of disability, age or gender, should be able to:

a) gain access to buildings and to gain access within buildings and their facilities, both as a visitor and as people who live or work in them;
b) use sanitary conveniences in the principle story of a new dwelling.

The provisions are expected to enable occupants with disabilities to cope better with reduced mobility and to 'stay put' longer in their own homes. The provisions are not necessarily expected to facilitate fully independent living for all people with disabilities.'

Extract from the building regulations

Document M Recommendations

'Document M is intended to provide guidance for some of the more common building situations.'

Recommendations relating to the fenestration industry are detailed in the proceeding pages:

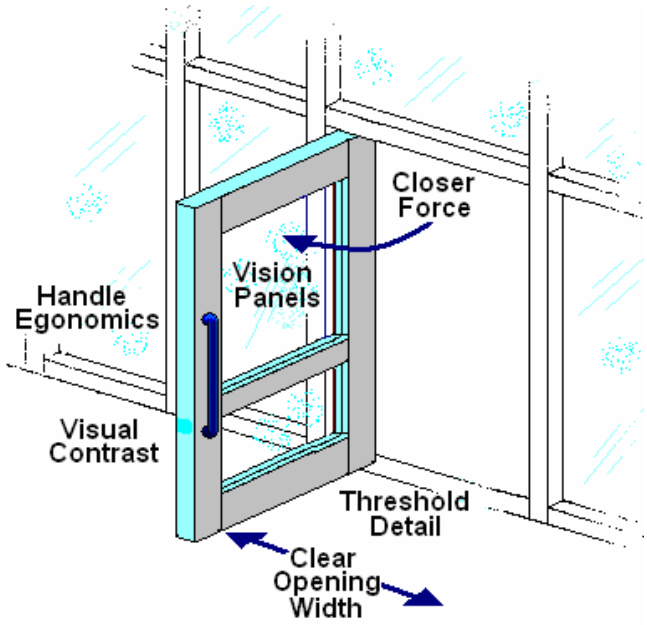


Figure 1 Document M Recommendations

Opening Width

The opening width is the clear width that a person can use to pass through a door, a wider opening width and approach clearance enables a door to be more accessible. Minimum clear opening widths for all doors in both commercial and domestic buildings are recommended in the building regulations.

The provision of an appropriate door opening width will help enable people with reduced mobility to manoeuvre through a building. For commercial doors, the recommended opening size depends on whether the building is an existing building or is a new building. If the door can only open 90 degrees the width also must include the projecting obstruction of the ironmongery.

External Doors

External doors must be a minimum width of 775mm with commercial new builds requiring a minimum opening width of one metre.

Doc M Recommendations:
External Doors

	New Build	Existing Buildings
Commercial	**1,000 mm**	**775 mm**
Domestic	**775 mm**	

Table 1 External doors minimum Opening Width

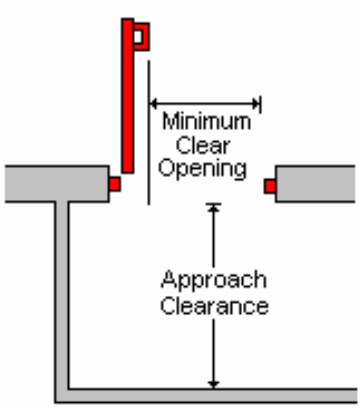


Figure 2 Minimum clear opening

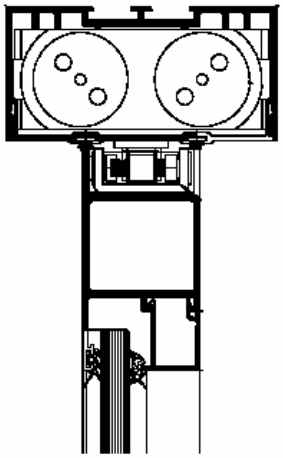
Internal Doors

For internal doors and lobby doors this minimum clear opening is also dependent on the approach clearance (Refer to Figure 2). If no wall or barrier is present to create an obstruction and a straight approach can be made then the approach clearance in the table below can be classified as 'good'.

Doc M Recommendations:
Internal and lobby Doors

	Approach Clearance		New Build	Existing Buildings
Commercial	**Good**	1500mm or better	**800 mm**	**750 mm**
	Limited	1200mm - 1500mm	**825 mm**	**775 mm**
Domestic	**Good**	1200mm or better	**750 mm**	
	Average	1050mm - 1200mm	**775 mm**	
	Limited	900mm - 1050mm	**800 mm**	

Closers Force



The closer force is the force at the leading edge to open a swing / auto closing door. With a lower closer force it is easier for people to open the door, making it more accessible; however, the lower the closer force, the less effectively the door will automatically self close.

The closer force has been heavily debated, with the OPDM amending the initial recommendations. This is mainly due to a lower closer force actually contradicting the purpose/intended operation of a self-closing door. The initial force required of a closing force of 20 Newtons to satisfy part M is unlikely to be sufficient to fully self-close the door. This situation would not satisfy the requirements of Part B (England and Wales), Technical Standard D (Scotland) or Technical Booklet E (Northern Ireland), and could influence the Part E acoustic requirements and also Part M conservation of Fuel and Power.

Recommended opening force
This has lead to a recent amendment from the originally recommended force of 20N in AD M, to a revised force in the FAQ's, and the opening force is now changes with the open angle of the door, refer to Figure 3.

FAQ Revised Recommendation:
The opening force at the leading edge of the door should not be greater than:
30 Newtons (for the first 30 degrees)
22.5 Newtons (from 30 and 60 degrees)

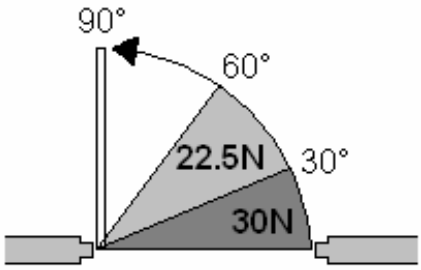


Figure 3 Recommended Opening Forces

Actual measured opening forces
It is impossible to fully model the force prior to installation purely on the closer. Many factors have a contributing effect to the leading edge of the door; hinge performance, latch resistance, seal positioning and internal air conditioning or external wind pressure effects will all have a contributing effect to the actual force measured. The difficulty to measure the closer force also tends to lead to differing results of the actual force and the force measured, a spring balance force gauge usually only has a tolerance of ± 3N, also it can be difficult to measure from the leading edge of the door. Measuring only 70mm from the opening edge and taking into account the measuring tolerances the allowable maximum edge force of 30 Newtons could increase from to a measured force of 36 Newtons.

Alternative external door solutions from Doc M 'FAQ'
Where in order to meet the opening force limits, the door closing device is insufficient to keep an entrance door closed against external conditions, consideration should be given to specifying an alternative door or closing systems:
a) a power operated (Automatic) door – sliding, balanced or swing;
b) a low energy swing door;
c) a power operated revolving door assembly
d) an entrance lobby or an air lock system of inner and outer doors or
e) for the purpose of building regulations in England and Wales, a low power rated door closer on a door fitted with a suitable latch.

Vision Panels

Vision panels are clear panels inset into the door which enables someone approaching the door to see potential obstructions or hazards on the other side of the door.

Doc M Recommendation:
Fully glazed doors or vision panels are required in entrance doors, doors in corridors and in passageways in public buildings.

Vision panels may be of any shape, size or number including one large vision panel, or as shown in Figure 4. Subject to the following minimum requirements, providing some vision through both zones 1 and zone 2 is achieved and that at least one of these zones provides vision reasonably close to the leading edge of the door.

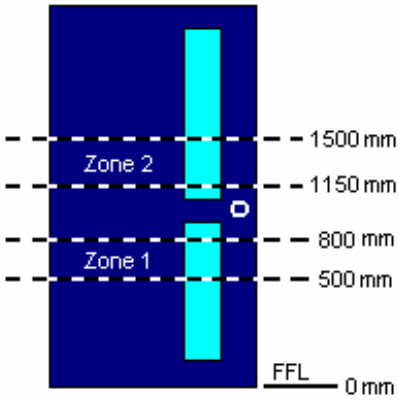


Figure 4 Vision Panels

Visual Contrast and Thermal Constant

Visual contrast is to improve the accessibility of all buildings features, in particular to people who are partially sighted. Visual contrast enables people to more easily distinguish between different building elements. In addition to visual contrast ADL recommends making handles and railings not to be 'cold to the touch'.

Doc M Recommendation:
The use of visual contrast of 30 points to help distinguish between building elements. Door hardware and railings not to be 'cold to the touch'

AD M makes a recommendation that for partially sighted persons, a difference in light reflectance between two surfaces of 30 points (on a scale where 0 is black and 100 is white) is required to help identify a distinction between building elements. Although this is greatly debated and recent research sponsored by GAI, Reading University has indicated that 20 points is generally adequate for distinction between different elements. Elements of particular importance are the door and the surrounding wall colours, to help identify exit locations. Further assistance can be obtained by contrasting the door with the ironmongery. Further to this visual contrast the regulations recommend that the handles and handrails are to be not 'cold to the touch'. This is commonly interpreted as not being bare metal, therefore this could either be a polymer handle, or on a metal handle with a polyester powder or nylon coating.

Thresholds

The threshold detail at the bottom of the door, when the door is opened effects the accessibility of the door. Low threshold or a flush threshold helps increases accessibility; however higher thresholds have the benefit of improved weather tightness, for exposed locations.

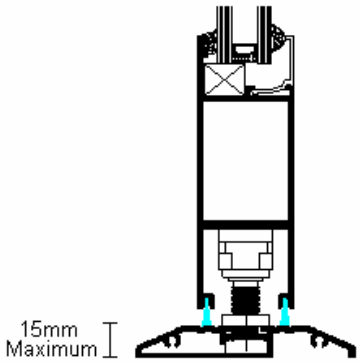


Figure 5 Low Threshold Requirements

Document M Recommendation:
Low thresholds should where feasible be placed on all accessible routes.

To facilitate easy access Doc M recommends that threshold are preferably level or, if raised a low threshold is used. A low threshold is described as having a total height not more than 15mm (refer to Figure 5), and a minimum number of upstands and slopes with any upstands higher than 5mm chamfered or rounded.

If after consideration the design of a low threshold is not fit for purpose, in particular to the typically reduced weather rating of low thresholds for exposed locations such as multi-storey apartments, then either secondary weathering system, extra shelter, additional drainage or a revised rebated entrance method could be considered. A rebated door could be sunken to alleviate any upstands but additional draining of the frame should then be considered.

Handle Ergonomics

When considering door hardware the ergonomics alongside the aesthetics need to be assessed. Certain designs may be easier to operate, improving the accessibility of the building.

Ensuring there is sufficient clearances behind handles and adequate length to grasp the handle, then this will improve the accessibility of the building, refer to Figure 6

Document M Recommendation:
- **Lever Handles**

45mm minimum clearances behind handle.
95mm minimum inside dimension
Lever diameter from 20mm to 35mm.
- **Pull Handles**

45mm minimum clearances behind handle.
400mm recommended minimum length
Pull diameter from 20mm to 35mm.

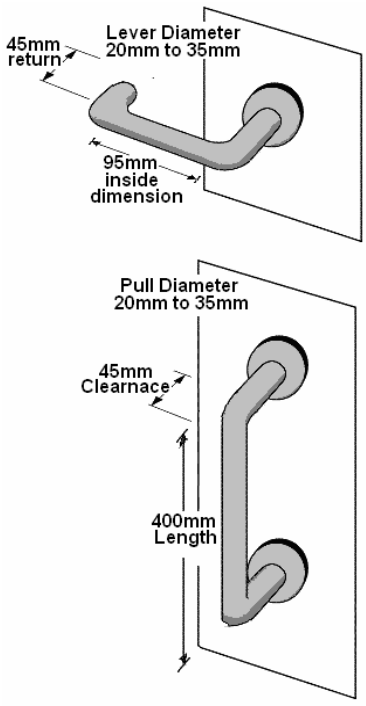


Figure 6 Handle Ergonomics

References

[1] Disability Discrimination Act 2005, Public Sector Duties - Disability Equality Scheme, obtainable from http://www.opsi.gov.uk/
[2] The Building Regulations 2000, Approved Documents M, obtainable from http://www.planningportal.gov.uk
[3] BS 8300:2001 Design of buildings and their approaches to meet the needs of disabled people

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