Building Regulations 2009

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Introduction

This document has been published by the Minister for the Environment, Heritage and Local Government under article 7 of the Building Regulations. It provides guidance in relation to the revised Part M of the Second Schedule to the Regulations. The document should be read in conjunction with the Building Regulations, 1997, and 2008 and other documents published under these Regulations.

In general, Building Regulations apply to the construction of new buildings and to extensions and material alterations to buildings. In addition, certain parts of the Regulations apply to existing buildings where a material change of use takes place. Otherwise, Building Regulations do not apply to buildings constructed prior to 1st June, 1992.

Transitional Arrangements

In general, this document applies to works, where the works or the change of use commence or takes place, as the case may be on or after 1st July 2010. Technical Guidance Document M – Access for People with Disabilities, dated 2000, also ceases to have effect from that date. However, the latter document may continue to be used in the case of works, where –

(a) the works are the subject of -
   (i) a planning application made on or before the 30th day of June, 2010 for planning permission or approval pursuant to the Local Government (Planning and Development) Act 2000 and where substantial work has been completed by the 30th day of June, 2012; or

   (ii) a notice pursuant to the provisions of Part 8 of the Local Government (Planning & Development) Regulations, 2001 (S.I. No. 600 of 2001) has been published on or before the 30th day of June, 2010 and where substantial work has been completed by the 30th day of June 2012; or

(b) a Fire Safety Certificate under the Building Control Regulations, in respect of the works or buildings, has been granted before the 30th day of June 2010 and where substantial work has been completed by the 30th day of June 2012.

The Guidance

The materials, methods of construction, standards and other specifications (including technical specifications) which are referred to in this document are those which are likely to be suitable for the purposes of the Regulations. Where works are carried out in accordance with the guidance in this document, this will, prima facie, indicate compliance with Part M of the Second Schedule to the Building Regulations (as amended). However, the adoption of an approach other than that outlined in the guidance is not precluded provided that the relevant requirements of the Regulations are complied with. Those involved in the design and construction of a building may be required by the relevant building control authority to provide such evidence as is necessary to establish that the requirements of the Building Regulations are being complied with.
INTRODUCTION

Existing Buildings

In the case of material alterations of existing buildings, the adoption without modification of the guidance in this document may not, in all circumstances, be appropriate. In particular, the adherence to guidance, including codes, standards or technical specifications, intended for application to new work may be unduly restrictive or impracticable. Buildings of architectural or historical interest are especially likely to give rise to such circumstances. In these situations, alternative approaches based on the principles contained in the document may be more relevant and should be considered.

Technical Specifications

Building Regulations are made for specific purposes, e.g. to provide, in relation to buildings, for the health, safety and welfare of persons, the conservation of energy and access for disabled persons. Technical specifications (including harmonised European Standards, European Technical Approvals, National Standards and Agreement Certificates) are relevant to the extent that they relate to these considerations. Any reference to a technical specification is a reference to so much of the specification as is relevant in the context in which it arises. Technical specifications may also address other aspects not covered by the Regulations.

A reference to a technical specification is to the latest edition (including any amendments, supplements or addenda) current at the date of publication of this Technical Guidance Document. However, if this version of the technical specification is subsequently revised or updated by the issuing body, the new version may be used as a source of guidance provided that it continues to address the relevant requirements of the Regulations.

A list of other standards and publications that deal with matters relating to this Part of the Building Regulations is included at the end of this document. These standards and publications maybe used as a source of further information but do not form part of the guidance.

Materials and Workmanship

Under Part D of the Second Schedule to the Building Regulations, building work to which the Regulations apply must be carried out with proper materials and in a workmanlike manner. Guidance in relation to compliance with Part D is contained in Technical Guidance Document D.

Interpretation

In this document, a reference to a section, sub-section, part, paragraph or diagram is, unless otherwise stated, a reference to a section, sub-section, part, paragraph or diagram, as the case may be, of this document. A reference to another Technical Guidance Document is a reference to the latest edition of a document published by the Department of the Environment under article 7 of the Building Regulations (as amended). Diagrams are used in this document to illustrate particular aspects of construction - they may not show all the details of construction.
Access and Use

Building Regulations – The Requirement – Part M

Part M of the Second Schedule to the Building Regulations, (as amended), provides as follows:

<table>
<thead>
<tr>
<th>Access and Use:</th>
<th>M1 Adequate provision shall be made for people to access and use a building, its facilities and its environs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of the Part:</td>
<td>M2 Adequate provision shall be made for people to approach and access an extension to a building.</td>
</tr>
<tr>
<td></td>
<td>M3 If sanitary conveniences are provided in a building that is to be extended, adequate sanitary conveniences shall be provided for people within the extension.</td>
</tr>
<tr>
<td></td>
<td>M4 Part M does not apply to works in connection with extensions to and material alterations of existing dwellings, provided that such works do not create a new dwelling.</td>
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</table>

General

0.1 Part M aims to foster an inclusive approach to design and construction of the built environment. The requirements of Part M (M1-M4) aim to ensure that regardless of age, size or disability:

- buildings other than dwellings are accessible and usable, and
- dwellings are visitable.

In doing so, they, the requirements, underpin the principle of Universal Design. Universal Design is defined as the design and composition of an environment that can be accessed, understood and used to the greatest extent possible by all people, regardless of their age, size or disability.

This document, Technical Guidance Document M (TGD M) sets out guidance on the minimum level of provision to meet requirements M1-M4. However, those involved in the design and construction of buildings should, have regard to the design philosophy of Universal Design and consider making additional provisions where practicable and appropriate. For this purpose, a list of useful references, advocating greater accessibility, is given at the end of this document. Further advice and guidance can be found at the Centre of Excellence for Universal Design www.universaldesign.ie and in the publication Building for Everyone.

0.2 In order to satisfy the requirements of Part M, all buildings should be designed and constructed so that

- people can safely and independently approach and gain access to the building, and
- elements of the building do not constitute an undue hazard for people especially for those with difficulty seeing, hearing or moving etc.

0.3 In the case of buildings other than dwellings, the building should be designed and constructed so that:

- people can move around within the building and use the buildings facilities;
Access and Use

- where sanitary accommodation is provided, adequate sanitary accommodation is available and accessible to people with a wide range of abilities.

- where relevant facilities such as fixed seating for audience or spectators, refreshment facilities, sleeping accommodation are provided, adequate provision is made for people with a range of abilities.

- suitable aids to communication are available for people with difficulty seeing or hearing.

0.4 Dwellings should be designed and constructed so that:

(i) people can safely and conveniently approach and gain access; On some steeply sloping sites, or where all entrances are on other than ground level and a suitable passenger lift is not provided, it is considered adequate to provide access by means of steps or a stairway suitable for use by people with mobility difficulties;

(ii) people can have access to the main habitable rooms at entry level. Where there is no habitable room at this level, it is considered adequate to provide for access to habitable rooms on the storey containing the main living room. Access to this storey from the entry storey may be by means of a stairway suitable for use by people with mobility difficulties;

(iii) a WC is provided at entry level or, where there are no habitable rooms at this level, on the storey containing the main living room.

0.5 The requirements of Part M apply;

(a) to works in connection with new buildings and new dwellings.

(b) to works in connection with extensions to existing buildings. In particular,

(i) under M2 adequate provision must be made to approach and access an extension. This may be provided by an adequate independent approach\(^1\) and entrance to the extension, or, where this is not provided, the existing approach and entrance, modified where necessary, must provide adequate approach and access to the extension, and

(ii) under M3, where sanitary conveniences are provided in a building, adequate accessible sanitary conveniences must be provided in the extension. Alternatively, where such sanitary conveniences are not provided in the extension, those in the existing building, modified where necessary, must be adequate and accessible from the extension.

(c) to works in connection with material alterations of existing buildings. Building (Amendment) Regulations, SI xxx, extends the definition of material alteration to include Part M. As a result, the Building Regulations apply to any alterations subject to the requirements of Part A, B or M. The incorporation of Part M means that alterations to features relevant to compliance with Part M eg entrances, sanitary conveniences etc, must comply with M1. Reasonable provision must also be made for people to access and

\(^1\) Independent approach means a route of access that does not require the user to pass through any other part of the building.
use new or modified sanitary conveniences. The building as a whole, including the approach from the site boundary and from on-site car parking where provided, must be no less compliant with M1 following a material alteration of a building. However, this does not mean it is necessary to upgrade access to the building entrance.

(d) to an existing building or part of an existing building, which undergoes a material change of use to a day care centre, hotel, institutional bldg, place of assembly, shopping centre. SI XXX, amends Article 13 the Building Regulations dealing with material changes of use to require Part M to apply to certain material changes of use. Where such material change of use applies to the whole building, the building must comply with M1. Where such material change of use only applies to part of the building, that part, the approach and access to that part (through independent access or through another part of the building) and any sanitary convenience provided in or in connection with it must comply with M1.

Part M does not apply to works in connection with extensions to and the material alterations of existing dwellings, provided that such works do not create a new dwelling. However, an extension or a material alteration of a dwelling must not make the building as a whole, less satisfactory in relation to Part M than it was before. This means an extension or a material alteration need not themselves comply with Part M, but they must not result in the dwelling being less compliant with Part M.

Part M does not apply to the part of a building used solely to enable inspection, repair or maintenance.

0.6 Access provision must be linked to egress provision. The scope of Part M is limited to matters of access to and use of a building. For guidance on means of escape or evacuation, reference should be made to Technical Guidance Document B (Fire Safety) and the NDA publication Promoting Safe Egress and Evacuation of People with Disabilities.

0.7 Diagrams included in this Document are intended to clarify certain aspects of the guidance. They are not necessarily to scale and do not represent fully detailed solutions. Where dimensions are stated, they refer to minimum finished dimensions. Allowance should be made for all necessary

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5 Day Care Centre: a building used for the provision of treatment or care to persons where such persons do not stay overnight eg creche, pre-school day nursery. Other Non-residential Purpose Group 8

6 Hotel: (Residential (Institutional) Purpose Group 2a)

4 Institutional Building: includes a hospital, nursing home, home for old people or for children, school or other similar establishment used as living accommodation or for the treatment, care or maintenance of persons suffering from illness or mental or physical disability or handicap, where such persons sleep on the premises. (Residential (Institutional) Purpose Group 2a)

6 Place of assembly: includes
   a) theatre, public library, hall or other building of public resort used for social or recreational purposes,
   b) a non-residential school or other educational establishment,
   c) a place of public worship,
   d) a public house, restaurant or similar premises used for the sale to members of the public of food or drink for consumption on the premises, but no building shall be treated as a place of assembly solely because it is a building to which members of the public are occasionally admitted. (Assembly & Recreation Purpose Group 5)

6 Shop: includes a building used for retail or wholesale trade or business (including retail sales by auction, self selection and over-the-counter wholesale trading, the business of lending books or periodicals for gain and the business of a barber or hairdresser) and premises to which the public is invited to deliver or to collect goods in connection with their hire, repair or other treatment, or where they themselves may carry out such repairs or other treatments. (Shop Purpose Group 4a)

7 Shopping centres: includes a building which comprises a number of individually occupied premises to which common access is provided principally for the benefit of shoppers. (Shop centre Purpose Group 4b)
Access and Use

tolerances and finishes. Reference should be made to Technical Guidance Document D (Materials and Workmanship) for guidance in relation to manufacturing and other tolerances applicable to building components generally.

0.8 The Disability Act (2005) aims to advance the participation of people with disabilities in everyday life by, for example, improving access to buildings, services and information. Attention is drawn to the obligation on Public bodies (such as Government Departments, Local Authorities, Health Boards, Semi-state Bodies etc.,) to make their buildings comply with Part M 2000, by 2015. It also requires that public buildings be brought into compliance with amendments to Part M not later than 10 years after the commencement of the amendment.

0.9 Whilst the provisions of the Building Regulations do not relate to management or maintenance, it is acknowledged that they are important functions and contribute to the ongoing accessibility of the building. Key issues such as arranging furniture appropriately, keeping circulation routes clear, facilities clean, equipment (lifts, communication aids etc) functioning, along with staff training and awareness campaigns etc are generally the responsibility of the management and or maintenance teams. For guidance on managing buildings refer to Building for Everyone, BS 8300 and the NDA publication Access Handbook Template.
Access and Use of Buildings other than dwellings

| Access and Use: | M1 | Adequate provision shall be made for people to access and use a building, its facilities and its environs. |

Section 1

Access and Use of Buildings other than Dwellings

The guidance in Section 1 applies to buildings other than dwellings including and, where applicable, to common areas of apartment blocks and the like.
Section 1.1
Approach to buildings

1.1.1 Objective

The objective is to provide an adequate means of approach to the accessible entrance(s) of a building and circulation around a building. In order to achieve this, the approach and circulation routes must be accessible to people with a wide range of abilities.

The approach routes to the accessible entrance(s) of a building include the routes from
(a) the adjacent road or the entrance point at the boundary of the site, and
(b) any designated car-parking spaces for people with disabilities and/or setting down areas.

The circulation routes around a building include the routes
(a) between the accessible entrance(s) and any other subsidiary entrances and buildings, where external circulation is required between them, and
(b) to and from facilities associated with the building and within the complex.

1.1.2 Introduction

The approach and circulation routes should be level thus accommodating the widest range of abilities. Changes in level are difficult for many people to negotiate, e.g. those using wheelchairs, walking aids, pushing buggies, those with difficulty seeing etc., and therefore should be avoided.

Where it is not possible to provide a level access route, a sloped access route should be provided. The gradient of a sloped approach should be as flat as possible. The more gentle the gradient the more accessible the route is for people using wheelchairs, pushing buggies etc.

Where the slope is 1:20 or steeper and the rise is greater than 300mm (equivalent to 2 x150mm steps), a stepped access route should be provided in addition to a sloped access route. Some people find it easier to use a flight of stairs than to travel on a slope e.g. people with difficulty walking who use certain walking aids.

Guidance on the features and characteristics of level, sloped and stepped access routes are described in 1.1.3.

Where car-parking and setting down areas are provided on site, designated car-parking spaces (exclusively for the use of holders of a disabled person's parking permit) should be provided and the setting down areas should be located so as to be convenient for people with difficulties walking or negotiating approach routes. Guidance on the provision and specification of designated car-parking spaces and setting down areas are given 1.1.5 and 1.1.6.

1.1.3 Access Routes

1.1.3.1 General

The following guidance applies to all access routes, whether level, sloped or stepped. Additional specific guidance on the three types follows below in 1.1.3.2 to 1.1.3.4.
Section 1.1
Approach to buildings

Where an access route is provided:

(a) building features, which may present hazards, should be avoided to reduce the risks to people with difficulty seeing. For example, a window or door in general use should not open out onto these routes, within a height of 2.1m above floor or ground level, as shown in diagram 1. Where such hazards are unavoidable, the area should be protected by guarding, planting or other suitable barriers.

Diagram 1 External Hazards

(b) the minimum headroom provided should be 2.1m. The underside of stairs, slopes or similar features that restrict headroom below this level should be enclosed to prevent people colliding with the edge of these features. Where enclosures are not possible, a protective guardrail and low level cane detection or a permanent barrier creating the same level of protection should be provided. Tapping rails or low kerbs can be a tripping hazard and should be avoided beneath free-standing stairs.

(c) street furniture, such as lighting columns, signposts, litter bins, seats, bollards etc should be located at or beyond the boundaries of the access route. If this is not practicable their presences should be clearly apparent by, for example, creating a visual contrast with the background. Bollards should be at least 1m high and not be linked with chains, these can be hazardous to people with difficulty seeing.

(d) the danger of inadvertently walking into a vehicular route should be minimized by providing a separate pedestrian route. However, where this is unavoidable tactile paving should be used to provide warning and guidance for people with difficulty seeing. See 1.1.4 Pedestrian Crossing.
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(e) it should be clearly identified (e.g. by the use of signage incorporating the international symbol for access) and well lit. Where this is provided by artificial light it should be equivalent to at least 100lux.

(f) drainage gratings should be positioned beyond the boundaries of the access route. Where this is not feasible they should be flush with the surrounding surface. Slots should be not more than 13mm wide and set at right angles to the dominant line of travel. The diameter of circular holes in gratings should be not more than 18mm to minimize the risk of trapping canes or wheelchair wheels.

(g) dished channels should be avoided as they increase the risk of tripping.

1.1.3.2 Level access routes

The following guidance applies to all level access routes in addition to the general guidance in 1.1.3.1.

Where a level access route is provided:
(a) the minimum clear width (between walls, upstands or kerbs) should be at least 1.5m. Passing places for wheelchair users should be provided. They should be 2.0m long and 1.8m wide (total width of access route) and located within direct sight of another passing place or at a maximum spacing of 50m, whichever is closer.
(b) A level approach is considered to include gradients no steeper than 1:50 along its length. A cross-fall gradient no steeper than 1:40 may be provided to remove surface water.
(c) the surface should be firm and durable. Materials such as loose gravel, sand etc should not be used.
(d) the surface should be slip resistant, especially when wet. Guidance on slip resistance is given in BS8300 Annex E.
(e) the frictional characteristics of the surface materials used along the route should be similar to prevent tripping and falling at interfaces between different materials.
(f) the surface should be reasonably smooth to reduce the difficulty for people using wheelchairs or walking aids, pushing buggies, using canes or who are generally unsteady. Undulations (except where tactile paving is used) should not exceed 5mm under a 3m straight edge. The difference in level between adjacent paving units or utility access covers and paving units should be no greater than 5mm. If feasible, the joints between paving units should be flush. Otherwise, the joints should be no wider than 10mm and no deeper than 5mm.

1.1.3.3 Sloped access routes

The following guidance applies to all sloped access routes in addition to the general guidance in 1.1.3.1 above.

Where a sloped access route is provided:
(a) Where gradient is between 1:50 and 1:20 it should comply with 1.1.3.2 a, c, d, e and f for level access routes
(b) where the gradient or part of the gradient is steeper than 1:40 and less steep than 1:20, level landings should be provided at each rise of 450mm.
(c) a landing should be provided at the top and bottom of the slope. The top and bottom landings should be at least equal to the width of the slope and at least 1.2m long and clear of any door swings or other obstructions.
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(d) intermediate landings should be at least 1.5 m long and clear of any door swings or other obstructions. Intermediate landings should be at least 1.8m wide and 1.8m long to act as passing places when it is not possible for a wheelchair user to see from one end of the slope to the other or the slope has three flights or more.

(e) the landings should be level. A level landing is considered to include gradients of less than 1:50.

(f) where gradient is 1:20 or steeper, it should comply with 1.1.3.2 c, d, e and f for level access routes.

(g) where gradients are 1:20 or steeper the minimum clear width (between walls, upstands or kerbs) should be at least 1.5m. However the unobstructed width between handrails should be 1.2m.

(h) where gradients are 1:20 or steeper, the lengths of flights should be in accordance with Table 1 and Diagram2. If the gradient is too steep or an individual flight too long, a person using or pushing a wheelchair may not have sufficient strength to travel up the slope. There is also the danger of falling forwards going downhill or backwards when going up hill if the gradient is too steep. So to ensure adequate control and braking power the gradients are limited to those in Table 1 and Diagram 2.

(i) where gradients are 1:20 or steeper, a visual contrast should be provided between the slopes and landings (e.g. colour contrast or luminance at the top and bottom of each flight), so people with difficulties seeing can distinguish the change in slope.

(j) where gradients are 1:20 or steeper, a handrail, in accordance with 1.1.3.5, should be provided on both sides. People with restricted mobility may be weaker on one side and therefore a handrail on each side of the flight is essential for support when ascending and descending long slopes. For shorter slopes of 2m in length or less, a handrail on one side may suffice.

(k) where gradients are 1:20 or steeper, an upstand should be provided on the open side of any slope or landing at least 100mm high which contrasts visually with the slope or landing to prevent a wheelchair falling over the edge. Reference should be made to Part K/TGD K where additional guarding may be required in some circumstances.

(l) an alternative means of access for wheelchair users should be provided e.g a lift, where the slope is 1:20 or greater and the total rise of the slope is greater than 2m. Slopes simply become too tiring for users beyond this height.
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Table 1  Limits for slope gradients and lengths

<table>
<thead>
<tr>
<th>Going of a flight</th>
<th>Maximum gradient</th>
<th>Maximum rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>9m</td>
<td>1.20</td>
<td>450mm</td>
</tr>
<tr>
<td>5m</td>
<td>1.15</td>
<td>333mm</td>
</tr>
<tr>
<td>2m</td>
<td>1.12</td>
<td>166mm</td>
</tr>
</tbody>
</table>

Note:
For goings between 2m and 9m, it is acceptable to interpolate between the maximum gradients. See Diagram 2.

Diagram 2  Relationship of Slope Gradient to the Going of a Flight
Stairs serve many different functions in a building e.g. a means of escape, a means of access for the ambulant disabled or an effective, efficient and simple means of vertical circulation, or sometimes a combination of these. Functional requirements and guidance on compliance, for stairs are given in various Parts of the Building Regulations namely Part B for escape, Part K for stairs in general and Part M for ambulant disabled stairs. Designers should be aware of the function of the stairs they are designing and refer to the appropriate Part and accompanying TGD.

Where a stepped access route is provided:

(a) a landing should be provided at the top and bottom of each flight.
(b) the landings should be level and have an unobstructed length of at least 1.2m.
(c) tactile hazard warning surfaces should be at top and bottom landings. People with difficulties seeing risk tripping or losing their balance if there is no warning that steps provide a change in level. The greatest risk lies at the top a flight when a person is descending. The tactile hazard warning surface should be provided in accordance with Diagrams 3.
(d) an intermediate landing with side access should have a tactile hazard warning surface 400mm deep on the landing 400mm from both upper and lower flights (if there is sufficient space to accommodate the surface outside the line of the side access), or within the side access 400mm from the intermediate landing if there is a continuous handrail opposite the side access.
(e) no doors should swing across landings.
(f) the clear width (between enclosing walls, strings or upstands) should be at least 1.2m. However the unobstructed width between handrails should be not less than 1.0m.
(g) there should be no single steps.
(h) the rise of a flight between landings should not exceed 1.5m. A single flight containing 18 risers or less is acceptable if the going is 350mm or greater. A greater going allows people with a weakness on one side or with difficulties seeing to place their feet square on a step. It also allows a person to stand and rest at any point within a flight and thus the flight can be extended to greater heights.
(i) all nosings should have a permanently contrasting material 55mm wide on both the tread and the riser. This is to facilitate easy recognition of the tread and where to place feet.
(j) projecting nosings should be avoided. See tread and riser profiles shown in Diagram 4 as they can cause people to trip or catch their feet.
(k) the rise and going of each step should be consistent throughout a flight.
(l) the rise of each step should be between 150mm and 170mm. Excessively high risers may result in strain being placed on knee and/or hip joints when descending and should thus be avoided.
(m) the going of each step should be between 280mm and 425mm, 300mm is preferable.
(n) tapered treads and open risers should not be used; as they create a sense of insecurity for people with difficulties seeing.
(o) there should be a continuous handrail on each side of flights and landings in accordance with 1.1.3.5
(p) where the overall unobstructed width (width between handrails) is more than 1.8m, additional handrails should be used to divide the stepped access route into channels of unobstructed width not less than 1m and not greater than 1.8m. This provides a person with less strength on one side to be within easy reach of support. This means stepped approaches with unobstructed widths of between 1.8 and 2.0m cannot be used.
(q) the surface of the treads should be slip resistant, especially when wet,
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*(r)* the sum of twice the rise plus the going \((2R + G)\) should be between 550-700mm inclusive.

*(s)* the luminance at tread level should be at least 100 lux.

Diagram 3  Stepped Access – key dimensions and use of hazard warning surface

Note: Full details of tactile paving are in “Guidance on the use of Tactile Paving Surfaces.”
1.1.3.5 Handrails

General guidance on handrails and guarding is given in TGD K, but the guidance that follows applies to handrails on access routes.

Where handrails are provided on an access route sloped or stepped:

(a) the vertical height to the top of the upper handrail from the pitch line of the surface of a flight should be between 900mm and 1.0m and from the surface of a landing should be between 900mm and 1.1m. See Diagram 5
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Approach to buildings

Diagram 5  External Steps and Stairs –Key Dimensions

(b) consideration should be given to providing a second handrail on stairs for children or those of short stature. In such cases and where there is full height structural guarding, the vertical height to the top of a second lower handrail from the pitch line of the surface of a flight should be 600mm.

(c) where there are 2 or more flights separated by a landing or landings, the handrails should be continuous across flights and landings, where possible.

(d) where the handrail is not continuous the handrail should extend at least 300 mm beyond the top and bottom of a sloped approach or the top and bottom risers of a stepped approach, and terminate in a closed end which does not project into a route of travel.

(e) there should be a visual contrast with the background against which it is seen without being highly reflective.

(f) the surface should be slip resistant and not cold to the touch. Handrails are used by some people when using a slope or steps not only for support but also to pull themselves up and to brake themselves when going down. Reluctance to use the handrail if it is uncomfortably cold, presents a safety hazard. For further information refer to BS 8300.

(g) the profile should be either circular with diameter of between 40-45mm or preferably oval with a width of 50mm, see Diagram 6.

(h) they should not protrude more than 100mm into the surface width of the access route where this would impinge on the stair width requirement of TGD B – Methods of Measurement.

(i) there should be a clearance of between 50-60mm between the handrail and any adjacent wall surface. See Diagram 6.

(j) there should be a clearance of at least 50mm between a cranked support and the underside of the handrail. See Diagram 6.

(k) Its inner face is located no more than 50mm beyond the surface width of the access route. See Diagram 6.

(l) Handrail fixings should be designed to meet the loading recommendations of BS 6399-1
1.1.4 Pedestrian Crossings

Where pedestrian crossings are provided:

(a) tactile paving should be provided at controlled and uncontrolled pedestrian crossings in accordance with Roads and Street Design
(b) dropped kerbs should be provided at controlled and uncontrolled pedestrian crossings in accordance with Roads and Street Design
For the purposes of this section, designated car-parking spaces are those spaces exclusively provided for the holders of a disabled person's parking permit.

Where on-site car parking is provided, whether for residents, employees, visitors or others, a number of designated car-parking spaces should be provided, on a proportional basis. In general for new buildings (including apartment buildings), at least 5% of the total number of spaces should be designated car-parking spaces, with a minimum provision of at least one such space.

Further guidance on the provision of designated car parking spaces is given in BS8300.

Where designated parking, either outside or in multi-storey car parks, is provided:

(a) it should be easily located. Signage should be provided, where necessary, at the entrance to each car park and at each change in direction to direct motorists to designated spaces.
(b) ticketing machines, access routes to buildings or other services such as lifts etc should be easily located. Signage should be provided, where necessary, to direct people.
(c) it should be possible for all motorists to activate car park control barriers. Ticket, swipe card or key activated controls can be difficult to reach and manipulate by some drivers. Barrier control systems should conform to BS 6571-4.
(d) the dimensions of the designated parking bays should be in accordance with Diagram 7.
(e) The 1.2m wide access zone should be along side and at the end of the parking bay. This should be hatched to ensure it is kept clear. This provides sufficient space to enter and leave the vehicle and move to the rear of the vehicle and should safely lead to an access route.
(f) a clear vertical clearance of 2.6m (on level ground) should be provided to allow the passage of high top conversion vehicles. Alternatively, a facility should exist whereby the user of a high top conversion can make arrangements to pass through the barrier. This must be maintained along the route to and from the designated car parking bays from the site boundary.
(g) if it is not feasible to maintain the recommended vertical clearance along the route, drivers should be warned about the height restrictions before they begin to queue for or enter such areas. At that point, there should be directions to suitable alternative parking spaces.
(h) the bay itself should be clearly marked with the international symbol of access and, when necessary, a vertical sign beside the bay should also be provided displaying the same symbol.
(i) it should be on firm, level ground as close as possible to the accessible entrances with which the spaces are associated, and in no case further than 50m.
(j) the surface of the access zone should be firm, durable, smooth and slip resistant, with undulations not exceeding 3mm under a 1m straight edge for formless materials. Materials such as loose gravel, sand etc should not be used.
(k) dropped kerbs in accordance with 1.1.4 should be provided to facilitate easy transfer from parking bay to these routes without undue effort or barrier.
(l) ticket machines, where used, should be adjacent to the designated parking bays and have controls between 750-1200mm above ground and a plinth which does not project in front of the face of the machine in a way that prevents its convenient use. For further guidance on the accessibility of ticket machines refer to the NDA publication Public Access Terminals Guidelines available at www.accessit.nda.ie
1.1.6 On–site setting down areas

For the convenience of a person arriving at a building as a passenger in a vehicle, where there is a road provided on the site, there should be a setting down point provided close to the accessible entrance of the building. This allows passenger to alight from the vehicle and enter the building safely and conveniently.

A setting down point should be provided in addition to designated parking bays.

Where a setting down area is provided:

(a) it should be clearly sign-posted
(b) it should be located on firm and level ground as close as practicable to the accessible entrances.
(c) an access route should lead from the setting down area to the accessible entrance.
(d) its surface should be level with the carriageway for convenient use of a wheelchair or other walking aids.
Section 1.2 Access to buildings

1.2.1 Objective

The objective is to provide entrances to a building that are accessible to all and avoid segregation based on a person’s level of ability.

The following entrances should be accessible:
(a) the main entrance which a visitor not familiar with the building would normally expect to approach,
(b) the main entrance close to the designated parking area, and
(c) the main entrance close to setting down area.

Subsidiary external entrances that should also be accessible include:
(d) any main entrance to a unique functional area or facility of a building e.g. in multi-occupancies buildings (retail, office, residential areas etc), or multi-functional buildings (hospitals with separate entrances for reception, A&E, outpatients etc), and
(e) any entrance used exclusively by staff.

Where main entrances are accessible to all they promote a spirit of inclusion that segregated accessible entrances do not. In certain situations, however, it may not be practicable for each of the applicable main entrance(s) above to be accessible, due to steeply sloping or restricted sites. Therefore an alternative accessible entrance or entrances should be provided.

1.2.2 Accessible entrances

Accessible entrances should accommodate the widest possible range of abilities. Approaches to accessible entrances should comply with Section 1.1. The route from an alternative accessible entrance should lead directly, via an accessible internal route conforming to Section 1.3, to the spaces served by the corresponding main entrances. Likewise, main entrances close to the designated parking area and setting down area, (b) and (c) above, should connect to the main entrance reception area, via an accessible internal route conforming to Section 1.3.

Where an accessible entrance is provided:
(a) it should be easily identified among the other elements of the building under all lighting conditions, shadow or strong sunlight e.g. by lighting and/or visual contrast. Glare from lighting or materials should be avoided as it is confusing for those with difficulty seeing.
(b) a level landing at least 1.5mx1.5m clear of any door swings should be provided immediately in front of the entrance,
(c) the surface of the landing should not impede the movement of wheelchairs or other mobility aids,
(d) the threshold should be level, so as not to create a trip hazard or barrier to people using wheelchairs or other mobility aids, i.e. with a maximum height of 15mm, a minimum number of upstands and slopes, with any upstands higher than 5mm chamfered or rounded.
(e) any door entry systems should be accessible to people with a wide range of abilities, particular attention should be paid to the needs of those who are deaf, hard of hearing, partially sighted,
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cannot speak or those using a wheelchair etc. Refer to the NDA publication Public Access Terminals Guidelines available at www.accessit.nda.ie for guidance.

(f) any structural supports at the entrance should not present a hazard for people with difficulty seeing,

(g) internal floor surfaces adjacent to the threshold should not impede the movement of wheelchairs or other mobility aids,

(h) changes in floor materials adjacent to threshold should not create a potential trip hazard, and

(i) where mat wells are provided, the surface of the mat should be level with the surface of the adjacent floor finish and the material should be firm to prevent wheels from sinking and making it difficult for a person using a wheelchair to maneuver.

1.2.3 Accessible Entrance Doors

Powered door opening and closing systems, are accessible to a very wide range of people as they require little, if any, strength to open. Sliding doors avoid the potential risk of injury from automatic swing doors colliding with those trying to enter. Therefore, powered sliding doors either manually controlled or automatically by sensors are the preferred accessible entrance doors.

Manually operated external doors, with a self-closing devices, can pose difficulties for people, especially people with limited upper body strength, with assistance dogs, walking aids or wheelchairs. As, to open and maneuver through this type of door requires a force greater than the force of the self-closing device and any extra resistance exerted by weather seals and/or wind pressure.

In general, revolving doors present particular difficulties and risk of injury for people e.g. those with visual impairments, people with assistance dogs, people with mobility problems and for parents with small children or buggies, elderly people etc, and are not considered accessible.

Doors that provided high levels of accessibility may not always be suitable as escape doors. Where an accessible entrance door also forms part of an escape route reference should be made to the guidance in TGD B (see section dealing with General Provisions for Means of Escape), on doors across escape routes, including automatic doors, to ensure compliance with Part B.

Where an accessible entrance door is provided:

(a) it should have an effective clear width through a single door or at least one leaf of a double door as set out in Table 2 below. The effective clear width should be measured in accordance with Diagram 8

(b) where possible, unless for reasons of security, door leaves and side panels wider than 450mm should 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 allows people to be able to see another approaching in the other direction in time to avoid a collision, the extent of the zone facilitates people of all heights or those using a wheelchairs.

(c) it can be a manual or powered door in accordance with 1.2.3.1 and 1.2.3.2 respectively

(d) Where it is a glass door;
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- It should be clearly defined with manifestation on the glass at two levels, within 850mm to 1000mm and 1400mm to 1600mm above the floor, contrasting visually with the background seen through the glass (from inside and outside) in all lighting conditions.
- Where the manifestation takes the form of a logo or sign, it should be 150mm high (repeated if on a glazed screen) or at least 50mm high if it takes the form of a decorative feature such as broken lines or continuous bands.
- It should be clearly differentiated from any glazed screen surround, by the provision of a high contrast strip at the top and on both sides. This ensures that people with difficulty seeing can decipher the location of the door.
- Where it is capable of being held open, should be protected by guarding to prevent the leading edge constituting a hazard.

1.2.3.1 Accessible manual doors:

(a) should be openable using a force of no greater than 20N at the leading edge.
(b) there should be an unobstructed space of at least 300mm on the side of the door next to the leading edge of a single leaf. This enables a person in a wheelchair to reach and grip the door handle, then open the door without releasing hold on the handle and without the footrest colliding with the return wall. See Diagram 8
(c) Where fitted with a latch the door opening furniture should be operable with one hand using a closed fist e.g. a lever handle. This facilitates those with limited manual dexterity.
(d) All door opening furniture should contrast visually with the surface of the door and should not be cold to touch, to aid those with difficulty seeing and those with sensory impairments.

1.2.3.2 Accessible powered doors:

(a) may have a sliding, swinging or folding action controlled;
   - Manually by a push pad, card swipe, coded entry or remote control, or
   - Automatically by a motion sensor or other proximity sensor, e.g. a contact mat,
(b) when installed, automatic sensors should be set so that automatically operated doors open early enough and stay open long enough to permit safe entry and exit. Time should be allowed for those who may not be able to react quickly.
(c) that have a swinging action and open towards the approach, visual and audible warnings should be provided to warn people of their automatic operation when both opening and closing,
(d) should incorporate a safety stop that activates if the doors begin to close when a person is passing through,
(e) should revert to manual control or fail safe in the open position in the event of a power failure,
(f) should not project into any adjacent access route when open,
(g) manual activation controls should;
   - be located between 750mm and 1000mm above floor level and operable with a closed fist,
   - contrast visually with the background so they are readily distinguishable by people with difficulty seeing, and
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- be set back 1.4m from the leading edge of the door when fully open (where doors open out). This means people do not have to move to avoid contact with the door as it opens.

Table 2 Minimum Effective Clear Widths of Doors

<table>
<thead>
<tr>
<th>Direction and width of approach</th>
<th>Minimum effective clear width i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight on (without a turn or oblique approach)</td>
<td>800</td>
</tr>
<tr>
<td>At right angles to an access route at least 1500mm wide</td>
<td>800</td>
</tr>
<tr>
<td>At right angles to an access route at least 1200mm wide</td>
<td>825</td>
</tr>
<tr>
<td>External doors to buildings used by the general public ii</td>
<td>1000</td>
</tr>
</tbody>
</table>

Notes
(i) The effective clear width should be measured in accordance with Diagram 8.
(ii) Building used by the general public include institutional buildings, hotels, day care centers, places of assembly, shops and shopping centers and certain office buildings.

Diagram 8 Effective Clear Width and Visibility Requirements of Doors

1.2.4 Entrance lobbies
Entrance lobbies serve a number of functions including air infiltration and draught reduction. The presence of an entrance lobby may allow the external door to have a lower powered self-closing device. Where they are provided they should be designed and constructed to ensure that there is sufficient space to enable a person using a wheelchair and an assistant to move clear of one door before opening the other.
Where an accessible entrance lobby is provided:

(a) the length should be in accordance with Diagram 9 for single swing doors and at least DP1+DP2+1570mm with double swing doors,
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(b) the width (excluding any projections into the space) should be at least 1200mm or (DL1 or DL2)+300mm, whichever is the greater, when single leaf doors are used and at least 1.8m when double leaf doors are used,

(c) glazing within the lobby should not create distracting reflections, floor surface materials within the lobby should not impede the movement of wheelchairs or other mobility aids,

(d) changes in floor materials should not create a potential trip hazard,

(e) any columns, ducts or similar full height elements that project into the lobby by more than 100mm should be protected by a visually contrasting guard rail,

(f) the floor surface should help remove rainwater from shoes and wheelchairs, this reduces the potential for slipping within the building e.g. by using cleaning mats, and

(j) where mat wells are provided, the surface of the mat should be level with the surface of the adjacent floor finish and the material should be firm to prevent wheels from sinking and making it difficult for a person using a wheelchair to maneuver.

Diagram 9. Key Dimensions for Lobbies with Single Leaf Doors

DL1 and DL2 = door leaf dimensions of the door to the lobby
DP1 and DP2 = door projection into the lobby (normally door leaf size)
L = minimum length of lobby, or length up to door leaf for side entry lobby

"a" = at least 300mm wheelchair access space (can be increased to reduce L)
1570mm = length of occupied wheelchair with a companion pushing (or a large scooter)
NB: For every 100mm increase above 300mm in the dimension "a" (which gives a greater overlap of the wheelchair footprint over the door swing), there can be a corresponding reduction of 10mm in the dimension L, up to a maximum of 600mm reduction.

b) No return wall within 600mm of the doorway to enable a wheelchair user to manoeuvre into a position straight onto the door.
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1.3.1 Objective

The objective is for people to travel vertically and horizontally within a building conveniently and without discomfort in order to make use of all relevant facilities.

1.3.2 Introduction

An entrance hall and reception area is the first point of contact and a source of information for many when arriving at a building and should be accessible to all. Corridors, passageways and internal lobbies should facilitate a free flow of people around a building. Doors along internal circulation routes can create barriers for people, for example those with limited upper body strength etc, and should only be provided where necessary. However, where they are necessary, they should be easy to use.

Each storey of a building should be so designed and constructed as to allow for independent circulation by people with disabilities and independent access to the range of services and facilities provided on that storey.

A passenger lift is a convenient means for many people, pushing buggies, using wheelchairs, carrying luggage, to travel from one floor to another in order to access all relevant facilities. Lifts should be provided in all multi-storey buildings. Internal stairs, suitable for people with ambulant disabilities, should also be provided to floors above and below the entrance level to provide a choice for users.

Where a change of level within a storey of a building is necessary because of site constraints or design considerations, a suitable means of access should be provided between the levels either by a sloped access route or some lifting device such as platform lift etc.

Guidance is given in this section on the features and characteristics of internal circulation areas, both horizontal and vertical, required to make them accessible to people with a wide range of abilities. The internal circulation areas dealt with include:

Horizontal Features

- Entrance hall and reception areas
- Internal doors
- Corridors and passageways
- Internal lobbies

Vertical Features:

- Passenger Lifts
- Internal stairs suitable for people with ambulant disabilities
- Internal slopes
- Handrails
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1.3.3 Horizontal Features:

1.3.3.1 Entrance hall and reception area

Where a reception point is provided:
(a) it should be located away from a main entrance where there is a risk that external noise could be a problem;
(b) it should be easily identified from the entrance;
(c) it should have a direct and unobstructed accessible route from the entrance;
(d) it should have a clear maneuvering space in front of any reception desk or counter of
   - 1200mm deep by 1800mm wide, if there is a knee recess of at least 500mm deep, or
   - 1400mm deep by 2200mm wide if there is no knee recess;
(e) it should be designed to accommodate people both standing and seated (e.g. people with wheelchairs). If a desk or counter is used, at least one section should have a minimum width of 1.5m, surface height of maximum 760mm and a knee recess not less than 700mm above floor level. This should be provided on both sides to accommodate both staff and visitors alike.
(f) it should have a hearing enhancement system, e.g. an induction loop;
(g) the floor surface should be slip resistant (refer to BS8300 Annex E);
(h) glazed screens in front of reception points or light sources or reflective wall surfaces located behind the reception point should be carefully designed not to compromise the ability of a person to lip read or follow sign language.

1.3.3.2 Internal doors

Doors can create barriers for people, for example those with limited upper body strength etc, and therefore should only be provided where necessary. Self-closing devices create particular difficulties for some people (see Section 1.2) and their use on internal doors should be minimized. While these devices are generally required on fire doors, TGD B gives guidance on acceptable methods of holding them open, where a self-closing device is considered a hindrance to the normal use of a building. Refer to TGD B, Annex B, Fire Doors, Self-closing devices, B3 for guidance. Fire doors should be held open in accordance with this guidance, where possible, especially in areas of the building frequently used by the public.

Where internal doors are provided:
(a) the opening force at the leading edge of the door should not exceed 20N, where the door is manually operated
(b) The effective clear width through a single leaf door or one leaf of a double leaf door should be in accordance with Table 2 and Diagram 8
(c) There should be an unobstructed space of at least 300mm on the pull side of the door between the leading edge of the door and any return wall, unless the door has power-controlled opening or it provides access to a standard hotel bedroom.
(d) Where fitted with a latch, the door opening furniture should be operable with the closed fist of one hand or an elbow e.g. a lever handle.
(e) All door opening furniture should contrast visually with the surface of the door.
(f) The door frames should contrast visually with the surrounding wall.
(g) The surface of the leading edge of any door that is not self-closing, or is likely to be held open, should contrast visually with the other door surfaces and its surroundings, so people with difficulty seeing can still identify the door opening within the wall.
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(h) Where possible, unless for reasons of security, door leaves and side panels wider than 450mm should 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 allows people to be able to see another approaching in the other direction in time to avoid a collision, the extent of the zone facilitates people of all heights or those using a wheelchair.

(i) Glass doors should comply with 1.2.3 (d)

(j) Any low energy powered swing door system is capable of being operated in manual mode, in powered mode or in power assisted mode.

(k) Refer to TGD B for the direction of opening on doors on escape routes.

1.3.3.3 Corridors and passageways

A corridor or passageway should be wide enough to allow people, to pass each other, taking into account common activities and mobility aids such as people pushing buggies, using a wheelchair, carrying luggage, using crutches etc. People in wheelchairs or those pushing buggies should have adequate space available to turn into adjoining spaces or to turn through 180 degrees.

Where corridors and passageway are provided:

(a) The unobstructed clear width should be at least 1.2m. Elements such as columns, radiators and fire hoses should not project into this corridor width, or where this is unavoidable a means of directing people around them such as a visually contrasting guard rail should be provided.

(b) Passing places, with an unobstructed total width of corridor 1.8m wide over a 1.8m length, should be provided at reasonable intervals and junctions etc., where the unobstructed width of the corridor is less than 1.8m. This will allow people using wheelchairs to pass each other. See Diagram 10

(c) The floor should be level (with a gradient no steeper than 1:50) or predominantly level.

(d) Any section with a gradient of 1:20 or steeper should be designed as an internal slope.

(e) Where a section of the floor has a gradient in the direction of travel, steeper than 1:50 but less steep than 1:20 it should have a level rest of at least 1.5 long at each rise of 500mm.

(f) Any sloping section should extend the full width of the corridor, otherwise the exposed edge should be clearly identified by visual contrast and where necessary, protected by guarding.

(g) Any door opening towards a corridor which is a major access route or an escape route should be recessed so that when fully open, it does not project into the corridor space except where the doors are minor utility facilities such as small store rooms and locked duct cupboards. This is to avoid collisions with passer-bys.

(h) The unobstructed clear width should be 1.8m wide locally if a door from a unisex wheelchair accessible toilet opens into the corridor, to allow a person using a wheelchair to manoeuvre out the door into the corridor. The corridor should not be a major access route or an escape route.

(i) On a major access route or an escape route, the wider leaf of a series of double doors with leaves of unequal width should be on the same side of the corridor through the length of the corridor.

(j) Floor surface finishes should be slip resistant. Refer to Annex E of BS 8300.

(k) Any glazed screens alongside a corridor are clearly defined with manifestation on the glass at two levels, 850mm to 1000mm and 1400mm to 1600mm contrasting visually with the background seen through the glass in all lighting conditions.
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(i) Clear unobstructed headroom of 2.1m should be provided to prevent people colliding with edges at head height. Where a stairway crosses over a circulation route, suitable precautions should be taken to ensure that any part of the area under the stairway with a height lower than 2.1 m cannot be used for circulation purposes. The area should be enclosed, protected by guarding and low level cane detection or a permanent barrier giving the same degree of protection.

(m) Corridors should be adequately lit.

(n) Consideration should be given to the need for seating and/or handrails along long corridors i.e. over 20m.

Diagram 10 - Dimensions and space allowances for corridors in buildings other than dwellings

1.3.3.4 Internal lobbies

Internal lobbies should be in accordance with entrance lobbies in 1.2.4.
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1.3.4 Vertical Features

1.3.4.1 Passenger Lifts

A passenger lift is the most accessible means of vertical circulation and allows people with a wide range of abilities to travel conveniently and without discomfort from floor to floor in order to make use of all relevant facilities. However, an internal stairs, suitable for people with ambulant disabilities, should also be provided as an alternative means of vertical access. See section 1.3.4.2 for details.

Lifts should be provided in all multi-storey buildings (storeys above and below entry level should be considered e.g. basements used for car parking etc.). Exceptions may be made for:

- non-residential buildings with a floor area per floor of less than 200m² and with no floor having an entrance level more than 4.5m above or below the main entrance level, and
- apartment buildings with 4 or less apartments on any storey other than the entrance storey and with no apartment having an entrance level more than 4.5m above or below the main entrance level and,
- buildings with a dwelling built directly above a ground level two storey dwelling where entry to the upper level dwelling is 6m or less above entry level to the lower level dwelling. Access stairs to the upper level should serve no more than two dwellings.

In calculating nett floor area, the areas of all parts of a storey (including any apartments) should be added together, whether they are in more than one part of the same storey or used for different purposes. The area of any vertical circulation, common sanitary accommodation and maintenance areas in the storey should not be included.

Consideration should be given to other lifting devices, such as lifting platforms or wheelchair platform stair lifts etc, that facilitate vertical travel to facilities, especially in building where the exceptions above apply. For further information on these devices refer to BS 8300 or Building for Everyone.

Where no lift or lifting device is provided, the same range of services/facilities that are available on the other levels should be made available on the entry or accessible level, where practicable.

Reference should be made to Part B and TGD B for guidance on fire related issues associated with lifts See TGD B – Section: General Provisions for means of escape.

In the case of places of work, designers should have regard to the Safety, Health and Welfare at Work (General application) Regulations 2007 (SI No. 299 of 2007) which requires testing, examination, certification and regular inspection of lifts.

Where an accessible lift is provided:

(a) it should conform with IS EN 81-1, IS EN 81-2 and IS EN 81-70;
(b) signs should be provided to facilitate finding the lift;
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(c) lift landing and car doors should be distinguishable visually from the adjoining walls.
(d) there should be a clear unobstructed space for maneuvering at least 1.5 m wide and at least 1.5m long in front of every entrance to the lift;
(e) doors should be power-operated horizontal sliding doors;
(f) doors should have a clear opening width of at least 800 mm;
(g) lift doors should be fitted with timing devices and re-opening activators to allow adequate time for people and any assistance dogs to enter and leave, the doors should stay open for at least 8 secs;
(h) the width of the lift car should be at least 1.1 m and the length at least 1.4 m; this size accommodates manual and electrically powered wheelchairs and one accompanying person. Larger lift cars should be provided in public areas of public facilities such as hotels, cinemas, shopping centers and similar places of assembly where practicable (i.e. in a building with greater than 200m² per floor). To accommodate any type of wheelchair and most scooters, along with several other passengers, the car dimensions should be 2000mm x 1400mm.
(i) the controls in the lift car should be at a height of not less than 900 mm, not more than 1.2 m (preferably 1.1m) above the car floor and at least 400mm from any return wall;
(j) The call buttons at each landing should be not less than 900mm and not more than 1.1m above the landing. Controls should not be located in corners and should be at least 500 mm from any wall or projecting surface. This will facilitate a person in a wheelchair reaching the buttons.
(k) suitable tactile indicators for floor numbers should be provided on or adjacent to lift buttons within the lift car and on the landing;
(l) the landing call button symbols where provided and control button symbols should be raised to facilitate tactile reading;
(m) all call and control buttons should contrast visually with the surrounding face plate and the face plate, similarly, with the surface on which it is mounted.
(n) the floor of a lifting device should not be a dark colour (as this can create the illusion, for people with difficulty seeing, of stepping into an open lift shaft) and should have frictional qualities similar to or higher than the floor of the landing
(o) the lift car and lift lobby should provide both visual and voice indication of lift arrival and the number of the floor reached;
(p) a half-length mirror should be installed to provide a wheelchair user with a rearview to safely reverse out from the lift car. The bottom edge of the mirror should be 900mm from the floor;
(q) a handrail should be provided on at least one wall with its top surface at 900mm above the floor and located so that it does not obstruct the controls or the mirror;
(r) a suitable emergency communication system should be installed. Systems should be easy to use for example intercom and push button activation and contain inductive couplers so that those using hearing aids can make use of them;
(s) the illumination in the lift should minimize glare, reflection, confusing shadows or pools of light and dark. Areas of glazing should be identifiable by people with impaired vision.
(t) It should be operated in accordance with manufactures instructions including necessary regular maintenance.

In existing buildings where it is not practicable to provide a passenger lift, other lifting devices such as lifting platforms or wheelchair platform stair lifts etc should facilitate vertical travel to facilities. For further information on these refer to BS 8300 or Building for Everyone.
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Diagram 11 Key dimensions associated with passenger lifts.

1.3.4.2 Internal stairs suitable for people with ambulant disabilities

At least one set of ambulant disabled stairs should be provided to access floors above or below entrance level in a building.

Stairs serve many different functions in a building e.g. a means of escape, a means of access for the ambulant disabled or an effective, efficient and simple means of vertical circulation, or sometimes a combination of these. Functional requirements and guidance on compliance, for stairs are given in various Parts of the Building Regulations namely Part B for escape, Part K for stairs in general and Part M for ambulant disabled stairs. Designers should refer to the relevant Part and accompanying TGD when designing stairs.

Particular reference should be made to Part B/TGDB for the provision of refuges for people with disabilities.

Where an internal stairs suitable for people with ambulant disabilities is provided:

(a) it should comply with guidance given for external stairs in section 1.1 par 1.1.3.4 a, b, e, f, g, i, j, k, n, o, p and q ;
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(b) the rise of a flight between landings should not exceed 1.8m. In exceptional circumstances in a small premises where the plan area is restricted, up to and including 16 risers may be used;
(c) the rise of each step should be between 150mm and 170mm and going at least 250mm. For people with mobility difficulties a going of at least 300mm is preferred;
(d) there is no guidance on hazard warning surfaces at the head of internal stairs as there is no recognised warning/hazard surface for internal use that can be guaranteed not to constitute a trip hazard when used along side flooring with different frictional resistances. Therefore, where possible, stairs should not be directly in line with an access route due to the potential risk that people will not recognize the stairs in time.
(e) the area beneath a stair where the soffit is less than 2.1m above floor level is protected as described in 1.1.3.1 (b).

1.3.4.3 Internal slopes
If a change in level is unavoidable within a storey, and the change in level is 300mm or more, two or more clearly signposted steps should be provided in addition to a slope. Where the change in level is no greater than 300mm a slope should be sufficient.

Where an internal slope is provided

(a) it should comply with guidance given for external sloped access routes in 1.1.3.3.
(b) it should be easy to locate or clearly sign-posted,
(c) no flight has a going greater than 9m or a rise of more than 450mm,
(d) The area beneath a slope where the soffit is less than 2.1 above floor level is protected by, enclosure, guarding and low level cane detection or a permanent barrier giving the same degree of protection.

(4) Handrails
A suitable continuous handrail should be provided on each side of flights and landings of internal stairs and slopes. See Technical Guidance Document K for guidance on the provision of guarding. Handrails should comply with guidance given for external handrails in 1.1.3.5.
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Sanitary conveniences in buildings

Section 1.4  Sanitary conveniences for buildings

1.4.1  Objective

The aim is to provide adequate sanitary accommodation that meets the needs of people with a wide range of abilities.

1.4.2  Provision

The number and location of sanitary conveniences required in a building will be dictated by the nature of the building, the size of the building, the number of people who will use the building, gender ratio, patterns of use and the ease of access. In the case of places of work, designers should have regard to the Safety, Health and Welfare at Work (General Application) Regulations, 2007 (S.1. No. 299 of 2007).

This section deals with the provision of accessible sanitary conveniences where sanitary accommodation is provided in a building, whether this is for customers, visitors, or people working in the building. It does not create a requirement for the provision of sanitary conveniences in a building or for different user groups e.g. for visitors where provision has only been made for staff.

The following guidance represents the minimum provisions to ensure that sanitary accommodation, where provided for a particular user group, is accessible to all in that group e.g. customers, staff etc. The guidance is based on providing a clear turning circle of 1.5m for a wheelchair. While, this may be adequate for most indoor wheelchairs, some electric wheelchairs and scooters (mostly used outdoors), should be accommodated in the public spaces of public facilities such as hotels, cinemas, shopping centers and similar places of assembly where practicable (i.e. in a building with greater than 200m² per floor). A turning circle of 1.8m should be adequate for wheelchairs. This will require an increase in the overall dimensions of rooms of 300mm in both width and length to those shown in the following guidance. All other relative dimensions should remain the same. For further guidance refer to Building for Everyone.

Provisions in relation to wheelchair accessible unisex WCs

(a) Where there is only one sanitary facility in the building, it should be unisex and wheelchair accessible. For floor area per floor is greater than 200m², it should incorporate a washbasin, in addition to the finger rinse basin associated with the WC pan as per 1.4.4
(b) Where there is more than one sanitary facility within a building, at least one wheelchair accessible unisex toilet should be provided at each location as per 1.4.4
(c) Where more than one wheelchair-accessible unisex WC cubicle is provided, the layouts should be handed to facilitate both left and right handed transfer techniques onto the WC. For further information on transfer techniques refer to Building For Everyone.

Provisions in relation to separate-sex WC accommodation:

(d) Where there is separate-sex WC accommodation, at least one WC cubicle should be provided for people with ambulant disabilities among the standard cubicles as per 1.4.5.1 and 1.4.5.2
(e) Where there are four or more WC cubicles in a separate sex toilet accommodation, one of these should be an enlarged cubicle for use by people who need extra space. Enlarged cubicles are not a substitute for cubicles suitable for ambulant disabled people, but rather an alternative arrangement to meet the needs of another range of abilities. If there is more than one enlarged
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... cubicle provided the arrangement should be handed as the WC is offset and therefore facilitates those who are stronger on one side as per 1.4.5.3

(f) Where there is separate-sex toilet accommodation incorporating urinals, which can be accessed by people who use wheelchairs, at least one accessible urinal and low wash hand basin should be provided for people using wheelchairs and one for people with ambulant disabilities as per 1.4.6

Provisions in relation to accessible bathrooms/shower rooms:

(g) Where en-suite sanitary accommodation is provided in bedrooms for independent use by a wheelchair user e.g. in hotels, guest accommodation, residential accommodation, medical facilities etc., the en-suite should be suitable for such users as per 1.4.7 (For information on the provision of wheelchair accessible rooms in hotels, see Section 1.5.)

(h) Equal numbers of en-suite bathrooms as en-suite shower rooms should be provided as some people may find it easier to use a shower than a bath as per 1.4.7 when more than one en-suite bathroom or shower room is provided.

(i) A choice of layouts suitable for left-hand and right-hand transfer should be provided when more than one en-suite bathroom or shower room is provided.

(j) Where sanitary accommodation combining showers/baths and WCs are provided in buildings, e.g. hotels, hospitals, student accommodation, sports, leisure facilities etc, an accessible shower room or bathroom as per 1.4.7 should be provided. To accommodate a wider range of people, a shower room and a bathroom may be provided. When more than one of each type is provided a choice of layouts suitable for left-hand and right-hand transfer should be provided. This should not be the only wheelchair accessible WC in the building.

Provisions in relation to changing and/or showering facilities:

(k) Where communal separate-sex changing and/or showering facilities are provided, e.g. in sports centers, leisure centres etc, accessible changing and/or showering facilities should be provided in communal areas by subdividing the area and providing accessible space and fittings as for self-contained facilities as per 1.4.8 but without doors.

(l) In sport facilities, accessible individual unisex self-contained showering and/or changing facilities should be provided as per 1.4.8 in addition to communal separate-sex facilities.

(m) If there is only space for one changing and/or showering facility then this should be individual, unisex and accessible as per 1.4.8

(n) A choice of layouts suitable for left-hand and right-hand transfer should be provided when more than one changing and or showering facility is provided.

Where independent access to stories, above or below the entrance storey, is not available for wheelchair users, i.e. if access is by stairway only, a unisex WC suitable for use by wheelchair users should be located on the entrance storey, except where the entrance storey contains only the entrance and vertical circulation areas. In such cases, the provision of a WC accessible to wheelchair users is not necessary. However, in every such building, provision for ambulant disabled people should still be made.

The space provided for maneuvering and the relative positioning of WCs, wash basins and other accessories is critical to enabling people using wheelchairs or people with difficulties moving or walking to adopt various transfer techniques that allow independent or assisted use of sanitary facilities. The guidance given in the following sections provide acceptable sample sizes and layouts...
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for the situations called up in (a) to (o) above.

For further information on accessible sanitary conveniences refer to BS8300 and Building for Everyone.

1.4.3 Sanitary accommodation – General

Where accessible sanitary conveniences are provided:

(a) Any bath or washbasin tap should be either controlled automatically or capable of being operated using a closed fist e.g. by lever action
(b) Any door handles and other ironmongery should comply with those for internal doors, i.e. Where fitted with a latch, the door opening furniture can be operated with one hand using a closed fist e.g. a lever handle. All door opening furniture contrasts visually with the surface of the door.
(c) Doors should be fitted with light action privacy bolts so that they can be operated by people with limited dexterity and if required to self close can be opened using a force no greater than 20N
(d) outward opening doors should be fitted with a horizontal closing bar fixed to the inside face and should not project into circulation routes or obstruct emergency escape routes.
(e) The swing of inward opening doors should not encroach into the wheelchair turning or transfer area.
(f) Doors should have an emergency release mechanism e.g. lifting off hinges etc so that they are capable of being opened outwards from the outside, in case of emergency, in the case where someone has fallen against the door and is unable to get up.
(g) Doors, when open, should not obstruct emergency escape routes
(h) Doors should have a minimum clear opening of 800mm and comply with the guidance on internal doors in Section 1.3
(i) Any fire alarm should emit a visual and audible signal to warn occupants with difficulty hearing or seeing
(j) Any emergency assistance alarm system should have:
   • A pull chord reachable from a wheelchair, the WC, the shower or bath or from the floor if someone has fallen, in some cases two pull chords may be required. See 1.5.6 (e)
   • Visual and audible indicators to confirm that an emergency call has been activated
   • A reset control reachable from a wheelchair and the WC, in case a false alarm is raised
   • A signal that is distinguishable visually and audibly from the fire alarm
   • A visual and audible indicator should be provided outside the room where it can be seen and heard by people able to respond.
(k) Any lighting controls should comply with the guidance for switches and controls. See Section 1.5.6
(l) The general lighting level in sanitary conveniences should be between 200-300 lux.
(m) Any heat emitters should either be screened or have their exposed surfaces kept at a temperature below 43 degrees C
(n) The floor surfaces should be firm, level and slip resistant when wet and dry. Guidance on slip resistance is given on BS8300 Annex E.
(o) The surface finish of sanitary fittings, grab rails, doors etc should contrast visually with background wall and floor finishes and there should also be a visual contrast between wall and floor finishes.
(p) They should be located in a convenient and accessible part of the building.
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(q) They should be clearly signed; people with difficulty communicating may prefer not to ask directions and should therefore be able to rely on signage.

(r) A shelf should be provided for a bag, a briefcase or other personal belongings to avoid placing them on the floor.

(s) They should be approached via an access route as per Section 1.1 that are direct and obstruction free;

(t) they should not be located in a way that compromises the privacy of users

(u) the WC pan should conform with IS EN 997:2003 in terms of key dimensions, in order to accommodate the use of variable height toilet seat risers, which people who find it difficult to use the standard seat height use, and – move to general

(v) The activation of the flush mechanism should be easy, require little strength and no fine hand movements. TGD G should be referred to for guidance on efficient use of water for flushing. Where a push button flush mechanism is used the buttons should protrude above the surrounding surface (wall or cistern), not require too great a pressure to activate the flush and be operable using an elbow or fist.

(w) Where automatic flushing is provided it should be clearly indicated.

(x) Where the activator for the flush mechanism is to one side, it should be positioned on the open or transfer side of the WC, ensuring it can be reached by a person who has transferred back into a wheelchair.

(y) The wall construction and fixings used to support grab rails should be capable of resisting the load exerted by users when pulling themselves to a standing or upright position.

1.4.4 Wheelchair accessible Unisex WC

Where a wheelchair accessible unisex WC is provided:

(a) the wheelchair user should not have to travel

- More than 40m on the same floor, a greater distance may be acceptable where the circulation route is unobstructed e.g. by the installation of doors with hold open devices
- More than a 40m combined horizontal distance where the unisex toilet accommodation is on another floor of the building but is accessible by passenger lift (if a lifting platform is installed, vertical travel to a wheel-chair accessible unisex WC is limited to one storey).

(b) The minimum overall dimensions and arrangement of fittings within a wheelchair accessible unisex WC should comply with Diagram 12, 13 and 14. Room dimensions of 1.5m x 2.2m are based on a 1.5m turning circle, while 1.8m x 2.5m is required for a 1.8m turning circle.

(c) Where a wash basin is provided in addition to the finger rinse basin in order to allow for hand and body washing and cleaning of equipment etc., the overall width should be increased from 1.5m to 2.0m (or from 1.8 to 2.3m for a 1.8m turning circle). The rim of this washbasin should be 720-740mm above the floor level to allow use by both standing and seated users. See Diagram 14.

(d) The door should be opposite the WC.

(e) A distance of 750 mm should be provided from the back wall to the front of the WC pan, this allows the wheelchair seat to be parallel with the toilet seat, so that the wheelchair can be reversed against the wall and the person using the toilet does not have to maneuver both sideways and also backwards to get into the seat.

(f) The user should be able to, from a sitting position on the WC, lean forward, wash hands in the finger rinse basin and insert or take out the basin’s waste plug. To facilitate this, the distance between the front of the WC pan and the nearest edge of the finger rinse basin should be...
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(g) The floor to washbasin height should be 720-740 mm to optimize the ease of getting one's knees below the basin while not having the basin too high so as to make it difficult to reach the waste plug.

(h) Grab rails should be a minimum of 600 mm.

(i) An emergency assistance alarm system should be provided in accordance with 1.4.3 (j)

(j) Heat emitters should be located so that they do not restrict the minimum clear wheelchair maneuvering space, nor the space beside the WC used for transfer from the wheelchair to the WC.

Diagram 12  Wheelchair Accessible Unisex WC
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Diagram 13  Heights and Arrangement of Fittings in a Wheelchair Accessible Unisex WC

Diagram 14  Height of Various Fittings in Toilet Accommodation
1.4.5 Cubicles

1.4.5.1 Standard Cubicles
Where standard cubicles are provided there should be a minimum 450mm diameter maneuvering space between the swing of the door, the WC pan and the side wall of the compartment, where the door is inward opening. See Diagram 15.

1.4.5.2 Cubicles for people with ambulant disabilities.
For people using crutches, with limited leg mobility or generally unsteady on their feet, cubicles with a larger than standard clear activity or maneuvering space and grab rails will be more accessible. The minimum dimensions and arrangement of the cubicle, activity space, grab rails and other fittings should be provided in accordance with Diagram 16.

1.4.5.3 Enlarged cubicles
For parents with children, people carrying luggage and people with some ambulant disabilities, people with assistance dogs etc cubicles with extra space will be more accessible.

Where enlarged cubicles are provided:
(a) The width of the cubicle should be 1200mm.
(b) The centerline of the WC should be between 450-500mm from one wall
(c) An activity space of 900mm x 900mm should be provided as per Diagram 16
(d) A horizontal grab rail adjacent to the WC pan should be provided.
(e) A vertical grab rail should be provided on the rear wall.
(f) Space for a shelf and a fold down changing table should also be provided.

Diagram 15 Standard WC Cubicle
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Diagram 16  WC Cubicle for People with Ambulant Disabilities

*Height subject to manufacturing tolerance of WC pan

Note: Length of cubicle depends on length of WC and door swing
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1.4.6 Accessible urinals

Where accessible urinals are provided:

(a) A clear area of 900x1350mm in front of the wheelchair accessible urinal should be level.
(b) The rim of the wheelchair accessible urinal should be 380mm above floor level, for people
with ambulant disabilities the standard 500mm is adequate, as per Diagram 17
(c) Vertical grab rails should be provided on both sides of the urinal, to support a person who is
standing they should be 600mm long, for a wheelchair user they should be 900mm long to
provide support in a sitting or standing position. The top fixing should be at the same level as
per Diagram 17.
(d) Urinals should contrast visually with the wall on which they are attached.
(e) Where wash basins are provided, at least one wash basin with its rim set at 720-740mm above
the floor should be provided.

Diagram 17 Accessible Urinals.
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1.4.7 Accessible bathrooms/shower rooms

(a) Where wheelchair accessible en-suite bathrooms or shower rooms are provided:

(b) An en-suite shower room should be in accordance with Diagram 18.
(c) Wall mounted drop down support rails and wall mounted slip resistant tip-up seats should be provided in the shower area.
(d) An en-suite bathroom with WC for independent use should be in accordance Diagram 19 and 20.
(e) The bath should be provided with a transfer seat, 400mm deep and equal to the width of the bath.
(f) The WC and washbasin is similar to the corner arrangement WC for a unisex accessible toilet except the washbasin is larger and set back from the sidewall so as not to project into the transfer space in front of the WC.
(g) The larger washbasin enables people to have a full body-wash, wash personal care equipment etc.
(h) The washbasin should be approximately 500mm x 550mm.
(i) The washbasin should have a waste plug so that the basin can be filled prior to using the WC, as the taps may be out of reach for some from the WC.
(j) Knee space under the basin should be free of obstructions to allow a wheelchair to pull up close to the basin.
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Diagram 18  An example of a Shower Room incorporating a Corner WC for Individual Use

Note
Alarm pull cord, horizontal and vertical grab rails, shower curtain rail and towel rail not shown for clarity.

Note
Layout shown for right hand transfer to shower seat and WC.
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Diagram 19  An example of a Bathroom incorporating a Corner WC

Diagram 20  Grab Rails and Fittings associated with a Bath
1.4.8.1 Changing Facilities

Where changing facilities are provided:

(a) the overall dimensions and the arrangement of equipment and controls for an individual self contained unit should comply with Diagram 21
(b) the floor should be level, and
(c) a maneuvering space 1500mm deep should be provided in front of any lockers provided in communal area.

Diagram 21 An example of a Self-contained Changing Room for Individual Use
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1.4.8.2 Showering facilities

Where shower facilities are provided:

(a) the minimum dimensions and arrangement of fittings etc should be in accordance with Diagram 22
(b) the shower curtain should be operable from the shower seat. This should enclose the seat (when in a horizontal position) and grab rails,
(c) a shelf, for toiletries etc, should be positioned so that it can be reached from the shower seat or from the wheelchair before or after transfer,
(d) the floor should be self draining,
(e) the markings on the shower control should be logical and clear.

Diagram 22   An Example of a Self-contained Shower Room for Individual Use

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Diagram showing the layout and specifications for a self-contained shower room, including dimensions, fixtures, and accessibility features.
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Facilities in buildings

Section 1.5  Facilities in buildings

1.5.1  Objective

The objective is to ensure that all facilities within a building are accessible to and useable by all and that they are designed and constructed to facilitate active participation where appropriate.

1.5.2  Introduction

Provisions should be made to ensure facilities within a building are accessible for people (both visitors and staff) with a range of abilities, e.g. those with difficulty seeing or hearing, people with ambulant disabilities, people who use wheelchairs, people with small children (in buggies) etc.

Guidance is given in this section on the features and characteristics of the following facilities, to make them accessible to and useable for people with a wide range of abilities:

- Audience and spectator facilities
- Refreshment facilities
- Sleeping accommodation
- Switches, outlets and controls

Audience and spectator facilities may be provided in several different types of buildings such as lecture/conference facilities in hotels, educational buildings etc., entertainment facilities in theatres, cinemas etc., and sports facilities\(^8\) in stadia, sports centers etc. Often, it is a functional characteristic of these types of buildings that audience or spectator accommodation is provided at several levels and frequently this necessitates the use of tiered or sloping floors. While people with ambulant disabilities should have access to all such levels, people using wheelchairs, notwithstanding the requirements for lifts etc., in Section 1.3, should have independent access to sufficient wheelchair spaces in selected areas which afford good viewing conditions. Facilities that are available to other users of the premises, such as bars, WC's, etc., should also be accessible from these selected areas. The minimum number of permanent and removable spaces should be in accordance with Table 3. Where a building contains several auditoria, e.g. a multi-screen cinema or a block of lecture theatres etc., the minimum requirement in Table 3 applies to each auditorium.

Refreshment facilities e.g. restaurants and bars, should be so designed and constructed that they can be reached and used by all (visitors and staff) independently or with companions.

Where sleeping accommodation is provided adequate provision should be made for people who use wheelchairs. At a minimum, one guest bedroom out of every twenty, or part thereof of guest bedrooms should be suitable in terms of size, layout and facilities for independent use by someone using a wheelchair. The same proportion of such bedrooms should have en suite sanitary accommodation as is provided in other bedrooms. See Section 1.4.

Switches, outlets and controls for all facilities should be made easy to see, access and use by all. Sanitary facilities are dealt with separately. For guidance on sanitary convenience refer to section 1.4.

\(^8\) For further guidance on sports facilities see – “Access for disabled people”
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Table 3 Provision of wheelchair space in audience seating

<table>
<thead>
<tr>
<th>Seating Capacity</th>
<th>Minimum provision of spaces for wheelchairs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Permanent</td>
</tr>
<tr>
<td>Up to 1000</td>
<td>1% of total</td>
</tr>
<tr>
<td>More than 1000²</td>
<td>1% of total</td>
</tr>
</tbody>
</table>

Note:
1. Rounded up
2. For greater than 10,000 refer to “Accessible stadia” guidelines

1.5.3 Audience and spectator facilities

Where audience and spectator facilities are provided:

(a) The route to wheelchair spaces should be clearly signed.
(b) The route to wheelchair spaces should be accessible by people using wheelchairs, in accordance with Section 1.1.
(c) Some wheelchair spaces should be provided in pairs with standard seating on at least one side, to accommodate a friend, assistant etc and avoid segregation. This can be provided on a permanent basis or created by removing seat. See Diagrams 23 and 24
(d) Where more than two wheelchair spaces are provided they should be located to give a range of views of the event at each side, as well as at the front and back of the seating area. This will help accommodate those with difficulty hearing or seeing on one side, those who need to be near lip readers or sign interpreters.
(e) The clear space allowance for an occupied wheelchair, in a parked position should be 900mm by 1400mm deep.
(f) The floor of each wheelchair space should be horizontal.
(g) Some seats should be located so that an assistance dog can accompany its owner and rest in front of or under the seat.
(h) Standard seats at the ends of rows and next to wheelchair spaces should have detachable, or lift-up arms
(i) Where wheelchair spaces are provided at the back of a stepped terraced floor, they should be provided in accordance with Diagram 24
(j) Where a podium or stage is provided, wheelchair users should have access to it by means of a slope or lifting platform.
(k) Stepped access routes to audience seating should be provided with fixed handrails. See Section 1.1.
(l) A hearing enhancement system in accordance with Section 1.6 should be provided for people with impaired hearing.
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Diagram 23  An example of Wheelchair Spaces in a Lecture Theatre

Diagram 24  An example of Wheelchair Space provision in a Cinema or Theatre
1.5.4 Refreshment facilities

Where refreshment facilities are provided:

(a) All users should have access to all parts of the facility. If there is a change in level, the different levels should be accessible. See Section 1.3.
(b) Part of the working surface of a bar or serving counter should be permanently accessible to wheelchair users and at a level of not more than 850mm above the floor and where necessary, part at a higher level for people standing.
(c) The worktop of a shared refreshment facility (e.g. for making tea) should be at a level of not more than 850mm above the floor with a clear space beneath at least 700mm above the floor. The water taps should be either controlled automatically or capable of being operated with a closed fist.
(d) Routes to and from external seating, where provided, and the internal facilities should be accessible.

1.5.5 Sleeping accommodation

Where wheelchair accessible sleeping accommodation is provided:

(a) The entrance door to the guest bedroom, should comply with the guidance in Section 1.3. The minimum clear opening width should be 800mm.
(b) Swing doors where provided for built in wardrobes and other storage systems should open through 180 degrees.
(c) Handles on hinged and sliding doors should be easy to grip and operate and contrast visually with the surface of the door.
(d) Openable windows and window controls should be located between 800mm and 1000mm above the floor and are easy to operate without using both hands simultaneously.
(e) It should have a visual fire alarm signal, in addition to the provisions for fire detection and alarm systems given in Part B/TGDB.
(f) Bedroom numbers should be indicated in embossed characters.
(g) Wheelchair accessible bedrooms should be located on accessible routes that lead to all other relevant facilities within the building.
(h) The size of wheelchair-accessible bedrooms should allow for a wheelchair user to maneuver at the side of a bed, then transfer independently to it. An example of a wheelchair accessible bedroom is given in Diagram 25
(i) Sanitary facilities should comply with Section 1.4
(j) Wide angle viewers, where provided in the entrance doors to a wheelchair accessible bedroom, should be are located at 1050mm and 1500 above floor level, to enable viewing by people who are seated or standing.
(k) A balcony, where provided, should have a door in compliance with Table 2, have a level threshold.
(l) There should be no permanent obstructions in a zone 1500mm back from any balcony doors.
(m) An emergency assistance alarm (plus reset button) should be located in the bedroom and activated by a pull cord, sited so that it can be operated both from the bed and from an
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adjacent floor area. It should be in accordance with 1.5.6 (e)

(n) An emergency assistance call signal outside a bedroom should be located so that it can be easily seen and heard by those able to give assistance and, in any case, at a central control point.

Diagram 25  Example of an Accessible Bedroom.
1.5.6 Switches, outlets and controls

Where switches, outlets and control are provided:

(a) Socket outlets should be located between 400-1200mm above the floor, with a preference for the lower end of the range. Examples include wall mounted socket outlets, telephones points and TV sockets. See Diagram 26. Exceptions may be made where floor sockets are required in open plan areas and the like, or skirting trucking is required e.g. for safety reasons. These requirements should be restricted to convenience socket-outlets used for general purposes and do not apply to dedicated socket-outlets not readily accessible and used for appliances that are intended to be continuously connected in normal use.

(b) Switches for permanently wired appliances should be located between 400-1200 above the floor, unless needed at a higher level for particular appliances. See Diagram 26. The requirements should apply for all control devices except where the manufacturer’s instructions specify otherwise.

(c) All switches and controls that require precise hand movements are located between 750-1200 above the floor, e.g. controls for heating systems. See Diagram 26

(d) Simple push button controls that require limited dexterity are not more than 1200mm above the floor

(e) Pull cords for emergency alarm systems should be coloured red, located as close to a wall as possible and have two red 50mm diameter bangles one set at 100mm and other set between 800mm and 1000mm above the floor.

(f) Controls that need close vision, e.g. meters should be located between 1200mm and 1400mm above the floor so that readings may be taken by a person sitting or standing (with thermostats at the top of the range). This does not apply to electricity meters or distribution/fuse boards.

(g) Socket outlets should be located consistently in relation to doorways and room corners, but in any case no nearer than 350mm from room corners.

(h) Light switches for use by the general public have large push pads and align horizontally with door handles within the range 900 to 1200mm for ease of location when entering a room.

(i) Where switches described in (h) cannot be provided, lighting pull cords are set between 900mm and 1200mm above floor level and fitted with a 50mm diameter bangle visually contrasting with its background and distinguishable visually from any emergency assistance pull cord.

(j) The operation of switches, outlets and controls should not require the simultaneous use of both hands except where this mode of operation is necessary for safety reasons,

(k) Switched socket outlets should indicate whether they are on or off,

(l) Mains and circuit isolator switches should clearly indicate whether they are on or off,

(m) Controls should contrast visually with their backgrounds to facilitate people locating controls.

(n) Switches should be adequately separated to allow selection of one at a time and avoid the unintended selection of adjacent switches.
Diagram 26  Heights to the Center of Outlets, Switches and Controls

- Upper limit for all controls/sockets
- Range for light switches
- Range for controls needing precise hand movement
- Range for permanently wired switches
- Range for meter indicators
- Range for socket outlets
- Lower limit for telephone and TV sockets
Section 1.6  
Aids to Communication  

1.6 Aids to Communication: 

1.6.1 Objective  
The objective is to provide adequate aids to communication to ensure people can access and use a building and its facilities.

1.6.2 Introduction  

Signage, visual contrast, lighting and audible aids assist people, especially those with difficulty seeing or hearing or with learning difficulties, in accessing and fully utilizing the relevant facilities in and around a building.

People will benefit most if there is an integrated approach to the design of wayfinding, public address and hearing enhancements within a building.

In relation to wayfinding, people use various different strategies and tools to navigate a building. Therefore, to effectively communicate information, directions or instructions to people with a wide range of abilities may require the use of various media. This may result in visual signs, tactile signs and audible aids delivering the same message.

Visual contrast between certain elements also assists in providing spatial information to those with difficult seeing and thus facilitating wayfinding. Visual contrast sensitivity is the ability to perceive differences between an object and its background eg a handle from the door, the nosing from the rest of the step etc. The amount of light a surface reflects is known as the Light Reflectance Value (LRV). The range of LRV is 0 (black) to 100 (white). The larger the difference between the LRVs of each surface the greater the visual contrast is and the easier it is for someone with a low visual contrast sensitivity to perceive the difference. BS8300 provides several methods for measuring LRVs and guidance on acceptable LRV differences. BS8493 provides LRV measurements for certain colours (as specified in BS 4800).

Lighting is an important feature of a building and directly affects its accessibility and that of its facilities. Well designed and installed lighting may be used to support wayfinding, identify hazards and improve communication such as lip reading or signing.

There are several types of audible aids, including:

(a) Public address systems. These can be amplified to suit people with difficulty hearing.

(b) Audio frequency induction loop systems. These can provide assistance to users of personal hearing aids incorporating an induction pick-up facility (T setting).

(c) Infra red systems. These offer line-of-sight wireless communication to specific personal receiver units.

(d) Radio systems. These offer wireless communication without the need for a clear line-of-sight to receiver unit.

Throughout this TGD guidance is given on the provision of signage, visual contrast, and hearing enhancement systems as well as the level of lighting required in certain locations. In all these cases the provisions are based on the following guidance (1.6.3 to 1.6.6)
Section 1.6
Aids to Communication

For additional information and guidance on the provision, design and use of signage, visual contrast, lighting and hearing enhancement systems, refer to Building for Everyone, BS 8300, Sign Design Guide, See it right Signage and The Accessible Office. Also, BS4800 and BS5252 provide colour specifications and co-ordination schemes for use in buildings. See Other Standards and References.

1.6.3 Signage

Where signage is provided:

(a) Signs should be as clear, short and concise as practicable.
(b) Signs should be provided at key locations such as at junctions or changes in direction along a route etc.
(c) Signs should be adequately lit when in use and positioned to avoid reflections from daylight or artificial light.
(d) The surface of a sign should be non-reflective.
(e) Text on signs should not be set in capital letters.
(f) Visual signs should be designed with due consideration given to the height of sign, layout of sign, font size, font type, use of symbols and visual contrast with background etc. For guidance on these elements of sign design refer to BS 8300 Signs and Information.
(g) Tactile signs should be designed using embossed text, symbols and or Braille. For guidance on these elements of sign design refer to BS 8300 Signs and Information.
(h) The International Symbol for Access should be provided on signs to features and facilities that are accessible such as entrances, routes, sanitary conveniences, etc.
(i) Standard symbols in accordance with BS 8501 should be used to indicate the presences of an induction loop or infrared hearing enhancement system

1.6.4 Visual Contrast

Where visual contrast is provided:

(a) The difference in the LRV of the surfaces should be 30 points or more when measured in accordance with BS 8300 or BS 8493, however for large areas such as walls and floors a difference in the LRV of 20 points or more is satisfactory.
(b) the area should be adequately lit in all conditions
(c) Shadows and glare should be avoided e.g. from changing daylight or high gloss surfaces.
(d) Large repeating patterns should be avoided in spaces where visual acuity is critical as they will hamper communication for people who are partially sighted and those who lip-read or use sign language. This would apply to locations such as reception areas with enquiry desks and speakers rostrums in lecture halls.

1.6.5 Lighting

Where artificial lighting is provided:

(a) It should give good colour rendering of all surfaces, and
(b) It should not create glare or pools of bright light and strong shadows, which poorly located uplighters may create.
Section 1.6
Aids to Communication

1.6.6 Audible aids

Where audible aids are provided:

(a) The system should enhance sound communicated to the user, whether received directly through a personal hearing aid, through additional equipment supplied as part of the system or other means.
(b) It should preserve the characteristics of the source, whilst suppressing reverberation and extraneous noise and should not be affected by environmental interference such as from lighting or other electrical installations.
(c) The presence and type of hearing enhancement system installed should be indicated with clear signage.
(d) A clearly audible public address system should be supplemented by visual information.
(e) Telephones suitable for hearing aid users should incorporate an inductive coupler and volume control.
Section 2
Access and use of dwellings

The Guidance in Section 2 applies to dwellings.
Section 2.1
Approach to dwellings

2.1.1 Objective
The objective is to provide an adequate means of approach to the main entrance of a dwelling to facilitate visitors from a point of access.

The point of access is
(a) The entrance at the boundary of a dwelling plot, or
(b) the point at which a person visiting a dwelling would normally alight from a vehicle within the dwelling plot, prior to approaching the dwelling. Where
   ➢ the distance between the point of access along the boundary and the main entrance is greater than 30m, or
   ➢ the site gradient is such that the relative finished levels at the dwelling entrance and the point of access along the boundary do not allow for the provision of the appropriate level or sloped approach.

The dwelling plot for the purpose of this section can be taken to mean the private lands associated with the dwelling.

At least one approach route from a point of access to the main entrance must be an access route.

2.1.2 Access route to a dwelling
To accommodate the widest possible range of abilities, the approach to a dwelling should be level. For background information on approaches see Section 1.1

The minimum clear opening width of at least one point of access should be 900mm. The access route, leading from this, should maintain the clear width of at least 900mm and have a firm and even surface, which is suitable for people using wheelchairs and reduces the risk of slipping.

The access route should be level (slope not more than 1:50). Where site gradients do not allow this, the flattest gradient of slope achievable should be used.

Where the gradient is between 1:20 and not exceeding 1:15 the maximum length between level landings should be 10 m. Where the gradient is between 1:15 and 1:12 the maximum length between level landings should be 5 m. The length of all landings should be not less than 1.2m exclusive of the swing of any door or gate, which opens onto it.

The approach may, in whole or in part, form part of an on site driveway. Where this occurs, the driveway should be at least 3.6 m wide so as to allow adequate unobstructed width at parked cars.

A raised kerb, at least 100 mm high, should be provided on any open side where the adjacent ground is not graded to the approach. See TGD K for guidance on the provision of guarding.

Where it is not practicable to provide the required level or sloped approach to the dwelling entrance from the point of access, a stepped approach may be used. This may arise

• where the gradient between the point of access and the main entrance of the dwelling is steeper than 1:15;
• where there is insufficient space between the point of access and the main entrance of the dwelling.
Section 2.1
Approach to dwellings

dwelling to provide for slopes and landings because of the need to conform to the existing building line;
• where planning requirements exist eg in relation to flood plains; or
• where the dwelling entrance is at other than the ground floor level of the building, e.g. duplex buildings or the like.

Guidance on the approach to apartment blocks and the like, is given in Section 1.1

Where a stepped approach is used, it should be suitable for use by people with ambulant disabilities and should comply with the following:

(a) it should have a clear unobstructed width of 900 mm,
(b) the rise of a flight between landings should be not more than 1.8 m,
(c) it should have top and bottom landings and, if necessary, intermediate landings, each of which should be at least 900 mm long,
(d) steps should have suitable tread/nosing profiles in accordance with Diagram 27 and the rise of each step should be uniform and between 75mm and 150 mm,
(e) the going of each step should be uniform and not less than 280 mm, which, for tapered treads, should be measured at a point 270 mm from the "inside" of the flight, and
(f) there should be a suitable continuous handrail, as detailed in Section 1.1, on both sides of the flights and intermediate landings, if the flight comprises three or more risers. Where a shallow stepped approach with goings at least 750mm long is used, handrails need not be provided.

See TGD K for guidance on the provision of guarding.

Diagram 27  External Step Profiles
Section 2.2
Access to dwellings

2.2.1 Objective

The objective is to provide a main entrance to a dwelling that is accessible to all visitors.

The main entrance is the entrance, which a visitor not familiar with the dwelling would normally expect to approach.

Where it is not practicable for the main entrance to a dwelling to be accessible, an alternative entrance must be provided that is accessible. Accessible alternative entrances must be approached via an access route, conforming with section 2.1, and be within the public realm of the dwelling plot.

The accessible entrance should be suitable for use by people with wheelchairs.

2.2.2 Accessible entrance

There should be a clear level area at least 1.2 m wide and at least 1.2 m deep in front of every accessible entrance. The entrance should be provided with a level entry, ie. with maximum threshold height of 15 mm, and the minimum clear opening width of the entrance door should be 800 mm as illustrated in Diagram 28.

Where a level entry is provided, regard should be had to the requirements of the Regulations generally, particularly in relation to resistance to weather and ground moisture. Guidance on the issues involved in the provision of level entry can be found in the publication "Accessible Thresholds in New Housing".

Where, in certain circumstances, it is not practicable to provide a level entry to a dwelling, one or more steps may be used. This may arise where there is insufficient space between the point of access and the entrance of the dwelling to provide a suitable level landing because of the need to conform with the existing building line or where the entrance storey does not contain at least one habitable room. External steps should comply with the guidance given in Section 2.1. Internal steps should comply with the guidance in Section 2.3.
Section 2.3
Circulation within dwellings

2.3.1 Objective

The objective is to facilitate circulation of all visitors within the entrance storey, or where there is no habitable room at this level, in the storey containing the main living room.

2.3.2 Circulation within a Dwelling

Corridors, passageways and doors to habitable rooms in the entrance storey or, where there is no habitable room at this level, in the storey containing the main living room, should be sufficiently wide and free of stepped changes of level so as to allow convenient circulation.

Corridors and passageways should have a minimum unobstructed width of 900 mm to facilitate circulation of people using wheelchairs. Local permanent obstructions, such as radiators, may be allowed, provided that the unobstructed width in those areas is at least 800 mm. Where a stepped change of level is provided within the storey, e.g. because of the slope of the site, it should be located so that at least one habitable room and a room containing a WC can be accessed from the accessible entrance without the need to negotiate the step(s).

Doors to accessible habitable rooms should be so designed and constructed that the minimum clear opening width, in relation to the adjacent unobstructed corridor width, complies with Table 4.

Table 4 – Doors to accessible habitable rooms

<table>
<thead>
<tr>
<th>Minimum clear opening width (mm)</th>
<th>Minimum unobstructed corridor width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>775</td>
<td>900 if approached head on</td>
</tr>
<tr>
<td>800</td>
<td>900</td>
</tr>
</tbody>
</table>

The length of unobstructed corridor complying with the minimum width requirement specified should be at least 1200 mm at the door.

Saddle boards, where provided, should be beveled with maximum up stand of 10 mm.

Doors to rooms (other than cloak rooms, hot presses etc), which can only be accessed by the use of steps or stairs, may have a minimum clear opening width of 750 mm.

Diagram 28 illustrates the guidance on internal doors, corridors and passageways for convenient wheelchair use in the entrance storey or, where there is no habitable room at this level, in the storey containing the main living room.
Section 2.3
Circulation within dwellings

Diagram 28  Corridors, Passages and Internal Doors to Dwellings – showing clear opening width

Where there is no habitable room at the entry level, the stairway providing access to the storey containing the main living room should comply with the following:

(a) it should have a clear unobstructed width of 900mm,
(b) the rise of a flight between landings should be not more than 1.8m,
(c) it should have top and bottom landings and if necessary, intermediate landings, each of which should be at least 900mm long,
(d) the rise of each step should be uniform and not more than 175mm,
(e) the going of each step should be uniform and not less than 280mm, which, for tapered treads should be measured at a point 270mm from the inside of the flight, and
(f) there should be a suitable continuous handrail, in accordance with 1.1.3.5 on each side of the flights and intermediate landings, if the flight comprises three or more risers.
Section 2.4
Sanitary conveniences for dwellings

2.4.1 Objective

The objective is to provide a WC that is accessible to all visitors.

A WC should be provided at entry level or, where there is no habitable room at this level, in the storey containing the main living room. At entry level, the WC should be so located that it can be accessed from the accessible entrance and from at least one habitable room without the need to negotiate steps. The approach route to the WC must be in accordance with section 2.3.

2.4.2 Accessible WC

The WC should be located in a bathroom or separate WC compartment, the layout of which should be designed to facilitate access to, and use of, the WC by persons with a range of abilities. A clear space of 750 mm by 1200 mm, accessible by people using a wheelchair should be available adjacent to the WC so as to facilitate sideways transfer from the chair to the WC.

In general, the size and layout of the bathroom or WC compartment, and the positioning of the door, should be such that a wheelchair can be fully contained within the compartment and the door closed with the wheelchair inside. Diagram 29 shows two examples of alternative layouts for WC compartments, which illustrate the level of provision which is considered generally acceptable.

The walls of this WC compartment should be so designed and constructed to ensure that they would be able to support handrails in use, if necessary. The minimum headroom available in the WC compartment should be 2.1m.

Diagram 29 Examples of WC Cubicles for Visit-able Housing
2.4.3 WC in smaller dwellings

In the case of certain smaller dwellings, WC compartments, which facilitate people with ambulant disabilities, may be acceptable. This level of provision should only be considered where the area of the storey where the WC is located is less than 45 m². Diagram 30 shows an example of a possible layout for such a compartment.

The clear opening width of WC doors should be in accordance with Table 4. Use of a door opening wider than the minimum, an outward opening door, a folding door or a sliding door will generally assist in facilitating wheelchair access. The choice of door type and location should be such as not to pose undue hazard on a circulation route or be otherwise dangerous in use.

The walls of this WC compartment should be so designed and constructed to ensure that they would be able to support handrails in use, if necessary.

The minimum headroom available in the WC compartment should be 2.1m measured from the front of the water cistern.

Diagram 30  
WC compartment in small dwelling
Section 2.5  
Switches and sockets in dwellings

Section 2.5  Switches and sockets in dwellings

2.5.1  Objective

The objective is to locate switches and sockets outlets at accessible heights.

2.5.2  Switches and sockets

Door handles should be located at a height of 900mm to 1200mm above floor level. Electric light switches should be located at a similar height.

Equipment adjacent to the entry intended to assist in gaining entry, e.g. doorbells, entry phones, should be located at a height between 900 mm and 1200 mm above floor level.

Switches and sockets outlets for lighting and other equipment in habitable rooms should be located at appropriate heights between 400mm and 1200mm from finished floor level.

These requirements should be restricted to convenience socket-outlets used for general purposes and should not apply to dedicated socket-outlets not readily accessible and used for appliances that are intended to be continuously connected in normal use.

The requirements should apply for all control devices except where the manufacturer’s instructions specify otherwise.

Reference should be made to Section 1.5 for further information on switches and sockets.
Referenced Standards and References

IS EN 81-1: 1999 Safety rules for the construction and installation of lifts - electric lifts (Amd 1)

IS EN 81-2:1999 Safety rules for the construction and installation of lifts - hydraulic lifts (Amd 1)


IS EN 997:2003 WC pans and WC suites with integral trap (AMD Corrigendum 14805) (AMD 16965)

BS 4800: 1989 Paint colours for building purposes (whilst the colours in this standard cannot be seen on CD-ROM or Online the text can still be used)

BS 5776: 1996 Specifications for powered stair lifts

BS 6034:2002 Graphical symbols and signs - Public information symbols (AMD 16897)

BS 6440: 1983 Code of practice for powered lifting platforms for use by disabled persons


BS8300: 2009 Design of Buildings and their approaches to meet the needs of disabled people – Code of Practice.

BS 8493 - In preparation


Draft Roads and Street Design, National Disability Authority Kildare County Council


Safety, Health and Welfare at Work (General application) Regulations 2007 (SI No. 299 of 2007)
Other Standards and References

Further Information

Legislation

Disability Act (2005)

Building Regulations (1997-2008)

Safety, Health and Welfare at Work (General application) Regulations 2007 (SI No. 299 of 2007)

General Accessibility

BS 8300: 2009 Design of Buildings and their approaches to meet the needs of disabled people – Code of Practice.

Centre of Excellence for Universal Design  www.universaldesign.ie


Approach & Access


Circulation

IS EN 81-1: 1999 Safety rules for the construction and installation of lifts - electric lifts (Amd 1)

IS EN 81-2:1999 Safety rules for the construction and installation of lifts - hydraulic lifts (Amd 1)


IS EN 10535: 1998 Hoist for the transfer of Disabled Persons

BS 5655 Lifts and service lifts: Part 5 : 1989 Specifications for dimensions for standard lift arrangements

BS 5776 : 1996 Specifications for powered stair lifts
Other Standards and References

BS 6440: 1983 Code of practice for powered lifting platforms for use by disabled persons


Sanitary Facilities


Facilities


Communication Aids

BS 4800: 1989 Paint colours for building purposes (whilst the colours in this standard cannot be seen on CD-ROM or Online the text can still be used)

BS 7594:1993 Code of Practice for audio-frequency induction loop systems (AFILS)

BS5252 BS 5252:1976 Framework for colour co-ordination for building purposes


See it right - Signage, 2007, Royal National Institute of Blind People, 105 Judd Street, London WC1H 9NE, www.rnib.org.uk


Project Rainbow, the Research Group for Inclusive Environments, 1995-1996, University of Reading, www.rdg.ac.uk

Other Standards and References

Dwellings


Egress

Promoting Safe Egress and Evacuation of People with Disabilities, National Disability Authority, 25 Clyde Road, Dublin 4, www.nda.ie

BS 5588-8:1999 Fire precautions in the design, construction and use of buildings. Code of practice for means of escape for disabled people

Historic Buildings


Existing Buildings

Buildings for All to Use- improving the accessibility of public buildings and environments (C610) Keith Bright and Sue Flanagan, Construction Industry Research and Information Association, Classic House, 174 - 180 Old Street, London EC1V 9BP, UK www.ciria.org (ISBN 0 86017 610X)

Management

Access Handbook Template, National Disability Authority, 25 Clyde Road, Dublin 4. www nda.ie