Department for Transport

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

Design Standards for Accessible Railway Stations

Version 04 – Valid from 20 March 2015

A joint Code of Practice by the Department for Transport and Transport Scotland

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Queries relating to the adoption and application of the PRM TSI, including its impact on rail vehicles, should be addressed to:

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Foreword by Baroness Kramer

There are over 10 million people in Great Britain with a disability and we are committed to improving their access to work and leisure. This includes improving access to the UK's railway stations, and this publication will help those delivering station infrastructure improvements to contribute to that aim.

There is something fundamentally unfair when a disabled passenger has to travel beyond the mainline station they need, simply to change trains, and travel back again in order to reach the correct platform. By designing more accessible railway stations, you can start to change this.

This is not only the right thing to do, it also makes good business sense, as passenger numbers can increase by up to 20% at stations where step-free access is provided.

All infrastructure work carried out at stations needs to comply with the EU and domestic rules set out in this Code of Practice.

Compliance with the Code is not gold plating, it is a requirement of the licence that each train operating company (TOC) and Network Rail has from the Office of Rail Regulation (ORR), and it applies in all cases, whether it's new, replacement or renewed infrastructure. The underlying principle of this Code is that, whenever work takes place, the opportunity is taken to ensure the output of that particular work provides for improved accessibility. We expect operators to commit themselves to a programme of continuous improvement on behalf of their disabled passengers.

It doesn't need to be a big deal or a big cost to a project. It just needs careful thought and designing in from the start – see it as an opportunity, not a problem. If you build it they will come.

Introduction

This Code fulfils the Secretary of State's responsibility under Section 71B of the Railways Act 1993 (as amended), to produce a Code of Practice "protecting the interests of users of railway passenger services or station services who are disabled".[1]

This updated Code replaces all previous versions, including ***Train and Station Services for Disabled Passengers: A Code of Practice* (the Blue Book)** and ***Accessible Train Station Design for Disabled Passengers: A Code of Practice (November 2011)***. This latest revision incorporates modifications to the Commission Regulation (EU) No 1300/2014 of 18 November 2014 on the technical specifications for interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility (PRM TSI).

The version of the document published on the Department for Transport's (DfT) website will be considered the official version for the purposes of the Railways Act 1993. Train and station operators, and anybody else who carries out work on Great Britain's railway network, should ensure that they are familiar with this version and should check the website on a regular basis for updates.

If you have any questions regarding the Code of Practice, please contact the Railways for All team using the address at the start of this document.

1 Railways Act 1993, s.71B. Available at www.legislation.gov.uk/ukpga/1993/43/contents#pt1-pb12-l1g70

About the Code of Practice

1. The purpose of the Code is to ensure that any infrastructure work at stations makes railway travel easier for disabled passengers. It applies to services provided by operators in Great Britain in relation to trains and stations.

2. The **Code identifies European and national standards** relevant for all passenger train and station operators in Great Britain. **Licensed operators, including Network Rail must follow** the Code, a condition of their licence, **whenever they install, renew or replace infrastructure or facilities**. This includes the requirement to establish and comply with a Disabled People's Protection Policy (DPPP), paying due regard to this Code.

3. The Code contains **mandatory European standards** (from the Persons with Reduced Mobility Technical Specification for Interoperability) which must be applied when any "major work" is being undertaken; **mandatory national standards** which must be applied to all other installations, renewals or replacements; and **best practice guidance** which should be applied wherever possible.

4. Under the Railways (Interoperability) Regulations 2011, all new work and upgrade or renewal work, under the PRM TSI, on Great Britain's rail system will require an authorisation to place into service from the national safety authority (ORR), unless the project has received a decision from the Department that an authorisation is not required for upgrade or renewal of the work.

5. A revised PRM TSI came into force on 1 January 2015 so all new work, upgrades or renewals are now subject to the revised TSI. The PRM TSI scope has been extended to cover the entire rail network. It will apply where new trains or stations are introduced, or where trains or stations undergo major work, on any part of Great Britain's

rail network. It is possible that some installations, replacements or refurbishments do not constitute upgrade or renewal work but are still subject to European or national standards referred to in this Code.

6. Details of operators who either do not hold licences and so are not required to produce a DPPP, or who are otherwise exempted from the licence condition to have regard to the Code of Practice are in Annex II.

Definition of "station"

7. The Code of Practice applies in all public circulation areas within railway stations. A station is defined in Section 83 (1) of the Railways Act 1993 as:

"Any land or other property which consists of premises used as, or for the purposes of, or otherwise in connection with, a railway passenger station or railway passenger terminal (including approaches, forecourt, cycle store or car park), whether or not the land or other property is, or the premises are, used for other purposes."

Definition of 'disability'

8. This Code assumes the same definition of disability as the Equality Act 2010:

"A physical or mental impairment that has a substantial and long term adverse effect on a person's ability to carry out normal day-to-day activities."

The scope

9. This Code of Practice is relevant to all passenger train and station operators in Great Britain. It does not apply to Northern Ireland.

10. The Railways Act 2005 granted Scottish ministers the power to produce their own Code of Practice to apply to services and stations in Scotland. Until such time as Scottish ministers choose to produce a separate Code of Practice, this Code will apply in Scotland. All references to external rules in England and Wales, such as the Building Regulations, shall be assumed to be referring, in addition, to the appropriate Scottish standard.

11. With certain exceptions set out in Annex II, operators are required to meet the European and national standards, as set out in the main body of this Code, when providing new, renewed or replacement facilities on passenger trains or at stations. The Code does not impose an obligation on operators to take action to enhance accessibility in other circumstances.

12. Following the guidance sections is not mandatory. However, this is best practice so it is strongly recommended that it is followed where possible.

Dispensation process

13. Where a non-exempt station scheme, undertaken by a licensed operator, cannot meet the European or national standards in this Code of Practice, the scheme promoter must contact the DfT to apply for a dispensation. Please see Annex IV for further details.

Enforcement

14. All licences issued to passenger train and station operators by the Office for Rail Regulation (ORR) contain a condition that, in drawing up their Disabled People's Protection Policies (DPPPs) licensees will pay due regard to the Code of Practice.

15. Furthermore, it is a standard condition of each operator's DPPP that they will follow the Code of Practice.

16. Compliance with the Code of Practice should therefore be treated in the same manner as compliance with any other licence condition. By failing to comply with the Code of Practice, an operator is in breach of their licence and may be subject to enforcement action by the ORR.

17. Operators should note that, in cases where the European and national standards are not prescriptive, they may find it difficult to defend themselves against action taken by an individual under the Equality Act 2010, if they cannot demonstrate that they have taken all reasonable steps, equivalent to those recommended in the Code of Practice guidance.

Updating the Code

18. Users must be sure at all times that they are using the most up-to-date version of this Code of Practice. There is a version number and date on each Code of Practice to help them to do this.

19. The latest version will be available on the Department's website at www.gov.uk/dft and users, particularly those who have printed a hard copy, are recommended to check there on a regular basis so as to be aware of any changes to standards or guidance.

A1. Pre-travel information

Good information is vital. In addition to the same information as anyone else, disabled passengers may need extra information to enable them to undertake and complete their journey in reasonable safety and comfort.

A1.	European standards	Reference
	Information regarding the level of accessibility of all stations must be freely available. Operating rules shall be made to ensure that information regarding the level of accessibility of all stations is available.	**PRM TSI: 4.4.1**

A1.	National standards	Reference
	This section contains no national standards but operators ought to refer to *How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators* for thorough guidance on the statutory requirements relating to this issue. An overview of these requirements is given below.	*How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators*

A1.	Code of Practice guidance	Reference
a.	Should a disabled person require assistance or the use of any additional facilities, they should be reassured that it will be provided, and be able to rely on the fact that it will be as arranged.	
b.	Accessibility information ought, as a minimum, to cover the following areas: • car parking facilities; • local transport interchanges (bus stops, drop-off and pick-up points); • doors and single-level entrances; • obstacle-free routes through the station; • floor surfaces, glass and wall markings, tactile information; • toilets and baby-changing facilities; • station furniture (seating, waiting rooms); • ticket offices and ticket vending machines; • information desks and customer assistance points; • visual and spoken information; • ramps, lifts and escalators; • stairs, steps and handrails; • boarding aids;	

A1.	Code of Practice guidance	Reference
	• platform width, edge of platform and end of platform; • lighting; • level track crossings; • commercial outlets, telephones, vending machines. Most of the above information is located on the Stations Made Easy application on the National Rail Enquiries website, which should be regularly checked and updated for accuracy.	
c.	As well as stating whether the facility exists at the station, it may also be pertinent to outline whether the facility is available at all times that trains run and what issues a passenger may face. For example, a flight of stairs may have 32 steps but may incorporate resting spaces.	
d.	Accessibility information should be available in a range of formats, including large print, audio and braille.	

A1.	Code of Practice guidance	Reference
e.	Passengers should be able to readily obtain the accessibility information for a particular station from the station operator's phone line, on the internet and by request from any of the operator's ticket offices or customer information points. Online information should be accessible to all users, in accordance with the W3C Web Accessibility Initiative's criteria for "Triple-A" compliance.	W3C Web Accessibility Initiative: Web Content Accessibility Guidelines 1.0
f.	Potential passengers ought to be able to find out in advance where they can catch their train, when it will leave, where they have to change, and what help or facilities are available for their particular needs.	
g.	If a station accessibility level changes (for example, a lift breaks down), then the operator should publicise this promptly, including an approximate timescale for any repairs, and update the Station Journey Planner by contacting the helpdesk.	

B1. Substitute transport – pre-planned and emergency

Figure B1.1 Sign for substitute transport – a replacement bus service. The foreground shows bollards

B1.	European standards	Reference
	The Infrastructure Manager or Station Manager shall have procedures that include the provision of alternative assistance to PRM during maintenance, replacement or repair of facilities that are for PRM use.	**PRM TSI: 4.5.1**

B1.	National standards	Reference
	The obligations within this section are also underpinned by statute. Section 248 of the Transport Act 2000 requires operators to ensure, so far as is reasonably practicable, that the substitute road services allow disabled passengers to undertake their journeys safely and in reasonable comfort. This should include passengers who have suffered an injury that seriously impairs their ability to walk. Financial liabilities can arise if operators fail to meet these requirements.	Transport Act 2000

B1.	Code of Practice guidance	Reference
a.	Buses or other substitute transport (Figure B1.1) should be accessible to disabled people.	
b.	Passenger train operators should ensure that accessible substitute transport is provided during such engineering works.	
c.	Where passenger train services are affected by engineering works or an emergency that leads to serious disruption, at short notice, it is recommended that passenger train operators provide accessible buses, where reasonably practicable, at no extra charge. Where this cannot be achieved, operators should ensure that other alternative accessible transport is available to disabled passengers, such as accessible taxis, at no extra charge and that these alternative travel arrangements are promoted.	
d.	Operators should ensure that any alternative accessible transport will carry assistance dogs, where applicable. This must never be at extra cost to the owner.	
e.	Operators should ensure that this information is supplied to National Rail Enquiries and other accessible information services and station staff on affected routes as soon as possible.	

C1. Car parking – general and location

Figure C1.1 Car park sign

Figure C1.2 Blue Badge holder parking spaces in use

C1.	European standards	Reference
1.	Where a station-specific parking area exists, there shall be sufficient and adapted parking spaces reserved for PRM eligible to utilise them (Figures C1.1 and C1.2) at the nearest practicable position, within the parking area, to an accessible entrance.	**PRM TSI: 4.2.1.1**
2.	The European TSI requirement is that UK national standards are followed to ensure consistency across the UK. Therefore, the national standards below must be followed.	**PRM TSI: 4.2.1**

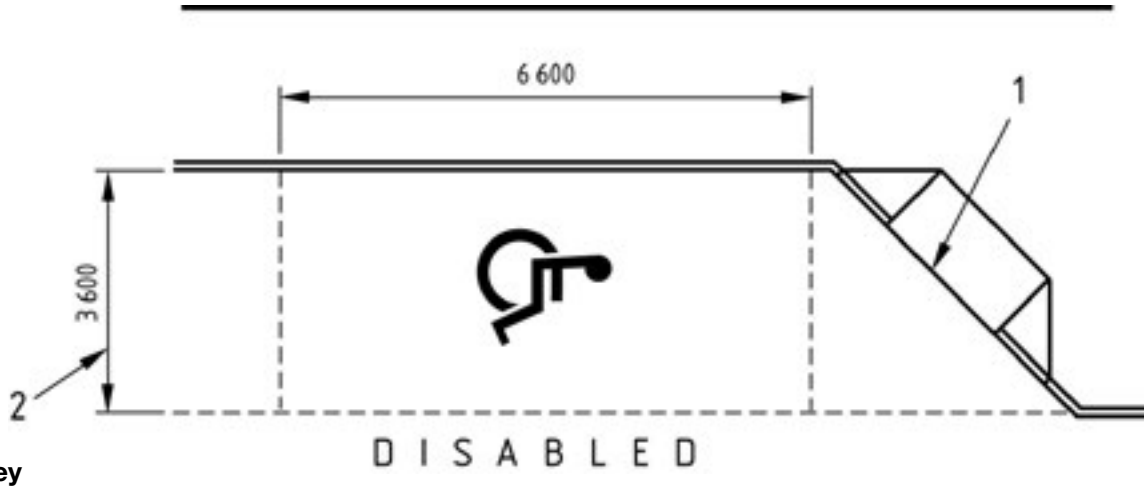
C1.	National standards	Reference
1.	A sign or, if appropriate, signs should be provided at the entrance to each car park and at each change in direction to direct disabled motorists to designated parking spaces.	**BS 8300:4.4.1**
2.	Designated disabled persons' parking spaces (Figure C2.1) should be located on firm and level ground, as close as is feasible to the accessible entrance. Access routes on level ground should have resting places not more than 50 m apart for people with limited mobility.	**BS 8300:4.2.2** **BS 8300:5.1**

C1.	National standards	Reference
3.	Any vehicle height barrier should provide a vertical clearance on level ground of 2600 mm from the carriageway to allow the passage of a high-top conversion vehicle. The vertical clearance of 2600 mm should be maintained from the entrance of the car park to (and including) the designated parking spaces and exits from those spaces.	**BS 8300:4.4.3**
4.	Height restrictions should be clearly signposted, at a point before drivers begin to enter the car park. For existing car parks, if it is not feasible to maintain the recommended vertical clearance along the route, there should be directions to suitable alternative designated parking spaces.	**BS 8300:4.4.3**
5.	Where designated on-street parking bays are provided, they should be sited where road gradient and camber are reasonably level, e.g. 1:50.	**BS 8300:4.1**

C1.	Code of Practice guidance	Reference
a.	All requirements and recommendations in this section apply to station car parks that are part of the operator's lease. Where the car park is operated by a third party, the station operator should ensure that conditions are introduced at the next review of the contract to require compliance with the standards in the Code.	
b.	It is recommended that, wherever possible, there is direct pedestrian access to the station without the need to conflict with road traffic.	
c.	Co-operation between the operator and the highway authority (or other party) is expected in order to provide suitable crossing points where there is a road between the car park and the station.	
d.	It is recommended that, where practicable, disabled persons' car parking spaces are covered with a shelter to protect people with mobility difficulties from the elements while they transfer to or from their vehicles.	
e.	If there are alternative routes between the station and the designated disabled persons' parking spaces, the preferred route for wheelchair users should be clearly signposted.	

C1.	Code of Practice guidance	Reference
f.	It is recommended that an accessible help point that can be used by all users, including wheelchair users, to summon assistance from staff is installed near the designated disabled persons' parking spaces.	
g.	It is also recommended that further help points are installed in the car park(s) to assist customers who may need help but who are not Blue Badge holders.	
h.	Where car parking is split into short and long stay, all blue badge holder parking bays and enlarged standard spaces should be located together, as near as feasible to the station entrance.	
i.	It is recommended that there is an accessible route between the general car parking and the station. This means that if all of the disabled spaces are occupied, a disabled person can still use the main car park.	
j.	Height restrictions should be clearly signposted, at a point before drivers begin to enter the car park.	

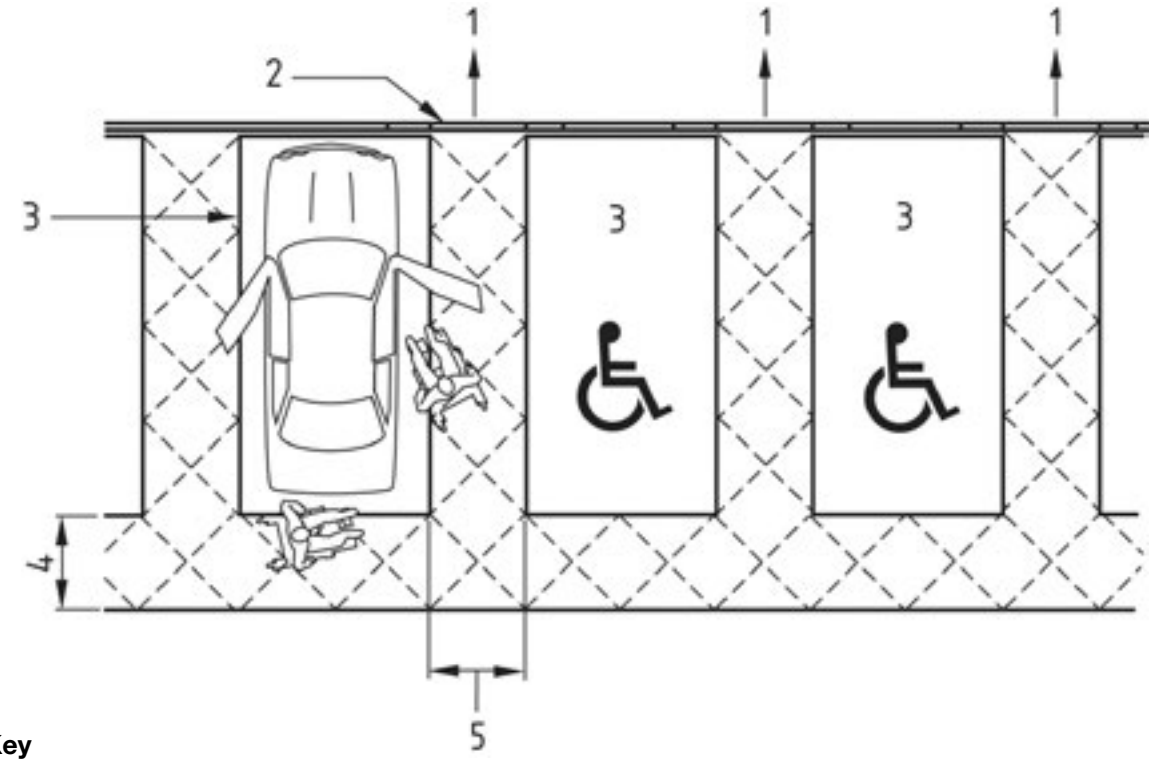
C2. Car parking – dimensions and number of spaces



Key
1 Dropped kerb (with blister tactile paving)
2 Allows safety zone on kerb or street side

NOTE Refer to Inclusive mobility – A guide to best practice on access to pedestrian and transport infrastructure *[10] for further guidance.*

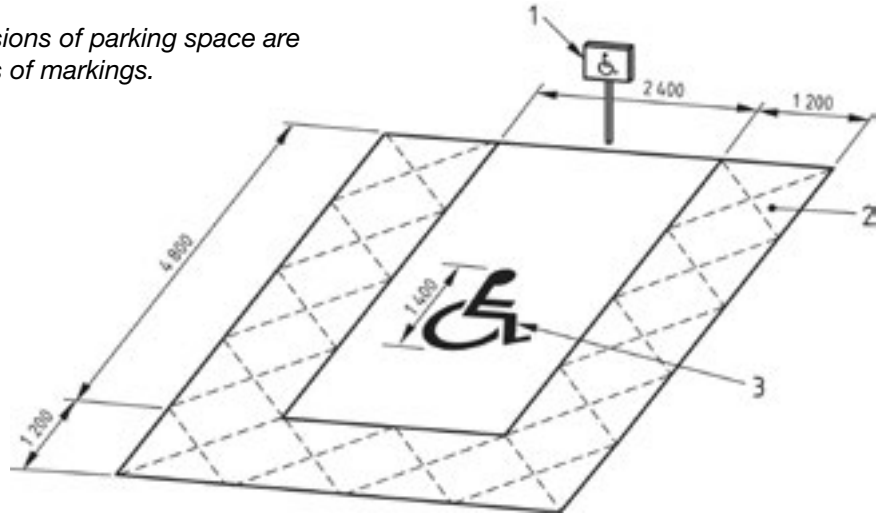
Figure 1 Example of a designated on-street parking bay
Dimensions in millimetres



Key
1 Preferred access route avoiding travel behind parked cars
2 Dropped kerb or level access
3 Standard 2400 mm x 4800 mm designated parking space
4 1200 mm wide safety zone for boot access and cars with rear hoists, outside the traffic zone
5 1200 mm wide marked access zone between designated parking spaces

Figure 2 Access around designated off-street parking spaces

NOTE Dimensions of parking space are to centre lines of markings.



1 Sign, with its lower edge 1000 mm above the ground, to identify parking space when road markings obscured e.g. by snow or fallen leaves, with the words “Blue badge holders only”
2 1200 mm wide access zone between designated parking spaces
3 International Symbol for Access

Figure 3 Markings for multiple designated off-street parking spaces

Source: BS 8300 Section 4 (Please note that figure numbers correspond with BS 8300)

C2.	European standards	Reference
	The European TSI requirement is that UK national standards shall be applied to ensure consistency across the UK. Therefore, the national standards below must be followed.	**PRM TSI 4.2.1**

C2.	National standards	Reference
1.	The minimum number of designated spaces should be one space for each employee who is a disabled motorist, plus 5 per cent of the total capacity for visiting disabled motorists.	**BS 8300:4.2.1.4**
2.	A further 5 per cent of the total capacity should be enlarged standard spaces of 3600 mm wide x 6000 mm long that could be adapted to be designated parking spaces to reflect changes in local population needs and allow for flexibility of provision in the future.	**BS 8300:4.2.1.1**
3.	Spaces designated for disabled employees should be differentiated from spaces designated for other users.	**BS 8300:4.2.1.1**
4.	Where space permits, at least one large designated parking space, 4800 mm wide x 8000 mm long, should be provided for side or rear access using hoists or ramps.	**BS 8300:4.2.1.1**

C2.	National standards	Reference
5.	Designated disabled persons' parking spaces must be 2400 mm x 4800 mm with a zone 1200 mm wide between designated parking spaces and between the designated spaces and a roadway (without reducing the width of the roadway) to enable a disabled driver or passenger to get in or out of a vehicle and access safely the boot or rear hoist (Figures C2.2 and C2.3).	**BS 8300:4.2.3**
6.	Designated on-street parking must be 6600 mm long × 3600 mm wide. This allows access to the rear of the vehicle and free passage between parked vehicles. It also enables the driver or passenger to alight from the side (Figure C2.1).	**BS 8300:4.1**

C2.	Code of Practice guidance	Reference
	If all the designated spaces are occupied for more than 10 per cent of the car park's operating hours, the operator should consider increasing their number.	

C3. Car parking – markings

C3.	European standards	Reference
	The European TSI requirement is that UK national standards shall be applied to ensure consistency across the UK. Therefore, the national standards below must be followed.	**PRM TSI: 4.2.1**

C3.	National standards	Reference
1.	Spaces must be clearly marked – for example, by the International Symbol for Access on the road surface and by a notice at the driver's eye level. See BS 8300:2009, Section 4, Figure 3.	**BS 8300:4.2.3**
2.	Designated parking spaces and any access routes from such spaces to the building entrance should be lit artificially to achieve a minimum luminance of 20 lux, but with an illuminance of 100 lux on ramps and stairs.	**BS 8300:4.2.3**
3.	Safety zones surrounding parking spaces should be marked so as to visually contrast with the surface to which they are applied. See BS 8300:2009, Section 4, Figure 3.	**BS 8300:4.2.3**

C3.	Code of Practice guidance	Reference
a.	All new signage should refer to “Blue Badge holders”.	
b.	Dropped kerbs or level access marked with yellow hatching should be provided at exits from the car park to surrounding footpaths and at, or close to, the entrance(s) of the station. These should be kept free of obstruction. They should be marked by the appropriate tactile surface, so that visually impaired people are aware when they are moving onto the highway.	
c.	It is recommended that dropped kerbs at the pavement edge are not more than 2000 mm wide, with a level area of at least 1000 mm on the pavement to the rear of the dropped kerb. If this is not possible, the dropped kerb should extend to the rear of the pavement. The gradient should be 1:20 unless site constraints make this impossible, in which case the recommended maximum is 1:15 (1:12 in exceptional circumstances). All dropped kerbs should be flush with the highway and designed to ensure that drainage prevents any water from gathering.	
d.	Where the dropped kerb at the controlled crossing is in the direct line of travel, e.g. at crossing points on junctions, the tactile surface should be laid to a depth of 1200 mm. At all other controlled crossings a depth of 800 mm should be provided.	

C3.	Code of Practice guidance	Reference
e.	It is inappropriate to install long sections of tactile paving. Parking bays should not be completely level with the surrounding footway; a 25 mm upstand to the footway will provide some indication of the change from footway to highway.	
f.	The front of each bay should be protected with barriers and a tactile warning surface 400 mm deep should be used to indicate where the footway becomes flush with the highway, for example at the front of the transfer zone.	
g.	For more information about tactile surfaces, see *Guidance on the Use of Tactile Paving Surfaces*.	*Guidance on the Use of Tactile Paving Surfaces*

C4. Car parking – monitoring and enforcement

C4.	European standards	Reference
	This section contains no European standards.	

C4.	National standards	Reference
	Use of the designated disabled persons' parking spaces must be regularly monitored to limit misuse by non-disabled motorists and to confirm the number of designated spaces remains appropriate for the number of disabled motorists using the station.	**BS 8300:4.2.1.1**

C4.	Code of Practice guidance	Reference
a.	The number of designated spaces should be monitored frequently as improvements in stations and rolling stock may make it possible for more disabled people to travel. The use of designated spaces should be monitored and their proper use enforced.	
b.	Any pay and display machines should be placed close to the blue badge holder spaces. It is recommended that the ticket machines are easily accessible to all disabled people. Any charging policies must be clearly stated on signs near the ticket machines. There should be alternative payment provisions in place for passengers who are unable to use the pay and display machines.	*Guidance on the Use of Tactile Paving Surfaces*

D1. Set-down and pick-up points

D1.	European standards	Reference
	Obstacle-free routes shall be provided that interconnect the following public areas of the infrastructure if provided: • Stopping points for other connecting modes of transport within the station confines (for example, taxi, bus, tram, metro, ferry etc.); • Car parks • Accessible entrances and exits • Information desks • Visual and audible information systems • Ticketing facilities • Customer assistance • Waiting areas • Toilet facilities • Platforms All of the above must meet the technical standards from PRM TSI: 4.2.1.2.	**PRM TSI: 4.2.1.2**

D1.	National standards	Reference
1.	A designated setting-down point suitable for disabled passengers should be provided on firm and level ground, close to the accessible entrance to the station.	**BS 8300:4.5**
2.	The location of the setting-down point should be clearly indicated.	**BS 8300:4.5**
3.	The setting-down point should be provided in addition to the designated disabled persons' parking spaces.	**BS 8300:4.5**
4.	The surface of the footway, alongside a setting-down point, should be level with the carriageway at that point, to allow convenient transfer into and from a wheelchair.	**BS 8300:4.5**
5.	If feasible, a short term waiting area for drivers of vehicles picking up disabled passengers or a disabled driver waiting for passengers should also be provided in addition to the setting-down point. An area of the footway with a kerb should be assigned as a setting-down/picking-up point for people using taxis and other vehicles that have ramps designed for transfer directly to the footway.	**BS 8300:4.5**
6.	If feasible, a setting-down point should be covered to provide protection from the weather.	**BS 8300:4.5**

D1.	Code of Practice guidance	Reference
a.	Where set-down and pick-up points can only be at pavement level, the kerb alignment should allow vehicles to park hard against it.	
b.	Wheelchair access to most taxis is on the nearside, though some taxis load wheelchair users through the rear door or the far side door. Where taxi ranks are being designed or redeveloped, they should be designed to facilitate access into all vehicle types without creating safety risks for either customers or drivers.	
c.	It is recommended that road-level set-down points are near to a dropped kerb so that it is possible for wheelchair users to get onto the safety of the pavement quickly. Passengers should ideally be dropped in a safety zone.	
d.	Set-down and pick-up points should be free of all obstacles and wide enough to allow transfer to and from a wheelchair without being obstructed by other pedestrians. The width of the unobstructed footway should be sufficient to allow the deployment of wheelchair ramps (up to 1620 mm) and adequate manoeuvring space for the wheelchair user. The suggested total width is 4040 mm.	

D1.	Code of Practice guidance	Reference
e.	Where set-down and pick-up points are not outside, or on the same side of the road as the station entrance, a controlled crossing route should be provided.	
f.	It is recommended that, where practicable, passengers are able to choose between getting out of taxis/minicabs or cars either at pavement level or at road level. Which of these is easier depends on the type of vehicle and the method of getting into and out of it. There should be a straight length of kerb to allow vehicles to park hard against it.	
g.	In the case of buses, it is recommended that raised “Kassel” type kerbs are used to help facilitate access. If this type of kerb is introduced, dropped kerb access at appropriate points should be included as well. The Public Service Vehicles Accessibility Regulations 2000 (PSVAR) contain a requirement for buses to carry a ramp or lift in order to overcome the height differences by 2015, 2016 and 2017, depending on the bus type.	For further details, see Annex V: Reference documents
h.	Controlled crossings with aural signals or a rotating cone (to assist deafblind people) fitted to the underside of the control box should ideally be used.	

D1.	Code of Practice guidance	Reference
i.	Where the crossing is not under the control of the station operator, it is recommended there is co-operation between the operator and the highway authority so that the standards in this code can be met.	

E1. Locating and approaching the station

Figure E1.1 The recognised double arrow for the national rail network

E1.	European standards	Reference
1.	Obstacle-free routes shall be provided that interconnect the following public areas of the infrastructure if provided: • Stopping points for other connecting modes of transport within the station confines (for example, taxi, bus, tram, metro, ferry etc.); • Car parks • Accessible entrances and exits • Information desks • Visual and audible information systems • Ticketing facilities • Customer assistance • Waiting areas • Toilet facilities • Platforms	**PRM TSI: 4.2.1.2**
2.	Obstacle-free routes shall be clearly identified by visual information, as detailed in the technical standards from PRM TSI: 4.2.1.10.	**PRM TSI: 4.2.1.2.3**
3.	Information on the obstacle-free route shall be given to visually impaired people by tactile and contrasting walking surface indicators. This does not apply to obstacle-free routes to and from car parks.	**PRM TSI: 4.2.1.2.3**

E1.	European standards	Reference
4.	If there are handrails or walls within reach along the obstacle-free route to the platform, they shall have brief information (for example platform number or direction information) in braille or in prismatic letters or numbers on the handrail, or on the wall at a height between 1450 mm and 1650 mm.	**PRM TSI: 4.2.1.2.3**
5.	Within the station confines, furniture and free-standing devices (including cantilevered and suspended items) shall be positioned where they do not obstruct blind or visually impaired people, or they shall be detectable by a person using a long cane.	**PRM TSI: 4.2.1.7**

E1.	National standards	Reference
1.	Free-standing columns that support an entrance canopy should not be positioned within the width of an access route.	**BS 8300: 5.7.1.2**
2.	Low-level posts, e.g. bollards, should not be located within an access route. They should be at least 1000 mm high and should contrast visually with the background against which they are seen (it is desirable also to incorporate a 150 mm deep contrasting strip at the top). They should not be linked with chains and should have no horizontal projections; they may taper towards the top but should not taper towards the ground.	**BS 8300: 5.7.1.2**

E1.	Code of Practice guidance	Reference
a.	Station operators are encouraged to work with local authorities to ensure that stations are clearly and consistently signposted at street junctions, especially on pedestrian routes between public transport facilities.	
b.	It is recommended that pavements provide a 2000 mm obstacle-free, clear passage and have a maximum cross-fall of 2.5 per cent.	
c.	Where it is necessary to introduce occasional narrowing of the footway to avoid existing obstructions (for example, trees) the restricted width should not be less than 1000 mm and should extend no more than 6000 mm.	
d.	Pavements should have a good level of slip resistance, with a smooth consistent texture and should have a well-defined kerb edge.	
e.	Paving slabs should have an even surface to avoid the risk of tripping and be smooth enough for wheelchairs.	
f.	Where station facilities, such as car parks, are outside the station lease area, it is expected that all pavements between the station and the facility will meet the standard of this Code. This may involve co-operation between the station operator and local authority or other third party.	

E1.	Code of Practice guidance	Reference
g.	Lighting should be even and consistent throughout the station.	
h.	The buildings and accessible entrances should be prominently signposted and the “double arrow” railway logo should be displayed near to the main building, so that passengers can find the station easily.	
i.	The “double arrow” symbol (Figure E1.1) should be displayed at, or near, all entrances to stations except Ashford International, Ebbsfleet International, St Pancras International, Stratford International and all stations operated by Heathrow Express. The symbol does not cover other networks (e.g. Tyne and Wear Metro, London Underground).	
j.	Obstructions should be minimised, with any unnecessary street furniture removed and the remaining facilities grouped together and made to contrast appropriately with the background.	
k.	Where bollards are necessary to separate and protect pedestrian areas, they should be consistently spaced and away from the general lines of pedestrian travel.	
l.	Bollards should never be linked with a chain or rope.	

E1.	Code of Practice guidance	Reference
m.	It is recommended that bollards contain a light fitted with louvres (to direct the light downwards to prevent glare) if they are placed in areas that are dark at night.	
n.	Temporary street furniture such as A-boards and street-café tables should be controlled to maintain free passage and be located in accordance with Section 137 of the Highways Act 1980. Street furniture should also contrast with surroundings to aid people with visual impairments. Further guidance can be found in DfT's *Inclusive Mobility*.	*Inclusive Mobility (2005)*
o.	If feasible, drainage gratings should be positioned beyond the boundaries of the access route. Gratings within an access route should be set flush with the surrounding surface. Slots in gratings should not be more than 13 mm wide and should be set at right angles to the dominant line of travel. The diameter of circular holes in gratings should not be more than 18 mm.	

F1. Unobstructed progress – general

Figure F1.1 An unobstructed route between platforms

F1.	European standards	Reference
1.	Obstacle-free routes shall be provided that interconnect the following public areas of the infrastructure if provided: • Stopping points for other connecting modes of transport within the station confines (for example, taxi, bus, tram, metro, ferry etc.) • Car parks • Accessible entrances and exits • Information desks • Visual and audible information systems • Ticketing facilities • Customer assistance • Waiting areas • Toilet facilities • Platforms	**PRM TSI: 4.2.1.2**
2.	All obstacle-free routes, footbridges and subways shall have a free width of a minimum of 1600 mm except in areas that are specified in the following clauses (doors, platforms, level crossings). Where thresholds are installed on a horizontal route, they shall contrast with the surrounding floor and shall not be higher than 25 mm.	**PRM TSI: 4.2.1.2.1**
3.	The length of the obstacle-free routes shall be the shortest practical distance.	**PRM TSI: 4.2.1.2**

F1.	European standards	Reference
4.	Where an obstacle-free route includes a change in level, there shall be a step-free route providing an alternative to stairs for mobility-impaired people.	**PRM TSI: 4.2.1.2.2** Please see Section O: Lifts and Section P1: Ramps for further information.
5.	Obstacle-free routes shall be clearly identified by visual information as detailed in clause 4.2.1.10 of the PRM TSI.	**PRM TSI: 4.2.1.2.3**
6.	Information on the obstacle-free route shall be given to visually impaired people by tactile and contrasting walking surface indicators. This does not apply to obstacle-free routes to and from car parks.	**PRM TSI: 4.2.1.2.3**
7.	If there are handrails or walls within reach along the obstacle-free route to the platform, they shall have brief information (for example platform number or direction information) in braille or in prismatic letters or numbers on the handrail, or on the wall at a height between 1450 mm and 1650 mm.	**PRM TSI: 4.2.1.2.3**

F1.	European standards	Reference
8.	When renewed or upgraded, existing stations that have a daily passenger flow of 1000 passengers or less, combined embarking and disembarking, averaged over a 12 month period are not required to have lifts or ramps where these would otherwise be necessary to provide a step-free route if another station within 50 km on the same route provides a fully compliant obstacle-free route. In such circumstances the design of stations shall incorporate provision for the future installation of a lift and/or ramps to make the station accessible to all categories of PRM.	**PRM TSI: Appendix B**
9.	When considering the practical application of PRM TSI: Appendix B above, operators should consider their obligations to provide accessible facilities in line with relevant legislation, including Part M of The Building Regulations 2000, BS8300 and the Equality Act 2010, as amended.	For further details, see Annex V: Reference documents.
10.	The European TSI requirement is that UK national rules shall be applied when organising the transport of PRMs by an accessible means between a non-accessible station and the next accessible station on the same route, to ensure consistency across the UK.	For further details, see *How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators*

F1.	National standards	Reference
	This section contains no additional national standards.	

F1.	Code of Practice guidance	Reference
a.	Routes to and within buildings should be wide enough for wheelchair users to use easily. We recommend 2000 mm minimum. They must be obstacle free, direct and obvious. Where necessary, e.g. where the accessible route differs from the routes used by other passengers, they should be signposted (see Section K: Signs).	
b.	Station furniture should be designed and placed so that it does not interfere with the main pedestrian flow. Such items should be clearly visible to all passengers and designed in such a way to offer good tonal contrast with the surrounding environment.	
c.	Facilities such as telephones, vending machines and seating should be sited so that people using them do not get in the way of others.	
d.	Passages and subways should be well lit, to a level of 150 lux, with clear directional information.	
e.	Where the use of columns or poles is unavoidable, these should have good tonal contrast against the floor and background in which they are seen. Where this is not possible, they should be marked with a coloured band 140–160 mm wide, with its lower edge at 1500 mm from the ground. An additional lower band should also be used to mark them as a hazard.	

F1.	Code of Practice guidance	Reference
f.	It is recommended that lights and signs are mounted on walls or suspended to avoid the use of additional upstands. Where this results in the information being displayed too far away from the viewer to be easily read, then the sensitive use of upstands should be considered.	
g.	Generally, it is recommended that free-standing objects such as bollards are placed clear of the pedestrian flow. They should be at least 1000 mm high, with coloured bands or tops so that they stand out from the background.	
h.	Objects projecting more than 100 mm into an access route between 300 mm and 2100 mm above the ground should be bordered by hazard protection.	
i.	Hazard protection should take the form of a barrier at a height of 1000 mm from ground level and a kerb, or other solid barrier, detectable by long cane users. This kerb should not be more than 100 mm back from the front edge of the obstacle.	

F1.	Code of Practice guidance	Reference
j.	Where litter bins are provided, they should have good contrast against the background in which they are seen, and should be placed so that they are not an obstruction. It is recommended that the top is 1300 mm above ground level, with a recommended opening of 750–900 mm above the ground. The base must be wide enough to be detected by a cane.	
k.	"Tapering" obstructions such as the spaces below ramps and stairs, which cannot be detected by cane users and are not picked out by guide dogs, should be blocked in or protected by rails which extend at least 1000 mm above ground level. It is recommended that a tapping rail of a maximum height of 200 mm is also used.	
l.	Station furniture should contrast both in tone and in colour with surrounding objects. There should be good contrast between walls, floors and doors for the benefit of visually impaired people. Walls should not have a glossy finish, and floors should ideally have a matt or semi-matt finish.	*Colour, Contrast & Perception: Design Guidance for Internal Built Environments (2004)*
m.	For advice on the provision of tactile paving along unobstructed routes, operators may wish to consult the *Guidance on the Use of Tactile Paving Surfaces*, Department for Transport, Chapter 6.	*Guidance on the Use of Tactile Paving Surfaces*

F1.	Code of Practice guidance	Reference
n.	For security purposes, it may be necessary to place an anti-vehicle security measure, for instance a collapsible bollard, in the centre of the station entrance. In this case a minimum width of at least 800 mm should be maintained on both sides of the bollard, and it should be clearly marked with a colour contrasting band so as to be identifiable to someone with impaired vision.	
o.	Any rise of more than 5 mm should have a bevelled edge, and single steps should also be avoided.	

F2. Unobstructed progress – building works

F2.	European standards	Reference
	The Infrastructure Manager or Station Manager shall have procedures that include the provision of alternative assistance to PRM during maintenance, replacement or repair of facilities that are for PRM use.	**PRM TSI: 4.5.1**

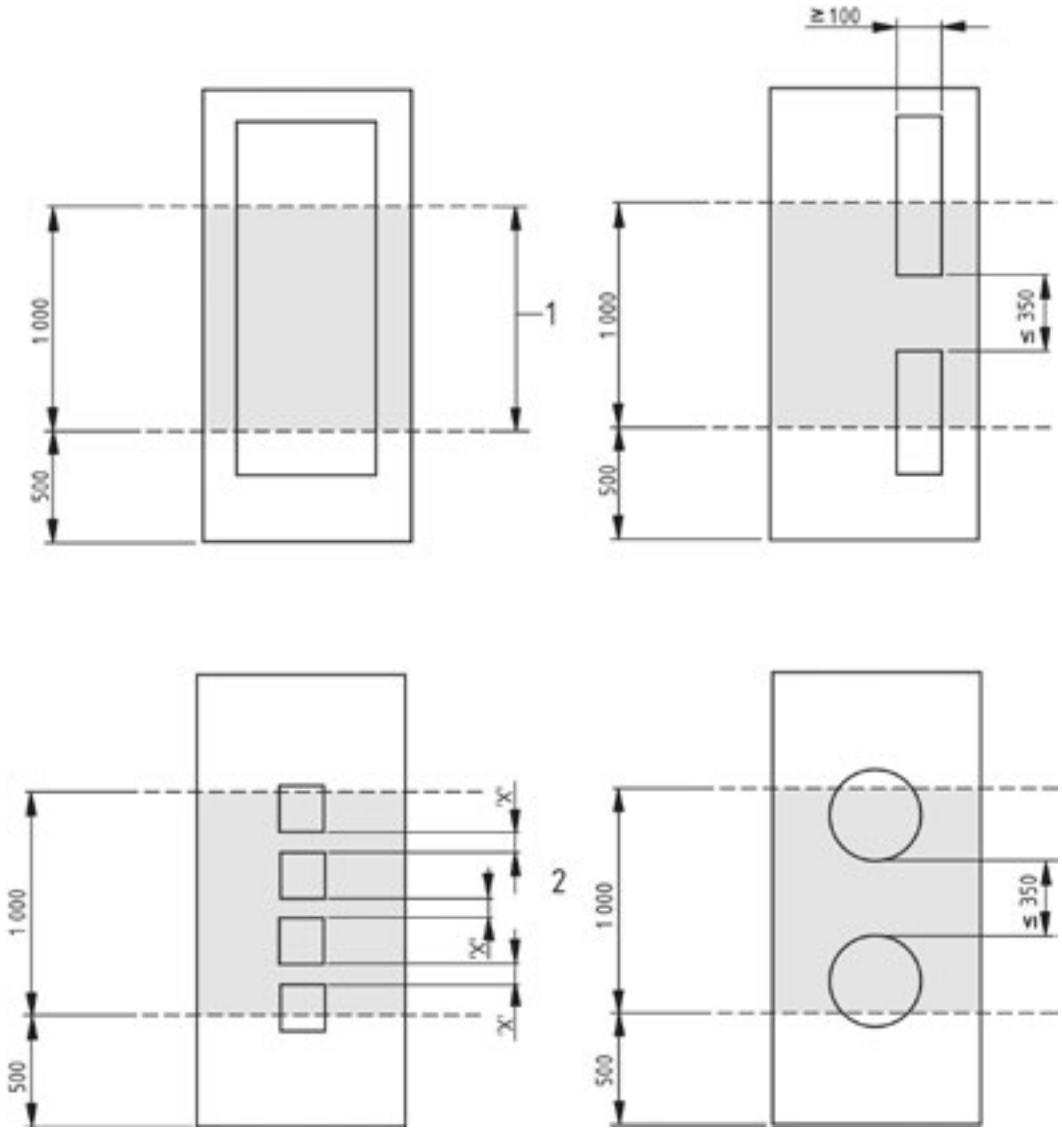
F2.	National standards	Reference
	This section contains no national standards.	

F2.	Code of Practice guidance	Reference
a.	All works and builders' materials in thoroughfares should be enclosed by a fence or barrier that is at a height and colour to be seen easily. It is recommended that the upper edge of barriers should be at least 1000 mm above the ground and should contrast in colour with their surroundings. Barriers should be detectable by visually impaired people, including long cane users, with a tapping rail of a minimum depth of 150 mm, with its lower edge up to a maximum of 200 mm above the ground. Such works should also comply with all relevant legislation, such as *The Construction (Design and Management) Regulations 2015.*	*The Construction (Design and Management) Regulations (2015)*
b.	If the barrier consists of a hoarding, it should include a contrasting band of colour between 140 mm and 160 mm wide, with the lower edge at a height about 1500 mm.	
c.	The use of warning stripes indicates a temporary warning, and the colour chosen should contrast with its background.	
d.	Lamps should mark out the site when the area is not lit. It is recommended that lamps are used at night for areas that are lit, as they provide a higher, more concentrated source around the obstructions, although care should be taken to ensure the safe operation of the railway.	

F2.	Code of Practice guidance	Reference
e.	The pedestrian route around the works should be clearly marked and wide enough for wheelchair users to traverse.	
f.	Where building works are of a size and type that may make it difficult for some people to use the station or facility concerned, information about the nature of the obstacle and about how long it will remain should be fed into the information network. Operators ought to refer to *How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators* for thorough guidance on the statutory requirements relating to this issue.	*How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators 2009*
g.	When commissioning work, station operators, or Network Rail as landlord, should ensure that contractors are aware of these basic rules in conjunction with their railway safety case or applicable safety management system. Where necessary, the local authority and disability groups can be consulted for advice.	
h.	Handrails should always be provided on at least one side of staircases and ramps, even when temporary work is under way. It is recommended where possible in these situations that handrails are provided on both sides.	

F2.	Code of Practice guidance	Reference
i.	On steps or ramps, it is recommended that barriers include a smooth, rigid handrail in a contrasting colour, fixed at between 900 mm and 1000 mm above ground level, for pedestrians to use for guidance and support.	

G1. Doors



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

Figure 13 Minimum zone of visibility and examples of acceptable vision panel configurations

Source: BS 8300 Section 6 (Please note that figure numbers correspond with BS 8300)

G1.	European standards	Reference
1.	Where thresholds are installed on a horizontal route, they shall contrast with the surrounding floor and shall not be higher than 25 mm.	**PRM TSI: 4.2.1.2.1**
2.	Doors shall have a minimum clear useable width of 900 mm and shall be operable by a PRM.	**PRM TSI: 4.2.1.3**
3.	It is permitted to use manual, semi-automatic or automatic doors.	**PRM TSI: 4.2.1.3**
4.	Door-operating devices shall be available at a height of between 800 mm and 1100 mm.	**PRM TSI: 4.2.1.3**

G1.	National standards	Reference
1.	Please see BS 8300 for the national standards on doors. Standards vary according to whether they are internal/external so please ensure you are applying the correct standards.	**BS 8300**
2.	Please refer to BS 8300 Figures 11-14 as examples of good practice in minimum zones of visibility and door-opening furniture. BS 8300 Appendix C also provides useful information on the space required for wheelchair users performing a 90 degrees turn.	**BS 8300:6.4.3 and Appendix C**

G1.	Code of Practice guidance	Reference
a.	It is recommended that thresholds be level with the surrounding floor or, where this is not possible, that they rise no more than 15 mm for external doors or 13 mm for internal doors.	
b.	Doormats should be fixed and sunk so that they are flush with the floor to avoid a trip hazard. Soft mats and coir mats should be avoided, as they are difficult for people using manual wheelchairs or mobility aids to travel over.	
c.	Doors should have tonal contrast with their surroundings.	
d.	The leading edge of any door that is to be left open should contrast with the background against which it will be viewed.	
e.	A clear space of 2000 mm is recommended before and after any doorway to allow a wheelchair user space to manoeuvre.	
f.	The use of automatic doors is highly recommended.	
g.	If automatic hinged doors are used, there should be a clear indication of which way they open so that people do not collide with opening doors.	

G1.	Code of Practice guidance	Reference
h.	Automatic doors should take at least 3 seconds to open and 6–9 seconds to close. Where double sets of automatic doors are used, they should close in a “Z” pattern to prevent a person using crutches from being caught in them.	
i.	Automatic and semi-automatic doors shall incorporate devices that prevent passengers being trapped during operation of the doors.	
j.	If manual doors are used, they should be held open during working hours. In inclement weather, manual doors may be closed, but should be capable of being opened by people with limited strength or wheelchair users.	
k.	Physical barriers should be installed to prevent manual and hinged automatic doors from swinging into people when they open.	
l.	Inward-opening swinging doors in exposed positions should be recessed or sheltered from prevailing winds so that heavy spring closers are not needed.	
m.	Swing doors should be designed so that they can be left open at 90 degrees.	

G1.	Code of Practice guidance	Reference
n.	Self-closing doors should be avoided. Where they are used (e.g. fire doors), they must incorporate a delay mechanism such as a damper.	
o.	Lever handles should be fixed at a height of 1000 mm, with a minimum length of 120 mm. They should be rounded in section, with at least 45 mm clearance from the door. All handles within a station should be at a consistent height.	
p.	An indication of the direction of swing of the doors should be given if this is not indicated by the door fittings.	
q.	It is recommended that doors should have kick plates at least 400 mm high.	
r.	Doorknobs that need to be turned should be avoided, as many people find them difficult or painful to use.	
s.	Doors should have a clear panel so that people of all heights (including wheelchair users) can be seen when approaching from the other side. The minimum zone of visibility should be between 500 mm and 1500 mm high. If a door requires an intermediate horizontal section, this should be between 800 mm and 1150 mm with visibility panels above and below.	

G1.	Code of Practice guidance	Reference
t.	A door control device shall have visual indication, on or around it when enabled and shall be operable by the palm of the hand exerting a force not greater than 15N.	
u.	Door-operating device controls shall be identifiable by touch (e.g. tactile markings) and shall indicate the functionality.	
v.	Where a revolving door is used, an additional non-revolving door shall be provided that is freely available for use, adjacent to the revolving door.	

H1. Lighting

Figure H1.1 Well-lit platforms
Source: Stagecoach South West Trains

H1.	European standards	Reference
1.	The illuminance level of the external areas of the station shall be sufficient to facilitate way finding and to highlight the changes of level, doors and entrances.	**PRM TSI: 4.2.1.9**
2.	The illuminance level along obstacle-free routes shall be adapted to the visual task of the passenger. Particular attention shall be paid to the changes of levels, ticket vending offices and machines, information desks and information displays.	**PRM TSI: 4.2.1.9**
3.	The footbridges, tunnels, stairs and ramps that are leading to the platforms and the platforms shall be illuminated according the specification referenced in EN 12464-2:2014 and EN 12464-1:2011.	**PRM TSI: 4.2.1.9**
4.	Emergency lighting shall provide sufficient visibility for evacuation and for identification of fire-fighting and safety equipment.	**PRM TSI: 4.2.1.9**

H1.	National standards	Reference
1.	Station forecourt lighting shall be in accordance with BS 5489-1 *Code of Practice for the Design of Road Lighting Part 1: Lighting of Roads and Public Amenity Areas*.	**BS 5489-1**
2.	Emergency lighting shall be in accordance with BS 5266-1 *Emergency Lighting Part 1: Code of Practice for the Emergency Lighting of Premises.*	**BS 5266-1**

H1.	Code of Practice guidance	Reference
a.	Wherever possible, it is recommended that public buildings are designed to make use of natural lighting, although care should be taken to minimise glare and strong reflections from surfaces.	
b.	White artificial light is more effective than yellow artificial light in terms of its colour-rendering properties and in creating true colour appearance. If other light colours are used, it is important that the tonal contrast is sufficient in daylight and artificial light. Strobe effects with lights should be avoided, as these may cause problems for people who may have epileptic seizures.	
c.	Steps and stairs should be well lit, without glare. It is recommended that lighting levels increase to 150–200 lux and that the transition should be smooth.	
d.	In passenger lifts, lighting should be uniformly distributed, avoiding the use of spotlights, as they can cause difficulties for visually impaired people. It is recommended that lighting levels in the lift are a minimum of 100 lux (approximately 50–75 lux at floor level), which also allows the occupants of the lift to be viewed by a station CCTV system.	

H1.	Code of Practice guidance	Reference
e.	On escalators, lighting should be provided near to floor level. It is recommended that lighting levels increase on escalators to 150–200 lux, but the transition should be smooth. The sides of the escalator should be a non-reflective material.	
f.	Lighting inside waiting rooms or shelters should be a minimum of 150 lux.	
g.	Platform lighting should provide uniform illumination, and it is recommended that this is a minimum of 100 lux, measured horizontally at floor level, although due care should be taken to the visibility of signals for train drivers.	
h.	Lighting levels should be good and consistent throughout routes used by passengers, day and night. There should be no sudden differences in lighting levels. Any transition on lighting levels should be smooth. No areas should be excessively bright or dark. There should be no areas of strong shadows.	
i.	Operators may wish to monitor the effectiveness of lighting equipment over time to ensure a consistent level as per the standards in this Code of Practice.	

I1. Floors

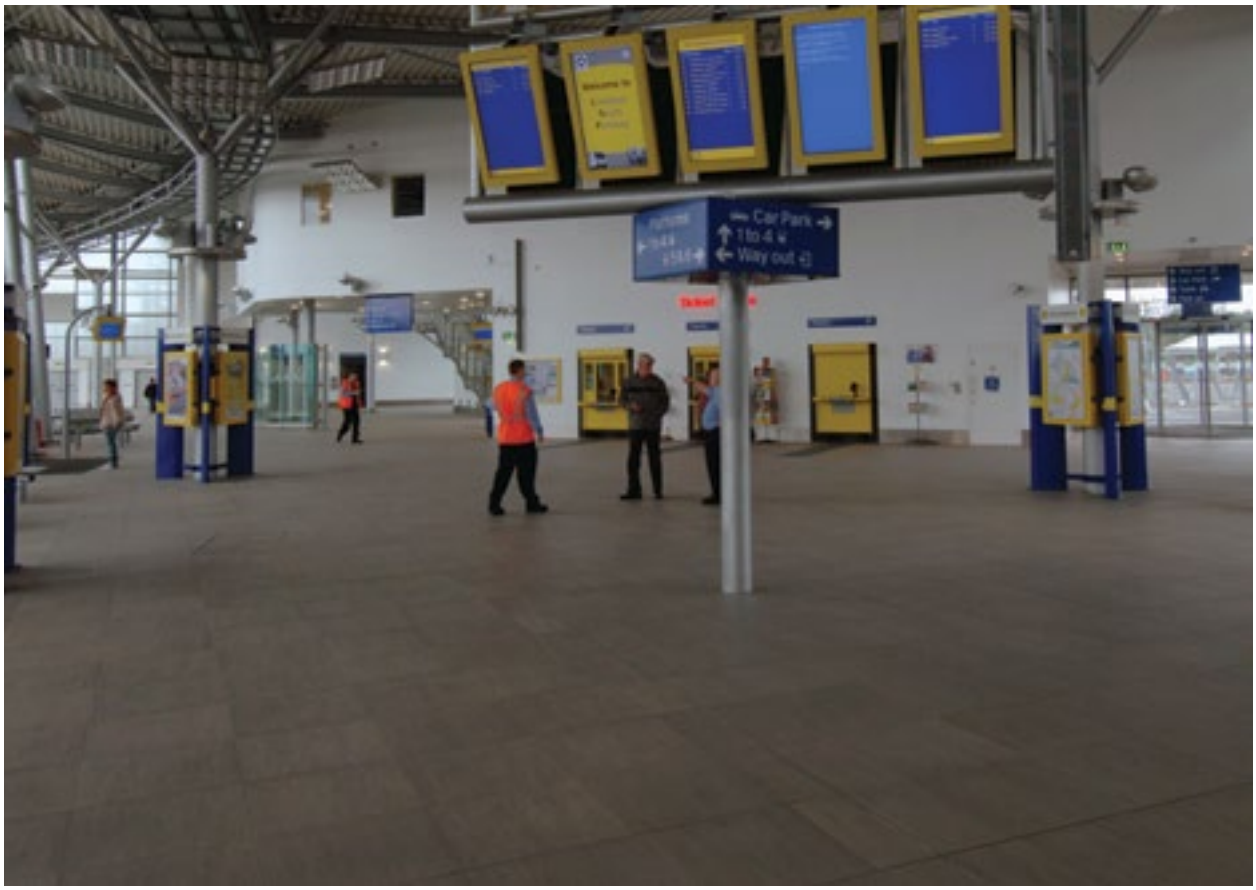


Figure I1.1 Station concourse with non-reflective floor

I1.	European standards	Reference
1.	Within the station buildings, there shall be no irregularities in excess of 5 mm at any given point in floor walking surface areas, except for thresholds, drainage channels and tactile walking surface indicators.	**PRM TSI: 4.2.1.4**
2.	Obstacle-free route floor surfaces and ground surfaces shall have low reflecting properties.	**PRM TSI: 4.2.1.2**
3.	All floor coverings, ground surfaces and stair tread surfaces shall be slip resistant.	**PRM TSI: 4.2.1.4**

I1.	National standards	Reference
1.	Floor surfaces should offer a level of slip resistance that provides a firm foothold and good wheel grip under normal conditions of use.	**BS 8300:9.1.3**
2.	The following indices should be used to indicate the slipperiness of surfaces: a) pendulum test values (PTVs) obtained using a pendulum tester in line with BS 7976-2; b) surface micro-roughness (Rz) measurements using a stylus instrument in accordance with BS 1134-1. Detailed information on assessing slip resistance, together with a table illustrating common surface materials and their dry and wet slip resistance values (SRV), also known as pendulum test values, can be found in BS 5395-1:2010, Clause 7.	**BS 8300: Annex E** **BS 5395-1:2010, Clause 7**

<table>
<tr><th>I1.</th><th>National standards</th><th>Reference</th></tr>
<tr><td>3.</td><td>See the table below for guidance on the interpretation of pendulum results. Surfaces with values in the high and moderate slip potential range are likely to be slippery, therefore they will be more likely to contribute to accidents.

Table 1 Slip potential classification, based on pendulum test values (PTV)<table><tr><th></th><th>PTV</th></tr><tr><td>High slip potential</td><td>0-24</td></tr><tr><td>Moderate slip potential</td><td>25-35</td></tr><tr><td>Low slip potential</td><td>36 +</td></tr></table></td><td>Assessing the slip resistance of flooring: a technical information sheet</td></tr>
<tr><td>4.</td><td>If necessary, existing floor surfaces should be treated to improve their slip resistance. Where two materials abut each other, they should have a similar level of slip resistance, otherwise the foot, walking frame or wheel will be abruptly stopped or caused to slip.</td><td>BS 8300:9.1.3

BS 8300: Annex E.1</td></tr>
</table>

I1.	National standards	Reference
5.	Any matting should either have its surface level with the adjacent floor finish or, if surface laid, be of a type that has a rubber backing and chamfered edges. If in exceptional circumstances other types of surface-laid mats are used, they should be fixed to the floor at their edges and at any joints.	**BS 8300:9.1.3**
6.	Steep cambers can cause problems for visually impaired people, wheelchair users and other mobility-impaired passengers so ought to be avoided. The maximum recommended camber is 2.5 per cent. See the RNIB's *Building Sight* handbook.	*Building Sight (1995)*
7.	Large, repeating patterns that incorporate bold contrasting colours or simulate steps should not be used for any floor surface.	**BS 8300:9.1.3**
8.	It is recommended that floors have a matt or semi-matt finish, wherever possible, to avoid specular (undiffused) reflection and glare (Figure I1.1).	**BS 8300:8.1.5**
9.	Mirrored, high-gloss or very shiny surface finishes should be avoided for large areas, e.g. floor, wall, door and ceiling surfaces.	**BS 8300:9.1.1**

I1.	National standards	Reference
10.	Differences in Light Reflectance Value (LRV) should be used to assess the degree of visual contrast between surfaces such as floors, walls, doors and ceilings and between key fittings/ fixtures and surrounding surfaces. The LRV of a wall should be 30 points different from that of the ceiling and of the floor. To avoid giving the wrong impression about the size of a room, skirtings should have the same LRV as the wall so that the junction between the skirting and the floor marks the extent of the room.	**BS 8300:9.1.1**

I1.	Code of Practice guidance	Reference
a.	New hard floor surfaces such as ceramic tiles, natural stone, concrete or terrazzo, which are widely used in commercial environments, should demonstrate the performance characteristic of differential wear to ensure they maintain their slip resistance over the life of the material. This can be achieved by using an additive such as carborundum in the mix to make them more slip resistant.	
b.	It is recommended that all passenger facilities are on one level. Unexpected changes in level should be avoided; therefore it is recommended that breaks in the surface, such as thresholds, drainage channels and short, sharp ramps, are avoided.	
c.	Single steps should be avoided. Stairs should have a minimum of three steps.	
d.	Floor surfaces should be firm, even, easily cleaned and slip resistant when wet or dry. Where necessary, floors should be treated with a slip-resistant finish in accordance with I1. national standard 2.	
e.	Main thoroughfares within buildings should have consistent floor surfaces. It is recommended that changes in colour and texture are used to mark the edge of the thoroughfares and any impending hazards, such as projecting obstacles and stairways.	

I1.	Code of Practice guidance	Reference
f.	Drainage grilles should, where possible, be offset from the access route. They should be set flush with the surrounding area. The gap between grille bars should not exceed 13 mm. It is recommended that grille bars are set at right angles to the main direction of travel – if there is one – so that they do not trap wheels or long canes. The diameter of circular holes in gratings should be not more than 18 mm. Dished channels should not be incorporated within an access route, as they increase the risk of tripping or of wheelchair users tipping over.	
g.	Any temporary hazards, such as wet areas caused by a leak in the roof, should be marked. The signs or other devices used to do this should be stable and not a hazard in themselves. They should contrast tonally with their surroundings.	

J1. Furniture, walls and transparent obstacles

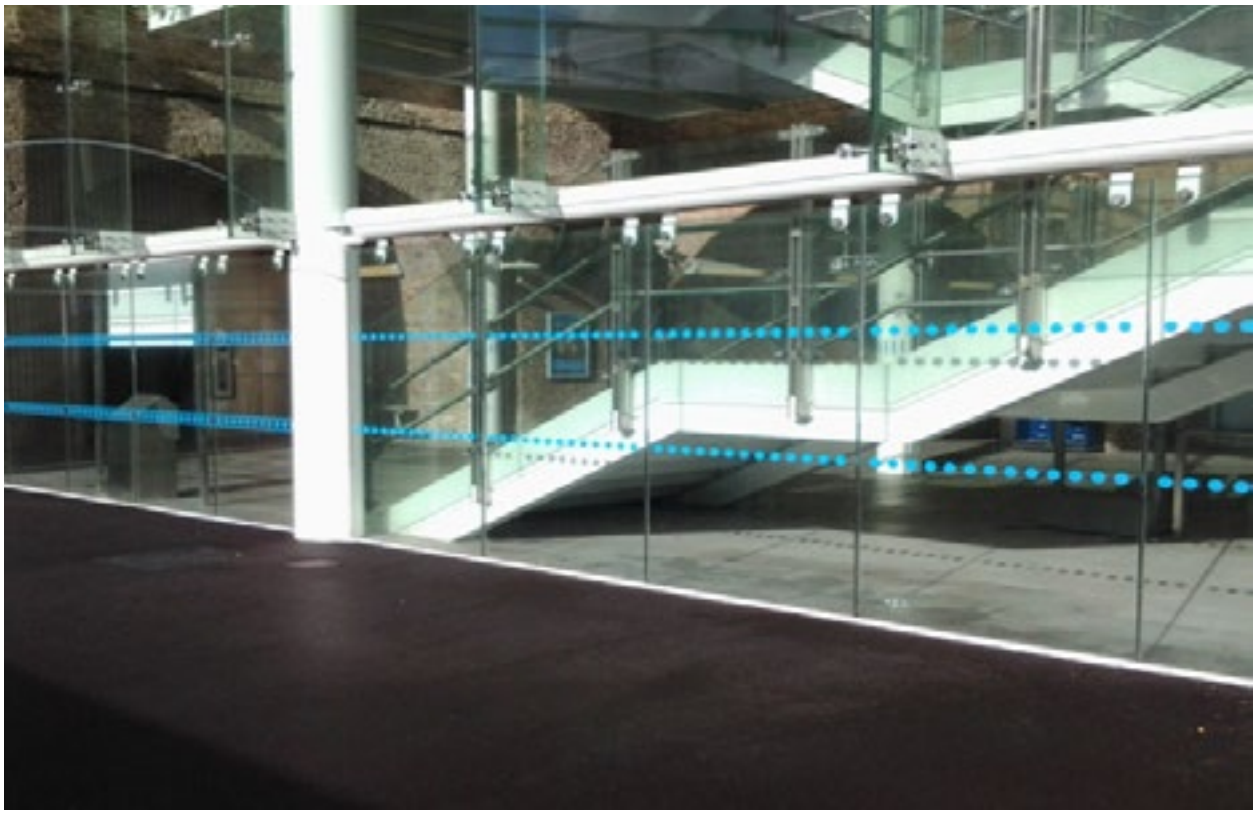


Figure J1.1 Glass wall with manifestations

J1.	European standards	Reference
1.	Transparent obstacles on or along the routes used by passengers, consisting of glass doors or transparent walls, shall be marked. These markings shall highlight the transparent obstacles.	**PRM TSI: 4.2.1.5**
2.	These markings are not required if passengers are protected from impact by other means – for example, by handrails or continuous benches.	**PRM TSI: 4.2.1.5**

J1.	National standards	Reference
	This section contains no national standards.	

J1.	Code of Practice guidance	Reference
a.	Walls should not have glossy reflective surfaces.	
b.	Walls should be in a tone that contrasts with the floor and the ceiling, so that the boundaries are clearly visible. All furniture should contrast with their surroundings. See *Colour and Contrast: A Design Guide for the Use of Colour Contrast to Improve the Built Environment for Visually Impaired People* (2001).	*Colour and Contrast (2001)*
c.	Where large areas of glass are used for any facilities, they should be clear to all users and marked with a contrasting tonal colour. Tonal contrast is the difference in quality between two colours, including the difference in the amount of useful light that each reflects. Please refer to *Colour and Contrast: A Design Guide for the Use of Colour Contrast to Improve the Built Environment for Visually Impaired People* (2001).	*Colour and Contrast (2001)*
d.	Any highlighting and manifestations used to warn people of the surface should remain visible in different lighting conditions and against all background environments. Their appearance should be taken into account during daylight and at night. The use of colour rather than opaque is recommended as opaque manifestations are less effective for some visually impaired people.	

J1.	Code of Practice guidance	Reference
e.	If a fully glazed door is adjacent to, or incorporated within, a fully glazed wall, the door should be clearly differentiated.	
f.	Etched or clouded glass should be avoided, as it looks like the misting of the visual field experienced by some people.	

J2. Furniture and free-standing devices

Figure J2.1 Free-standing signs on a station concourse

J2.	European standards	Reference
1.	All items of furniture and free-standing devices at stations (Figure J2.1) shall contrast with their background, and have rounded edges.	**PRM TSI: 4.2.1.7**
2.	Within the station confines, furniture and free-standing devices (including cantilevered and suspended items) shall be positioned where they do not obstruct blind or visually impaired people, or they shall be detectable by a person using a long cane.	**PRM TSI: 4.2.1.7**
3.	On each platform where passengers are allowed to wait for trains and at every waiting area, there shall be a minimum of one area fitted with seating facilities and a space for a wheelchair.	**PRM TSI: 4.2.1.7**
4.	When this area is weather protected, it shall be accessible by a wheelchair user.	**PRM TSI: 4.2.1.7**

J2.	National standards	Reference
	This section contains no national standards.	

J2.	Code of Practice guidance	Reference
a.	Seats should be back-supported and at least one-third provided with armrests. There should also be a standing rest bar of at least 1400 mm length.	
b.	Cantilevered items, fitted below a height of 2100 mm that protrude by more than 150 mm shall be indicated by an obstacle at a maximum height of 300 mm that can be detected by a visually impaired person using a cane.	

K1. Signs – general

Figure K1.1 A large, directional station sign

K1.	European standards	Reference
1.	Operating rules shall be implemented to ensure consistency between essential visual and spoken information.	**PRM TSI: 4.4.1**
2.	Signage, symbols and pictograms shall be applied consistently over the whole route.	**PRM TSI: 4.2.1.10**
3.	The following information shall be provided: • Safety information and safety instructions. • Warning, prohibition and mandatory actions signs. • Information concerning the departure of trains. • Identification of station facilities, where provided, and access routes to those facilities.	**PRM TSI: 4.2.1.10**
4.	The fonts, symbols and pictograms used for visual information shall contrast with their background.	**PRM TSI: 4.2.1.10**

K1.	European standards	Reference
5.	The following specific PRM graphic symbols and pictograms shall be fitted with the wheelchair symbol in accordance with PRM TSI: Appendix N Clauses N.2 and N.3: • Directional information for wheelchair-specific routes • Indication of the wheelchair-accessible toilets and other amenities if provided • If there is train configuration information on the platform, indication of the wheelchair boarding location. The symbols are permitted to be combined with other symbols (for example: lift, toilet, etc).	**PRM TSI: 4.2.1.10**
6.	If there is a call for assistance or call for information facility, these shall be indicated by a sign having a green or yellow background (according to the specification referenced in the PRM TSI Appendix A, index 10, chapter 11) and a white symbol, representing a bell or a telephone.	**PRM TSI: 5.3.2.6**
7.	Advertisements shall not be combined with the routing information (Note: General Information about public transport services shall not be considered as advertisements for the purposes of this clause).	**PRM TSI: 4.4.1**
8.	Where inductive loops are fitted, these shall be indicated by a sign as described in PRM TSI Appendix N and Annex I: References.	**PRM TSI: Appendix N.3**

K1.	National standards	Reference
1.	Text and symbols must be able to be read and understood quickly. They must be clear, consistent and unambiguous.	**BS 8300:9.2.1.1**
2.	Station signs have to identify services, facilities and platforms and guide passengers towards whichever of these they need. To do this job effectively, all signs must form part of a comprehensive, coherent and consistent system. This is particularly important where several passenger train operators share a station. For more information on signs see *Sign Design Guide*. This document explains the "one sign for all" concept, planning a signage system, the four different sign types and how to achieve accessible, embossed and braille signage.	**BS 8300:9.2.1.3** *Sign Design Guide*

K1.	Code of Practice guidance	Reference
a.	Information displayed on signs should use straightforward descriptions that do not require detailed knowledge of the station or the town/ city and be accompanied by recognised, adequately sized pictograms. This will make them more accessible for passengers with cognitive impairments.	
b.	The average eye line of a standing person is in the range of 1400–1700 mm above ground level. Signs, such as directories or identification signs on doors that are intended to be read at close range should be mounted as close as possible to this range.	
c.	Signs should not be on a door that may be held open. Signs should be located on the wall alongside the door.	
d.	It is recommended that all screens and signage are mounted in positions that are reasonably close to the main passenger desire lines, but which are, equally, not likely to impede or disrupt the passenger flow.	

K1.	Code of Practice guidance	Reference
e.	Overhanging and projecting signs must be mounted high enough to avoid creating a hazard: 2500 mm from the underside of the sign to the ground is the minimum recommended clearance, as set out in *Railway Group Standard GI/RT7016 Interface Between Station Platforms, Track and Trains (Issue 5).*	*Railway Group Standard GI/RT7016 Interface Between Station Platforms, Track and Trains (Issue 5)*
f.	Where signs are accompanied by a control panel, they should be positioned within easy reach. The range 900–1200 mm above ground level meets the needs of both wheelchair users and those standing.	
g.	Symbols should supplement words to indicate specific facilities, where appropriate, as they are more readily understood by people with cognitive impairments and people whose first language is not English.	
h.	However, symbols should not be used without text unless it is known that they will be understood by passengers.	
i.	It is also important to ensure that visually impaired people understand any embossed information before it is installed. Complex or obscure designs may take longer to understand than words such as “Ticket Office”.	

K1.	Code of Practice guidance	Reference
j.	The International Symbol for Access is commonly used as a universal sign for disability. However, it can cause confusion where the best route for wheelchair users is too long for those disabled people who can only walk a short distance. It is recommended in this case that an alternative logo, with an appropriate indication of any barriers (e.g. stairs) is adopted for the latter route. Proper use of the symbols for stairs, escalators, lifts and ramps will help give guidance and allow people to make informed choices of route for themselves.	

K2. Signs – directional information

Figure K2.1 A smaller station sign indicating the accessible route

K2.	European standards	Reference
1.	Signposting shall be provided at all points where passengers need to make a route-taking decision and at intervals on the route.	**PRM TSI: 4.2.1.10**
2.	There shall be no more than five pictograms, together with a directional arrow, indicating a single direction placed adjacent to each other at a single location.	**PRM TSI: 4.2.1.10**

K2.	National standards	Reference
	This section contains no national standards.	

K2.	Code of Practice guidance	Reference
a.	Signs (Figure K2.1) are not a substitute for good station design. As far as possible, stations should be laid out in a logical way, so that finding a particular facility is partly intuitive.	
b.	Consistency is essential: the sign for a facility or feature should continue to appear until the facility or feature is reached.	
c.	Routes for wheelchair users and people with mobility impairments should be clearly signposted, particularly where they are not the main route out of the station or to facilities, such as platforms, toilets and ticket offices.	
d.	Sufficient information required to make the decision shall be provided. For example, “To the platforms” may be appropriate at the first decision-making point when entering the station, rather than specific signs for each platform.	

K3. Signs – font

K3.	European standards	Reference
	Infrastructure PRM signage dimensions shall be calculated according to the formula: • Reading distance in mm divided by 250, multiplied by 1, 25 = frame size in mm, where a frame is utilised.	**PRM TSI: Appendix N.2**

K3.	National standards	Reference
	This section contains no national standards.	

K3.	Code of Practice guidance	Reference
a.	Sans-serif fonts, in mixed case, shall be used for all written information (i.e. not in capital letters only).	
b.	Compressed descenders and ascenders shall not be used.	
c.	Descenders shall be clearly recognisable and have a minimum size ratio of 20 per cent to the upper-case characters.	
d.	The greater the distance between the sign and its reader, the larger the lettering should be. The aim is to use the largest practical size compatible with the space available.	
e.	The visibility of a sign is affected by its position, size and distance from the person reading it. Its positioning should take into account the direction from which people are likely to approach the sign and where they might stand/ sit to read it.	

<table>
<tr><th>K3.</th><th>Code of Practice guidance</th><th>Reference</th></tr>
<tr><td>f.</td><td>It is recommended that character heights are determined by the formula: reading distance (mm) / 100 = character height (mm). The following table provides examples of how this system may be implemented.
<table>
<tr><td>Reading distance (mm)</td><td>5000</td><td>4000</td><td>3000</td><td>2000</td><td>1000</td></tr>
<tr><td>Recommended letter height (mm)</td><td>50</td><td>40</td><td>30</td><td>20</td><td>10</td></tr>
</table>
Note: The figures are based on someone who is eligible for registration as partially sighted.</td><td></td></tr>
<tr><td>g.</td><td>Text heights below those specified above are not recommended, unless it can be established that critical information that essentially needs to be displayed on the same screen cannot be displayed in this way without reducing the text height. It is preferable to rationalise the amount of information. The publication Sign Design Guide includes more detailed information on reading distance and letter height.</td><td>Sign Design Guide</td></tr>
<tr><td>h.</td><td>Research into legibility has led to the design of a number of typefaces that are used by the transport industry. Clear typefaces include Helvetica, Arial, Rail Alphabet, Brunel, New Johnston and Airport. Over-stylised designs and ornate typefaces should be avoided.</td><td></td></tr>
</table>

K3.	Code of Practice guidance	Reference
i.	A mix of upper and lower case should be used for all signage (e.g. Sunderland) as they can be read more easily and recognised more quickly than capitals only (e.g. SUNDERLAND).	**BS 8300:9.2.3.1**
j.	Passengers with visual impairments may find it particularly difficult to read any “non-solid” messages made up of dots unless the grid used is fine enough to reproduce accurately the shapes of letters and numerals. Therefore, great care is required to ensure that the letter shapes and colours used are clear. Certain numerals, such as 6 or 9, can be difficult to read, and the figure 0 must not include a diagonal line.	*Sign Design Guide*
k.	Where LED or dot-matrix displays are used, a clean letter shape should be established. A 32-dot display will provide a clearer text than an 8-dot display, where the letter shape will be broken.	
j.	The rules about legibility, set out in this section, apply equally to electronic, plasma-screen or dot-matrix signs.	

K4. Signs – sign design

Figure K4.1 A sign with good contrast to its background

K4.	European standards	Reference
1.	The fonts, symbols and pictograms used for visual information shall contrast with their background.	**PRM TSI: 4.2.1.10**
2.	All safety, warning, mandatory action and prohibition signs shall include pictograms.	**PRM TSI: 4.2.1.10**

K4.	National standards	Reference
1.	Visual information shall contrast with its background (Figure K4.1).	**BS 8300:9.2.3.2**
2.	Lettering on signs must stand out clearly from the sign; signs themselves must contrast from their backgrounds. Where this is not possible a visually contrasting border should be used to ensure contrast between all parts of the sign and background.	**BS 8300:9.2.3.2**
3.	Colours used to convey safety messages, in accordance with BS 5378 and 5499, must not be used on information signs.	**BS 8300:9.2.3.2, 9.2.1.4**
4.	Signs must be durable, and materials must be used that will not fade.	

<table>
<tr><th>K4.</th><th>Code of Practice guidance</th><th>Reference</th></tr>
<tr><td>a.</td><td>The table below shows appropriate colour relationships for signs:
<table>
<tr><th>Background</th><th>Sign board</th><th>Legend</th></tr>
<tr><td>Brick or dark stone</td><td>White</td><td>Black, dark green or dark blue</td></tr>
<tr><td>Light brick or light stone</td><td>Black/dark</td><td>White or yellow</td></tr>
<tr><td>Whitewashed walls</td><td>Black/dark</td><td>White or yellow</td></tr>
<tr><td>Green vegetation</td><td>White</td><td>Black, dark green or dark blue</td></tr>
</table>
Different situations need different solutions; see Sign Design Guide for further information.</td><td>Sign Design Guide</td></tr>
<tr><td>b.</td><td>Particular care must be taken with any colour used to establish a corporate identity to ensure that it complements the clarity of signs.</td><td></td></tr>
</table>

K5. Signs – sign lighting

Figure K5.1 Example of a backlit platform sign
Source: Crown copyright

K5.	European standards	Reference
	The European TSI requirement is that UK national standards shall be applied to ensure consistency across the UK. Therefore, the national standards below must be followed.	**PRM TSI: 4.2.1**

K5.	National standards	Reference
1.	Care must be taken in the positioning and the illumination of signs, both by daylight and artificial light, to ensure that the sign face is well lit and that its legibility is distinct in relation to its surroundings. The sign must not be subject to glare, gloom, reflections or a conflicting or dazzling background, particularly in relation to sunlight, glazing or other light sources. This must be checked both at standing and sitting height.	**BS 8300:9.2.2**
2.	Internally illuminated translucent signs (Figure K5.1) may be suitable inside buildings, but care must be taken to ensure that there is no glare to reduce their effectiveness. The colour and size of lettering may need to be different from externally lit signs to ensure a consistent standard of legibility.	**BS 8300:9.4.1**

K5.	Code of Practice guidance	Reference
	All signs must be well lit and legible at all times, preferably above the ambient surrounding light levels by a factor of at least 20 per cent.	

K6. Signs – tactile (embossed and braille) signs

Figure K6.1 Lift control buttons with braille markings

K6.	European standards	Reference
	Tactile information signage shall be fitted in: • Toilets, for functional information and call for aid if appropriate. • Lifts in accordance with EN 81-70:2003+A1:2004.	**PRM TSI: 4.2.1.10**

K6.	National standards	Reference
	This section contains no national standards.	

K6.	Code of Practice guidance	Reference
a.	Embossed signs should be provided where visually impaired people need them to be able to identify and use facilities at stations.	
b.	Embossed signs should be fixed next to toilet doors to identify whether the toilets are unisex or single sex.	
c.	Embossed signs should not be engraved, and the letters or symbols should be large enough for people to read easily.	
d.	Signage should always be mounted consistently on the latch side of the door, preferably to the right. Signage should be mounted at 1400–1700 mm. With toilet and washroom doors, it is acceptable to mount signage on the door itself.	
e.	Embossed signs are essential for people who have no sight and those who cannot make out individual characters. Characters on tactile signs should be raised by 1 mm to 1.5 mm from the background. These should have a stroke width of 1.5 mm to 2 mm and a height of at least 15 mm, maximum 60 mm. An ideal height range for the sign is between 1400 mm and 1700 mm from the floor, with a maximum horizontal stretching distance of 500 mm. More information on tactile signs can be found in the *Sign Design Guide*.	*Sign Design Guide*

K6.	Code of Practice guidance	Reference
f.	Where space permits, braille should also be used (Figure K6.1). Grade 1 braille can be used for single-word signs and contracted braille (Grade 2) for multi-word signs. The *Sign Design Guide* demonstrates how to incorporate braille information on standard signage, located directly below the relevant text, ranged left and identified with a locator on the edge of the sign board.	*Sign Design Guide*

K7. Signs – display screens

K7.	European standards	Reference
1.	Displays shall be sized to show individual station names or words of messages. Each station name, or words of messages, shall be displayed for a minimum of 2 seconds.	**PRM TSI: 5.3.1.1**
2.	If a scrolling display is used (either horizontal or vertical), each complete word shall be displayed for a minimum of 2 seconds and the horizontal scrolling speed shall not exceed 6 characters per second.	**PRM TSI: 5.3.1.1**

K7.	National standards	Reference
	This section contains no national standards.	

K7.	Code of Practice guidance	Reference
a.	Operators should ensure that the information given on variable message signs is accurate and up to date.	
b.	Systems that give changing information (such as the list of stations on route) or display alternative information must allow enough time for people to read and comprehend the information before it changes.	
c.	It is useful if the display times are set to correspond with the amount of information that needs to be read and understood. Consideration should be given to people with visual impairment and/or cognitive impairments, to ensure they have enough time to read, digest and understand the information before it changes.	
d.	Screen information is easier to read when it is refreshed rather than scrolled.	
e.	Good luminance contrast between the text and the background will improve the quality of the display. It should also meet the contrast standards described for fixed signs, in sections K4 and K5 above.	

K7.	Code of Practice guidance	Reference
f.	The text heights in table K3.f are based on maximum contrast (i.e. black text on a white background); for screens that incorporate anything less than maximum contrast, there will be a need to compensate for this by increasing text heights.	
g.	It is recommended that low-level screens are provided where suspended screens are used. This will benefit wheelchair users and people who find it difficult or uncomfortable to look up for long periods of time.	
h.	Any low-level screens should be mounted consistently at all stations, for example next to the ticket counter or customer information desk. Care should be taken so that they are not obscured by queues.	
i.	Glare from lighting can be a major cause of discomfort, particularly for people who are sensitive to bright sources of light. To help alleviate this problem, it is recommended to avoid mounting plasma screens where they are within the same field of view as light sources or areas of external glazing.	
j.	Mounting plasma screens at a lower level on the main concourse may help to reduce reflections and direct glare from the roof lights.	

K7.	Code of Practice guidance	Reference
k.	Veiling reflections occur when a source of natural or artificial light can be seen reflected in the screen. These veiling reflections reduce the contrast between the text and the background and can make sections of the screen unreadable. Consideration should be given to the positioning of screens and to providing adequate shading from areas of glazing or light fittings, for all where necessary.	
l.	Screens should be manufactured from a material that is as matt as possible so as to help reduce veiling reflections.	
m.	High-level screens should be fixed at an angle between 5 and 15 degrees, depending on the mounting height.	

K8. Signs – maps and detailed information

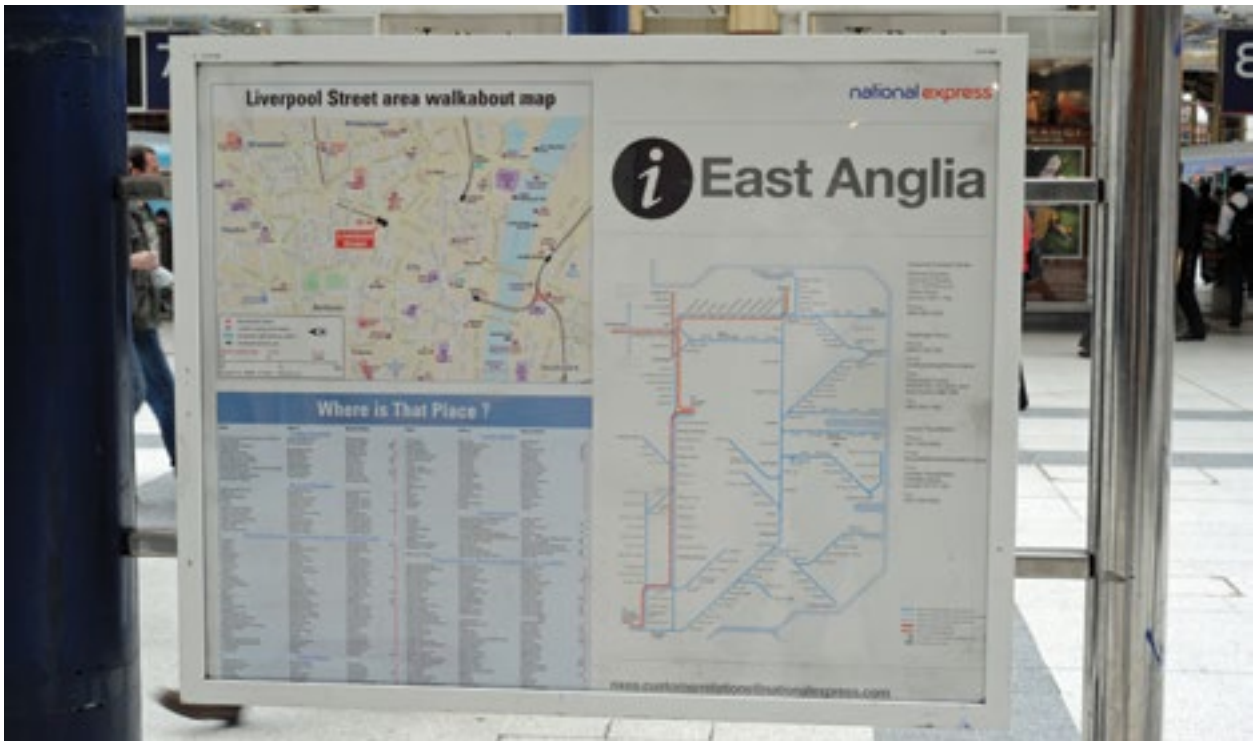


Figure K8.1 A typical map with local information

K8.	European standards	Reference
	The illuminance level along obstacle-free routes shall be adapted to the visual task of the passenger. Particular attention shall be paid to the changes of levels, ticket vending offices and machines, information desks and information displays. Applicable technical means to satisfy the requirement are described in the standards listed in the PRM TSI Appendix A, index 3 and index 4.	**PRM TSI: 4.2.1.9**

K8.	National standards	Reference
	This section contains no national standards.	

K8.	Code of Practice guidance	Reference
a.	Maps (Figure K8.1) should be well lit; it is recommended that lighting levels should be a minimum of 200 lux.	
b.	It is recommended that station maps that show the layout of larger stations (categories A–B) are designed so that, as far as possible, wheelchair users and people with visual impairments or cognitive impairments can approach and use them. This may involve situating maps at different heights.	
c.	Where street maps are provided, it is recommended that they show other local transport boarding points, such as bus stops and taxi ranks and telephone numbers of services.	
d.	If tactile maps are provided, they should be designed by experts.	

L1. Announcements – general

L1.	European standards	Reference
1.	The spoken information shall have a minimum STI-PA level of 0.45, in accordance with PRM TSI: Appendix A, index 5 in all areas.	**PRM TSI: 4.2.1.11**
2.	Operating rules shall be implemented to ensure consistency between essential visual and spoken information.	**PRM TSI: 4.4.1**
3.	Where spoken information is not provided via a public address system at a station, operating rules shall be implemented to ensure the provision of an alternative information system, whereby passengers are able to acquire the same information audibly at the station (e.g. a staffed or automated telephone information service).	**PRM TSI: 4.4.1**
4.	Staff making announcements shall follow standard procedures to achieve complete consistency of essential information.	**PRM TSI: 4.4.1**

L1.	National standards	Reference
	This section contains no national standards.	

L1.	Code of Practice guidance	Reference
a.	Clear announcements of departures, giving information about time, platform and destination, should be given as they are particularly valuable for blind and partially sighted passengers, and are a reassurance to all.	
b.	At very busy stations (station category A at all times, B+C during peak hours), it may not always be possible to announce every departure, because there may be too many messages to convey at the same time and passengers may become confused. However, with careful consideration of message structures, summary departure information can be given at the vast majority of stations.	
c.	Aural announcements should give priority to covering any variations from the normal timetable (emergencies, revised platforms, cancellations or late running) and details of longer distance or special services.	
d.	Announcements should include information about the probable length of any delay, where this is known.	
e.	Announcements should be given early enough to allow sufficient time for people to act on them without having to rush.	

L1.	Code of Practice guidance	Reference
f.	Announcements should also be made (after proper training in their content has been provided to staff) so that station staff can locate passengers who have booked assistance via Passenger Assist where those passengers are not easily identifiable, so that suitable assistance can be provided. Where announcements are made and the passengers who booked assistance are not located, the destination/interchange stations should be informed that the passenger is not travelling on that service.	
g.	Where announcements do not cover every departure, an alternative means of providing visually impaired people with this information should be found. At the very least, staffed booking offices and information points as well as appropriate remote help points should be able to provide this information.	**Please see BS 7594:2011** *Code of practice for audio-frequency induction-loop systems (AFILS), for relevant standards.*
h.	Careful consideration of the location of announcement systems and ensuring that speakers are placed frequently throughout the station to reach all public areas is vital, rather than relying purely on high volume. High volumes can cause pain and disorientation to some users.	

L1.	Code of Practice guidance	Reference
i.	All recorded information should be clear and succinct, and the quality of recording should be high.	
j.	All systems that relay recorded information (PA systems and help points, for example) should be equipped with an induction loop.	

L2. Announcements – induction loops

L2.	European standards	
	This section contains no European standards.	

L2.	National standards	Reference
	This section contains no national standards.	

L2.	Code of Practice guidance	Reference
a.	All PA systems should be linked to induction loops that cover the main public areas of the station (i.e. ticket office, waiting rooms, around customer information systems (CIS), etc.).	
b.	Station operators will need to consider some practical issues when installing induction loops. Areas should be tested for electrical interference (usually heard as a buzzing noise on a hearing aid when switched to “T”) before installation.	
c.	There may be difficulty in installing induction loops for effective coverage in large areas. One solution would be to have a series of listening areas.	
d.	Induction loops should be clearly signposted so users know when they are in an area where they can switch to “T”.	
e.	All staff working in locations with an induction loop should be trained in its usage.	
f.	All induction loops should be regularly, maintained, tested (ideally once a week), and clearly signposted. Loop testers can be used to test that induction loops are working.	

L2.	Code of Practice guidance	Reference
g.	Where induction loops break down, operators should ensure that they are repaired within 48 hours of notification of the failure. Until the system is repaired, operators should provide alternatives, which may include increasing staffing levels.	

L3. Announcements – emergency alarms

L3.	European standards	Reference
	This section contains no European standards.	

L3.	National standards	Reference
	BS 5839 Part 1 Fire *Detection and Fire Alarm Systems for Buildings – Code of Practice for System Design, Installation, Commissioning and Maintenance*.	**BS 5839-1: 2013**

L3.	Code of Practice guidance	Reference
a.	Emergency alarms should be both visual and aural.	
b.	Visual announcements can be displayed on departure screens and, where the text of these screens is coloured, the emergency announcement should use text of a different colour.	
c.	Flashing alarms can be helpful, but their use needs professional advice, and great care should be taken to ensure that strobing does not disadvantage people with epilepsy.	
d.	Any visual alarm should be positioned so that it does not interfere with train drivers' ability to see and act on signals and signs.	
e.	Aural emergency alarms should be played as distinct and different from all other aural signals in the station. This includes "open" and "close" tones from train doors.	

M1. Help points

M1.	European standards	Reference
	In situations where essential spoken information is not provided via a public address system at a station (refer to PRM TSI clauses 4.2.1.10 and 4.2.1.11), operating rules shall be implemented to ensure the provision of an alternative information system whereby passengers are able to acquire the same information audibly at the station (e.g. a staffed or automated telephone information service).	**PRM TSI: 4.4.1**

M1.	National standards	Reference
	This section contains no national standards.	

M1.	Code of Practice guidance	Reference
a.	Help points should be designed so that visually impaired people can find, recognise and use them. An information/tactile surface can be used to identify help points to visually impaired people but should only be introduced if local users recommend it. The help point should tonally contrast with the background.	
b.	Where staff are not always available to give information, clearly marked help points should be positioned at key locations, such as on main platforms or concourses, so that passengers can talk to enquiry offices or other points of assistance.	
c.	Staff should be available to answer calls at all times that services are in operation at the station. Operators must have in place a mechanism to allow passengers to inform them when there are problems, particularly at unstaffed stations. Operators may wish to set this out when providing details of feedback mechanisms.	*How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators*
d.	New installations should be fitted with induction loops. It is recommended that old points are fitted with them during maintenance programmes.	
e.	The working parts of the help point should be between 700 mm and 1200 mm from the ground.	

M1.	Code of Practice guidance	Reference
f.	Operators should ensure that: • the help point can be located easily; • the location does not impede pedestrian traffic; • controls are within comfortable reach range; • the force required to operate the controls is kept to a minimum and that controls are palm-operable; • the buttons contrast well with the background and that their function is described both in text and tactile form; • the buttons have a minimum diameter of 20 mm; • the person providing the help can be heard (localised acoustic consideration); and • a visual indicator lamp indicates to a hearing impaired person that their call has been answered.	

N1. Ticket sales points – booking offices, information and customer-service desks

Figure N1.1 and **Figure N1.2** Accessible ticket counters

N1.	European standards	Reference
1.	Where manual ticket sales counters, information desks and customer assistance points (Figure N1.1) are provided along the obstacle-free route, a minimum of one desk shall be accessible to a wheelchair user and to people of small stature and a minimum of one desk shall be fitted with an induction loop system for hearing assistance.	**PRM TSI: 4.2.1.8**
2.	If there is a glass barrier between the passenger and sales person at the ticket counter, this shall either be removable or, if not removable, an intercom system shall be fitted. Any such glass barrier shall consist of clear glass.	**PRM TSI: 4.2.1.8**
3.	If electronic devices are fitted that display pricing information to the sales person, such devices shall also be fitted that display the price to the person purchasing the ticket.	**PRM TSI: 4.2.1.8**

N1.	National standards	Reference
	This section contains no national standards, but operators may wish to refer to BS 8300 Figure 29 for good practice on setting the heights of counters and reception desks.	**BS 8300:11.1.3**

N1.	Code of Practice guidance	Reference
a.	The counter should have a slight upstand at the front edge so that tickets or change do not fall on the floor.	
b.	Where lowered counters are not available at stations, alternative arrangements should be made for wheelchair users so that they can buy tickets at the same times as other people.	
c.	Waiting at booking offices is difficult for people who cannot stand for long periods. One solution is to provide handrails of a type that can be leant on in places where there are often queues or to provide “perch” seating. Rope or chain systems should be avoided, as they do not provide a sufficient level of support and are a trip hazard for people with visual impairments.	
d.	Speak-through security panels can be a particular communication barrier for visually impaired and hard-of-hearing passengers and should be avoided.	
e.	Glass screens should be unobstructed and non-reflective, to help lip readers.	
f.	It is important that lighting in the booking office enables effective lipreading (light level of 100 lux measured in the vertical plane is recommended). Increased lighting on the staff side of the counter will ensure that this is effective.	

N1.	Code of Practice guidance	Reference
g.	It is recommended that this is a minimum of 750 lux within a localised area (i.e. at counter level).	
h.	The induction loop should be mounted at a height of 1100 mm, so that there is no visual barrier between the booking clerk and the passenger. The standard induction loop symbol should be displayed wherever the loops exist.	
i.	Accessibility limitations at some stations, which could lengthen disabled passengers' journeys, should not cause them to have to pay more for a ticket than non-disabled passengers.	
j.	Station booking offices should sell a wide range of tickets to passengers accurately and impartially. This does not always mean selling the cheapest ticket for the quickest journey. In many cases, disabled passengers may find other factors to be of equal or greater importance. In particular, they may need to know if they can make a journey without having to change trains.	
k.	Card machines at ticket desks should not be fixed. They should be moveable so passengers can move them closer for easier use and financial privacy.	

N2. Ticket sales points – ticket vending machines

N2.	European standards	Reference
1.	Where ticket vending machines are provided on an obstacle-free route at a station, a minimum of one of these machines shall have an interface that is reachable by a wheelchair user and people of small stature.	**PRM TSI: 4.2.1.8**
2.	The illuminance level along obstacle-free routes shall be adapted to the visual task of the passenger. Particular attention shall be paid to the changes of levels, ticket vending offices and machines, information desks and information displays. Applicable technical means to satisfy the requirement are described in the standards listed in the PRM TSI: Appendix A, index 3 and index 4.	**PRM TSI: 4.2.1.9**
3.	At unstaffed stations, where vending machines are relied upon for ticketing, an alternative means of ticketing, accessible to visually impaired passengers, shall always be available (for example, permitting purchasing either on the train or at the destination.)	**PRM TSI: 4.4.1**

N2.	European standards	Reference
4.	If ticket control machines are fitted, a minimum of one of the machines shall have a free passageway with a minimum width of 900 mm and shall be able to accommodate a wheelchair up to 1250 mm in length. In the case of upgrade or renewal, a minimum width of 800 mm is permitted.	**PRM TSI: 4.2.1.8**

N2.	National standards	Reference
	This section contains no national standards.	

N2.	Code of Practice guidance	Reference
a.	Operating buttons should be at least 20 mm in diameter and must protrude sufficiently to be used by those who rely upon palm pressure.	
b.	Tickets and change should be easy to retrieve by people with limited manual dexterity.	
c.	Ticket machines should have the ability to sell tickets with the Disabled Persons Railcard (DPRC) discount and, if accompanied, for a companion; otherwise, the benefits of making ticket machines accessible will be lost to DPRC holders.	
d.	Touch screens should be carefully considered when used for providing tickets. Their design and use can make it difficult for visually impaired people to use such systems.	
e.	The information on screen should be easy to read, understand and see.	
f.	Good contrast and fonts are essential for visually impaired passengers.	
g.	Ticket vending machines should be carefully sited, so that glare and reflections from natural or unnatural light are minimised on the screen.	

N2.	Code of Practice guidance	Reference
h.	The coin slot, credit card slot and change/ticket flap should have adequate contrast, so that visually impaired passengers can identify them easily.	
i.	Ticket machines should be well lit; 200 lux is recommended.	
j.	A minimum of one display and the keyboard shall be visible by both someone sitting in a wheelchair and by someone standing in front of the machine.	

N3. Ticket sales points – ticket barriers

Figure N3.1 A typical ticket gateline

N3.	European standards	Reference
1.	In cases where turnstiles (Figure N3.1) are utilised for ticketing control, operational rules shall be implemented, whereby PRM are offered parallel access through such control points. This PRM access shall permit wheelchair users, and may be controlled by staff or be automatic.	**PRM TSI: 4.4.1**
2.	If ticket control machines are fitted, a minimum of one of the machines shall have a free passageway with a minimum width of 900 mm and shall be able to accommodate a wheelchair up to 1250 mm in length. In the case of upgrade or renewal, a minimum width of 800 mm is permitted.	**PRM TSI: 4.2.1.8**
3.	If turnstiles are used, there shall be a non-turnstile access point available for use by persons of reduced mobility at all operational times.	**PRM TSI: 4.2.1.8**

N3.	National standards	Reference
	This section contains no national standards.	

N3.	Code of Practice guidance	Reference
a.	At times when stations are open but unstaffed, ticket barriers and gates should be fixed in an open position.	
b.	Ticket or coin slots should be designed to be clearly visible and easy to use by passengers who are visually impaired or have limited manual dexterity.	
c.	Paddles on automatic ticket gates should be designed so as not to cause injury during their operation.	
d.	The paddles should contrast with the remainder of the gate.	

O1. Lifts – general

Figure R1.1 A typical station lift

O1.	European standards	Reference
	Lifts shall be provided where ramps are not available and shall be at least of type 2 in accordance with the specification referenced in the PRM TSI Appendix A, index 1. Type 1 lifts are allowed in the case of stations being renewed or upgraded only.	**PRM TSI: 4.2.1.2.2**

O1.	European standards			Reference
Table 1: Minimum car dimensions for cars with a single entrance or two opposite entrance				
Type of lift	**Minimum car dimensions**			**Accessibility level**
	Width	**Depth**	**Max. weight**	
1	1000 mm	1250 mm	450 kg	This car accommodates one wheelchair user.
2	1100 mm	1400 mm	630 kg	This car accommodates one wheelchair user and an accompanying person.
3	2000 mm	1400 mm	1275 kg	This car accommodates one wheelchair user and several other passengers. It also allows the wheelchair to be rotated in the car.
• Car width is the horizontal distance between the inner surface of the structural walls, measured parallel to the front entrance. • Car depth is the horizontal distance between the inner surface of the structural walls, measured perpendicular to the width.				

O1.	National standards	Reference
	This section contains no national standards.	

O1.	Code of Practice guidance	Reference
a.	Lift doors should have the following clear openings (EN81-70 5.2.1): Type 1 lift – 800 mm Type 2 lift – 900 mm Type 3 lift – 1100 mm	
b.	Lifts should be located as near as possible to any stairs.	
c.	It is recommended that lifts are grouped together to reduce waiting times.	
d.	Through lifts should be fitted wherever the geography of the station allows. These have a door at either end of the lift. This is much easier for wheelchair users, who do not have to turn round in the lift or back out of it – a manoeuvre which can be difficult and time consuming.	
e.	It is recommended that all lifts are at least 1500 mm deep, so that people in larger wheelchairs or with extended footrests can get into the lift.	
f.	Where space allows, the recommended minimum internal dimensions of a lift should be 1600 (wide), 1500 mm (deep) and 2300 mm (high).	

O1.	Code of Practice guidance	Reference
g.	It is recommended that lift dimensions allow for the turning circle of the reference wheelchair (1500 mm). This is especially important where the lift only has a single entrance, as wheelchair users ought not to have to reverse out of the lift because it is too narrow for them to turn around.	
h.	Seating should be provided close to lift entrances for waiting passengers who cannot stand for long periods.	
i.	Lifts on platforms should have a sheltered waiting area with seating nearby.	
j.	Lifts should have a clear landing of at least 1500 mm x 1500 mm outside the lift entrance/exit.	
k.	Lift doors should tonally contrast with the surrounding wall.	
l.	Automatic lift doors should have reopening activators, operated by invisible beam or contact with passengers, children and assistance dogs.	
m.	It is recommended that the doors remain open for at least five seconds.	
n.	There should be a button to reopen the doors for those who need longer to get in or out of the lift.	

O1.	Code of Practice guidance	Reference
o.	Aural warnings should be given when doors are about to be opened or closed.	
p.	It is recommended that, when lifts are constructed, operators consider using glass doors. This is so that passengers using the lift can be seen and passengers waiting for the lift can see if anyone is using it. It may be that, in appropriate locations, the walls of the lift and the lift shaft can also be constructed using glass. However, as large areas of plain glass are confusing for visually impaired users, suitable contrasting manifestations should be applied.	
q.	Inside and outside the lift, a visual and aural acknowledgement should be given when the lift has been called, when it has arrived and when doors are opening or closing.	
r.	Lift controls, both outside and inside the lift, should be operable by wheelchair users and have tactile markings.	
s.	There should be an obvious way of indicating to an intending user if the lift is not working.	
t.	Flooring should have a slip resistance value of 45–70 (optimally 50–65), as measured with 4S torsugar rubber on a pendulum test.	

O1.	Code of Practice guidance	Reference
u.	A clear contrast between the lift walls and floor will assist visually impaired people. Black flooring should not be used in lifts as this can appear to be a hole to some visually impaired people.	
v.	Lifts should have automatic floor-levelling devices to avoid gaps that can be hard to negotiate. Stopping accuracy should be within 10 mm, and gaps between the floor and lift should be no wider than 20 mm.	
w.	Care should be taken with interior finishes, especially with stainless steel, to reduce visual confusion and glare from undiffused reflections.	
x.	Walls within the lift should not be mirrored, as this can be very confusing for visually impaired people. However, if the lift is not a through lift, a small half-depth mirror should be provided on the rear wall to aid wheelchair users and allow visual indicators to be seen.	
y.	Lighting should be uniformly distributed, avoiding the use of spotlights, as they can cause difficulties for visually impaired people.	
z.	It is recommended that lighting levels in the lift are a minimum of 100 lux (approximately 50–75 lux at floor level), which also allows the occupants of the lift to be viewed by a station CCTV system.	

O1.	Code of Practice guidance	Reference
aa.	A handrail should be provided on each of the lift's walls at 850 mm to 1000 mm above the floor.	
bb.	The buttons should be large: at least 20 mm in size and at least 10 mm apart, and all should be within reach of wheelchair users at between 700 mm and 1200 mm from the floor.	
cc.	Buttons should protrude slightly from the wall and should be of a design that allows them to be worked by, for example, an elbow, fist or palm of the hand.	
dd.	The force needed to press the buttons should be between 2.5 and 5 newtons.	
ee.	There should be confirmation that any requested action has worked, e.g. through illumination and an aural signal.	
ff.	Buttons should contrast in colour with the panel on which they are located, which, in turn, should contrast with the lift wall.	
gg.	Embossed markings and braille (15 mm in size) should be used to identify each button.	
hh.	In the lift, floor numbers, where appropriate, should be announced and shown in visual form.	
ii.	It should be possible to see visual indicators whichever way you are facing in the lift.	

O2. Lifts – lift emergencies

Figure O2.1 Lift controls, showing the alarm button

O2.	European standards	Reference
	This section contains no European standards.	

O2.	National standards	Reference
	This section contains no national standards.	

O2.	Code of Practice guidance	Reference
a.	Emergency communication systems (Figure O2.1) should be no lower than 900 mm from the floor and no part of the emergency communication system should be more than 1200 mm from the floor.	
b.	An additional emergency call button should be provided for passengers who fall in the lift.	
c.	The emergency intercom system should have an induction loop.	
d.	It is recommended that an acoustic coupler is used as an aid to people with impaired hearing.	
e.	A yellow illuminated pictogram should be used to indicate the alarm is activated, and a green illuminated pictogram, to indicate the emergency call has been registered.	

O3. Lifts – platform lifts (inside the station building)

O3.	European standards	Reference
	This section contains no European standards.	

O3.	National standards	Reference
	This section contains no national standards.	

O3.	Code of Practice guidance	Reference
a.	Guidance about the design of platform lifts is contained within BS 6440: 2011 *Code of Practice for Powered Lifting Platforms for Use by Disabled Persons*. This restricts the maximum lifting distance to 1980 mm if there is only one barrier rail for security.	**BS 6440: 2011**
b.	The platform lift should have enough space at the top and bottom to allow passengers to get on and off the lift easily. A minimum clear access of 1500 mm is recommended.	
c.	If installed, guardrails must lock into place automatically, and controls must not be locked.	
d.	Platform lifts can only be used for relatively short changes in level, such as a short flight of steps to a booking office.	

P1. Ramps

P1.	European standards	Reference
1.	Ramps shall be installed for PRM unable to use stairs where lifts are not provided.	**PRM TSI: 4.2.1.2.2**
2.	Ramps shall have a moderate gradient. A steep gradient is allowed for ramps on short distances only.	**PRM TSI: 4.2.1.2.2**
3.	Ramps shall be provided with handrails on both sides and at two levels.	**PRM TSI: 4.2.1.2.2**
4.	If there are handrails or walls within reach along the obstacle-free route to the platform, they shall have brief information (for example, platform number or direction information) in braille or in prismatic letters or numbers on the handrail, or on the wall at a height between 1450 mm and 1650 mm.	**PRM TSI: 4.2.1.2.3**

P1.	National standards	Reference
1.	Some ambulant-disabled people have difficulty using ramps, so a ramp should not be the only approach to the station.	**BS 8300:5.8**
2.	However, where the change in level is no greater than 300 mm, a ramp may be acceptable as the only means of access, avoiding the need for a single step.	**BS 8300:5.8.1**

P1.	National standards	Reference
3.	The existence and location of a ramp should be clearly indicated on the approach to a building. If the beginning of the ramp cannot be located close to the principal entrance, information should be provided at that point in order to direct users to the correct location. The text should be in large characters, contrasting visually with their background, and be accompanied by the International Symbol of Access.	**BS 8300:5.8.1** **BS 8300:9.2.1.4**
4.	A ramp should have the lowest practical gradient. Where the ramp has a gradient of 1:20 or steeper, it should conform to the recommended length of ramp (going of a flight):	**BS 8300:5.8.2**

Going of a flight (length)	Maximum gradient
10 metres	**1:20**
9 metres	**1:19**
8 metres	**1:18**
7 metres	**1:17**
6 metres	**1:16**
5 metres	**1:15**
4 metres	**1:14**
3 metres	**1:13**
not exceeding 2 metres	**1:12**

P1.	National standards	Reference
5.	No individual flight of a ramp should have a going of more than 10 metres or a rise of more than 500 mm.	**BS 8300:5.8.2**
6.	No series of ramps to a building should rise in total more than 2 metres.	**BS 8300:2001 5.8.2**
7.	If a series of ramp flights rise more than 2 metres, an alternative means of access, such as a lift, should be provided.	**BS 8300:5.8.2**
8.	The maximum cross-fall gradient of a slope must be 1:50, to help drain surface water.	**BS 8300:5.8.2**
9.	The surface width of a ramp should be not less than 1500 mm. However, the intensity of use should be considered when deciding on suitable ramp width.	**BS 8300:5.8.3**
10.	Where the width between the handrails of a ramp exceeds 2.5 metres, the ramp should be divided by a handrail into two or more equal channels to ensure that all users have access to a handrail.	**BS 8300: 5.8.3**
11.	1800 mm is the minimum width that would permit two wheelchair users on a ramp to pass each other.	**BS 8300:5.8.3**
12.	Landings should be provided at the foot and head of a ramp. They should be at least the width of the ramp and a minimum of 1500 mm long, clear of any other obstruction.	**BS 8300:5.8.4**

P1.	National standards	Reference
13.	Any intermediate landings along a series of ramps in a straight line should be at least 1500 mm long, clear of any obstruction.	**BS 8300:5.8.4**
14.	If an intermediate landing is a quarter- or half-turn landing, the width of the ramp should be maintained throughout the turn, or turns.	**BS 8300:5.8.4**
15.	If there is likely to be frequent use of the ramp by people in wheelchairs, it may be advisable to increase the width of an intermediate landing to 1800 mm, so that it can serve as a passing place.	**BS 8300:5.8.4**
16.	A continuous upstand at least 100 mm high, or an equivalent barrier, should be provided at any open edge of a ramp. This should be detectable to long cane users and contrast visually with the surface of the ramp.	**BS 8300:5.8.6**

P1.	Code of Practice guidance	Reference
a.	Staircases (and ramps) should be designed using best practice principles to be of sufficient width to deal with current and predicted passenger flows in the station during various operating scenarios including but not limited to normal, perturbed, and emergency escape situations. These scenarios should take into account the needs of persons of reduced mobility.	
b.	For changes in level where it is inappropriate for a lift to be installed, a dual arrangement of stairs and ramps should be provided, subject to physical constraints and the ramp and stairs should be near to each other. The ramp should not appear to be a secondary, inferior entrance.	*Design Manual for Roads and Bridges* (2008) see Annex V: Reference documents
c.	For further useful guidance on the design of ramped footbridges, please see *Design Manual for Roads and Bridges.*	
d.	It is recommended that ramps slope at a consistent angle at a gradient of not more than 1:20. Ramps steeper than 1:20 can be very difficult for some people who propel their wheelchair themselves, or for those who provide assistance by pushing the chair from behind.	
e.	If, in existing stations, a ramp of 1:12 is unavoidable, it should not be longer than 2 metres.	

P1.	Code of Practice guidance	Reference
f.	Operators should consult with local disabled people before deciding whether to provide ramps over 50 metres in length, including landings, when refurbishment or replacement is being carried out.	
g.	It is recommended that, for stations in categories A–D, ramps have a minimum width of 2000 mm between handrails.	
h.	The surface materials used for a ramp should be chosen to be as easy to maintain and as slip resistant as possible, especially in wet weather or where spillage occurs.	
i.	The surface of a ramp should contrast visually with that of a level landing, so that its presence is detectable by visually impaired persons.	
j.	Where different materials are used for the flights and the landings of a ramp, care should be taken to ensure that the slip characteristics are similar in order to minimise the risk of stumbling.	
k.	The sides of ramps should be protected by raised kerbs of at least 100 mm in height, detectable to long cane users.	
l.	The tactile corduroy warning surface, detailed in Section Q: Steps and stairs, should not be used with ramps.	

P1.	Code of Practice guidance	Reference
m.	Where ramps have a central handrail, it is recommended that double rails are used to avoid clashes between users on different sides.	
n.	Handrails should have a slip-resistant matt finish to reduce glare and increase their visibility. Shiny metal handrails should be avoided, because the reflections they cause can mislead visually impaired people.	
o.	The coating of the handrail should provide insulation, so it does not remove the heat from the hands of people with painful conditions, such as arthritis.	
p.	The ends of handrails should extend at least 300 mm horizontally (from the ground) beyond the top and bottom of ramps, with smooth shaped ends, and turned into the wall or curved downward to just above floor level, or have a minimum rounded down-turn of 100 mm.	
q.	On ramps, the higher handrail shall be positioned at between 850 mm and 1000 mm above floor level, the lower handrail shall be positioned at a height of between 500 mm and 750 mm above floor level.	
r.	There should be a minimum clear space of 40 mm between the handrail and other parts of the structure, other than its mountings.	

P1.	Code of Practice guidance	Reference
s.	The handrail should be rounded and have a cross-section of 30 mm to 50 mm equivalent diameter.	
t.	Handrails shall contrast with the surrounding wall colours	
u.	Handrails should be continuous.	

Q1. Steps and stairs – general

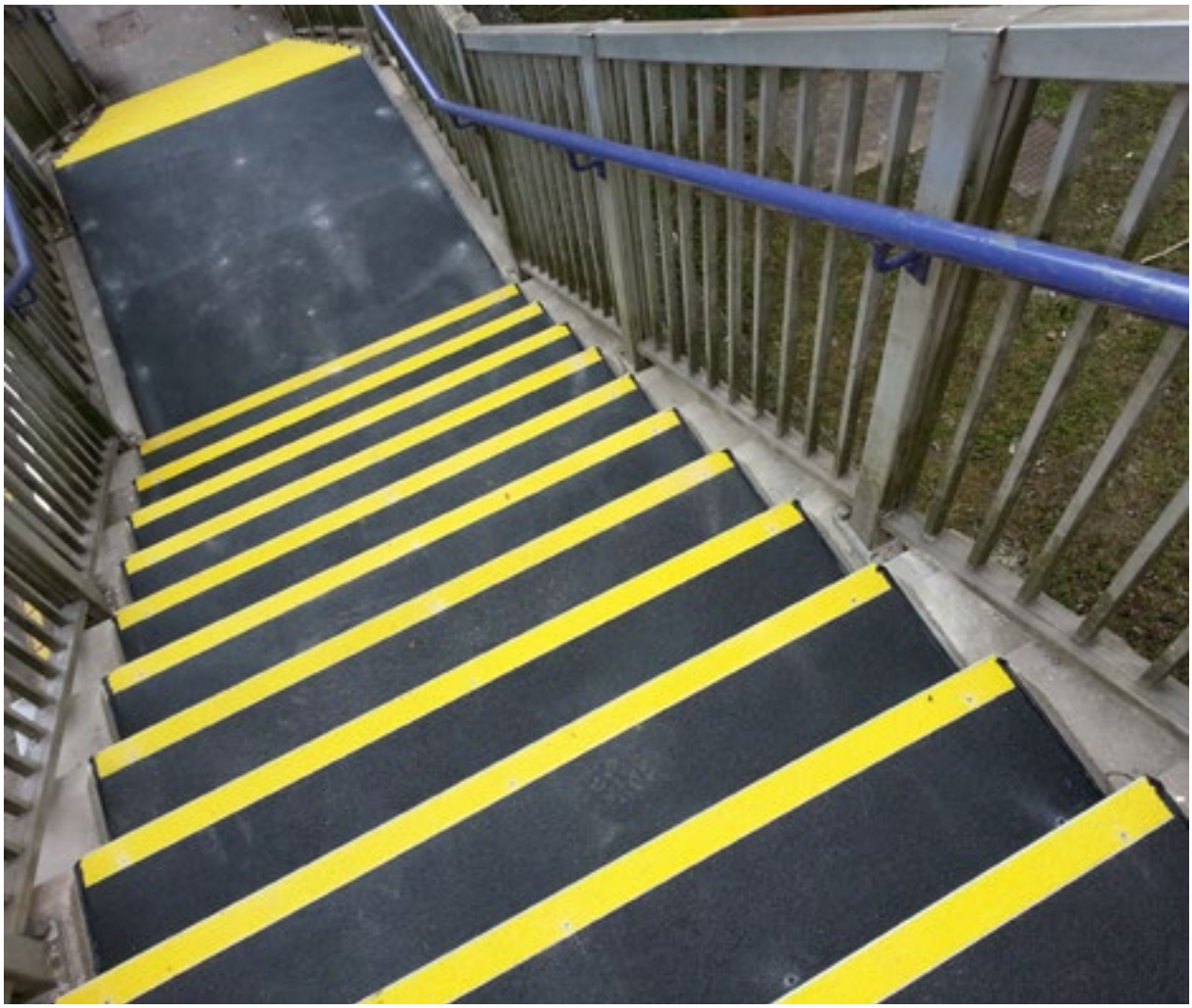


Figure Q1.1 A typical station footbridge staircase

Q1.	European standards	Reference
1.	Staircases (Figure Q1.1) on the obstacle-free routes shall have a minimum width of 1600 mm measured between the handrails.	**PRM TSI: 4.2.1.2.2**
2.	The footbridges, tunnels, stairs and ramps that are leading to the platforms and the platforms shall be illuminated according the specification referenced in the PRM TSI Appendix A, index 3 and index 4.	**PRM TSI: 4.2.1.9**

Q1.	National standards	Reference
	If feasible, stepped access routes should be protected from inclement weather.	**BS 8300:5.9.1**

Q1.	Code of Practice guidance	Reference
a.	It is recommended that lighting levels increase to 150–200 lux over stairs and that the transition should be smooth.	
b.	Staircases should be designed using best practice principles to be of sufficient width to deal with current and predicted passenger flows in the station during various operating scenarios including but not limited to normal, perturbed, and emergency escape situations. These scenarios should take into account the needs of persons of reduced mobility.	

Q2. Steps and stairs – stair and step design

Q2.	European standards	Reference
	All floor coverings, ground surfaces and stair tread surfaces shall be slip resistant.	**PRM TSI: 4.2.1.4**

Q2.	National standards	Reference
1.	The preferred range for the rise of a step should be 150–180 mm.	**BS 8300:5.9.2**
2.	The going for a step should be 300 mm to 450 mm. Goings within a flight, and preferably within a series of flights, should be uniform.	**BS 8300:5.9.2**
3.	Preferably, a step should not overlap the one below. If there is an overlap, the nosing should not project over the tread by more than 25 mm.	**BS 8300:5.9.2**
4.	The risers should not be open.	**BS 8300:5.9.2**
5.	No flight in a stepped access route should contain more than 20 risers and, as far as possible, the number of risers in successive flights should be uniform.	**BS 8300:5.9.3**

Q2.	National standards	Reference
6.	Each step nosing should incorporate a permanently contrasting continuous material for the full width of the stair on both the tread and the riser. This will help blind and partially sighted people appreciate the extent of the stair and identify individual treads.	**BS 8300:5.9.5**
7.	The contrasting material should be 50 mm to 65 mm wide on the tread and 30 mm to 55 mm on the riser, and should contrast visually with the remainder of the tread and riser.	**BS 8300:5.9.5**
8.	The whole tread or the nosing should incorporate a slip-resistant material, starting as close as practicable to the front edge of the nosing and extending the full width of the tread.	**BS 8300:5.9.5**
9.	The provision of isolated single steps should be avoided.	**BS 8300:5.9.3**

Q2.	Code of Practice guidance	Reference
a.	There should be a minimum of three steps in each flight; any fewer is less safe. In these cases, a ramp should be installed.	
b.	Nosings should be splayed or rounded to a 6 mm radius without overhang, and should be colour contrasted from the rest of the step, for the full width of the step to a depth of 30–55 mm on the riser and 50–65 mm on the tread.	
c.	Highly reflective surfaces such as stainless steel or brass should not be used on staircases, because reflections can cause disorientation.	

Q3. Steps and stairs – landings and areas beneath stairs

Q3.	European standards	Reference
	As a minimum the first and last steps shall be indicated by a contrasting band and as a minimum tactile warning surface indicators shall be installed before the first descending step.	**PRM TSI: 4.2.1.2.2**

Q3.	National standards	Reference
1.	A level landing should be provided at the top and bottom of each flight of steps. Its length, clear of any obstruction, should not be less than the surface width of the flight.	**BS 8300:5.9.6**
2.	If practicable, the tactile warning surface indicators (Q3 European standards) should extend beyond the line of the edge of the flight.	**BS 8300:5.9.6**

Q3.	Code of Practice guidance	Reference
a.	A textured warning surface should be included at the top and bottom of steps, but not on intermediate landings, unless they have entry or exit points leading to, say, a car park.	
b.	A corduroy hazard warning surface, consisting of rounded bars that run across the direction of travel, ought to be considered and can warn of an upcoming hazard. See *Guidance on the Use of Tactile Paving Surfaces*, for further guidance.	*Guidance on the Use of Tactile Paving Surfaces*
c.	The tactile surface should tonally contrast with the surrounding area.	
d.	It is recommended that the surface should extend 400 mm beyond each side of the stairway and should be 800 mm deep, so that it is easier for those with visual impairments to detect.	
e.	Where possible, stair landings should be at least as long as they are wide.	
f.	Contrasting bands should have a minimum depth of 400 mm and shall contrast with and be integrated into the floor surface. This band should differ to those used for the tactile guide path, where installed.	
g.	Open areas beneath stairs should be protected to prevent passengers from inadvertent collision with structural supports and areas of reduced headroom.	

Q4. Steps and stairs – handrails

Q4.	European standards	Reference
1.	Stairs and ramps shall be provided with handrails on both sides and at two levels.	**PRM TSI: 4.2.1.2.2**
2.	Staircases on the obstacle-free routes shall have a minimum width of 1600 mm measured between the handrails.	**PRM TSI: 4.2.1.2.2**
3.	If there are handrails or walls within reach along the obstacle-free route to the platform, they shall have brief information (for example platform number or direction information) in braille or in prismatic letters or numbers on the handrail, or on the wall at a height between 1450 mm and 1650 mm.	**PRM TSI: 4.2.1.2.3**
4.	The European TSI requirement is that UK national standards shall be applied to ensure consistency across the UK. Therefore, the national standards below must be followed.	**PRM TSI: 4.2**

Q4.	National standards	Reference
1.	A handrail should be provided on each side of a ramp or stair flight, throughout its length. The top surface of the handrail should be between 900 mm and 1000 mm from the surface of the ramp or pitch line of a stair and between 900 mm and 1100 mm from the landing.	**BS 8300:5.10.1**
2.	For all buildings used by the general public, a second handrail should be installed with its top surface 600 mm from the ramp surface or pitch line.	**BS 8300:5.10.1**
3.	A handrail should be: a) easy and comfortable to grip with no sharp edges, but able to provide adequate resistance to hand slippage; b) continuously graspable along its entire length without obstruction; c) finished so as to provide visual contrast with the surroundings against which it is seen; d) terminated horizontally at least 300 mm beyond the start and finish of the ramp or the last nosing of a stair, at both top and bottom; e) terminated in a way that will reduce the risk of clothing being caught; f) strong enough to support users and fixed to the structure in a way that will support the required loading.	**BS 8300:5.10.2**

4.	A handrail with an oval profile should have dimensions of 50 mm wide and 39 mm deep. The profile should have rounded edges with a radius of at least 15 mm.	**BS 8300:5.10.3**
5.	Any circular handrail should have a diameter of between 32 mm and 50 mm.	**BS 8300:5.10.3**
6.	There should be a clearance of between 50 mm and 75 mm between a handrail and any adjacent wall surface, and any handrail support should meet the handrail, centrally, on its underside. The clearance between the bottom of the rail and any cranked support, or continuous balustrade, should be at least 50 mm to minimise the risk of the handrail supports interrupting the smooth running of a person's hand along the rail.	**BS 8300:5.10.3**
7.	In locations subject to extremely cold or hot temperatures, handrails should not become excessively cold or hot to touch, while being of a material that, if necessary, is sufficiently robust to resist vandalism or misuse.	**BS 8300:5.10.5**
8.	Operators may wish to refer to BS 8300 Figure 9 as an example of good practice in handrail design.	**BS 8300:5.10**

Q4.	Code of Practice guidance	Reference
a.	It is recommended that an additional central handrail is provided on stairways wider than 4000 mm.	
b.	It is recommended that central double rails are used to avoid clashes between users on different sides.	
c.	Handrails should have a slip-resistant matt finish to reduce glare and increase their visibility. Shiny metal handrails should be avoided, because the reflections they cause can mislead visually impaired people.	
d.	The coating of the handrail should provide insulation, so it does not remove the heat from the hands of people with painful conditions, such as arthritis.	

R1. Escalators and moving walkways

R1.	European standards	Reference
1.	Escalators and moving walks shall be designed in accordance with the specification referenced in the PRM TSI Appendix A, index 2.	**PRM TSI: 4.2.1.2.2**
2.	The footbridges, tunnels, stairs and ramps that are leading to the platforms and the platforms shall be illuminated according to the specification referenced in PRM TSI Appendix A, index 3 and index 4.	**PRM TSI: 4.2.1.9**

R1.	National standards	Reference
1.	Escalators shall be in accordance with BS EN 115: *Safety of escalators and moving walks. Construction and installation*.	**BS EN 115**
2.	The steps of escalators should have a nosing that contrasts visually with the tread and riser.	**BS 8300:8.4**
3.	Wherever an escalator is installed between floors, a clearly signposted alternative access by lift should be provided.	**BS 8300:8.4**
4.	The direction in which an escalator is travelling should be clearly indicated by a sign.	**BS 8300:8.4**
5.	Travelators shall be designed in accordance with BS EN 115: *Safety of escalators and moving walks. Construction and installation*.	**BS EN 115**

6.	The direction in which a travelator is travelling should be clearly indicated by a sign.	**BS 8300:8.4**
7.	Travelator handrails should contrast visually with the surroundings, for the benefit of visually impaired persons.	**BS 8300:8.4**
8.	Where a travelator is within a passenger access route, guarding should be provided alongside and at each end of the conveyor for the safety of visually impaired people. Without guarding, visually impaired people can inadvertently walk onto a passenger conveyor or be pulled over by accidental contact with moving handrails.	**BS 8300:8.4**
9.	Escalator and travelator handrails should contrast visually with the surroundings for the benefit of visually impaired persons.	**BS 8300:8.4**

R1.	Code of Practice guidance	Reference
a.	The recommended angle of inclination for escalators is 30 to 35 degrees.	
b.	The recommended width for escalators is between 580 mm and 1100 mm.	
c.	The recommended height for escalator steps is between 210 mm and 240 mm, if escalators are to be used as an emergency exit when stationary.	
d.	Recommended preferred tread depths are 380 mm.	
e.	Handrails should have disks (minimum 18 mm diameter, equally spaced at 1000 mm and centred) which are colour contrasted to indicate that the handrails are moving.	
f.	Escalators are useful additions to stairs and lifts, but they cannot be used by wheelchair users, assistance dog users, and people who lack the confidence to use them. Escalators should therefore not be used as a substitute for stairs.	
g.	Where escalators are provided, stairs should be located nearby for those who have difficulty using escalators.	

R1.	Code of Practice guidance	Reference
h.	If no alternative to the escalator is available, staff should be available to assist and turn off escalators – even during peak periods – to allow a passenger to use the escalator as a static stairway.	
i.	There should be enough space at the top and bottom to give passengers enough room to get on and off safely. Five metres or more is recommended where reasonably practicable.	
j.	It is recommended that lighting levels increase on escalators to 150–200 lux, but the transition should be smooth.	
k.	The sides of the escalator should be in a non-reflective material.	
l.	Emergency stop buttons should be clearly marked. It is important that people with limited dexterity can use them.	
m.	The approaches to the top and bottom of escalators should be indicated by a change of floor colour using a slip-resistant ridged standard plate.	
n.	Where it is possible to approach the escalator or travelator obliquely, barriers should extend 1.5 metres in front of the escalator to aid visually impaired people.	

S1. Platforms – platform design

Figure S2.1 Platform design, showing tactiles and danger area markings
Source: Merseyrail

S1.	European standards	Reference
1.	It is permitted for the width of the platform to be variable on the whole length of the platform.	**PRM TSI: 4.2.1.12**
2.	The minimum width of the platform without obstacles shall be the width of the danger area plus the width of two opposing freeways of 800 mm (1600 mm). This dimension may taper to 900 mm at the platform ends.	**PRM TSI: 4.2.1.12**

<table>
<tr><th>S1.</th><th>European standards</th><th>Reference</th></tr>
<tr><td>3.</td><td>It is permitted to have obstacles inside this freeway of 1600 mm. Equipment required for the signalling system and safety equipment shall not be considered as obstacles in this clause. The minimum distance from obstacles to the danger area shall be according to the following table:

Table 4: minimum distance from obstacles to the danger area

<table><tr><td>Length of obstacles (measured parallel to the platform edge)</td><td>Minimum distance to the danger area</td></tr><tr><td>< 1 metre (note 1) – small obstacle</td><td>800 mm</td></tr><tr><td>1 metre to < 10 metres – large obstacle</td><td>1200 mm</td></tr></table></td><td>PRM TSI: 4.2.1.12</td></tr>
<tr><td>4.</td><td>If the distance between two small obstacles is less than 2.4 metres measured parallel to the platform edge they shall be considered as one large obstacle.</td><td>PRM TSI: 4.2.1.12</td></tr>
<tr><td>5.</td><td>Within this minimum distance from a large obstacle to the danger area it is permitted to have additional small obstacles as long as the requirements for small obstacles (minimum distance to danger area and minimum distance to next small obstacle) are met.</td><td>PRM TSI: 4.2.1.12</td></tr>
</table>

S1.	European standards	Reference
6.	If there are auxiliary facilities on board trains, or on the platform, to allow wheelchair users to board or alight from trains, a free space (no obstacles) of 1500 mm from the edge of the facility towards the direction where the wheelchair boards/lands at/to shall be provided where such facilities are likely to be used. A new station shall meet this requirement for all trains that are planned to stop at the platform.	**PRM TSI: 4.2.1.12**
7.	The danger area of a platform commences at the rail side edge of the platform and is defined as the area where passengers are not allowed to stand when trains are passing or arriving.	**PRM TSI: 4.1.2.12**
8.	The illuminance level of the external areas of the station shall be sufficient to facilitate way finding and to highlight the changes of level, doors and entrances.	**PRM TSI: 4.2.1.9**
9.	The boundary of the danger area, furthest from the rail side edge of the platform, shall have a visual marking and tactile walking surface indicators.	**PRM TSI: 4.2.1.12**
10.	The visual marking shall be a contrasting, slip-resistant, warning line with a minimum width of 100 mm.	**PRM TSI: 4.2.1.12**

S1.	European standards	Reference
11.	Tactile walking surface indicators can be one of the two types: • an attention pattern indicating a hazard at the boundary of the danger area • a guiding pattern indicating a path of travel at the safe side of the platform	**PRM TSI: 4.2.1.12**
12.	The material at the rail side edge of the platform shall contrast with the darkness of the gap. This material shall be slip resistant.	**PRM TSI: 4.2.1.12**
13.	The end of the platform shall either be fitted with a barrier that prevents public access or shall have a visual marking and tactile walking surface indicators with an attention pattern indicating a hazard.	**PRM TSI: 4.2.1.13**

S1.	National standards	Reference
	This section contains no national standards.	

S1.	Code of Practice guidance	Reference
a.	It is recommended that upright posts, grabrails and pillars be of a contrasting colour to the surrounding platform surface. Where this is not possible, they must be marked with a contrasting coloured band 140–160 mm wide, with its lower edge at 1500 mm from the ground. An additional lower band should also be used to mark them as a hazard.	
b.	Platform lighting should provide uniform illumination, and it is recommended that it is at least 100 lux measured horizontally at floor level, although due care must be taken for the visibility of signals for train drivers.	
c.	Platform repairs should not contrast significantly in texture or colour with the existing surface, and there must be no significant cracks or breaks in the surface or changes in level.	
d.	Cross-falls required for drainage purposes should slope away from the platform edge and be in the range of 1:80 to 1:40 on exposed platforms. A much shallower gradient can be used on sheltered or indoor platforms.	
e.	The appropriate tactile surface should be installed along the entire length of a platform when any rebuilding or resurfacing takes place. See *Guidance on the Use of Tactile Paving Surfaces* for further guidance.	*Guidance on the Use of Tactile Paving Surfaces*

S1.	Code of Practice guidance	Reference
f.	Where the tactile surface is installed on an island platform, it should be on both faces of the island platform. It should never be installed on one face and not the other.	
g.	The platform edge tactile warning surface can be of any colour, except red, and the colour should provide a good contrast with the surrounding paved area.	
h.	The tactile surface should be 400 mm deep, extend the full length of the platform, and be laid parallel to, and immediately behind, the platform edge coper, where this is 760 mm from the platform edge. Platforms that are only partially installed with tactile strips should be avoided.	
i.	Where the depth of copers varies along the length of the platform (e.g. where both old and new copers exist), tactiles should be installed in a single consistent line wherever practical.	
j.	If a single consistent line of tactiles is not practical, it may be acceptable to incorporate staggers (never tapers) in the tactile line as long as such staggers are no closer than 50 metres apart along the platform length and the tactile line is continuous even if staggered.	

S1.	Code of Practice guidance	Reference
k.	It is recommended that the warning surface should not be less than 500 mm from the platform edge, because it may not allow enough time for people to stop after detecting the surface.	
l.	Paving must slope downwards in a direction away from the platform edge. This should be no greater than 2.5 per cent.	
m.	Where the permissible or enhanced permissible speed on the adjacent line is greater than 100 mph, a yellow line should be provided on the platform, together with warning signs. The yellow line shall be positioned so that people standing immediately behind the line are at least 1500 mm away from the platform edge.	
n.	It is recommended that entrances to platforms from lifts, escalators, ramps or stairways are parallel with the platform edge wherever possible to minimise the chances of people falling onto the line.	
o.	If it is not possible for entrances to platforms from different levels to be parallel with the platform edge, barriers should be provided, at least 1100 mm high (preferably 1200 mm) with cross-members, to prevent any passengers or assistance dogs from accidentally falling over the platform edge.	

S1.	Code of Practice guidance	Reference
p.	Any barriers should contrast sufficiently with their background surrounding.	
q.	Barriers should also be provided at terminal platforms or bay platforms to protect the area beyond which trains normally stop (i.e. behind the buffer stop).	
r.	Where platforms terminate in an end ramp that leads to the track for the ease of maintenance work, passengers should be prevented from walking down the end ramp and onto the track. A fixed barrier should be provided at the end of the level platform surface, at least 1100 mm in height; it should be fitted with cross-members and be rendered to contrast with the background against which it is seen. It may need to be fitted with a lockable gate so that there is access to the track for maintenance staff. A sign bearing the wording “No entry – staff access only” or similar should be affixed to the barrier. The barrier should be fitted across the entire width of the platform, up to and aligned with the inner edge of the tactile warning surface(s) on the platform edge.	
s.	As an alternative to platform-end barriers, it may be safer to install appropriate tactile paving.	

T1. Seating, waiting rooms and shelters

Figure T1.1 A selection of typical station seating
Top right, top left, and bottom left – Source: Paul Bigland
Bottom right – Source: Stagecoach South West Trains

T1.	European standards	Reference
1.	On each platform where passengers are allowed to wait for trains and at every waiting area, there shall be a minimum of one area fitted with seating facilities and a space for a wheelchair. When this area is weather protected, it shall be accessible by a wheelchair user.	**PRM TSI: 4.2.1.7**
2.	Within the station confines, furniture and free-standing devices (including cantilevered and suspended items) shall be positioned where they do not obstruct blind or visually impaired people, or they shall be detectable by a person using a long cane.	**PRM TSI: 4.2.1.7**
3.	All items of furniture and free-standing devices at stations shall contrast with their background, and have rounded edges.	**PRM TSI: 4.2.1.7**
4.	Please refer to the PRM TSI Appendix A, regarding lighting.	

T1.	National standards	Reference
	This section contains no national standards.	

T1.	Code of Practice guidance	Reference
a.	All seating should be clean, comfortable, easy to get in and out of and a range of seating should be freely available.	
b.	Where there is minimal seating, it should be clearly marked as being priority seating for disabled people, older people, pregnant women and those carrying young children. Such seating should be near to entrances, travel information, toilets and other facilities.	
c.	The seats shall be back-supported and at least one-third provided with armrests. Not all seats should have armrests though, so that bigger people or those with back problems can use them.	
d.	Where arms are provided they should be at a height of 200 mm above the seat to permit passengers to use them to push themselves up from the seat.	
e.	Armrests should be coated or constructed from slip-resistant material to ensure that good grip is provided, and they should contrast with the seat finish to aid partially sighted people.	
f.	There should be a range of seating to meet individual needs. Various heights should be provided; standard seats should be about 450 mm from the floor.	

<table>
<tr><th>T1.</th><th>Code of Practice guidance</th><th>Reference</th></tr>
<tr><td>g.</td><td>There should be enough space under, or adjacent to, these seats to allow an assistance dog to lie clear of the pedestrian route.</td><td></td></tr>
<tr><td>h.</td><td>Seating layouts should allow a wheelchair user and a companion to sit next to each other.</td><td></td></tr>
<tr><td>i.</td><td>The recommended ratio of spaces for wheelchairs to fixed seats is set out in the table below:</td><td></td></tr>
<tr><td></td><td><table>
<tr><th>Fixed seating capacity</th><th>Number of wheelchair spaces</th></tr>
<tr><td>4 to 25</td><td>1</td></tr>
<tr><td>26 to 50</td><td>2</td></tr>
<tr><td>51 to 300</td><td>4</td></tr>
<tr><td>301 to 500</td><td>6</td></tr>
</table></td><td></td></tr>
<tr><td>j.</td><td>There should also be sufficient space for wheelchair users to wait and manoeuvre, taking into account additional space for parking pushchairs and storing luggage. Please see BS8300 Annex C.</td><td></td></tr>
<tr><td>k.</td><td>Seating and spaces for wheelchair users should be protected from the elements, such as wind and rain.</td><td></td></tr>
</table>

T1.	Code of Practice guidance	Reference
l.	There should be a clear space alongside the seating of 900 mm × 1350 mm for each wheelchair where there are fixed seats.	
m.	There should be clear aisle space of 1200 mm in front of any seating to facilitate easy access.	
n.	In addition, a clear space of 2250 mm x 1050 mm is required for a wheelchair user to manoeuvre into a designated space. This designated space should be at least 900 mm wide x 1350 mm deep.	
o.	Other seats should include seats with standing rest bars (also known as horizontal perch rails) at a height of about 700 mm and at least 1400 mm in length; these higher seats are for people who find getting up out of standard seats difficult.	
p.	It is recommended that outdoor seating is designed to prevent rainwater collecting in any part of the seat and to allow the seat to dry relatively quickly.	
q.	Waiting rooms and shelters on single-face platforms should be located along the rear of the platform. On island platforms, they should be located centrally, with the doors or doorways being located on both sides of the structure and offset against each other.	

T1.	Code of Practice guidance	Reference
r.	Waiting rooms and shelters should allow all passengers to stay informed of train arrivals and departures and any critical changes, such as platform alterations. They should be able to hear announcements and view the customer information system. It is recommended that passenger information systems are placed in front of the main bank of seats/space(s) in the line of sight and at a height that is comfortable for all passengers. Where practicable, the ability to see and hear a train approaching is desirable.	
s.	Wherever possible, the waiting room or shelter should be aligned with other platform furniture.	
t.	The recommended lighting level inside the waiting room or shelter is 150 lux.	
u.	The use of stainless steel and glass in waiting rooms and shelters should be carefully considered and any glass panels should be adequately marked with highlighting or manifestations (see Section J1:Walls and transparent devices.	
v.	If doors are provided, these should be automatic.	

T1.	Code of Practice guidance	Reference
w.	Where more than one door is used to access the waiting room or shelter, the doors should be offset against each other to minimise discomfort caused by draughts.	
x.	Where the waiting room or shelter is combined with a refreshment facility at smaller stations, it should be clearly signed as being available for waiting only.	

U1. Toilets – standard toilets

U1.	European standards	Reference
	This section contains no European standards.	

U1.	National standards	Reference
	This section contains no national standards.	

U1.	Code of Practice guidance	Reference
a.	Toilet facilities should be provided where possible, and open where provided, at all categories A–C stations.	
b.	A suitable cubicle should be provided in male and female toilet accommodation, and urinals accessible to ambulant-disabled people should also be provided.	
c.	The rim of urinals for ambulant-disabled people should be 500 mm above the floor, and urinals should project at least 360 mm from the wall.	
d.	Vertical grabrails should be provided on each side of a urinal where stall privacy dividers are not fitted. They should be centred at 1100 mm above the floor.	
e.	The door and all entrances to the toilet facilities (excluding wheelchair-accessible toilets) should have a minimum clear width of 650 mm.	
f.	Where hinged handrails are provided, a graphic symbol showing the rail in both the upright and lowered position should be provided.	
g.	Colour contrasting should always be used in every cubicle as visually impaired people do not necessarily need to use accessible toilets.	

U2. Toilets – provision and location of wheelchair-accessible toilets

U2.	European standards	Reference
	If toilets are provided at a station, then a minimum of one unisex cubicle shall be wheelchair accessible. Otherwise, see national standards, below.	**PRM TSI: 4.2.1.6**

U2.	National standards	Reference
1.	Disabled people should be able to find and use suitable toilet accommodation no less easily than non-disabled people.	**BS 8300:12.6**
2.	Toilets must be well signposted.	**BS 8300:12.6**
3.	Toilets must be designed so that they can be used independently.	**BS 8300:12.6**
4.	Where there is only one accessible WC in a building, it should be of unisex corner design, suitable for both wheelchair users and ambulant-disabled people Figure U5.51.	**BS 8300:12.6.1**
5.	When more than one unisex accessible corner WC compartment is planned, a choice of layouts suitable for left-hand and right-hand transfer should be provided to cater for people who are paralysed or have limited mobility on one side or the other.	**BS 8300:12.6.1**

U2.	National standards	Reference
6.	As well as being accessible to people in wheelchairs, a well-designed toilet must be easy to use for a wide range of other people, including those who cannot bend, those with limited strength, impaired balance, impaired vision and those who make involuntary movements.	**BS 8300:12.6.1**
7.	Where entry to a toilet requires payment, coin slots must be clearly visible with a contrasting band around the slot.	**BS 8300:10.2**
8.	Where new toilets are being built, or where existing toilets are undergoing a major refurbishment (involving renewal or removal of walls, sanitary ware or plumbing, for example), toilets for disabled people must be provided.	**BS 8300:12.6.1**
9.	A Changing Places toilet facility should be provided in all large railway stations (category A). (Further advice on the design and installation of Changing Places facilities can be obtained by contacting the Changing Places Consortium.)	**BS 8300:12.7**
10.	The Changing Places facility should be in addition to, not instead of, the provision of unisex accessible WCs.	**BS 8300:12.7**

U2.	National standards	Reference
11.	Baby-changing facilities, where provided, must be separate and accessible at larger and busier stations (categories A–C). This is because many disabled people, unable to use alternative facilities, will not be able to wait for the accessible toilet to become free, if occupied by a baby-changing parent.	**BS 8300:12.5**

U2.	Code of Practice guidance	Reference
a.	It is likely that accessible modular toilets could be installed at smaller and unstaffed stations. Where these are installed, the interior dimensions and fittings must comply with the standards and diagrams contained in this section.	
b.	Additional space should be allowed for large bins so that there is still enough space for wheelchair users to turn.	
c.	The cubicle should be laid out in a way that the washbasin and hand dryer/ paper towels can be accessed from the WC.	

U3. Toilets – opening hours

U3.	European standards	Reference
	This section contains no European standards.	

U3.	National standards	Reference
	Accessible toilets must be open at all times that other toilets are open.	**BS 8300:12.6**

U3.	Code of Practice guidance	Reference
a.	Toilet opening hours form part of the station-specific annexes, under the Station Access Conditions. Any changes reducing the number of hours that toilets are open would require specific approval from the Office of Rail Regulation. However, locked toilets can be more of a problem for disabled people, because there may be no accessible alternative nearby. In places where toilets are locked (for example, when station staff go off duty), to prevent misuse and vandalism, operators should consider making the accessible toilet part of the National Key Scheme (NKS) to ensure their availability at all times.	
b.	NKS accessible toilets are those that can be unlocked with a special key. Operators who use this scheme should have a spare key that is held by staff at the relevant station. This scheme is operated by the Royal Association for Disability and Rehabilitation (RADAR).	*Royal Association for Disability and Rehabilitation* *www.radar.org.uk*
c.	Where possible and applicable, operators should install bells or buzzers outside locked accessible toilets to gain attention of station staff.	

U4. Toilets – doors

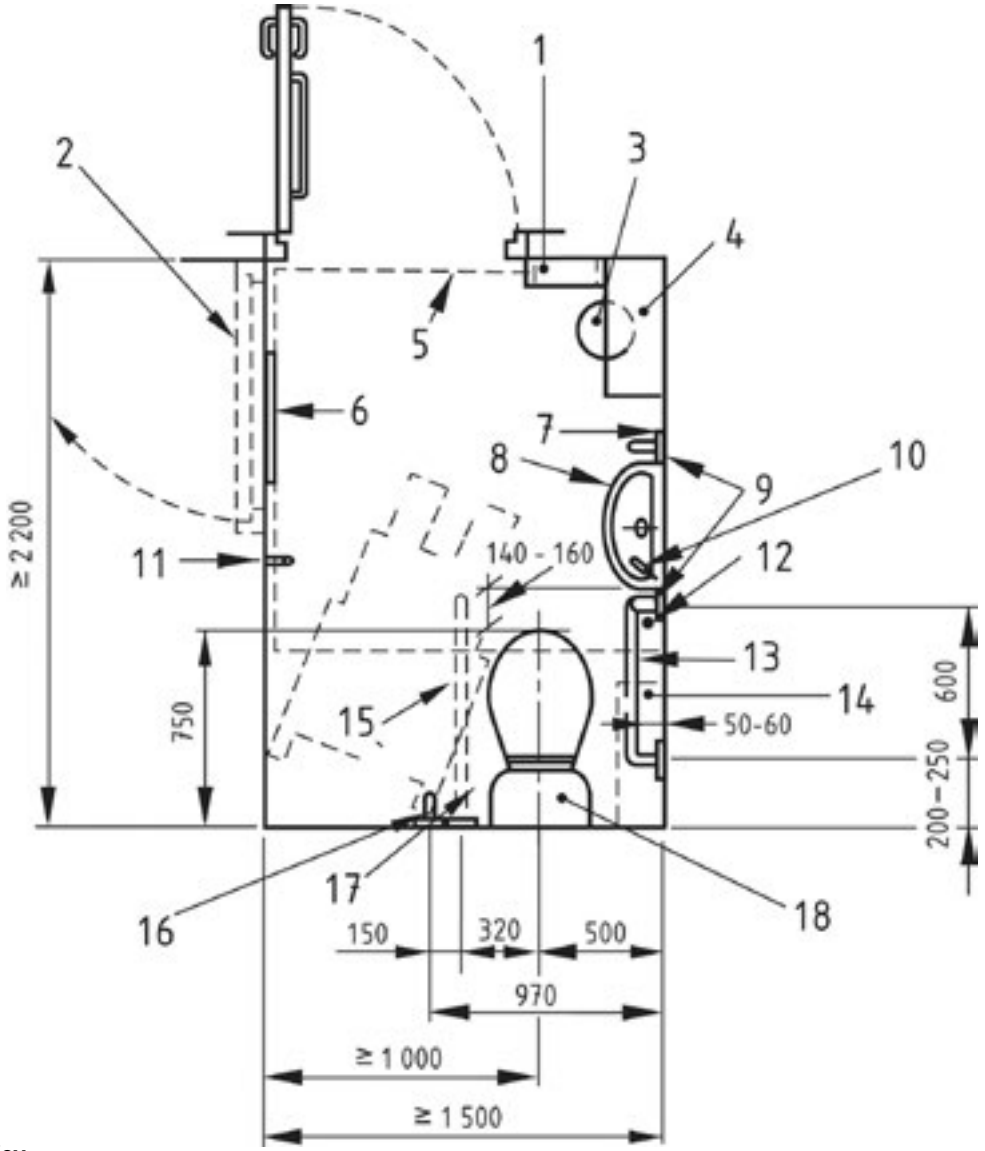
U4.	European standards	Reference
	The following standards do not apply to doors giving access to the toilets which are not dedicated to PRM: • Doors shall have a minimum clear useable width of 900 mm and shall be operable by a PRM. • It is permitted to use manual, semi-automatic or automatic doors. • Door-operating devices shall be available at a height of between 800 mm and 1100 mm.	**PRM TSI: 4.2.1.3**

U4.	National standards	Reference
1.	Doors should have an effective clear width of 800 mm from a straight-on approach and a clear width of 1000 mm for external doors and internal lobby doors at the entrance of buildings used by the general public.	**BS 8300:6.4.2 (Table 2)**
2.	If an inward-opening door is the only solution for a cubicle that is accessible to a wheelchair user, a clear minimum space (on plan) of 700 mm x 1100 mm should be provided between the door swing and the sanitary fittings to enable a wheelchair user to enter and close the door behind them.	**BS 8300:12.2.6**

U4.	National standards	Reference
3.	For easy identification by blind and partially sighted people, all door opening furniture should contrast visually with the surface of the door.	**BS 8300:6.5.1**
4.	Whether the door opens inwards or outwards, it should be capable of being opened in an emergency if a person has fallen against it and is unable to move.	**BS 8300:12.2.6**
5.	A door fitted with a privacy lock should have an emergency release operable from the outside.	**BS 8300:12.2.6**
6.	It should be possible to operate all door opening furniture one handed, without the need to grasp or twist.	**BS 8300:6.5.1**
7.	Outward-opening doors should have a horizontal pull rail fixed to the closing, or interior, face where no door closing is fitted.	**BS 8300:12.2.6**

U4.	Code of Practice guidance	Reference
a.	Doors should open outwards with sufficient clearance around the door in the corridor to allow access in an emergency.	
b.	Some means of indicating whether the toilet is in use should be provided, preferably using the words “vacant” or “occupied”.	
c.	Rising butt hinges will ensure that the door does not open unnecessarily, potentially into the path of visually impaired people.	
d.	Bi-folding doors opening outwards can be used, but should not be secured on floor or ceiling runners, as these can restrict their movement.	
e.	Any door will need to be well maintained and have the hinges and locks regularly lubricated for ease of use.	

U5. Toilets – design and layout



Key

1 Sanitary dispenser
2 Alternative door position
3 Disposal bin
4 Shelf
5 Wheelchair turning space (1500 × 1500) mm
6 Long mirror
7 Wall A (see Figure 52)
8 Hand rinse basin
9 Vertical grab rails
10 Tap on side of basin nearest to WC
11 Two clothes hooks, one at 1050 mm and the other at 1400 mm above the floor
12 Alarm pull cord
13 Horizontal grab rail
14 Sanitary disposal unit
15 Drop-down support rail
16 Vertical grab rail
17 Flush mechanism on this side of WC pan
18 Flat-topped close-coupled cistern providing a back rest and a colostomy changing surface for standing users (where high or low level cisterns are used, a rail with a padded back rest and a separate colostomy changing shelf 125 mm to 150 mm deep and preferably 400 mm wide, with its surface 950 mm above floor level, should be provided)

Figure 51 Unisex accessible corner WC layouts
Dimensions in millimetres

Source: BS 8300 Section 12 (Please note that figure numbers correspond with BS 8300)

U5.	European standards	Reference
	This section contains no European standards.	

U5.	National standards	Reference
1.	The internal dimensions of an accessible toilet must be at least 1500 mm wide and 2200 mm deep, so that it is big enough to accommodate people using powered scooters and also to allow more room for transfer. There must be a clear wheelchair turning space of 1500 mm x 1500 mm, which must not be reduced by obtrusive pipework or fittings below 700 mm.	**BS 8300:12.6.3.1 Figure 51**
2.	The toilet cubicle must be large enough to allow wheelchair users to transfer from the front, side or when the chair is placed diagonally alongside the toilet pan. There must be enough space for an assistant to help with the transfer to and from a wheelchair.	**BS 8300:12.6**
3.	The centre line of the toilet pan must be 500 mm from the side wall and the rim must be 480 mm above the floor.	**BS 8300:12.6.3.1 Figures 51A and 52**
4.	The front of the pan must be far enough away from the back wall to allow a wheelchair to be lined up with it for transfer.	**BS 8300:12.6.3.1 Figure 54**

U5.	National standards	Reference
5.	The basin and its taps must be close enough to be used whilst sitting on the pan so that hands can be washed before transferring back onto the wheelchair. The tap to the basin should be positioned on the side nearest to the WC pan.	**BS 8300:12.6.3.1**
6.	The side of the washbasin should be located between 140 mm and 160 mm in front of the leading edge of the toilet pan.	**BS 8300:12.6.3.1 Figure 51**

U5.	Code of Practice guidance	Reference
	There is no additional guidance relating to this section.	

U6. Toilets – WC pan and cistern

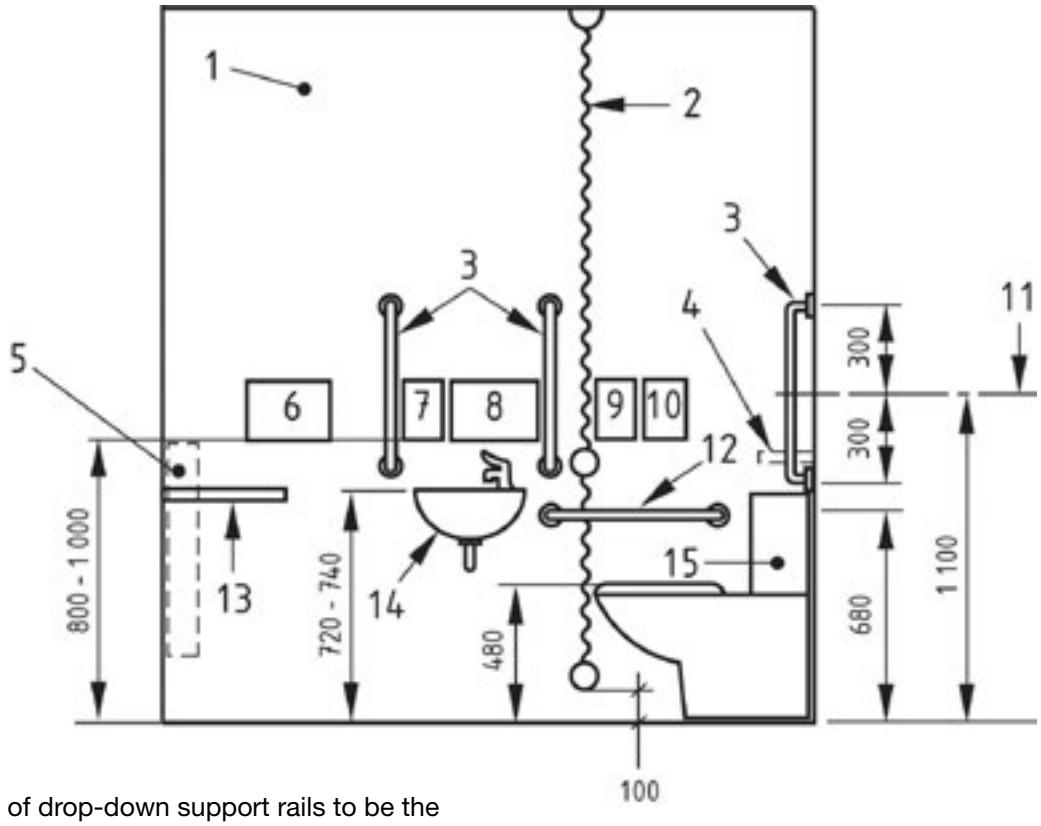
U6.	European standards	Reference
	This section contains no European standards.	

U6.	National standards	Reference
1.	The flush must be easy to operate. Where practicable, the flush should be operated by a spatula-type lever positioned on the open or transfer side of the pan for ease of access. It must be designed so that a passenger with limited reach, or passengers using a fist or an elbow, can operate it. A flushing lever attached to the cistern should be used in preference to the pull type, as pull types might get confused with the emergency call for aid control.	**BS 8300:12.6.3.4**
2.	Where a chain pull is used, it should be positioned adjacent to the transfer space, at a height between 800 mm and 1000 mm above floor level. It should terminate with a ring handle of 50 mm diameter. These types of flush should only be used in existing buildings.	**BS 8300:12.6.3.4**
3.	Alternatively, the flush should be operated by sensor activation (e.g. infra-red), with the sensor located in the same place as a lever.	**BS 8300:12.6.3.4**
4.	The top surface of a WC seat (not the cover nor the sanitary ware) should be set at a height of 480 mm above the finished floor level.	**BS 8300:12.6.3.4**

U6.	National standards	Reference
5.	Open seats (those with a gap in the front) make transfer more difficult and must be avoided.	**BS 8300:12.6.3.4**
6.	The WC seat in an accessible toilet should be designed for heavy duty use and securely fixed with metal (preferably stainless steel) fittings from the top into the rim of the WC, as a wheelchair user transferring from a wheelchair imposes high lateral stresses on the seat and seat fittings.	**BS 8300:12.6.3.4**
7.	The WC seat and cover should contrast visually with the WC pan and cistern.	**BS 8300:12.2.7**

U6.	Code of Practice guidance	Reference
	It is recommended that, where possible, a cantilevered toilet pan should be used, so that male wheelchair users can get close enough to use it as a urinal without having to move their feet from the wheelchair's footplates.	

U7. Toilets – grabrails



Height of drop-down support rails to be the same as the other horizontal grab rails.

Key

1 Wall A (see Figure 51)
2 Alarm pull cord with two red bangles
3 Vertical grab rails (those above the hand rinse basin should be set 500 mm to 700 mm apart, centred on the basin)
4 Colostomy changing shelf at 950 mm above floor level where a high or low level cistern is used
5 Sanitary dispenser, on wall adjacent to door, with coin slot between 750 mm and 1000 mm above the floor
6 Automatic hand dryer
7 Soap dispenser
8 Paper towel dispenser
9 Toilet paper dispenser
10 Alarm reset button
11 Centre line of vertical grab rails
12 Horizontal grab rail
13 Shelf
14 Hand rinse basin with tap on side of basin close to the WC pan
15 Flat-topped close-coupled cistern providing a back rest and a colostomy changing surface for standing users (where high or low level cisterns are used, a rail with a padded back rest should be provided)

Figure 52 Heights of fixtures and fittings for corner WC layout
Dimensions in millimetres

U7.	European standards	Reference
	This section contains no European standards.	

U7.	National standards	Reference
1.	Grabrails are required to give support and stability when transferring, standing up or sitting down and when adjusting clothing. They must be firmly fixed and capable of resisting the loads exerted by users when they pull themselves to a standing position.	**BS 8300:12.2.4**
2.	Grabrails should be 32 mm to 35 mm in diameter, with a clearance between the bar and the wall of 50 mm to 60 mm, with a surface that provides a good grip in wet conditions.	**BS 8300:12.2.4**
3.	Grabrails must contrast visually with their surroundings.	**BS 8300:12.2.7**
4.	All horizontal grabrails must be 680 mm above the floor and vertical grabrails, at least 600 mm in length, must be centred at a height of 1100 mm above the floor.	**BS 8300:12.6.3.5**
5.	A drop-down or hinged grabrail should be located on the transfer side of the toilet, 320 mm from the centre line of the toilet pan. This is used for getting on and off the seat (in combination with a fixed grabrail). The front of the grabrail should extend 50 mm to 100 mm beyond the front of the WC.	**BS 8300:12.6.3.5**

U7.	National standards	Reference
6.	Drop-down support rails should be held securely when in an upright position. They must be easy to release from their upright position and, when down, must be very steady.	**BS 8300:12.2.4**
7.	A vertical grabrail should be located 150 mm beyond the drop-down or hinged grabrail to aid stability in the transfer space.	**BS 8300:12.6.3 Figure 51**
8.	A fixed horizontal grabrail should be located on the side wall.	**BS 8300:12.6.3.5**
9.	There should be two vertical grabrails either side of, and centred on, the washbasin. As a guide, the first should be located 100 mm beyond the leading edge of the toilet pan, above the horizontal grabrail.	**BS 8300:12.6.3.1 Figure 52**
10.	If the cistern is situated in a duct or at a high level, there should be a horizontal grabrail with a padded backrest located behind, and centred on, the toilet pan. The grabrail must not stop the toilet seat remaining in the raised position.	**BS 8300:12.6.3.5**

U7.	Code of Practice guidance	Reference
a.	Where hinged handrails are provided, a graphic symbol showing the rail in both the upright and lowered position shall be provided.	
b.	Grabrails should be placed so they do not cause an obstruction themselves.	

U8. Toilets – washbasins

U8.	European standards	Reference
	This section contains no European standards.	

U8.	National standards	Reference
1.	The hand-rinse basin should be set with the rim height at 720 mm to 740 mm above the floor.	**BS 8300:12.6.3.1**
2.	Wheelchair users must be able to manoeuvre feet and footrests under the washbasin when the wheelchair is turned.	**BS 8300:12.6.5.1**
3.	Taps should either be mixer taps with a single lever action to control water flow or individual, clearly marked, hot and cold lever-operated taps with not more than a quarter turn from off to full flow.	**BS 8300:12.2.3**
4.	The markings on taps should be logical and clear to blind and partially sighted people.	**BS 8300:12.2.3**
5.	Hot water from individual bath and basin taps should be thermostatically controlled so that it does not exceed 43°C at the outlet.	**BS 8300:12.2.3**
6.	Toilet accessories, such as dispensers for soap, toilet paper and paper towels, should be suitable for single-handed use and for use by people with weak arm movements.	**BS 8300:12.6.6.1**

U8.	Code of Practice guidance	Reference
a.	The washbasin must be in a position that does not prevent people reaching other fittings, such as towels or a soap dispenser.	
b.	It is recommended that the basin is large enough to accommodate a portable urinal in order to rinse it after it has been emptied into the toilet. A standard-sized washbasin would achieve this.	
c.	There should be a remote sink plug control that can be reached easily and is large enough to operate without difficulty.	

U9. Toilets – accessories and surface finishes

U9.	European standards	Reference
	This section contains no European standards.	

U9.	National standards	Reference
1.	Toilet accessories should be readily accessible to a person in a wheelchair or seated on the WC, and to a person when standing.	**BS 8300:12.6.6.1**
2.	Electric hand dryers should be operated either by a movement sensor or by an easily operated push button. Hand dryers that require the user to insert their hands in the top of the dryer should not be installed.	**BS 8300:12.6.6.1**
3.	Sanitary towel and incontinence pad dispensers, and sealed containers for their disposal, should not obstruct transfer from a wheelchair to the WC pan.	**BS 8300:12.6.6.1**
4.	Where a high- or low-level cistern is used, a shelf, for use by ambulant-disabled people when changing colostomy bags, should be provided adjacent to the WC pan.	**BS 8300:12.6.6.1**
5.	A shelf, approximately 400 mm wide and 200 mm deep, set at 700 mm above the floor, should be provided adjacent to the washbasin and away from the wheelchair manoeuvring area.	**BS 8300:12.6.6.1 (Figure 52)**

U9.	National standards	Reference
6.	Mirrors that cannot be extended down to the upper edge of the washbasin, e.g. because of the presence of a soap dispenser, should be tilted forward. (A tilting mirror is suitable for use by most people and can enable a smaller size of mirror to be used.)	**BS 8300:12.6.6.2**
7.	When a mirror is located away from a washbasin it should be at least 1000 mm tall and have its bottom edge set at 600 mm above the floor.	**BS 8300:12.6.6.2**
8.	Large expanses of mirror in a compartment should be avoided as they can cause difficulties for blind and partially sighted people.	**BS 8300:12.6.6.2**
9.	Large areas of shiny floor and wall surface should not be used, as they can produce reflections and glare that confuse partially sighted people.	**BS 8300:12.2.7**
10.	Toilet accessories should contrast visually with the background against which they are seen.	**BS 8300:12.2.7**

U9.	Code of Practice guidance	Reference
a.	It is recommended that single-sheet toilet paper dispensers be fitted, which will benefit people with restricted limb movement.	
b.	A hand dryer is recommended in addition to a paper towel dispenser. It must be located either beside the washbasin or adjacent to the mirror. A shaver socket could also be provided near the mirror.	
c.	As referenced in U5 national standard 4 the shelf is also used for colostomy bags; therefore, it is recommended that the shelf is positioned adjacent to the vertical rail beside the wash basin.	
d.	A mirror should be provided opposite the washbasin. It should be at least 400 mm wide and 1000 mm tall. Its bottom edge should be no lower than 500 mm above the floor.	
e.	Shiny metal fittings that are cold to the touch should be avoided.	
f.	A waste bin should be provided, together with a sealed container for used incontinence pads and other disposables. These must be located clear of the manoeuvring space. It is recommended that this is beneath the shelf.	

U9.	Code of Practice guidance	Reference
g.	It is recommended that guidance be given to passengers about what is appropriate to be placed in the open bins.	
h.	Other fittings must be designed and placed in a way that makes the toilet easy to use for the widest range of people.	

U10. Toilets – lighting

U10.	European standards	Reference
	This section contains no European standards.	

U10.	National standards	Reference
1.	The maintained illuminance (or general lighting level) of toilet accommodation should be not less than 100 lux at floor level.	**BS 8300:12.6.7**
2.	A lighting pull cord should be set between 900 mm and 1000 mm above the floor, and located within 150 mm of the leading edge of the door and the surface of the adjacent wall.	**BS 8300:12.2.10**
3.	The pull cord and the pull cord end should contrast visually with the wall, but should not be red as this colour is reserved for emergency assistance alarms.	**BS 8300:12.2.10**
4.	Where automatic lighting is used, back-up switched lighting should be provided in addition to a motion sensor.	**BS 8300:12.6.7**

U10.	Code of Practice guidance	Reference
	Reflectors or diffusers should be fitted to all light fittings to reduce the glare from lamps.	

U11. Toilets – emergency

U11.	European standards	Reference
	This section contains no European standards.	

U11.	National standards	Reference
1.	Visual and aural feedback should be provided to indicate that, when the alarm has been operated, the emergency assistance call has been acknowledged and is being actioned.	**BS 8300:9.3.7.2**
2.	An emergency assistance alarm system, where provided, should be designed so that it is not confused visually or audibly with a fire alarm.	**BS 8300:9.3.7.2**
3.	A reset control should be provided for use if the alarm is activated by mistake.	**BS 8300:12.2.8**
4.	The reset control for the emergency assistance alarm should be clearly marked as such and should be reachable from a wheelchair and the WC. The reset control should be easy to operate and located with its bottom edge between 800 mm and 1000 mm above floor level. The marking of the reset control should be both visible and tactile.	**BS 8300:9.3.7.2**

U11.	National standards	Reference
5.	An emergency assistance pull cord, coloured red, should be provided with two red bangles (or handles) of 50 mm diameter, one set at a height between 800 mm and 1000 mm and the other set at 100 mm above floor level.	**BS 8300:9.3.7.2**
6.	The emergency assistance alarm indicator outside the room or compartment should be located so that it is easily seen and heard by people able to give assistance and indicates where help is required.	**BS 8300:9.3.7.2**

U11.	Code of Practice guidance	Reference
a.	It is recommended that the pull cord handle is a triangular design, which is appropriate in that it is easy to grip and heavy enough not to swing out of reach if missed initially.	
b.	Palm-operable push buttons can also be used if there is one at a higher level and one that is reachable from the majority of the floor.	
c.	The alarm should ring at a continually staffed location, or where it can be easily seen and heard by those able to give assistance. To reassure those in distress, visual and aural feedback should be provided to indicate that the alarm has been activated.	

U12. Toilets – baby-changing facilities

U12.	European standards	Reference
1.	If toilets are provided at a station, baby nappy changing facilities shall be provided which are accessible to both men and women.	**PRM TSI: 4.2.1.6**
2.	The European TSI requirement is that UK national standards are followed to ensure consistency across the UK. Therefore, the national standards below must be followed.	**PRM TSI: 4.2.1**

U12.	National standards	Reference
1.	Where baby-changing facilities are provided, they should be accessible to disabled people.	**BS 8300:12.5**
2.	An accessible baby-changing facility should not be incorporated in a unisex accessible WC but should be provided in a separate room.	**BS 8300:12.5**
3.	The room should be at least 2 metres × 2 metres in size and should include the following items: a) a baby-changing table set against the wall, either permanently fixed at 750 mm above floor level or adjustable in height; b) a washbasin, with its rim at 720 mm to 740 mm above floor level; c) a soap dispenser and an automatic hand dryer, with their undersides set between 800 mm and 1000 mm above floor level; d) a full length mirror, with its lower edge located at 600 mm above floor level; e) a nappy vending machine with the controls no higher than 1000 mm above floor level; f) a sanitary disposal bin, preferably recessed into the wall; g) a chair, if a fixed changing table is installed.	**BS 8300:12.5**

U12.	Code of Practice guidance	Reference
a.	Baby-changing facilities should allow enough room for a wheelchair to turn (i.e. 1500 mm by 1500 mm), which should not be obstructed by fittings below 700 mm.	
b.	Where possible, there should be baby-changing facilities in both the standard and accessible toilet facilities or the accessible baby-changing facilities should be separate from the toilets.	

V1. Platform lifts for boarding trains

V1.	European standards	Reference
Where a platform lift is used, it shall comply with the following:		
1.	Lifts shall be designed and assessed for an area of use defined by the maximum vertical gap they can overcome	**PRM TSI: 5.3.1.3**
2.	Lifts shall accommodate a wheelchair with characteristics as detailed in PRM TSI Appendix M.	**PRM TSI: 5.3.1.3**
3.	Lifts shall withstand a weight of at least 300kg, placed at the centre of the device distributed over an area of 660 mm by 660 mm.	**PRM TSI: 5.3.1.3**
4.	The lift platform surface shall be slip resistant.	**PRM TSI: 5.3.1.3**
5.	At surface level, the lift platform shall have a minimum clear width of 800 mm and a length of 1200 mm.	**PRM TSI: 5.3.1.3**
6.	Where provided, each control for deploying, lowering to ground level, raising and stowing the lift shall require continuous manual pressure by the operator and shall not allow an improper lift sequencing when the lift platform is occupied.	**PRM TSI: 5.3.1.3**

V1.	European standards	Reference
7.	The lift shall incorporate a method of deploying, lowering to ground level with a lift occupant, and raising and stowing the empty lift if the power to the lift fails.	**PRM TSI: 5.3.1.3**
8.	No part of the lift platform shall move at a rate exceeding 150 mm/second during lowering and lifting an occupant, and shall not exceed 600 mm/second during deploying or stowing (except if the lift is manually deployed or stowed).	**PRM TSI: 5.3.1.3**
9.	The maximum lift platform horizontal and vertical acceleration when occupied shall be 0.3 g.	**PRM TSI: 5.3.1.3**
10.	The lift platform shall be equipped with barriers to prevent any of the wheels of a wheelchair from rolling off the lift platform during its operation.	**PRM TSI: 5.3.1.3**
11.	A movable barrier or inherent design feature shall prevent a wheelchair from rolling off the edge closest to the vehicle until the lift is in its fully raised position.	**PRM TSI: 5.3.1.3**
12.	Each side of the lift platform which extends beyond the vehicle in its raised position shall have a barrier a minimum of 25 mm high. Such barriers shall not interfere with manoeuvring into or out of the aisle.	**PRM TSI: 5.3.1.3**

V1.	European standards	Reference
13.	The loading-edge barrier (outer barrier), which functions as a loading ramp when the lift is at ground level, shall be sufficient when raised or closed, or a supplementary system shall be provided, to prevent a power wheelchair from riding over or defeating it.	**PRM TSI: 5.3.1.3**
14.	The lift shall permit both inboard and outboard orientation of the wheelchair user.	**PRM TSI: 5.3.1.3**
15.	A secure storage method shall be provided to ensure that boarding aids, including portable ramps, when stored on a platform, do not cause an obstruction or pose any hazard to passengers.	**PRM TSI: 4.2.1.14**

V1.	National standards	Reference
	This section contains no national standards.	

V1.	Code of Practice guidance	Reference
	Where platform lifts are used to aid boarding a train, the design of the lift should ensure that the (rail) vehicle cannot be moved when the lift is not stowed.	

W1. Crossing the track

Figure W1.1 A station footbridge with lifts and stairs
Source: Merseyrail

W1.	European standards	Reference
1.	Level track crossings in stations are permitted to be used as part of a step-free route or of an obstacle-free route according to National Rules.	**PRM TSI: 4.2.15**
2.	If level track crossings are used as parts of step-free routes in addition to other routes, they shall: – have a minimum width of 1200 mm (less than 10 metres in length) or 1600 mm (10 metres or more in length) – have moderate slopes; a steep gradient is only allowed for ramps on short distances – be designed so that the smallest wheel of a wheelchair, as defined in PRM TSI Appendix M, cannot be trapped within the crossing surface and the rail – where accesses to level crossings are equipped with safety chicanes in order to prevent people from unintended/uncontrolled crossing of the tracks, the minimum width of the walkways in the chicane can be less than 1200 mm with a minimum of 900 mm; it shall be sufficient for a wheelchair user to manoeuvre.	**PRM TSI: 4.2.1.15**

3.	If level track crossings are used as parts of obstacle-free routes, and are the only option for all passengers, they shall – meet all specifications above, – have visual and tactile markings to identify the beginning and the end of the crossing surface. – be supervised, or, on the basis of national rules, equipment for a safe crossing of blind or visually impaired people shall be provided and/or the level crossing shall be operated for a safe crossing of visually impaired people.	**PRM TSI: 4.2.1.15**
4.	If any of the above requirements cannot be met, the level track crossing shall not be considered part of a step-free route or of an obstacle-free route.	**PRM TSI: 4.2.1.15**
5.	Where supervised level track crossing is permitted, operating rules shall be implemented to ensure that staff at supervised level track crossings give appropriate assistance to PRM, including indication of when it is safe to cross the track.	**PRM TSI: 4.4.1**

W1.	**National standards**	**Reference**
	This section contains no national standards.	

W1.	Code of Practice guidance	Reference
a.	Any proposals for new barrow crossings would be very unlikely to be agreed by ORR. Where barrow crossings exist already it is recommended that consideration is given, at the earliest opportunity, to their elimination as part of any station refurbishment or upgrade.	
b.	Barrow crossings should also have visual and tactile markings to identify the boundaries of the crossing.	
c.	Those who use the crossing should always be accompanied by staff conversant with the instructions for use of barrow crossings at the location concerned.	

W2. Crossing the track – subways

W2.	European standards	Reference
1.	All obstacle-free routes, footbridges and subways, shall have a free width of a minimum of 1600 mm except in areas that are specified in points 4.2.1.3 (2) (doors), 4.2.1.12 (3) (platforms) and 4.2.1.15 (2) (level crossings).	**PRM TSI: 4.2.1.2.1**
2.	The illuminance level along obstacle-free routes shall be adapted to the visual task of the passenger. Particular attention shall be paid to the changes of levels, ticket vending offices and machines, information desks and information displays.	**PRM TSI: 4.2.1.9**
3.	The footbridges, tunnels, stairs and ramps that are leading to the platforms and the platforms shall be illuminated according the specification referenced in the PRM TSI Appendix A, index 3 and index 4.	**PRM TSI: 4.2.1.9**

W2.	National standards	Reference
	This section contains no national standards.	

W2.	Code of Practice guidance	Reference
a.	Where possible, it is recommended that the approach to the underpass is as wide as possible, to give an open aspect and sense of security. Accordingly, it is recommended that subways be at least 4800 mm wide and have clear headroom of 3000 mm.	
b.	There should be a clear view from one end of the subway to the other.	
c.	CCTV cameras should be placed in underpasses to enhance security.	
d.	It is recommended that lighting is a minimum of 150 lux.	
e.	Where there are corridors of constrained width in subways or bridges, consideration should be given to providing a wider passing place to enable PRM to pass (in such instances where, for example, a wheelchair is wider than the dimensions given for the reference wheelchair).	
f.	It is recommended that there is close joint working with local authorities when designing subways to ensure that they are accessible.	
g.	Please refer to Section P1: Ramps for acceptable ramp lengths and gradients.	

X1. Connecting transport

Figure X1.1 Directional signs at stations to other modes of transport

X1.	European standards	Reference
	Obstacle-free routes shall be provided that interconnect the following public areas of the infrastructure if provided: • stopping points for other connecting modes of transport within the station confines (for example, taxi, bus, tram, metro, ferry etc.); • car parks; • accessible entrances and exits; • information desks; • visual and audible information systems; • ticketing facilities; • customer assistance; • waiting areas; • toilet facilities; and • platforms.	**PRM TSI: 4.2.1.2**

X1.	National standards	Reference
	This section contains no national standards.	

X1.	Code of Practice guidance	Reference
a.	It is recommended that station operators gather and update details about local services, so that station staff can provide information about access to taxis, buses, trams, metro systems and other local transport. This information may include: • walking distances, steps and any obstacles that may get in the way of a disabled person; • timetables; • toilet facilities; • refreshment facilities; and • suitable waiting areas.	
b.	Passenger train operators and station operators should consult and work with relevant stakeholders (local authorities, transport operators, disability and access groups) to ensure practical integration of services and information sharing on service interchanges.	

Y1. Staff training

Y1.	European standards	Reference
1.	Professional training of staff performing the tasks of accompanying trains, delivering service and help for passengers at a station and of selling tickets shall include the subject of disability awareness and equality, including the specific needs of each category of PRM.	**PRM TSI: 4.6**
2.	Professional training of engineers and managers, responsible for maintaining and operating the Infrastructure or the Rolling Stock, shall include the subject of disability awareness and equality, including the specific needs of each category of PRM.	**PRM TSI: 4.6**

Y1.	National standards	Reference
	This section contains no national standards but operators ought to refer to *How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators* for thorough guidance on the statutory requirements relating to this issue.	*How to Write Your Disabled People's Protection Policy: A Guide for Train and Station Operators*

Y1.	Code of Practice guidance	Reference
	There is no additional guidance relating to this section.	

Annex I: References

Infrastructure signs

Infrastructure signage dimensions shall be calculated as follows:

The minimum size of the enclosure of the written and graphic symbols shall be according to the formula: reading distance in mm divided by 250, multiplied by 1.25 = frame size in mm, where a frame is utilised.

International wheelchair sign

The sign conforming to the international symbol for the “provision for the disabled or handicapped persons” in accordance with ISO 7000:2004 symbol 0100, which identifies wheelchair-accessible areas, shall meet the following criteria:

Symbol	Background
RAL 9003 Signal white	RAL 5022 Night blue
NCS S 0500-N	NCS S 6030-R70B
C0 M0 Y0 K0	Pantone 274 EC (C100 M100 Y0 K38)

Figure A1.1 International wheelchair sign

Inductive loop sign

The sign indicating where inductive loops are fitted shall comply with Figure A1.2 and the following:

Symbol	Background
RAL 9003 Signal white	RAL 5022 Night blue
NCS S 0500-N	NCS S 6030-R70B
C0 M0 Y0 K0	Pantone 274 EC (C100 M100 Y0 K38)

Figure A1.2 Inductive loop sign

Call for assistance/call for information sign

The sign indicating where there is a call for assistance or call for information facility shall comply with Figure A1.3 and the following:

Symbol	Background
RAL 9003 Signal white	RAL 5022 Night blue
NCS S 0500-N	NCS S 6030-R70B
C0 M0 Y0 K0	Pantone 274 EC (C100 M100 Y0 K38)

Figure A1.3 Call for assistance/information sign

Emergency call sign

The sign indicating where there is an emergency call device shall comply with Figure A1.4 and the following:

Symbol	Background
RAL 9003 Signal white	Green
NCS S 0500-N	according
C0 M0 Y0 K0	ISO 3864-1:2002 Chapter 11

Figure A1.4 Emergency call sign

Annex II: Exemptions from licence provision requiring the following of the Code of Practice

1. Services which are, to a varying extent, exempt from licence obligations are:

Heathrow Express

2. Trains are licensed by the ORR. However, stations at Heathrow are licence exempt. Heathrow Express is required to have an approved DPPP in respect of its passenger train operations and is subject to the Equality Act 2010.

London Underground

3. Most of the system is licence exempt. However, where underground trains run on the Network Rail network, and where they operate stations used by national passenger train operators, they are covered by licences and are regulated by the ORR and the DfT. London Underground is required to have a DPPP approved by DfT and is subject to the Equality Act 2010.

Charter trains

4. All operators of charter trains are licensed. However, promoters may or may not be licensed. In many cases the licensed operator has no direct relationship with the passenger, who may have booked a journey with a promoter, although the operator will have a DPPP that sets out their commitments to service provision.

5. In addition to these, The Railway (Class and Miscellaneous Exemptions) Order 1994[2] exempted all companies and operations that were not part of British Rail at the time the Act came into force. These included obvious anomalies such as miniature railways on private land and fairground rides. Also exempted were:

Narrow- and broad-gauge railways

6. These include historical railways, cliff railways and funicular systems – anything that runs on non-standard track. Such railways may be subject to the Equality Act 2010.

Heritage railways

7. Some of these run on track that is not connected to the national network. Some, however, do link in, and some share stations. Where shared stations are run by a licensed operator, the station operator is bound by its DPPP. In some cases, part of the station is run by the heritage railway, and that part of the station is licence exempt.

Light railways

8. At the time of the Railways Act 1993, these were the Docklands Light Railway (including the Beckton extension), Glasgow Subway, Manchester Metrolink and the Tyne and Wear Metro. New systems will be licensed by the ORR unless the operators apply for and are granted an exemption, or the systems are tramways, and thus fall outside the scope of the Railways Act. Light Railways are subject to the Equality Act 2010.

2 SI 1994 No. 606

Outside the scope of the DfT and ORR's powers

Tramways

9. In general, tramways fall outside the scope of the DfT's and ORR's powers, as they are not defined as railway services under the Railways Act 1993. Tramways are, however, covered by the Rail Vehicle Accessibility (Non Interoperable Rail System) Regulations 2010 (RVAR 2010). Tramways are defined to include a system that has track wholly, or mainly, along a street or other public place. In addition to these, some services have been designated as tramways by the legislation that brought them into existence, even when they have not met this condition.

Northern Ireland

10. The Railways Act 1993 does not generally apply to railways in Northern Ireland. Stations and trains are run by NI Railways, and some services are shared with the Irish Republic. Northern Ireland has its own Rail Vehicle Accessibility Regulations, which it introduced in 2001.[3] The provisions of the Equality Act 2010 apply to Northern Ireland in the same manner as in the rest of the United Kingdom.

International services

11. Since 2005, all international passenger train services operating through the Channel Tunnel, except Eurotunnel's own vehicle-carrying services, have been covered by licences from the ORR. Whilst the standard international licence does not contain any conditions equivalent to the Provision of Services for Disabled People condition included in the domestic licences, the standard Statement of National Regulatory Provisions (SNRP) licence does include such provision.

3 Rail Vehicle Accessibility Regulations (Northern Ireland) 2001 – Statutory Rule 2001/264

12. Stations in Great Britain operated by Eurostar (St Pancras International, Stratford International, Ebbsfleet International and Ashford International) are domestically licensed by the ORR. Enforcement of the Provision of Services for Disabled People condition of its licence is therefore also the responsibility of the ORR, whose actions with regard to DPPPs, and the requirement to follow the Code, will be informed by DfT advice.

Annex III: Transportable wheelchair dimensions

This annex identifies the maximum engineering limits for a transportable wheelchair.

Characteristics

The minimum technical requirements are:

Basic dimensions

- Width of 700 mm plus 50 mm min each side for hands when moving.
- Length of 1200 mm plus 50 mm for feet.

Wheels

- The smallest wheel shall accommodate a gap of dimensions 75 mm horizontal and 50 mm vertical.

Height

- 1375 mm max including a ninety-fifth percentile male occupant.

Turning circle

- 1500 mm × 1500 mm.

Weight

- Fully laden weight of 300 kg for wheelchair and occupant (including any baggage).

Obstacle height that can be overcome and ground clearance

- Obstacle height that can be overcome 50 mm (max).
- Ground clearance 60 mm (min).

Maximum safe slope on which the wheelchair will remain stable

- The wheelchair shall have dynamic stability in all directions at an angle of 6 degrees.
- The wheelchair shall have static stability in all directions (including with brake applied) at an angle of 9 degrees.

Annex IV: Dispensation and derogation process

We expect operators to comply with the European and national standards (together the “Code standards”) in this Code of Practice, for all installation, renewal or replacements work at stations.

Where an operator is unable to comply with the Code domestic standards in respect of works to a station, they must apply to the DfT for a dispensation. Where they are unable to comply with the European PRM TSI standards, they must apply to the DfT for a derogation.

It is unlikely that dispensations or derogations will be granted for a new station or substantial redesign of an existing station.

An application for a dispensation or derogation must be made as early in the process as possible, and well before finalising designs, arranging finance, seeking planning and other consents (including station change), and well before any construction is commenced.

Inability to comply with the recommended good practice does not require a dispensation, so long as the required standard is met.

For dispensations, applications must be submitted on Code Dispensation Form A, which can be obtained, along with completion instructions, from the DfT Railways for All team at: railwaysforall@dft.gsi.gov.uk

For derogations, please contact the Rail Technical Team at the DfT at: interoperability@dft.gsi.gov.uk

Annex V: Reference documents

The following documents could be a useful source of information. You should, however, be aware that they may not be updated as frequently as the Code and therefore may not contain the latest standards available.

Accessible Print Design **Lighthouse International, published online**
Available at: http://www.lighthouse.org/accessibility/design/

Assessing the slip resistance of flooring: a technical information sheet (2007) **Health and Safety Executive, published online**
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