

ACCESS CONTROL

A GUIDE TO ASSIST IN COMPLIANCE WITH THE DISABILITY DISCRIMINATION ACT

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INTRODUCTION

This guide has been created to help design Access Control Systems following the introduction of the revisions to Disability Discrimination Act (DDA) Pt III which is due for publication in October 2004. The impact of the DDA will be significant not only in terms of the design of new systems, it also means that many systems will need upgrading to ensure compliance.

Your organisation has to make a careful judgement about the security level that is required and the legal requirement to allow easy access for people with a disability. There are no hard and fast answers. Different access control systems will allow different levels of flexibility in providing the right balance.

This document is a guide only and reference should be made to the DDA. Information can be found at www.disability.gov.uk/dda/ and www.disability.gov.uk/legislation/ddb/draft-ddb.asp and its latest developments. Additionally, consideration should be given to any local legislation and fire regulations.

1. EMPLOYERS' RESPONSIBILITIES UNDER THE DDA ACT PART II

All employees are covered by the DDA except for the Armed Forces, whether full or part time, you have duties under the DDA, which makes it unlawful to discriminate against employees or job applicants on the grounds of disability.

You, as an employer, are responsible for ensuring that discrimination does not occur in the workplace. This includes the need to make reasonable adjustments for people with disabilities. Complying with the DDA will help you employ the right person for a job. It will also ensure that you are fulfilling legal obligations towards your employees.

You are also responsible for your employees' actions in the course of their work, unless you can show you have taken any reasonably practicable steps to prevent discrimination, such as setting up appropriate awareness and training programmes throughout your organisation. Similarly, you are responsible for the actions of any agent working on your behalf unless they act outside their authority.

Key concepts of the DDA that you need to bear in mind are that it is unlawful to discriminate against disabled people by treating disabled employees less favourably for a reason related to their disability without justification. Employers are subject to a duty to make reasonable adjustments to premises for disabled employees. Under the Act discrimination also occurs when anyone knowingly aids someone to discriminate against a disabled person, or victimises anyone who tries to make use of rights under the Act.

2. ACCESS CONTROL AND THE DDA

How the DDA relates to Access Control Systems is encapsulated in section 21.2 of the DDA, which states. 'Where a physical feature makes it impossible or unreasonably difficult for a disabled person to make use of a service or building, it is the duty of the provider of that service to take steps that are reasonable to remedy the situation, i.e.: remove the feature, alter it so that it no longer has the effect, or provide a reasonable alternative method of making the service in question available to a disabled person.'

3. DEFINITIONS

At this point it makes sense to briefly define disability and physical features as they are defined under the 1996 revision.

3.1 Disability: A sensory, physical or mental impairment that has a substantial and long-term adverse effect on a person's ability to carry out normal day to day activities. These include not only wheelchair users but also the blind and partially sighted, the deaf, those with arthritis, or with long term illnesses and people with learning difficulties. Bear in mind all technology in relation to the DDA has to give visual and audible feedback and some consideration should be given to touch.

3.2 Physical Features: Under the DDA a 'physical feature' will include anything arising from the design or construction of a building or to an approach to exit from, or access to, a building. Physical features of premises will also include fixtures, fittings, furniture, equipment and or materials in, or on the premises, whether temporary or permanent.

4. WHAT DOES REASONABLE ADJUSTMENT MEAN?

Employers are now required to take 'reasonable' steps to reduce or remove any substantial disadvantage that a physical feature of the premises causes a disabled person, compared to that of an able bodied person. Failing to make the 'reasonable' adjustment without justification is discrimination.

4.1 What is a 'reasonable' adjustment?

A 'reasonable' adjustment depends on a number of qualifying factors.

The effectiveness of the adjustment in preventing the disadvantage e.g. it could be unreasonable for an employer to have to make adjustments if the benefit to a disabled user is minor.

The practicality of the adjustment e.g. if an employer needs an employee urgently, it may be impractical to wait for an entrance to be modified. However it may be possible to make a temporary adjustment in the meantime, such as enabling the disabled person to use another less inconvenient entrance.

Financial Cost e.g. it depends on resources available to the individual employer, not to the unit in which the disabled person works.

5. IMPLICATIONS OF THE DDA AND ACCESS CONTROL

This guide will look at two areas of Access Control: Firstly creating a secure access point and secondly the authorising technology to allow authorised users to enter.

6. CREATING A SECURE ACCESS POINT

The most common access point is a door. This can be either an internal or an external door.

6.1 General

Access doors should be so designed as to permit operation by one person in a single motion with little effort.

Power-operated doors are the best for people with disabilities. The activator system should be automatic or placed within easy reach.

An accessible door should have the following features:

- Secure side
a sign, a door handle, an extra pull handle, glazing and a kick plate.
- Un-secure side
a sign, user-friendly access control reader, glazing and a kick plate.

(Fig 1)

6.2 Door types

- (a) Automatic doors:- can be of the sliding or swinging type. In general sliding doors are preferable to swinging doors (fig. 1) (fig. 2).
- Automatic doors are useful when traffic is heavy.
 - Automatic doors should have an adequate opening interval.
 - Guard-rails can be installed near double-swinging doors to indicate a door opening area and to prevent people from being hit by the door.
- (b) Revolving doors:- not suitable for use by disabled people or people with prams.
- Wherever there are revolving doors, an adjacent accessible swinging or sliding door should be provided (fig. 3).
 - Auxiliary gates should be provided next to turnstiles (fig. 3).
- (c) Pivoted doors:- should swing away from the direction of travel wherever possible.
- Pivoted doors in series are considered as vestibules.
- (d) Sliding and folding doors:- manual sliding and folding doors are recommended for narrow spaces not heavily used by the public (fig. 4).

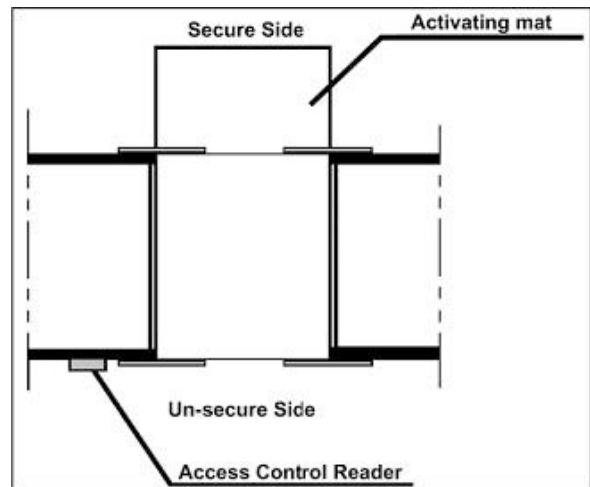


Fig 1

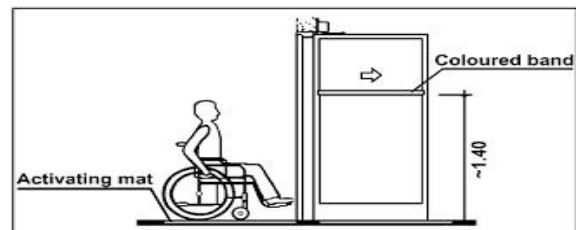


Fig 2

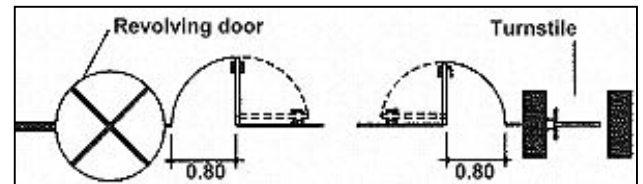


Fig 3

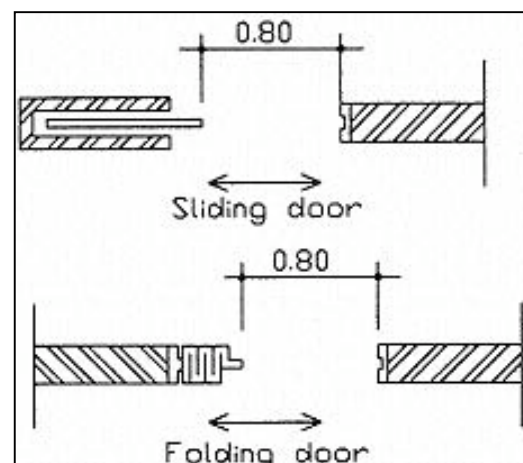


Fig 4

6.3 Door opening

For exterior doors, the minimum opening is 0.90m when the door is open.

For interior doors, the minimum opening is 0.80m when the door is open.

The minimum door opening can be 0.75m if the access is straight or if the door can stay open by itself (fig. 5). The minimum door width of rest rooms should be 0.75m.

For doors installed in an opening more than 0.60m in depth, the clear door opening should be at least 0.90m (fig. 6).

For double-leaf doors, at least one leaf should have a minimum clear width of 0.80m (fig. 7).

6.4 Manual door hardware

Operational devices on doors, such as handles, pulls, latches and locks, should be easy to grasp with one hand.

(a) Handles:- lever-type handles, push plates or pull handles are recommended for swinging doors because they are easy to open. ⁽¹⁾

- Round knobs are not recommended.
- Door handles should be located at a comfortable height between 0.90m and 1.00m from the floor surface (fig 8).

(b) Access Control Readers: readers on entrance doors should be mounted at a comfortable height between 0.90m and 1.00m from the floor. Readers should be easy to operate; hands-free readers being recommended (fig 9).

(c) Extra pull handle: to facilitate closing, a door fitted with spring closers should be equipped with an extra pull handle approximately 0.30m in length, located between 0.20m and 0.30m from the hinged side of the door and mounted between 0.90m and 1.20m from the floor (fig 8).

Notes:

⁽¹⁾ lever type handles can be activated by hand, elbow or other means.

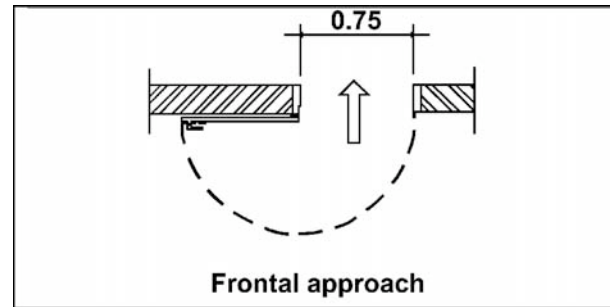


Fig. 5

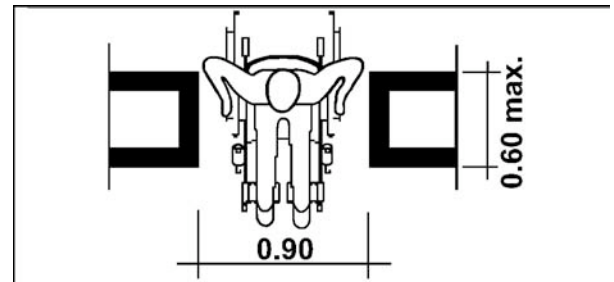


Fig. 6

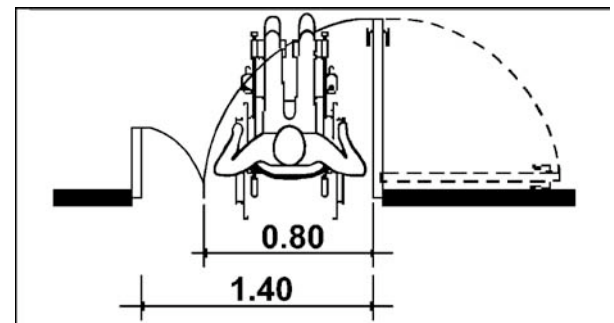


Fig. 7

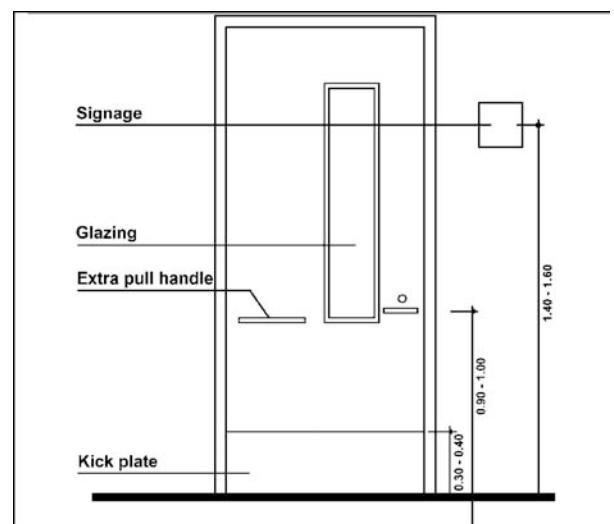


Fig. 8

6.5 Automatic doors hardware

Automatic doors can be activated by:

- (a) Push buttons located at a comfortable height between 0.90m and 1.20m;
- (b) Activating mats, which can also serve as a location cue (fig. 2);
- (c) Access Control Readers : readers on entrance doors should be mounted at a comfortable height between 0.90m and 1.00m from the floor. Readers should be easy to operate; hands-free readers being recommended (fig. 9);
- (d) Remote control.

6.6 Threshold (fig. 8)

Thresholds should be omitted wherever possible. Weather-stripping at the door bottom is preferred to thresholds.

The threshold should not be more than 20mm higher than the finished floor level.

Thresholds higher than 6mm should be bevelled or have sloped edges to facilitate the passage of a wheelchair.

6.7 Exit doors landing

The exit landing should not be lower than the finished floor level by more than 20mm.

6.8 Glazing and glazed doors

Outward swinging doors and doors in public corridors should have low windows to enable users to see oncoming traffic. The bottom edge of the window should not be higher than 1.00m from the finished floor level (fig. 8).

Completely glazed doors should be avoided in buildings frequented by people with visual impairments.

Glazed doors should be clearly marked with a coloured band or mark placed for the benefit of all users at a height between 1.40m and 1.60m (fig. 2).

6.9 Kick plates

Kick plates are useful in protecting the finish on the lower part of the door. Kick plates should be between 0.30m and 0.40m in height (fig. 8).

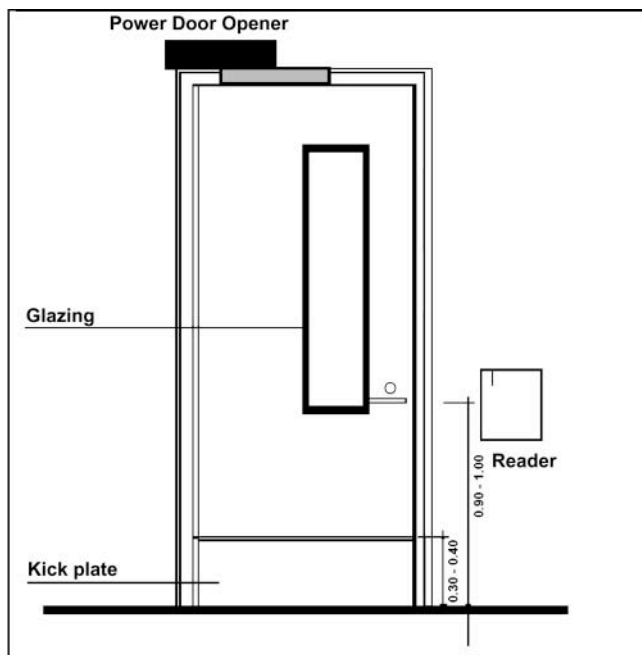


Fig. 9

6.10 Signage

In public buildings, the function or room number, incorporating international symbols should be identified at eye level, i.e. between 1.40m and 1.60m (fig. 8).

Room numbers should be placed on door frames and not on doors themselves so that the room number is visible even when the door is open.

6.11 Colour

The door or the door frame can be painted in a colour that contrasts with the adjoining wall to facilitate its identification by people with visual impairments.

6.12 Existing Constructions

It is recommended that automatic doors replace heavy, hard-to-open swinging doors. Door openings narrower than 0.75m should be widened. A swing-clear hinged door may be used to slightly enlarge an opening.

7. TURNSTILES

Turnstiles are often used in the reception areas of a building or its perimeter. These are used to provide a higher level of security than a door, by checking each individual is authorised and denying access to those who are not.

Here is a summary of the types of turnstiles available along with a brief introduction to their operation and suitability for the DDA.

7.1 Optical Turnstiles

7.1.1 Typical Application: Well managed reception areas where aesthetics and speed of throughput are the key issues.

7.1.2 Operation: Optical Turnstiles are designed to replace traditional fixed arm turnstiles used to control building access. They utilize infrared beams between pedestals to remove the need for the physical barrier. Optical Turnstiles provide a similar level of security as a traditional half height turnstile, yet the open appearance created by an optical turnstile ensures acceptance in most office environments where the overall design is of paramount importance to the aesthetics of the building. Optical Turnstiles automatically monitor the passage of every individual entering and leaving a building. Security staff are therefore only required to deal with exceptions such as unauthorised users or visitors without a valid pass.

7.1.3 DDA: Lane widths can be adjusted to accommodate wheelchairs without the need for a separate passgate; therefore all system users utilise the same technology with no discrimination. Most models also feature audible and visual feedback.

7.2 Half Height Fixed Arm Turnstiles

7.2.1 Typical Application: Constantly manned reception areas where appearance is not the highest requirement.

7.2.2 Operation: Fixed arm turnstiles are available in a wide variety of formats and can be made up of three stainless steel tubes making a tripod mechanism or glass panels to make a more discreet finish.

7.2.3 DDA: A half height turnstile is not compliant with the DDA in its own right. This type of turnstile may be compliant if a 'reasonable adjustment' is made i.e. a separate passgate is installed. Although not stated explicitly in the Act it may be argued that a passgate is discriminatory because it forces disabled users to use a different kind of technology and to be supervised or even aided – often a guard needs to be summoned to open the gate (rather than the person using a card like other people) so they can make sure only one person goes through when the gate is open. Normally passgates and turnstiles do not feature audible and visual feedback so this should also be considered.

7.3 Speedgates

7.3.1 Typical Application: Reception areas where aesthetics, speed of throughput and security are key issues.

7.3.2 Operation: Speedgates combine features of optical turnstiles and physical turnstiles. A lane is monitored by infrared beams and a physical barrier is used to physically deter entrants.

They are available in normally open or normally closed models and combine the open look and speed of throughput of optical turnstiles with the deterrent factor of traditional turnstiles. This combination of benefits makes the speedgate an ideal choice for the corporate office lobby.

7.3.3 DDA: Most manufacturers make DDA compliant versions. However, for some units, this can mean a significantly wider pedestal is needed to accommodate the longer barriers (which will affect the aesthetics and available space). Most models also feature audible and visual feedback.

7.4 Full Height Turnstiles

7.4.1 Typical Application: Full height turnstiles are normally used on external perimeters in unguarded areas or higher security sites e.g. football stadiums etc. They are a good option for commercial and industrial facilities where security and guarding costs are more important than appearance.

7.4.2 Operation: Full height turnstiles are designed to stop people jumping over the units hence they can be unmanned. In some designs it is possible to get 2 people in a section at one time. The barriers are normally finished in steel but some units use clear perspex to give an improved aesthetic appearance.

7.4.3 DDA: Full height turnstiles are generally not compliant. They cannot accommodate wheelchairs. Alternative measures need to be provided. Additionally turnstiles do not normally feature audible and visual feedback so this should be considered as well.

7.5 Tailgate Detection Devices

7.5.1 Typical Application: Primarily used on the main entrance for small sites and back doors and key doors within larger sites, e.g. cash rooms, computer suites etc.

7.5.2 Operation: Tailgate Detection devices uniquely answer the problem of tailgating at access controlled doors by creating an infrared field across the door opening to monitor the passage of every individual entering and leaving through that door. In the event of an unauthorised person following an authorised user through a door after it has been opened the system can provide local and remote indications to alert the individual concerned and security. Additionally the system can lock doors and trigger cameras to monitor illegal transactions and ensure events are recorded for later analysis. This ensures only one person gains access through a secured door for each valid card transaction thereby providing improved security at any access controlled door.

7.5.3 DDA: Detectors can operate at up to 2.5 metres apart (subject to door widths) to accommodate wheelchairs; therefore all system users utilise the same technology with minimal supervision and no discrimination.

They can be used across wide corridors and double doors; however, people should be restricted to passing through single-file i.e. one door leaf should be secured for normal application. Most models also feature some form of audible and visual feedback.

8. DESIGN CONSIDERATIONS WHEN USING HANDS-FREE READING TECHNOLOGY

Of all the reading technologies, hands free readers provide the best solution for compliance with the DDA. There are however, design considerations that must be taken into account to ensure their use provides a secure solution and one that works reliably.

8.1 In and Out Readers

Care must be taken that there is sufficient spacing between In and Out readers so that false reads do not occur. i.e. positioning of the In reader should not allow the Out reader to read cards by persons entering an area and vice versa.

The system controlling the readers should be capable of ignoring card reads on the In or Out reader where that card has been presented recently on the opposite reader. i.e. a card read at the In reader should be ignored at the Out reader for a short period - time will depend on type of installation.

8.2 Turnstiles

Care must be taken that there is sufficient spacing between the readers where there are multiple lanes. If there is insufficient spacing adjacent lanes may be activated rather than the one being used.

Where readers are being used in a multilane situation it may be necessary to install shielding if there is insufficient separation. It should be noted however that any shielding will affect the overall range of readers and may result in poor overall performance.

It may in certain circumstances be preferable to provide a hands free reader on only one lane of the installation which is suitable for wheelchair access. All other lanes could use proximity or long-range proximity readers.

There are various popular methods of access control –

Key and lock, PIN code entry

Key and Lock along with PIN code entry require a high level of dexterity and visual acuity. They are not recommended for access controlled doors for disabled users and should only be used where they can be active “Out of Hours” but where the door gives free access during normal working hours.



Magnetic swipe card Proximity card

Both Magnetic swipe and Proximity card require dexterity and visual acuity. In most cases adequate though not recommended for access controlled doors for disabled users. Where used they should be positioned at 0.9m to 1.0m above ground.



Biometrics

Biometric readers are not recommended for disabled users since they rely on the user possessing certain physical characteristics e.g. a finger.

Coded transmitter

Coded transmitters, e.g. a garage door opener, require only the ability to press a button when near the access point. They are highly recommended for low security access points. Not recommended for high security points because of the limited coding options.



Real Hands-Free Readers have a reading range of up to 1 metre

Hands-Free card

Hands-Free cards require no further physical action than that required in getting to the access point. The access authorization to allow door opening being read from the card whilst it is somewhere on the bearers person within 1m to 2m of the access point.

