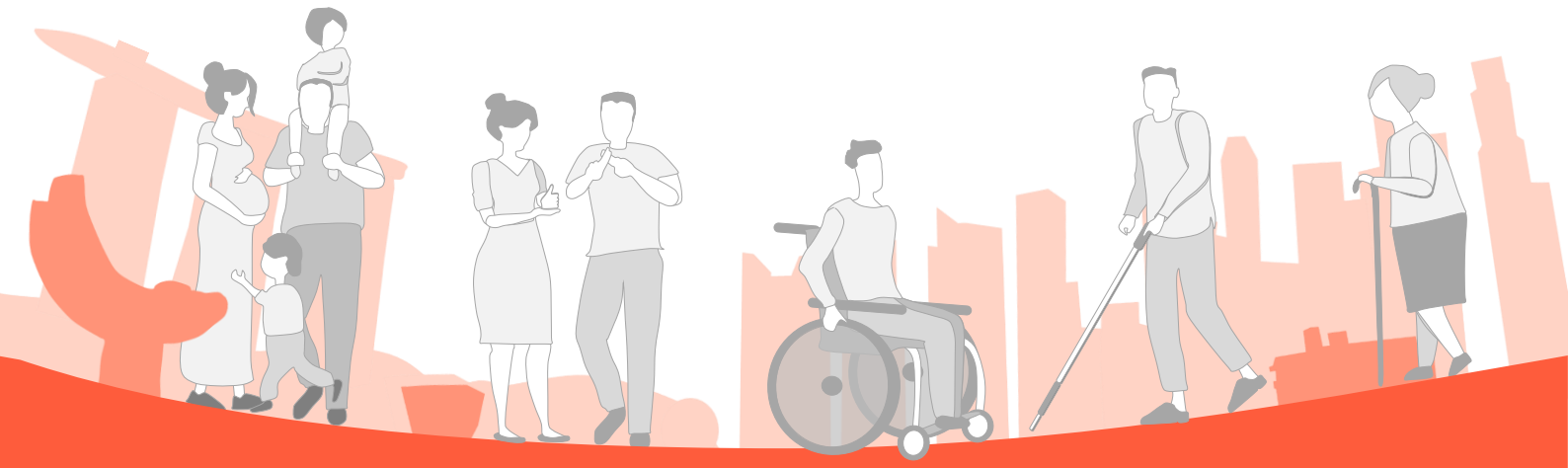
Building and Construction Authority

CODE ON ACCESSIBILITY

IN THE BUILT ENVIRONMENT 2025



CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The Code on Accessibility in the Built Environment ("Code") sets out the minimum design requirements for accessible and inclusive buildings. It provides technical details necessary to achieve the minimum level of accessibility for deemed-to-satisfy design solutions that meet the relevant objectives and performance requirements of the Building Control Regulations. The Code is periodically reviewed by the Code Review Committee to ensure accessibility standards remain balanced and relevant, addressing current and future demographic trends and the evolving community needs.

2 The design requirements in this Code should be incorporated from the onset of any new building project. This approach allows accessibility and usability considerations to be integrated into the overall design, minimising the cost of providing accessibility as an afterthought and resulting in a safer, more inclusive building for all users. For existing buildings undergoing additions and alterations, there may be unique access opportunities and constraints. However, owners and designers must make every effort to meet the accessibility outcomes to the fullest extent possible. This Code does not address the maintenance of accessible features. Under the Building Control Act, building owners are responsible for ensuring that as-built accessible features are properly maintained in working condition.

3 The provisions in this Code do not represent the only possible solutions. In keeping pace with technological advancements and changing user demand, Qualified Persons may develop alternative methods to meet regulatory objectives and address the needs of a diverse user base. Anthropometric data provides the measurable, physical basis for accessible design. In this revised version of the Code, basic anthropometric information on reach ranges, clearances and manoeuvring spaces for different user groups is presented at the beginning of the document for easy reference by designers. The content has also been streamlined and reorganised to enhance clarity, with additional functional intent statements introduced to describe the expected performance and conditions necessary for achieving the objectives.

4 An inclusive approach to designing and constructing the built environment is crucial for enabling people of all ages and abilities to live well and participate actively in the community. Buildings should provide easy and safe access for persons with disabilities, the elderly, and families with young children, without undue effort or segregation. Building owners and designers are encouraged to adopt Universal Design principles and consider exceeding baseline standards by making additional provisions where possible and practicable. Improved accessibility benefits everyone.

Building Plan and Universal Design Department
Building Plan and Management Group
Building and Construction Authority

Chapter 1:
Accessibility in the Built Environment

1.1 Scope

1.1.1 This Code sets out the minimum design and construction requirements for accessible and inclusive buildings. It specifies which building types must be made accessible and identifies specific areas within these buildings where accessibility is required.

1.2 Definitions

1.2.1 For the purpose of this Code, the definitions below apply:

"accessible" describes a site, building, facility, pedestrian path, and interconnection that complies with this Code and that can be approached, entered and used by persons with disabilities acting independently or with a caregiver, the elderly and other intended users as specified in this Code;

"accessible route" is a continuous path of travel that is free from barriers and connects all accessible elements and spaces. This path must not incorporate any steps, stairways, turnstiles, revolving doors, escalators, or other impediments which would prevent it from being safely navigated by persons with disabilities. Interior accessible routes include doorways, corridors, ramps, passenger lifts and clear floor space at fixtures. Exterior accessible routes include parking access aisles, kerb ramps, walkways, and ramps;

"building" includes part of a building;

"circulation path" is an exterior or interior way of passage from one place to another for pedestrians including walkways, hallways, aisles, courtyards, doorways, stairways and stair landings;

"commuter facilities" are transport nodes that cater to the needs of pedestrians and commuters such as bus shelters and taxi shelters, including associated road related facilities such as covered linkways, pedestrian overhead bridges and underpasses;

"grab bar" is a support rail used to maintain balance and to give steady, stabilising assistance or support in locations such as bathrooms, toilets and lifts;

"guide dog" is a specially bred and extensively trained service animal that guides a blind or person with visual impairment;

"handrail" is a rail used to give stability and support in circulation areas such as corridors, passageways, ramps, and stairways to assist in continuous movement;

"hearing enhancement system" enables sound signals of the activity to be transmitted to a person with a hearing enhancement device without interference of background noise or excessive reverberation. This allows them to participate in activities such as conferences, meetings, and entertainment;

"kerb" is a side barrier to a road or pavement;

"kerb ramp" is a short ramp cutting through a kerb or built up to it;

"operable part" is part of a piece of equipment or appliance used to insert or withdraw objects to activate, deactivate, or adjust the equipment or appliance (for example, coin-slots, push buttons, handles etc);

"person with ambulant mobility impairment" is a person who has difficulties in walking, either with or without personal assistance, and who may depend on prostheses (artificial limbs), orthoses (callipers), sticks, crutches or walking aids to move about;

"persons with disabilities" are persons whose mobility and use of a building are affected by one or more of the following physical or sensory disabilities or impairments: mobility impairment (including those requiring the use of mobility aids such as wheelchairs), deafness or hard-of-hearing, or blindness or visual impairment;

"place of public resort" means a building or a defined or enclosed place used as a zoo, wildlife parks, theme parks, amusement centres, community club, country club, cinema, theatre, public exhibition/concert/lecture/event hall, public ballroom, museum, gallery, library, stadium or a public place of assembly for persons admitted thereto by tickets or otherwise;

"place of worship" means a building, or a defined or enclosed place used either as a church, chapel, mosque, temple or other place where public worship is or religious ceremonies are performed;

"primary accessible route" is the main accessible route used to approach and access a building or facility's accessible elements and spaces. This route must be the most direct and predominantly used path of travel;

"ramp" is an inclined way connecting one level to another;

"slip-resistant" refers to a pedestrian surface material with adequate frictional characteristics to reduce the risk of slipping, in accordance with the recommendations and test methods stipulated in SS 485 – "Specification for slip resistance classification of pedestrian surface materials";

"symbol" means the International Symbol of Access for persons with disabilities;

"tactile" describes an object that can be perceived using the sense of touch;

"tactile ground surface indicator" (TGSI) consists of warning TGSI and directional TGSI. It provides cues, which, when combined with other environmental information, assist people who are blind or have visual impairment with their orientation. Orientation is a person's awareness of where they are, where they are going, and where they have been;

"warning TGSI" is an indicator that is used as a warning of a hazard and the need to stop, consider, investigate and wait before proceeding;

"water closet cubicle" is a compartment having a water closet within the male or female toilet;

"wheelchair user" is a person who depends on a wheelchair for mobility;

"width" is the clear distance from one finished surface to another; and

"white cane" is a mobility aid to guide persons who are blind or have visual impairment and to detect obstructions as they move in the environment.

1.2.2 Where "must" is used in this Code, it refers to mandatory design requirements. Recommended design requirements are indicated as an "Advisory".

1.2.3 "Note" as used in this Code, indicates situations where requirements need not apply or can be varied. It also contains important considerations in relation to any preceding clauses.

1.2.4 All figures and diagrams within this Code are intended to clarify certain aspects of the technical requirement. The figures and diagrams are not necessarily to scale and do not represent fully detailed solutions.

1.2.5 Unless otherwise specified, all dimensions shown in the figures in this Code are in millimetres (mm). Clearance dimensions refer to finished surfaces, not to those of structural elements. Allowance should be made for all necessary construction tolerances and finishes.

1.2.6 Unless the context otherwise requires:

(a) words importing the singular must include the plural and vice versa; and

(b) words importing the masculine gender must include the feminine gender and vice versa.

1.3 Anthropometrics

1.3.1 The requirements specified in the Code, relevant to the use of wheelchairs, are based on the dimensions of commonly used wheelchair sizes and users. For larger wheelchairs and other mobility aids, additional space allowances will have to be considered according to the needs of the intended users.

1.3.2 Persons with severe physical disabilities may have requirements beyond the standards provided in this Code.

1.3.3 Clear Floor Space for Wheelchair Users

1.3.3.1 The required floor space to accommodate a single, stationary wheelchair and occupant is 750 mm by 1200 mm.

1.3.3.2 The required knee and toe spaces, and the seat height are as shown in Figure 1.

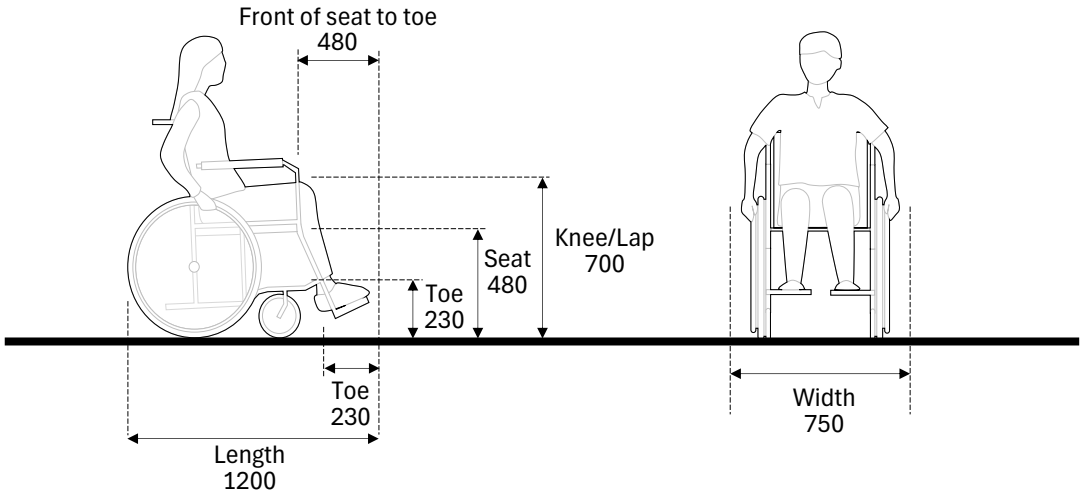


Figure 1
Dimensions of Stationary Wheelchair and Occupant

1.3.4 Manoeuvring Space for Wheelchair Users

1.3.4.1 The minimum clear floor space for a wheelchair to turn freely is 1800 mm, as shown in Figure 2.

1.3.4.2 The minimum clear floor space for a wheelchair to turn within a confined space is 1500 mm.

1.3.4.3 The minimum clear floor space to accommodate a single manoeuvring wheelchair and occupant travelling in a straight path is 900 mm by 1200 mm, as shown in Figure 3(b).

1.3.4.4 The minimum clear floor space to accommodate a single wheelchair and occupant manoeuvring into a side transfer position is 900 mm by 1500 mm, as shown in Figure 3(c).

1.3.4.5 The minimum clear floor space to accommodate a single wheelchair and occupant manoeuvring into a confined space and interacting with control and operating devices is 1200 mm by 1500 mm, as shown in Figure 3(d).

1.3.4.6 Adequate space allowance should be provided for different users passing on an accessible route as shown in Figure 4.

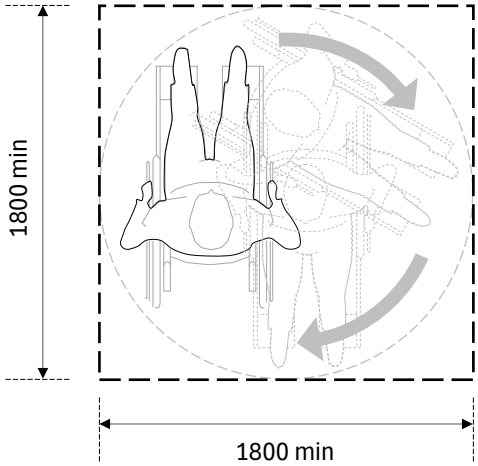
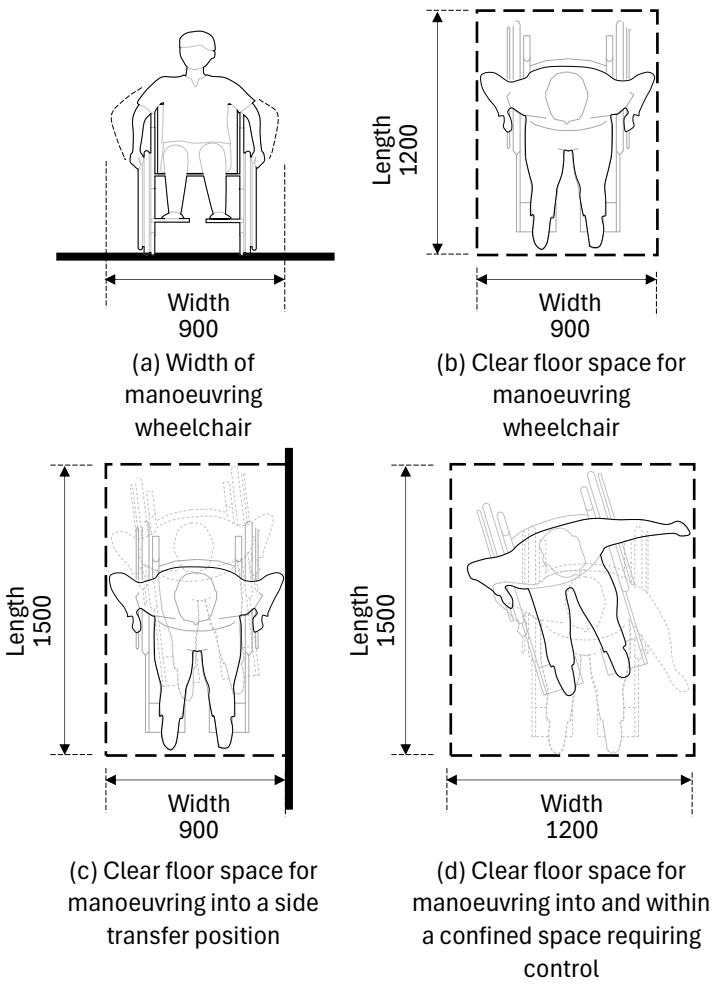


Figure 2
Minimum Clear Floor Space for Wheelchair to Turn Freely



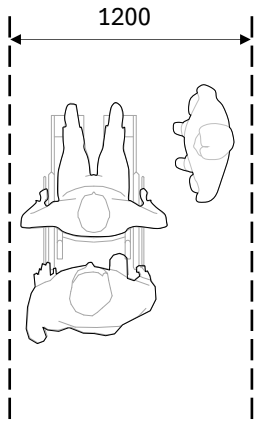
(a) Width of manoeuvring wheelchair

(b) Clear floor space for manoeuvring wheelchair

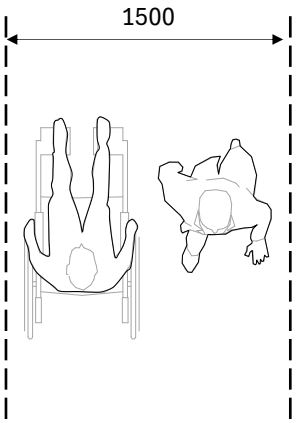
(c) Clear floor space for manoeuvring into a side transfer position

(d) Clear floor space for manoeuvring into and within a confined space requiring control

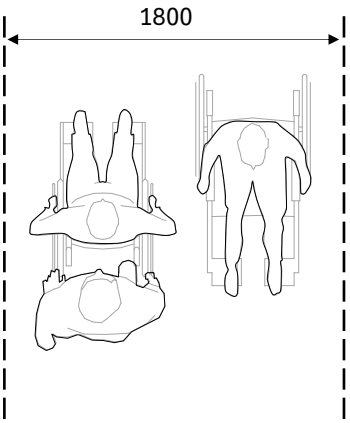
Figure 3
Clear Floor Space to Accommodate a Single Manoeuvring Wheelchair and Occupant



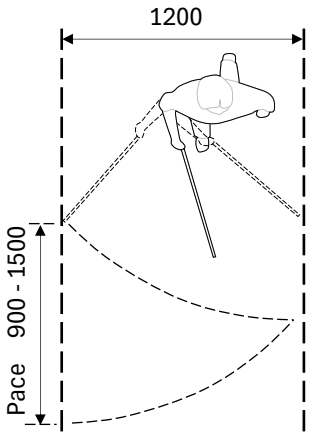
(a) Wheelchair and a person facing sideways



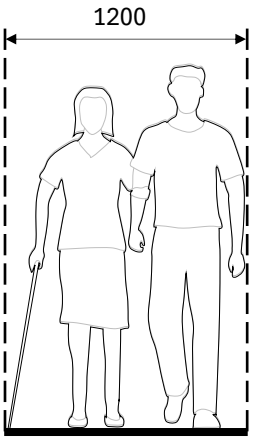
(b) Wheelchair and a person passing



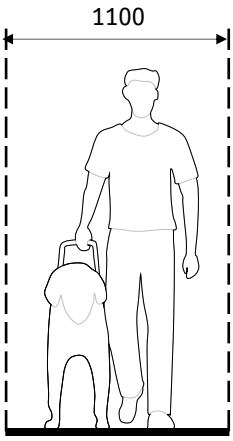
(c) Two wheelchairs passing



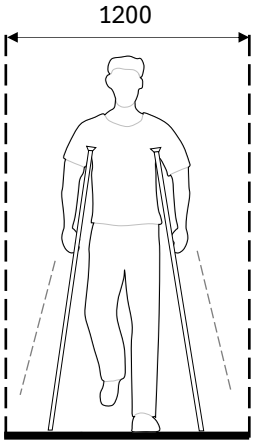
(d) Person with visual impairment using a white cane



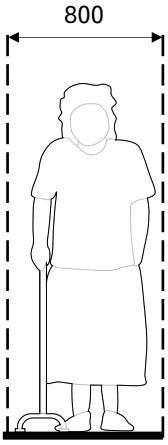
(e) Person with visual impairment accompanied by a sighted guide



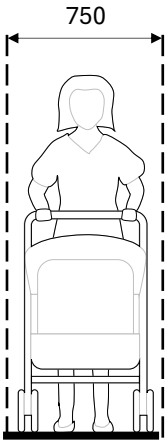
(f) Person with visual impairment accompanied by a guide dog



(g) Person using crutches



(h) Person using walking aid



(i) Person with baby pram

Figure 4
Comfortable Access Widths

1.3.5 Reach Ranges

1.3.5.1 The range of side reaches for a person in a wheelchair is as follows:

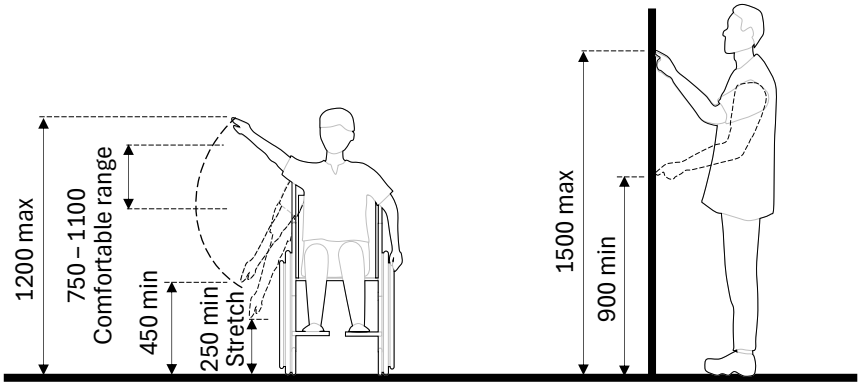
(a) a maximum height of 1200 mm from the floor level; and

(b) a minimum height of 450 mm from the floor level.

1.3.5.2 The comfortable height for a person with visual impairment to read tactile and Braille signs on walls is between 900 mm and 1500 mm from the floor level.

1.3.5.3 The forward reach for a person in a wheelchair is a maximum of 400 mm from the front of the wheelchair seat.

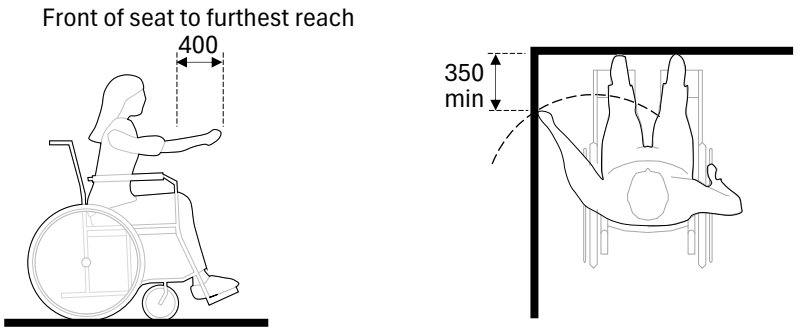
1.3.5.4 The maximum reach for a person in a wheelchair in an area with obstruction is a minimum of 350 mm from an internal corner or obstruction.



(a) Side reach heights for a person in wheelchair

(b) Heights for reading of tactile and Braille by persons with visual impairment

Figure 5
Height of Reach Ranges



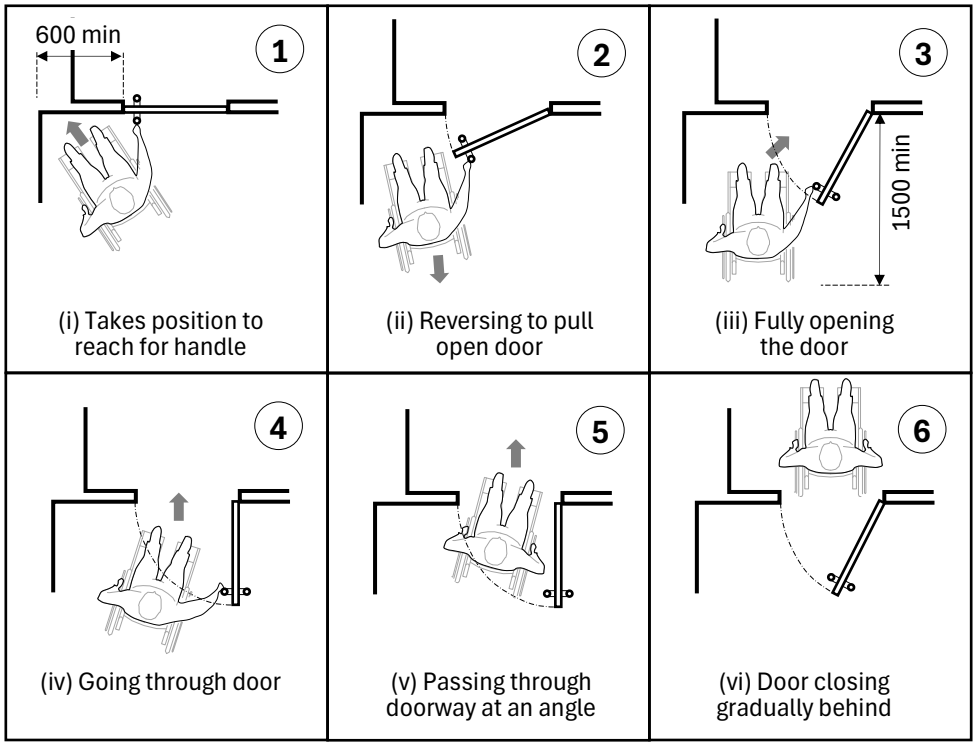
(a) Forward reach

(b) Reach from internal corner or obstruction

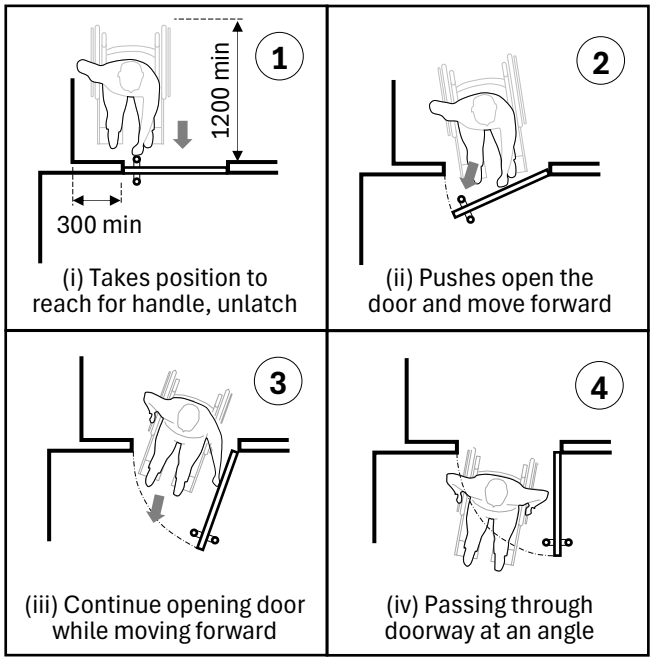
Figure 6
Extended Reach Ranges

1.3.6 Manoeuvring Space at Doorways for Wheelchair User

1.3.6.1 The positions taken by a wheelchair user when negotiating a door in a passageway are illustrated in Figure 7.



(a) Negotiating a door (pull-side) by wheelchair user

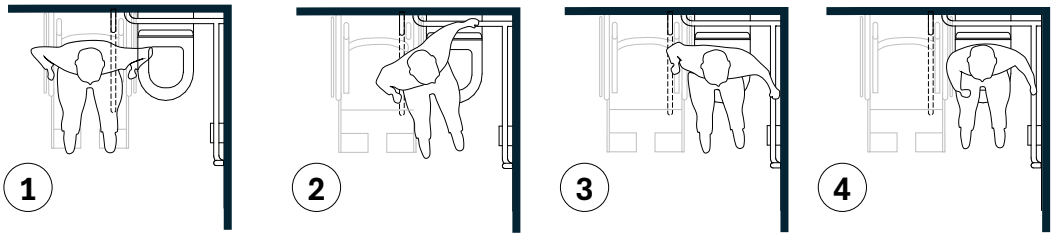


(b) Negotiating a door (push-side) by wheelchair user

Figure 7
Positions Taken by a Wheelchair User When Negotiating a Door in a Passageway

1.3.7 Wheelchair Transfer to Water Closet

1.3.7.1 The side approach for wheelchair user to transfer is as shown in Figure 8.



(a) Takes transfer position, sets brakes, removes armrest

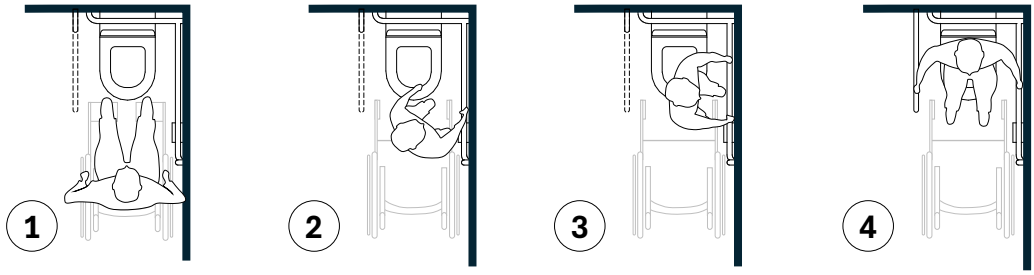
(b) Transfers from wheelchair seat

(c) Transfers onto water closet seat

(d) Positions on water closet

Figure 8
Side/Parallel Approach

1.3.7.2 The frontal approach for wheelchair user to transfer is as shown in Figure 9.



(a) Takes transfer position, sets brakes, removes footrests

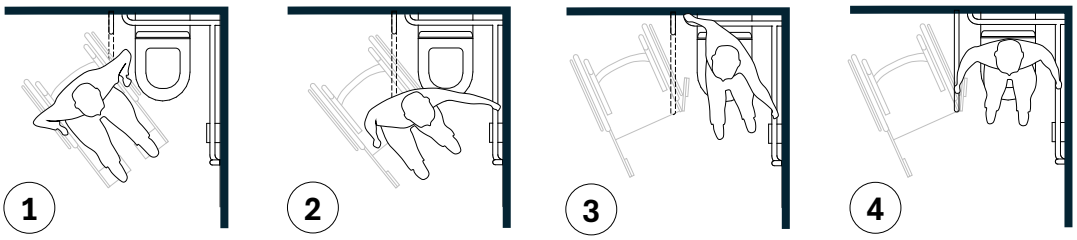
(b) Transfers from wheelchair seat

(c) Transfers onto water closet seat

(d) Positions on water closet

Figure 9
Frontal Approach

1.3.7.3 The diagonal approach for wheelchair user to transfer is as shown in Figure 10.



(a) Takes transfer position and sets brakes

(b) Removes armrest, footrest, and transfers

(c) Moves wheelchair out of the way and adjusts position

(d) Positions on water closet

Figure 10
Diagonal Approach

Chapter 2:
Provisions for Accessibility

2.1 Accessibility in the Built Environment

Functional Intent

Persons with disabilities – wheelchair users, persons with ambulant mobility impairment and persons with sensory impairment – and families with young children must be able to easily gain access to buildings and use their facilities, both as visitors and people who live or work in them.

2.1.1 All areas or levels must be made accessible for persons with disabilities and other intended users, including employees, visitors and the public, in accordance with the requirements of this Code. The following building types have specific accessibility requirements:

(a) For purpose-built workers' dormitories: the designated areas leading to the accessible room, communal areas and facilities must be made accessible;

(b) For vehicle parks, including surface parking, vehicle parking buildings or vehicle parking facilities within a building: all car parking areas, including the interconnectivity of any car parking area to lift lobbies, entrances and to adjacent buildings must be made accessible.

2.1.2 Where a site, building, facility, room, or space serves multiple purpose, each distinct area must comply with the requirements applicable to its specific use.

Note Clause 2.1 does not apply to a landed dwelling-house.

2.2 Additions and Alteration Works

2.2.1 The provisions of this Code apply to all new areas and existing areas with addition and alteration works which require plan submission and approval from the Commissioner of Building Control.

2.3 Temporary Obstructions During Pandemic or Crisis

Functional Intent

The accessibility provisions within a building must be maintained during pandemic or crisis.

2.3.1 During periods of pandemic or crisis where any existing accessible approach, entrance, route, feature or facility has to be temporarily closed, obstructed or altered, an alternative in accordance with the provisions of this Code must be provided. In addition, signage must be provided to direct users to this alternative.

Table 1

Provision of Key Facilities and Accessible Features

This table serves a quick reference to the applicable requirements for key facilities and accessible features across different building types. The table should be read alongside the specific clauses within this Code.

Building type	Key provisions		
	Accessible sanitary provisions	**Family friendly provisions**	**Other provisions**
1. Residential development	AWC, ASF, AMB	-	RWC, SSO
2. Shophouses with commercial use on first storey and residential use on upper storeys * Where the use on upper storeys is of non-residential use, refer to the respective building types	AWC, ASF, AMB	-	HES, TBS
3. Office buildings including business parks			
(a) GFA less than 5,000 m^2	AWC, ASF, AMB	-	HES, TBS
(b) GFA 5,000 m^2 or more	AWC, ASF, AMB	LR	HES, TBS
4. Shopping centres and multi-purpose complexes			
(a) GFA less than 5,000 m^2	AWC, ASF, AMB, LWC	-	HES, TBS
(b) GFA 5,000 m^2 to less than 10,000 m^2	AWC, ASF, AMB, LWC	LR	HES, TBS
(c) GFA 10,000 m^2 to less than 20,000 m^2	AWC, ASF, AMB, LWC	FF, LR	HES, TBS
(d) GFA 20,000 m^2 or more	ACR, AWC, ASF, AMB, LWC	FF, LR	HES, TBS
5. Hotels, boarding houses, chalets and backpacker hotels	AWC, ASF, AMB	-	AR, ER, HES, TBS, SSO
6. Serviced apartments	AWC, ASF, AMB	-	AR, HES, TBS, SSO

Legend:

Accessible sanitary provisions

ACR	Accessible changing room
AWC	Accessible individual washroom
LWC	Larger accessible individual washroom
ASF	Accessible individual shower facility
AMB	Facilities for persons with ambulant mobility impairment

Family-friendly provisions

FF	Family-friendly sanitary facilities and car parking
LR	Lactation room

Other provisions

AR	Accessible guestroom
ER	Elder-friendly guestroom
RWC	Bathroom for future retrofitting
HES	Hearing enhancement system
SSO	Accessible switches and socket outlets
TBS	Tactile and Braille signs

Table 1 (continued)
Provision of Key Facilities and Accessible Features

Building type	Key provisions		
	Accessible sanitary provisions	**Family friendly provisions**	**Other provisions**
7. Sports facilities and public swimming pools	ACR, AWC, ASF, AMB, LWC	FF, LR	HES, TBS
8. Places of public resort	ACR, AWC, ASF, AMB, LWC	FF, LR	HES, TBS
9. Non-residential components in mixed developments with GFA 5,000 m^2 or more	Refer to respective type	LR	Refer to respective type
10. Parks and open spaces including civic plazas	AWC, ASF, AMB	-	-
11. Place of worship	AWC, ASF, AMB, LWC	-	HES, TBS
12. Markets, hawker or food centres and eating establishments	AWC, ASF, AMB, LWC	-	TBS
13. Transport terminals and stations			
(a) Standalone transport terminals including bus terminals and MRT stations.	AWC, ASF, AMB, LWC	FF, LR	HES, TBS
(b) Major transport terminals/interchanges, including airport, bus and MRT interchanges/railway stations, cruise centres	ACR, AWC, ASF, AMB, LWC	FF, LR	HES, TBS

Legend:

Accessible sanitary provisions
- ACR Accessible changing room
- AWC Accessible individual washroom
- LWC Larger accessible individual washroom
- ASF Accessible individual shower facility
- AMB Facilities for persons with ambulant mobility impairment

Family-friendly provisions
- FF Family-friendly sanitary facilities and car parking
- LR Lactation room

Other provisions
- AR Accessible guestroom
- ER Elder-friendly guestroom
- HES Hearing enhancement system
- TBS Tactile and Braille signs

Table 1 (continued)
Provision of Key Facilities and Accessible Features

Building type	Key provisions		
	Accessible sanitary provisions	**Family friendly provisions**	**Other provisions**
14. Schools			
(a) Preschools, primary and secondary school	AWC, ASF, AMB	LR	HES
(b) Colleges, universities and other institutions of learning	AWC, ASF, AMB, LWC	LR	HES, TBS
(c) Hostels, halls of residence and dormitories	AWC, ASF, AMB	-	AR, SSO, TBS
15. Hospitals	ACR, AWC, ASF, AMB, LWC	LR	HES, TBS
16. Polyclinics, health-care centres and specialist outpatient clinics	ACR, AWC, ASF, AMB, LWC	LR	HES, TBS
17. Nursing homes, homes for the aged and welfare homes	AWC, ASF, AMB	-	HES, TBS
18. Factories, workshops, industrial buildings and office/showroom areas in warehouses	AWC, ASF, AMB	-	-
19. Purpose-built workers' dormitories	AWC, ASF	-	-

Legend:

Accessible sanitary provisions

ACR	Accessible changing room
AWC	Accessible individual washroom
LWC	Larger accessible individual washroom
ASF	Accessible individual shower facility
AMB	Facilities for persons with ambulant mobility impairment

Family-friendly provisions

FF	Family-friendly sanitary facilities and car parking
LR	Lactation room

Other provisions

AR	Accessible guestroom
ER	Elder-friendly guestroom
HES	Hearing enhancement system
SSO	Accessible switches and socket outlets
TBS	Tactile and Braille signs

2.4 Interconnectivity

Functional Intent

The planning and design of a building must provide barrier-free connectivity to adjacent infrastructure and developments for seamless accessibility.

2.4.1 The provisions of this Code apply to building works within the development and must be read in conjunction with the Land Transport Authority's guidelines for street works and public footpaths, and the National Parks Board's guidelines for public open spaces and parks. Accessibility must extend to all building interfaces, including connections between buildings and commuter facilities.

2.4.2 A plan showing the primary accessible route connecting the building or facility's accessible elements and spaces must be provided for building plan approval. This plan must include the barrier-free connections to adjacent buildings and public infrastructure, such as pedestrian and commuter facilities.

2.4.3 Footpaths in the road reserve abutting a development under construction must be kept barrier-free, unobstructed, and free of construction activities and equipment. The footpath must be adequately protected from the debris of construction work.

2.4.4 In the event that the existing accessible footpath around a development under construction has to be temporarily obstructed, removed or altered, an alternative accessible footpath with a minimum width of 1200 mm must be provided in addition to signage to direct users.

2.5 Exemptions

Functional Intent

In areas of a building where inherent health and safety risks exist, particularly for persons with disabilities, the requirements of this Code need not apply.

2.5.1 The provisions of this Code do not apply to the following areas:

(a) Construction sites and structures which are directly associated with the process of construction;

(b) Areas which are raised primarily for purposes of security, lifesaving or fire safety, including but not limited to, observation or lookout galleries, prison guard towers, fire towers or lifeguard stands;

(c) Plants, equipment rooms and machinery spaces;

(d) Loading docks; and

(e) The following areas in industrial buildings:

  (i) Process plants and structures that deal with the oil and gas, refinery operations, chemical production, and premises that handle chemicals, toxic materials and potentially explosive compounds, including ancillary offices within these areas;

  (ii) Areas requiring gowning protocols, such as clean rooms or sterile environments;

  (iii) Production areas containing heavy machinery; and

  (iv) Areas used for warehousing and storage.

Chapter 3:
Arriving at the Building

3.1 Approach and Access to Buildings

Functional Intent

Persons with disabilities must be able to identify and approach accessible entrances independently, and obtain information on the accessible routes and facilities within the building.

3.1.1 The main entrance of the building must be accessible.

3.1.2 Where there are other entrances that connect to adjacent buildings, commuter facilities, park connectors or covered linkways, all such entrances and connections must be made accessible.

3.1.3 Directional signs bearing the Symbol of Access in accordance with clause 8.3 must be displayed at all other non-accessible entrances to direct persons with disabilities to the accessible entrance.

3.1.4 Where alighting and boarding points, taxi shelters, bus shelters or accessible parking lots are provided, at least one accessible route leading to an accessible entrance of the building must be provided.

3.1.5 Where transfers between vehicular and pedestrian surfaces are necessary, driveways, pavements, and footways must be flush, ramped, or blended to a common level in accordance with clauses 3.2, 4.5 and Table 4.

3.1.6 A permanent floor diagram of durable material indicating the accessible routes and facilities must be displayed at an appropriate location within the building:

(a) in every storey of a non-residential building; and

(b) where common facilities are provided in residential buildings.

3.2 Passenger Alighting and Boarding Points, including Taxi Shelters

Functional Intent

Passenger alighting and boarding points must be safe and accessible for persons with disabilities. It must provide a place of rest as well as protection from weather.

3.2.1 Where passenger alighting and boarding points are provided, at least one must be:

(a) sheltered;

(b) accessible in accordance with clauses 3.2.3 or 3.2.4 and connected to an accessible route; and

(c) provided with seats that do not impede the movement of a wheelchair user.

Advisory to clause 3.2.1(c)

- Seating areas should include designated spaces for wheelchairs. The colour of seats should contrast with their surroundings, avoid causing glare, and feature armrests and backrests to provide support for people whilst resting.

3.2.2 Where bollards are used, it must be in accordance with clause 4.2.3.6.

3.2.3 Where there is no level difference, warning TGSI in accordance with clause 9.7 must be provided as shown in Figure 11 and must:

(a) extend across the full length of the passenger alighting and boarding point for a depth of 600 mm;

(b) be set back 300 mm away from the vehicular way; and

(c) be contrasting in colour with the surrounding floor material.

3.2.4 Where there is a level difference, a passenger alighting and boarding point, as shown in Figure 12 must:

(a) provide an access aisle of at least 1200 mm wide by 4500 mm long adjacent and parallel to the vehicle pull-up space;

(b) have a permanent contrasting colour band at the kerb; and

(c) have at least:

(i) one kerb ramp in accordance with clause 4.5.3; or

(ii) two kerb ramps in accordance with clause 4.5.3 where it is a taxi shelter.

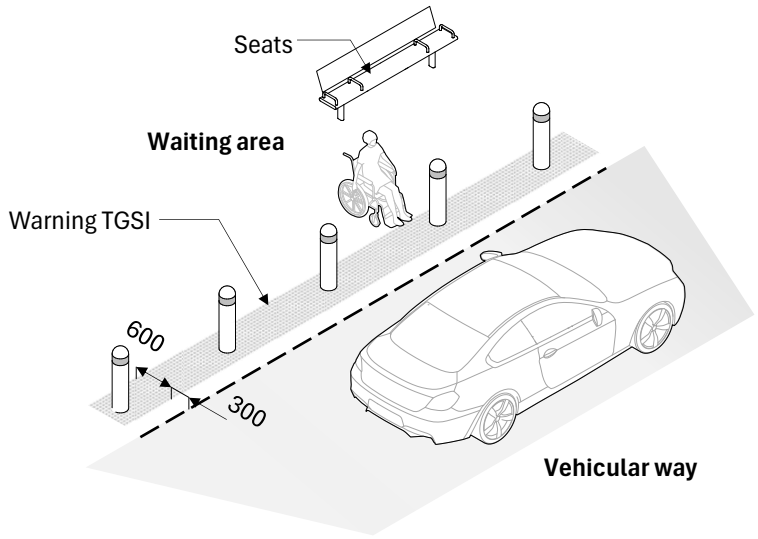


Figure 11
Passenger Alighting and Boarding Point with no Level Difference

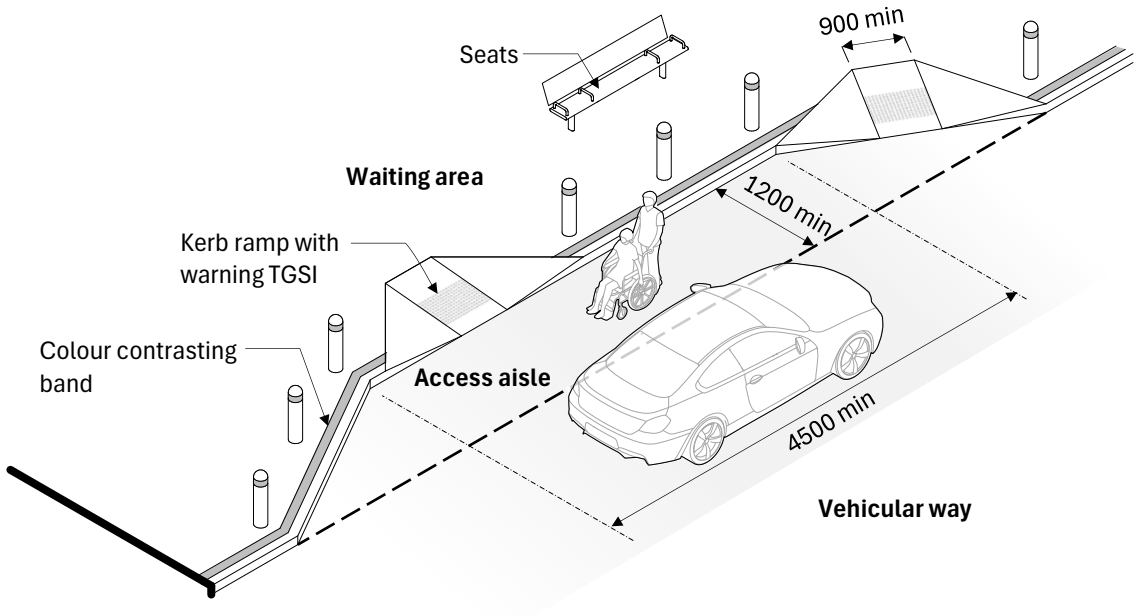


Figure 12
Passenger Alighting and Boarding Point with Level Difference

3.3 Accessible Vehicle Parking

Functional Intent

Designated accessible vehicle parking lots must be provided on a proportional basis solely for the use by persons with disabilities. The accessible parking lot must be clearly marked, easy to locate and access. The design must ensure that persons with disabilities, including wheelchair users, can safely enter and exit their vehicles, and must include provisions for reporting any misuse.

3.3.1 Vehicular Parking Provision

3.3.1.1 Where vehicle parks are provided, the number of accessible vehicle parking lots must be in accordance with Table 2 and be over and above the Land Transport Authority's parking requirements.

Table 2
Provision of Accessible Vehicle Parking Lots

Number of vehicle parking lots provided	Number of accessible vehicle lots required for hospitals	Number of accessible vehicle lots required for other buildings
1 to 10	1	1
11 to 50	2	1
51 to 100	4	2
Every subsequent 200 lots or any part thereof	1 additional lot	1 additional lot

Note Where 10 or fewer vehicle parking lots are provided, one lot must be designed and constructed in accordance with the requirements in this Code but without displaying the Symbol of Access. This lot can be converted into an accessible vehicle lot should the need arise in the future.

3.3.2 Accessible Vehicle Parking Lots

3.3.2.1 An accessible vehicle parking lot must:

(a) have a firm, level surface without aeration slabs;

(b) have the minimum dimensions of:

(i) 4800 mm by 3600 mm for angled parking as shown in Figure 13;

(ii) 5400 mm by 3600 mm for parallel parking as shown in Figure 14; and

(iii) 7200 mm by 3600 mm for parallel parking where vehicles cannot be parked by reversing or where there are obstructions at the ends of the parking spaces as shown in Figure 14.

(c) have the Symbol of Access in accordance with clause 8.1, painted or marked on the accessible parking lot that:

(i) comprises a white stylised figure with dimensions between 1000 mm and 1500 mm on a blue background; and

(ii) be located in the centre of the lot.

(d) have the Symbol of Access in accordance with clause 8.1, on a vertical sign immediately adjacent to the accessible parking lot where it would not be obstructed by a vehicle parked in the lot. The vertical sign must:

(i) have a minimum dimension of 450 mm by 450 mm;

(ii) be installed at a height of at least 1500 mm from the floor level to the centre of the sign; and

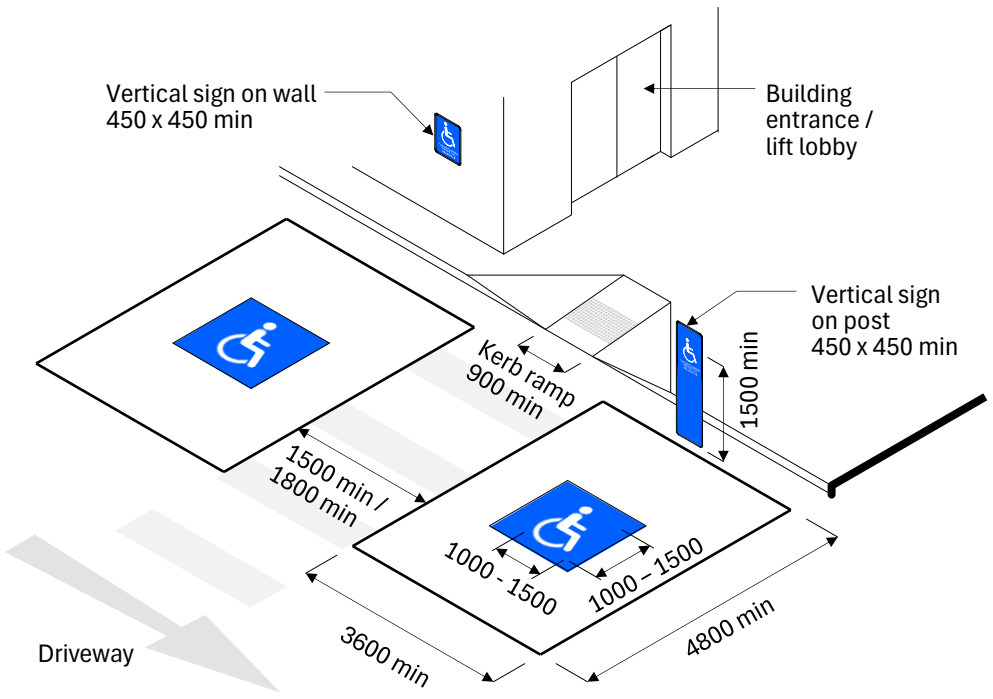
(iii) have the telephone number of the building management, Town Council or the relevant authority clearly printed on the sign for the purpose of reporting unauthorised parking.

3.3.3 Location

3.3.3.1 Accessible vehicle parking lots that serve a particular building must be located close to an accessible entrance and/or lift lobby.

3.3.3.2 For a vehicle park that does not serve a particular building, accessible vehicle parking lots must be linked to an accessible walkway which must not be part of the driveway.

3.3.3.3 An accessible route leading to the entrance of the building must be level or have kerb ramps in accordance with clause 4.5.3.



To ensure the safety of users, the accessible path from the accessible vehicle parking lot should not cross vehicular paths, including driveways and spaces where vehicles may be backing out, unless clearly designated as a pedestrian crossing.

Figure 13
Accessible Vehicle Parking Lot

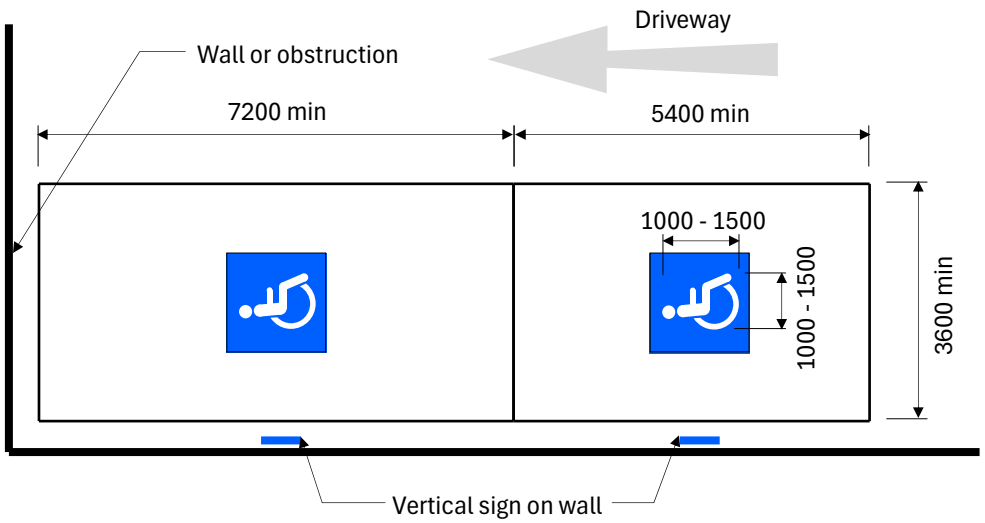


Figure 14
Parallel Accessible Vehicle Parking Lot

3.3.4 Signage

3.3.4.1 Before approaching the vehicle park entrance, clear directional signs in accordance with clause 8.3 must be displayed at appropriate places to direct drivers with disabilities to the location of accessible vehicle parking lots.

3.3.4.2 At entrances to vehicle parks, signage bearing the Symbol of Access in accordance with clause 8.2 must be displayed to indicate the provision of accessible vehicle parking lots within the parking facility.

3.3.4.3 Within the vehicle park, directional signs in accordance with clause 8.3 must be displayed at points where there is a change of direction to direct persons with disabilities to the accessible vehicle parking lots.

Advisory to clause 3.3.4

- Information on the number and location of accessible vehicle parking lots should be provided at vehicle park entrances to enable drivers with disabilities to easily locate them.

Chapter 4:
Accessibility Around and Within the Building

Horizontal Circulation

4.1 Floor and Ground Surfaces

Functional Intent

Floor surfaces along accessible routes must be safe and facilitate easy movement for persons with disabilities. Clear warnings must be provided to alert users to changes in level.

4.1.1 Floor surfaces must:

(a) be stable, firm, level and slip-resistant;

(b) not have any drop or unexpected variations in levels;

(c) contrast with the walls in tone and colour, or have skirtings providing a clear distinction between the floor and wall; and

(d) where there is a change in level, have contrasting colour bands or warning TGSI to alert users in accordance with clause 4.5.

4.1.2 Where carpets or carpet tiles are used along accessible routes, they must be in accordance with clause 4.1.1 and be securely fixed, have a firm cushion, pad or backing and have any exposed edges fastened to the floor surfaces with trims in accordance with Table 4.

Advisory to clause 4.1.1

- Highly polished or reflective surfaces should be avoided as they may cause visual discomfort.
- High-pile carpets should be avoided as it is challenging for wheelchair users to manoeuvre.

4.1.3 Where gratings are located on accessible routes, gratings as shown in Figure 15 must:

(a) be set flush with the surrounding surface;

(b) have spaces/gaps/openings not greater than 12 mm wide; and

(c) be placed so that the long dimension is perpendicular to the dominant direction of travel.

4.1.4 Any cross-fall gradient provided to allow drainage of surface water must not be steeper than 1:40.

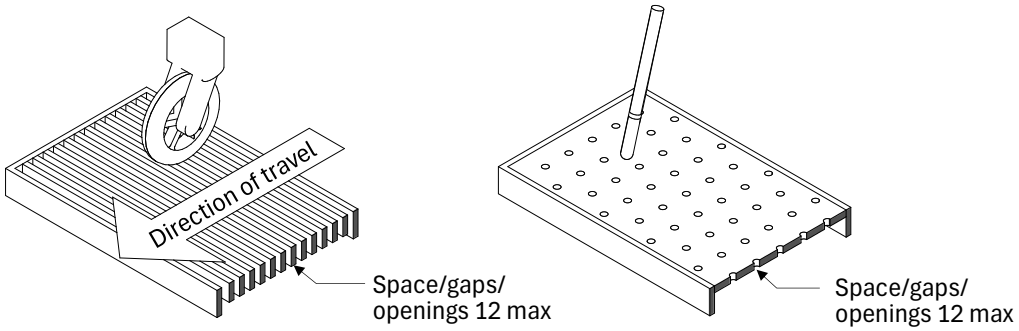


Figure 15
Gratings

4.2 Accessible Routes, Corridors and Paths

Functional Intent

Accessible routes must ensure safe and unimpeded movement for persons with disabilities, and must provide sufficient widths and wheelchair manoeuvring spaces along corridors, doorways, gantries and the like. Accessible routes must be sheltered where applicable, and incorporate rest areas. Warning and protection against obstacles and protrusions must be provided.

4.2.1 Width

4.2.1.1 The width of accessible routes, corridors and paths must:

(a) meet the width requirements in Table 3 for the primary routes of the building types; and

(b) be at least 1200 mm for all other accessible routes.

Table 3
Accessible Route Widths

Building type	Minimum width of primary accessible route
Residential; Office buildings, including business parks; Hotels, boarding houses, chalets and backpacker hotels; Serviced apartments; Hostels, halls of residence or dormitories; Preschools, primary and secondary schools; Factories, workshops, industrial buildings, warehouses; Purpose-built workers' dormitories	1500 mm* *Passing spaces in accordance with clause 4.2.1.2 must be provided.
All other uses	1800 mm

4.2.1.2 Where the width of accessible routes is less than 1800 mm, at least one passing space must be provided as shown in Figure 16. In addition:

(a) the passing space must have a minimum clear floor space of 1800 mm by 1800 mm; and

(b) additional passing spaces must be provided at intervals of no more than 25 m.

4.2.1.3 Where there is a dead-end corridor, a turning space of at least 2000 mm in the direction of travel and not less than 1500 mm wide must be provided to allow wheelchair users to make a 180° turn and travel back in the opposite direction.

4.2.1.4 Manoeuvring space as described in clause 4.4.6 must be provided at doorways along accessible routes.

4.2.2 Turnstiles, Gantries and Checkout Lanes

4.2.2.1 Where turnstiles or gantries are provided, at least one accessible gate or gantry with a minimum width of 900 mm must be available as shown in Figure 17.

4.2.2.2 Where checkout lanes are provided, at least one accessible checkout lane with a minimum width of 900 mm must be provided as shown in Figure 17.

4.2.2.3 Entry and exit controls such as keypads, card readers and biometric identifiers must be in accordance with clause 9.2.

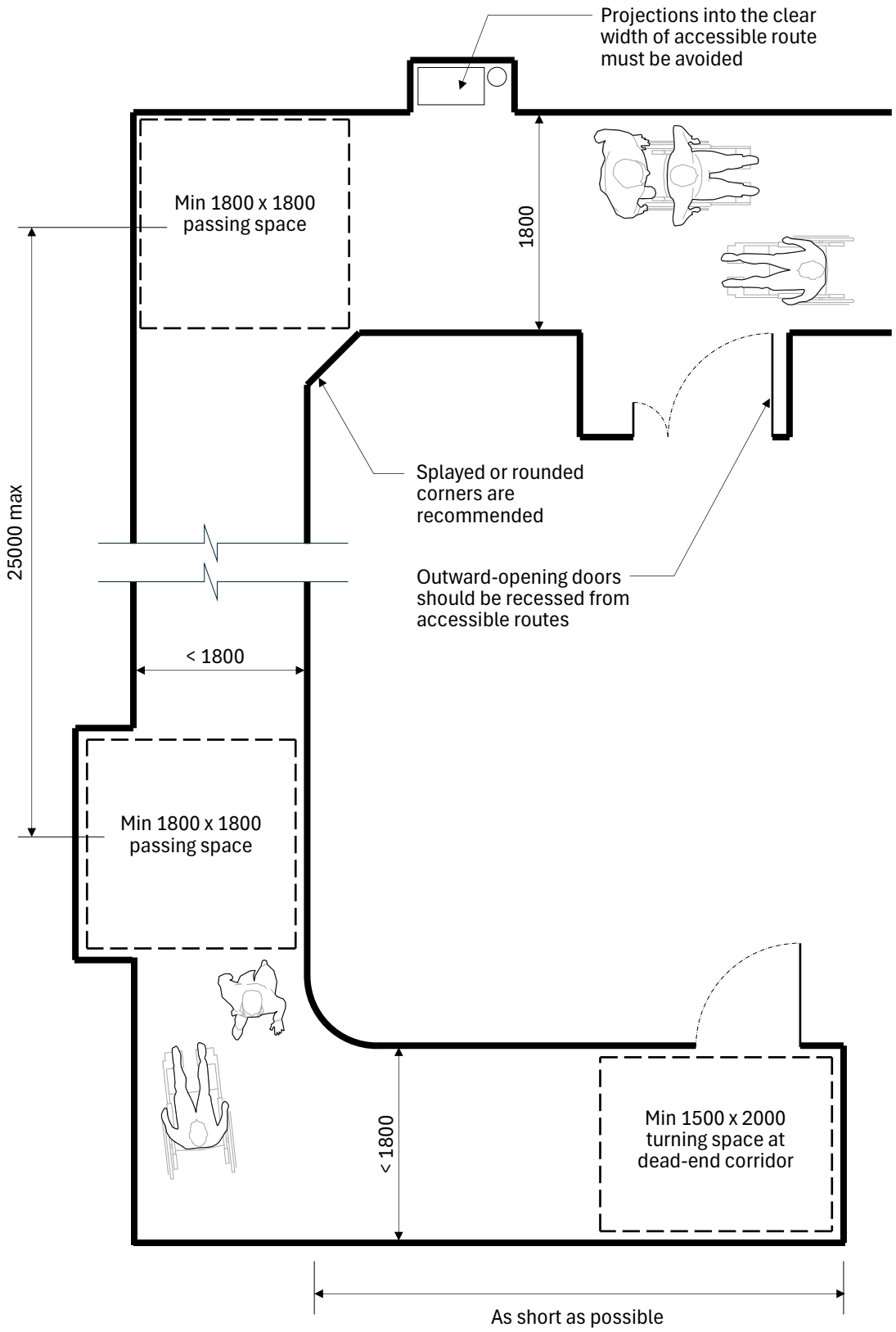


Figure 16
Space Requirements for Accessible Corridors

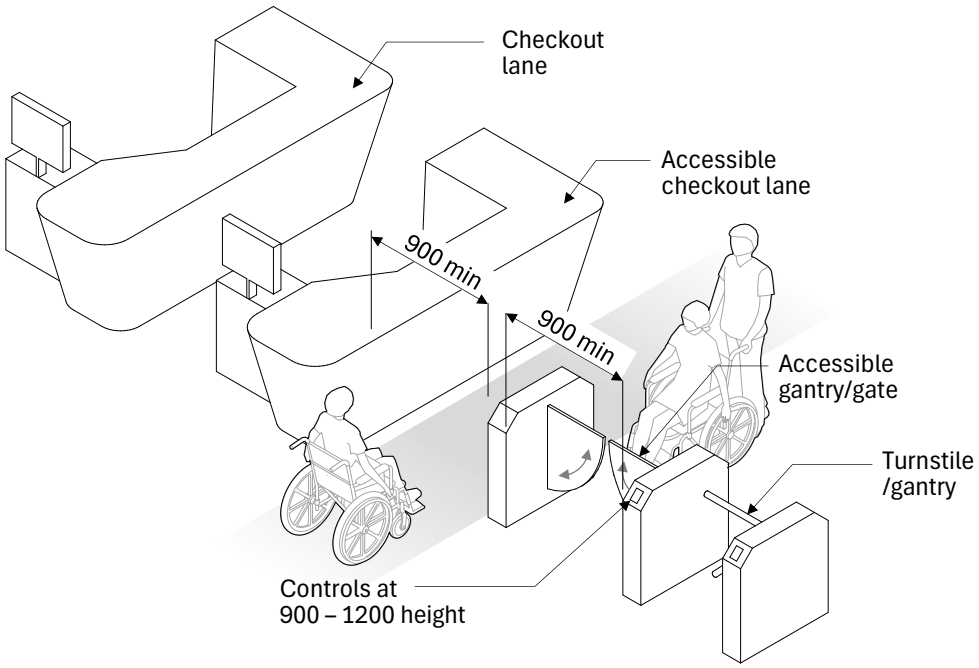


Figure 17
Access Beside Turnstiles, Accessible Gantries and Checkout Lanes

4.2.3 Obstacles and Protrusions

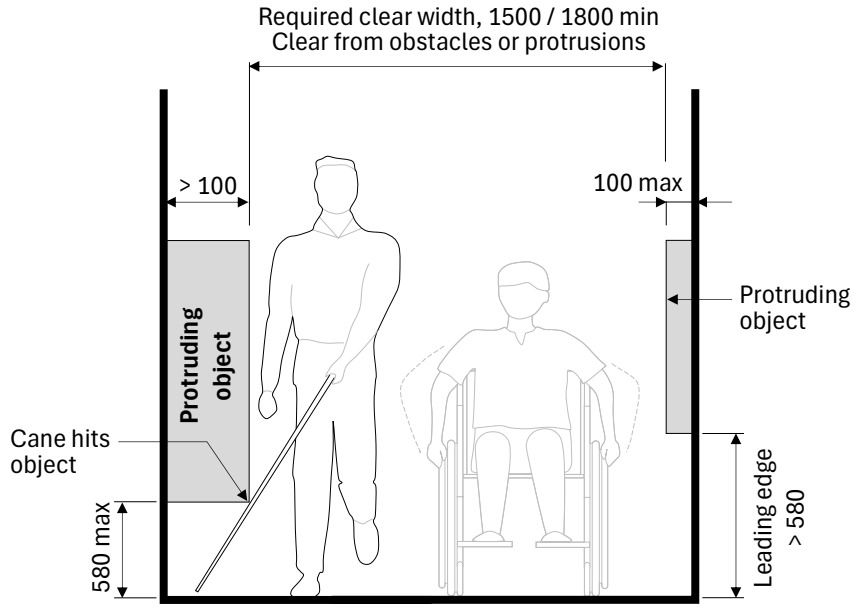
4.2.3.1 The minimum required clear width of an accessible route in accordance with Table 3 must be free of any obstacles or protrusions, such as handrails, fire extinguishers, plumbing and sanitary services, and freestanding objects.

4.2.3.2 Protruding objects with their leading edges at any height above 580 mm from the floor level must not protrude more than 100 mm from the wall, as shown in Figure 18.

4.2.3.3 Protruding objects with their leading edges up to a maximum height of 580 mm from the floor level, may protrude more than 100 mm from the wall, as shown in Figure 18.

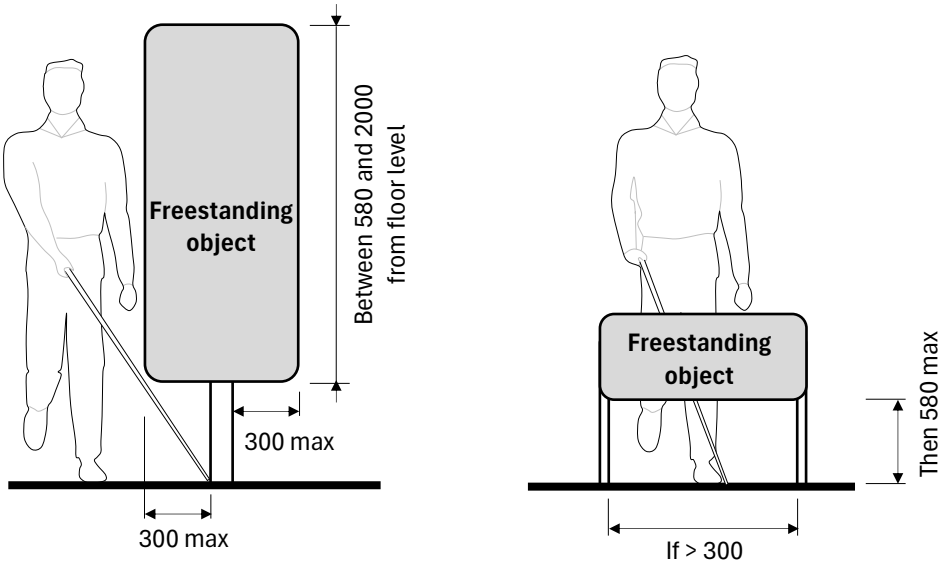
4.2.3.4 Freestanding objects placed between the height of 580 mm and 2000 mm from the floor level must have an overhang of 300 mm or less, as shown in Figure 19.

4.2.3.5 Freestanding objects with a space exceeding 300 mm between supports must have their bottom edge no higher than 580 mm from the floor level, as shown in Figure 19.



Overhangs from protruding objects cannot be detected by a person with visual impairment using a white cane if the protrusion is more than 100 mm from the wall and its leading edge is 580 mm or more from the floor level.

Figure 18
Limits of Protruding Objects Along Accessible Routes



(a) Cane hits post

(b) Cane hits post or object

Figure 19
Freestanding Objects Mounted on Posts

4.2.3.6 Where bollards are erected at entrances to walkways or pathways, they must:

(a) have a minimum clear distance of 900 mm between the bollards;

(b) not be linked with a chain or rope;

(c) have a minimum height of 800 mm;

(d) have a colour that contrasts with the background or be provided with a coloured or reflective band around the neck of the bollard to further aid visibility;

(e) not have sharp or ornamental features protruding horizontally; and

(f) be well lit and the light fitting must be positioned in such a manner that will not cause glare.

4.2.4 Resting Areas

4.2.4.1 Resting areas must be provided along long paths of travel.

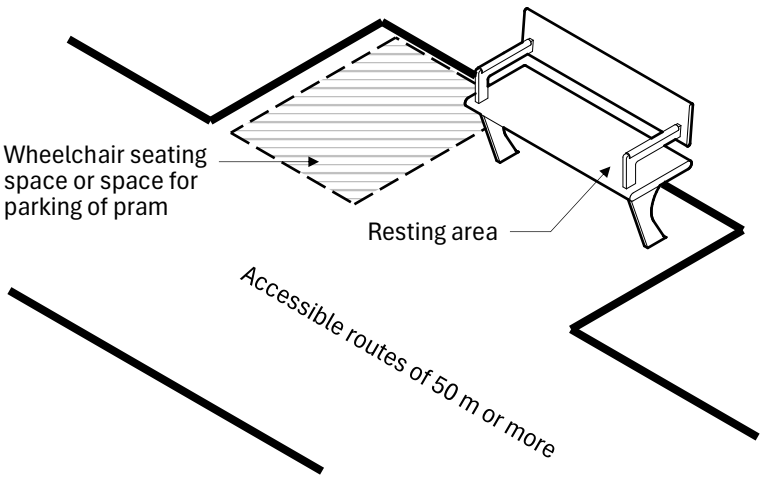
4.2.4.2 At least one resting area with seats must be provided along accessible routes of 50 m or more.

4.2.4.3 The interval for the resting areas along accessible routes around and within buildings must not exceed 50 m.

Note Clause 4.2.4 does not apply to passageways connecting transport stations within interchanges, nor to the passageways of underpasses or linkways leading from the entrance to the concourse of transport stations.

4.2.5 Exterior Walkways

4.2.5.1 Where shelter is provided over exterior walkways, the accessible route must be provided with shelter.



Where seats are provided, they should have armrests to assist the elderly or persons with disabilities to get up from the seats. The height of the seats should be between 430 mm and 470 mm.

Figure 20
Resting Areas

4.3 Headroom

4.3.1 The minimum clear headroom in pedestrian areas such as walkways, halls, corridors, passageways or aisles must be 2000 mm.

4.3.2 Where the headroom of an area adjacent to an accessible route is less than 2000 mm, a detectable guardrail or other barrier must be installed. The leading edge of this barrier must be positioned between 400 mm and 580 mm from the floor level.

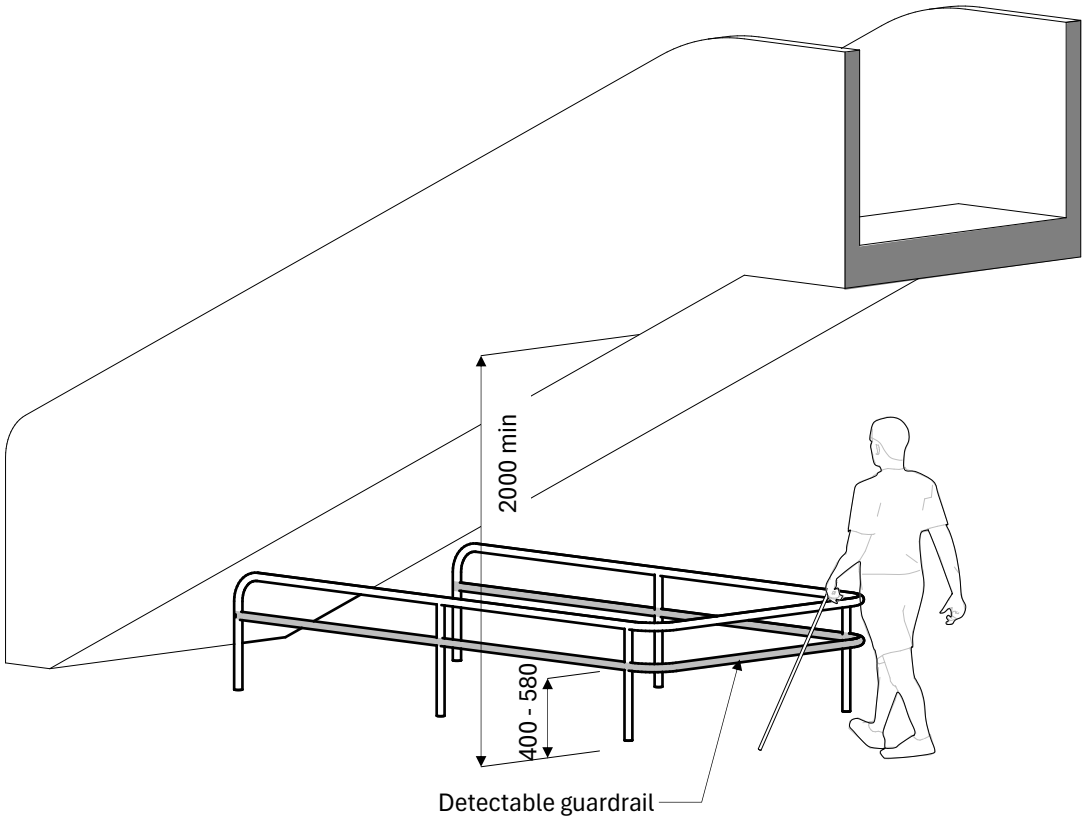


Figure 21
Overhead Hazards

4.4 Doors

Functional Intent

Doors, doorways and entryways along an accessible route must allow independent access and use by persons with disabilities. They must have sufficient wheelchair manoeuvring space and incorporate appropriate door hardware and features to facilitate safe and easy use.

4.4.1 General

4.4.1.1 Doorways and the required manoeuvring spaces must be level.

4.4.1.2 Where power-operated doors are provided, the doors must be in accordance with the requirements of clauses 4.4 and 9.2, and:

(a) remain open for at least 5 seconds after the release of the activating device, or longer where required to allow for safe passage; and

(b) be able to detect the presence of a person within the door closing area.

4.4.1.3 Where revolving doors are installed, a door in accordance with clauses 4.4.2 and 4.4.6 must be provided adjacent to the revolving door.

4.4.1.4 The colour of the door must contrast with the door frame or the wall.

Advisory to clause 4.4.1

- Where feasible, automatic doors should be installed at building entrances instead of manually operated doors. These doors should include failsafe mechanisms that activate during power failures or emergencies, such as defaulting to an open position.

4.4.2 Clear Opening

4.4.2.1 The clear opening of doorways must be at least 850 mm measured between the face of the door and the face of the doorstop with the door opened at 90°.

4.4.3 Double-leaf Doors

4.4.3.1 Where doorways have two independently operated door leaves, at least one active leaf must be in accordance with clauses 4.4.2 and 4.4.6.

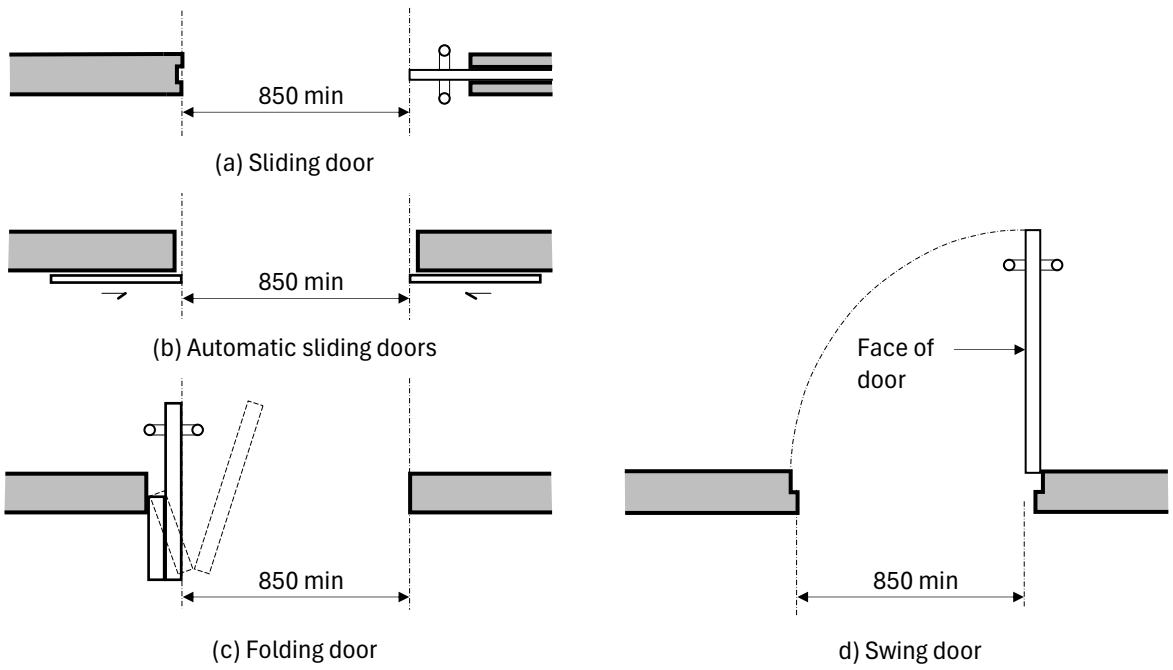


Figure 22
Clear Opening of Doorways

4.4.4 Sliding/Folding Doors

4.4.4.1 Operating hardware for manually operated sliding doors must be exposed and have a sufficient gripping surface area from both sides when the sliding/folding doors are fully open.

4.4.4.2 Accessible handles on the exposed edge of manually operated sliding doors must be in accordance with clause 4.4.9.2 as shown in Figure 27.

4.4.5 Glass Doors, Walls and Screens

4.4.5.1 Unframed full-height glass doors and adjacent glass walls/screens must be prominently marked or highlighted with motifs to make them visible.

4.4.5.2 The markings or motifs must consist of two horizontal bands, each at least 100 mm high and of contrasting colours to assist visibility.

4.4.5.3 The upper band must be affixed at a height of between 1400 mm and 1600 mm and the lower band affixed at a height of between 850 mm and 1000 mm above the floor level.

4.4.5.4 Where each band zone consists of more than one band, the aggregate width of the bands in each zone must be 100 mm or more, as shown in Figure 23.

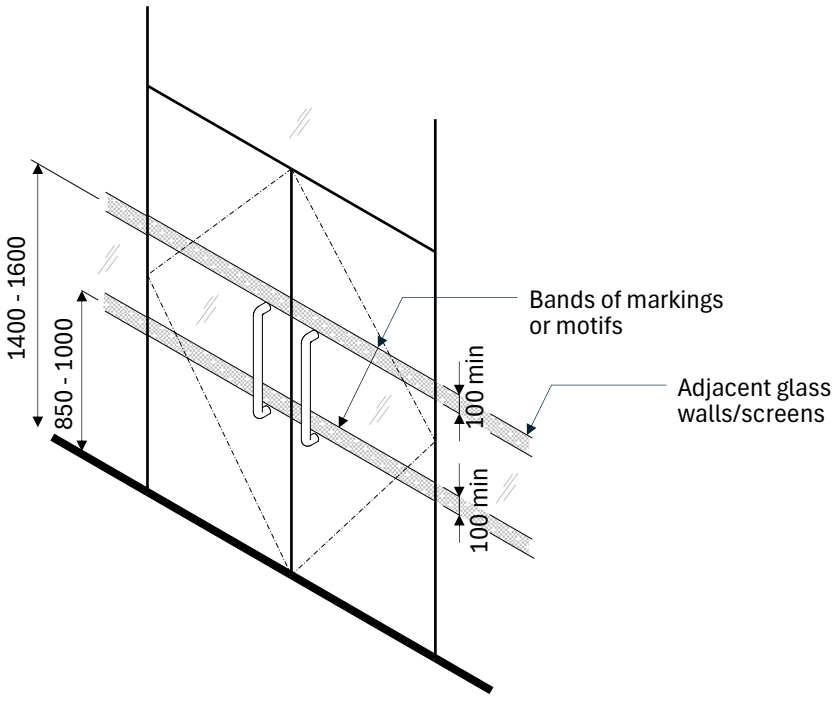


Figure 23
Markings on Glass Doors and Adjacent Glass Walls/Screens

4.4.6 Manoeuvring Spaces at Manually Operated Doors

4.4.6.1 Where manually operated doors are provided along the accessible route, the doorways must have manoeuvring spaces on both sides for wheelchair users and the following clear spaces must be provided as shown in Figure 24:

(a) on the pull side of a one-way swing door, a minimum clear space of 600 mm adjacent to the leading edge of the door and a minimum clear floor space of 1500 mm by 1500 mm;

(b) on the push side of a one-way swing door, a minimum clear space of 300 mm adjacent to the leading edge of the door and a minimum clear floor space of 1200 mm by 1200 mm; and

(c) on both sides of a two-way swing door or a sliding door, a minimum clear space of 300 mm adjacent to the leading edge of the door and a minimum clear floor space of 1200 mm by 1200 mm.

4.4.6.2 The leading edge of the door leaf as shown in Figure 25:

(a) must not be set more than 250 mm away from the surface of any obstruction on the push side; and

(b) must not be set more than 150 mm away from the surface of any obstruction on the pull side.

4.4.7 Two Doors in a Series

4.4.7.1 The minimum space between two swing doors in a series must be 1200 mm plus the width of the door swinging into that space as shown in Figure 26.

4.4.8 Door Hardware

4.4.8.1 Operating devices such as handles, pulls, latches and locks must:

(a) be operable by one hand;

(b) not require fine finger control, tight grasping, pinching or twisting of the wrist to operate; and

(c) be mounted at a height of 900 mm to 1100 mm from the floor level.

4.4.9 Door Handles

4.4.9.1 Door handles must have:

(a) push-pull mechanisms that do not require grasping;

(b) lever handles on latched doors;

(c) contrast with the colour of the door.

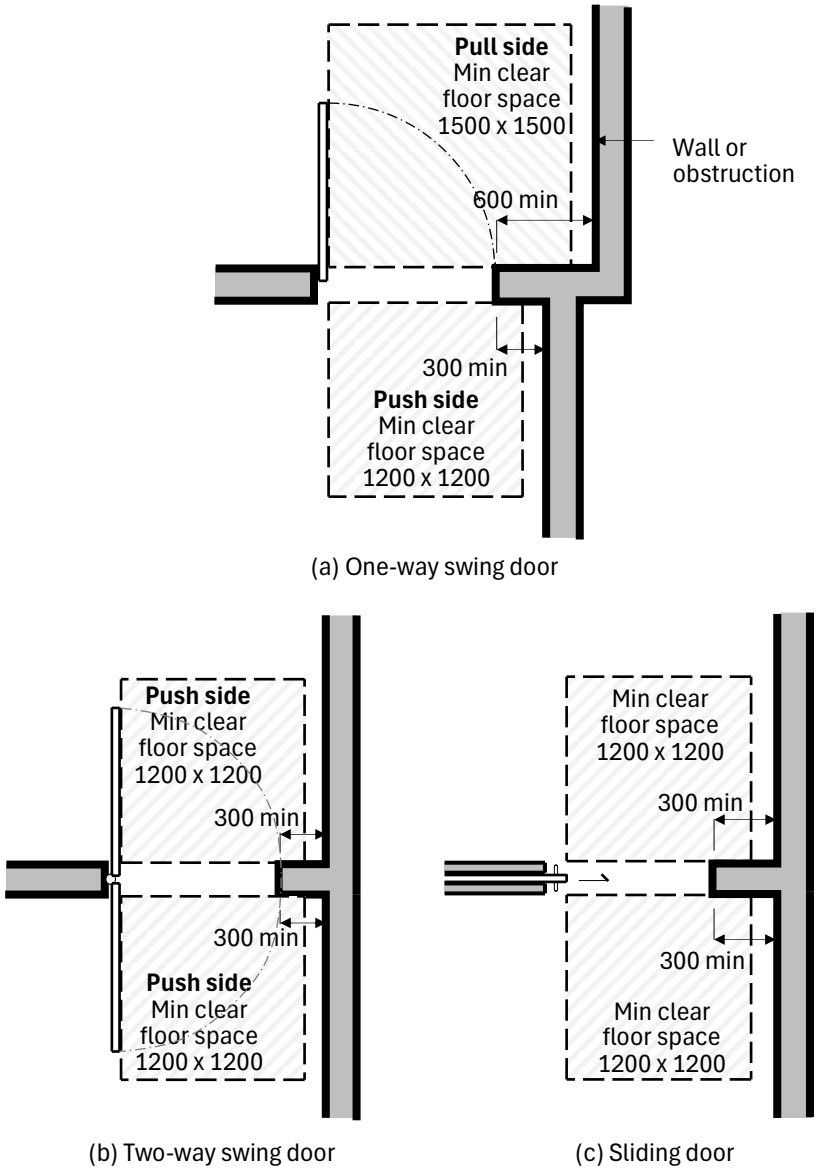


Figure 24
Minimum Doorway Manoeuvring Spaces

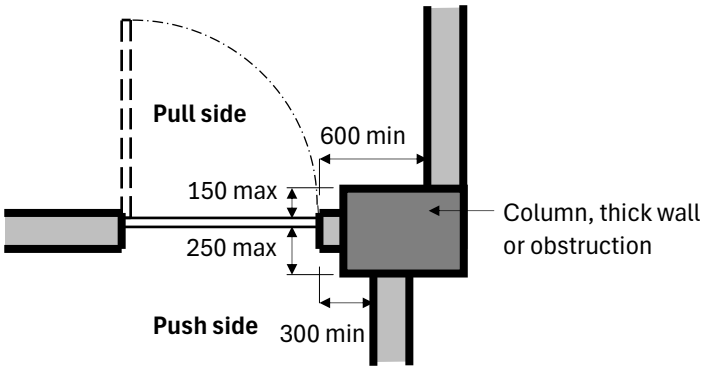
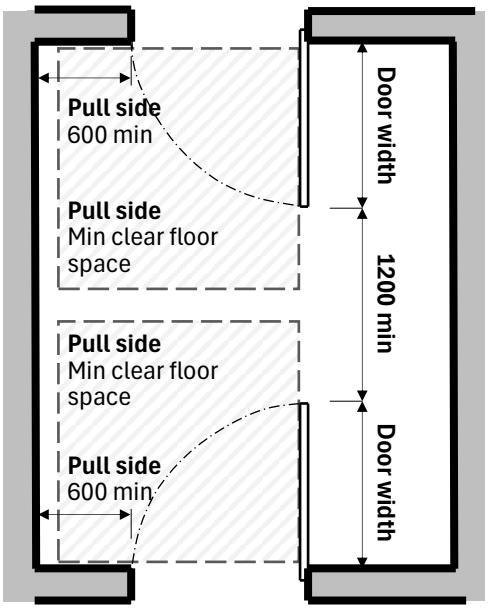
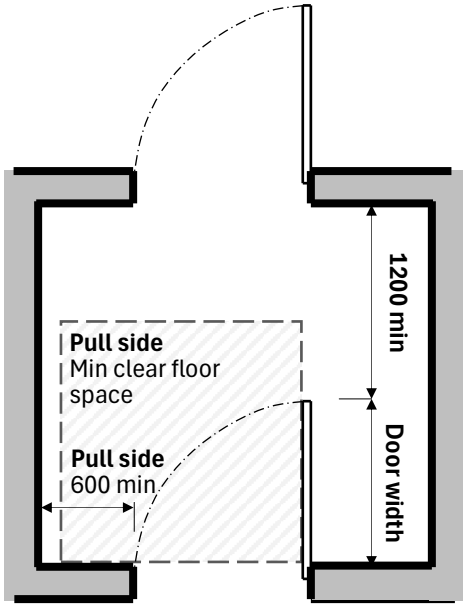


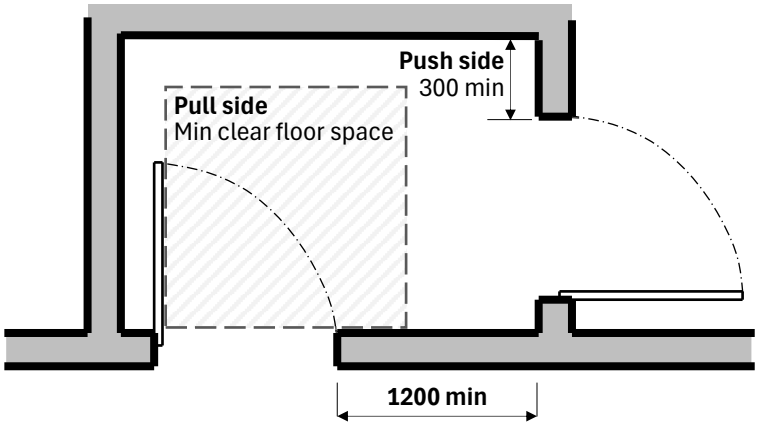
Figure 25
Minimum Distance Between Leading Edge of Door Leaf and Wall Surface



(a) Doors opening in opposite directions



(b) Doors opening in the same direction



(c) Doors at right angles

Figure 26
Minimum Manoeuvring Spaces for Doors in a Series

4.4.9.2 Door handles for sliding doors as shown in Figure 27 must:

(a) be a vertical bar handle;

(b) have a handle length of at least 140 mm;

(c) be installed between 60 mm and 130 mm from the door jamb or doorstop when in open or closed positions.

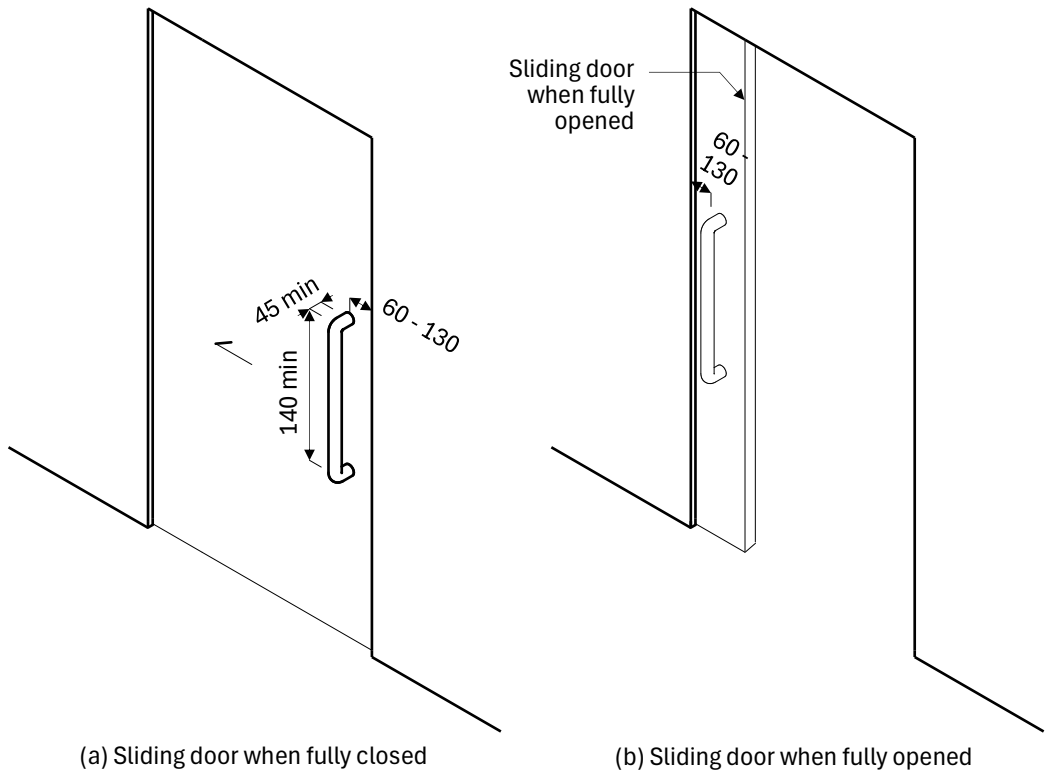


Figure 27
Example of Door Handle for Sliding Door

4.4.10 Door Opening Force

4.4.10.1 The force, measured at the leading edge of the door to operate swing doors must not be more than:

(a) 30 N at 0°; and

(b) 20 N at 30°.

Note Clause 4.4.10 does not apply to latch bolts or other devices that hold the door in a closed position.

Advisory to clause 4.4.10

- The maximum force required to operate sliding or folding doors should be 22 N.
- Where door closers are used, door closers with adjustable tension should be used so that the tension can be adjusted to be in accordance with clause 4.4.10. The sweep period of the door should be adjusted so that from an open position of 90°, the door will take 3 seconds or more to move into a semi-closed position of approximately 12°.

4.4.11 Vision Panels

4.4.11.1 All two-way swing doors or doors across circulation routes must be provided with vision panels as shown in Figure 28, giving a minimum zone of visibility:

(a) from a height of 900 mm to 1500 mm; and

(b) a width of 100 mm.

Advisory to clause 4.4.11

- Automatic swing doors that open towards the user should be equipped with suitable detection devices to ensure that people approaching or leaving do not come into contact with the door during its opening or closing phases.

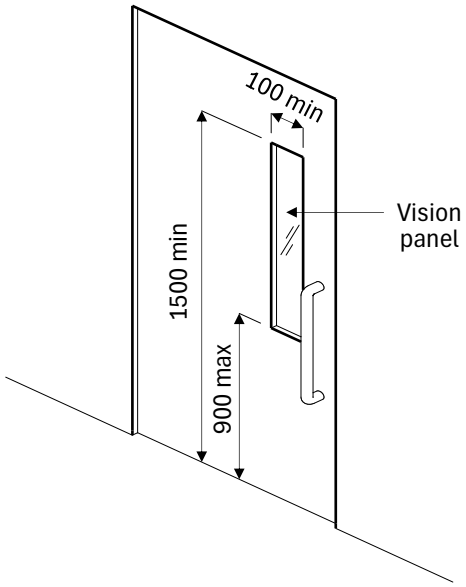


Figure 28
Vision Panels

Vertical Circulation

4.5 Changes in Levels and Kerb Ramps

Functional Intent

Minor level changes along accessible routes must incorporate slopes or kerb ramps with appropriate gradients and widths to ensure safe passage for persons with disabilities. Clear warnings must be provided to alert users to changes in level.

4.5.1 For any change in the level of the floor surface, the gradient of the slope must conform to the requirements in Table 4.

Table 4
Changes in Levels

Changes in vertical rise (mm)	Gradient not steeper than
0 to 15	1:2
More than 15 to 50	1:5
More than 50 to 175	1:10
Exceeding 175	1:12

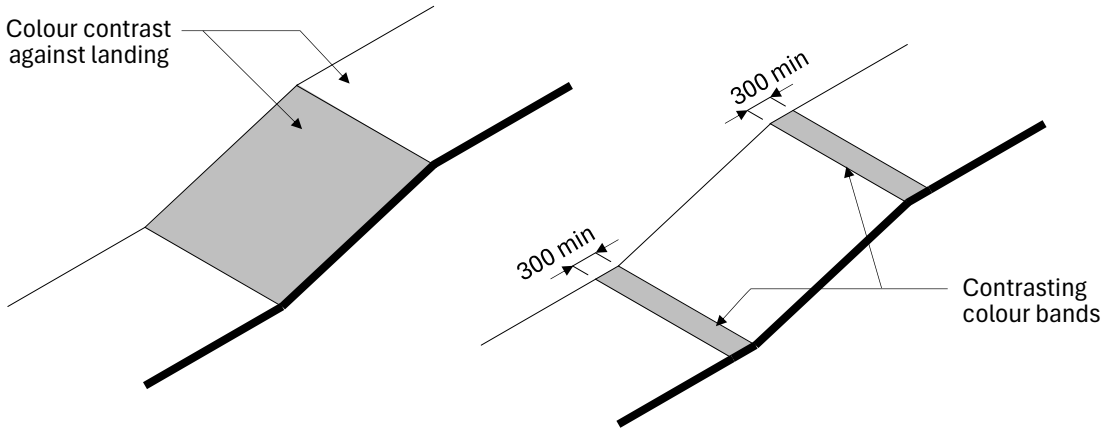


Figure 29
Contrasting Colour and Coloured Bands on Ramps

4.5.2 Where the change in vertical rise is 15 mm or more:

(a) the ramp must be in permanent contrasting colour against the landings; or

(b) a band of at least 300 mm depth in permanent contrasting colour that contrasts against the surrounding flooring material must be provided at the top and bottom levels of the slope across the width of the slope or ramp, as shown in Figure 29.

Note 1 Clause 4.5.2 does not apply if the gradient of a ramp is equal to or gentler than 1:25.

Note 2 Clause 4.5.2 does not apply for kerb ramps in accordance with clause 4.5.3.

4.5.3 Kerb Ramps

4.5.3.1 Where the change in vertical rise is 175 mm or less, kerb ramps can be used to mitigate the level difference along an accessible route.

4.5.3.2 Kerb ramps must:

(a) not project onto a vehicular access way;

(b) be located or protected to prevent obstruction by parked vehicles;

(c) be free from any obstructions, such as signposts, bollards and the like;

(d) have a clear width of at least 900 mm;

(e) have a gradient not steeper than 1:10, including the flared sides; and

(f) be slip-resistant.

4.5.3.3 Kerb ramps located along pedestrian crossings must be fitted with warning TGSI that:

(a) spans the full width of the kerb ramp with a depth of 600 mm, starting 300 mm from the ramp's lower edge; and

(b) provides colour contrast with surrounding surfaces.

Examples of different kerb ramp configurations are illustrated in Figure 30.

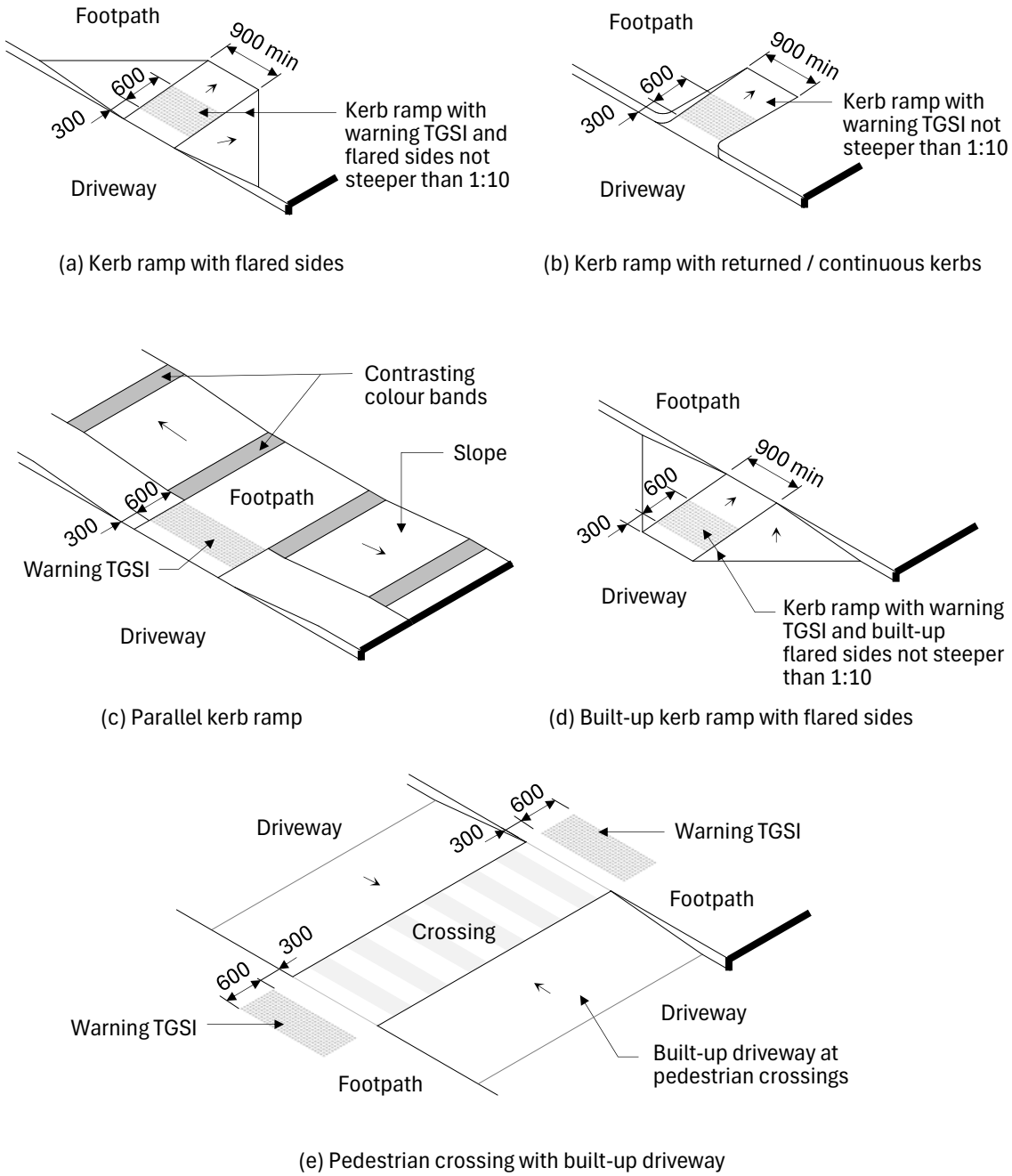


Figure 30
Examples of Kerb Ramps and Crossing

4.6 Ramps

Functional Intent

Ramps must be designed to be safe and provided with sufficient width and the lowest practicable gradient for wheelchair users and persons with ambulant mobility impairment. Clear warnings must be provided to alert users to changes in level. Appropriate wayfinding features must be incorporated for persons with visual impairment.

4.6.1 General

4.6.1.1 The top, bottom and landing of a ramp must be properly drained to prevent water accumulation.

4.6.2 Gradient

4.6.2.1 The gradient of a ramp must:

(a) be in accordance with the requirements in Table 4; and

(b) be consistent between landings.

4.6.3 Width

4.6.3.1 Where ramps form accessible routes, corridors and paths, the minimum clear width of the ramp must be in accordance with clause 4.2.1 and Table 3.

Note The clear width of the ramp may be reduced to 1200 mm if an alternative stepped approach is provided adjacent to the ramp and the total rise does not exceed 1200 mm as shown in Figure 31.

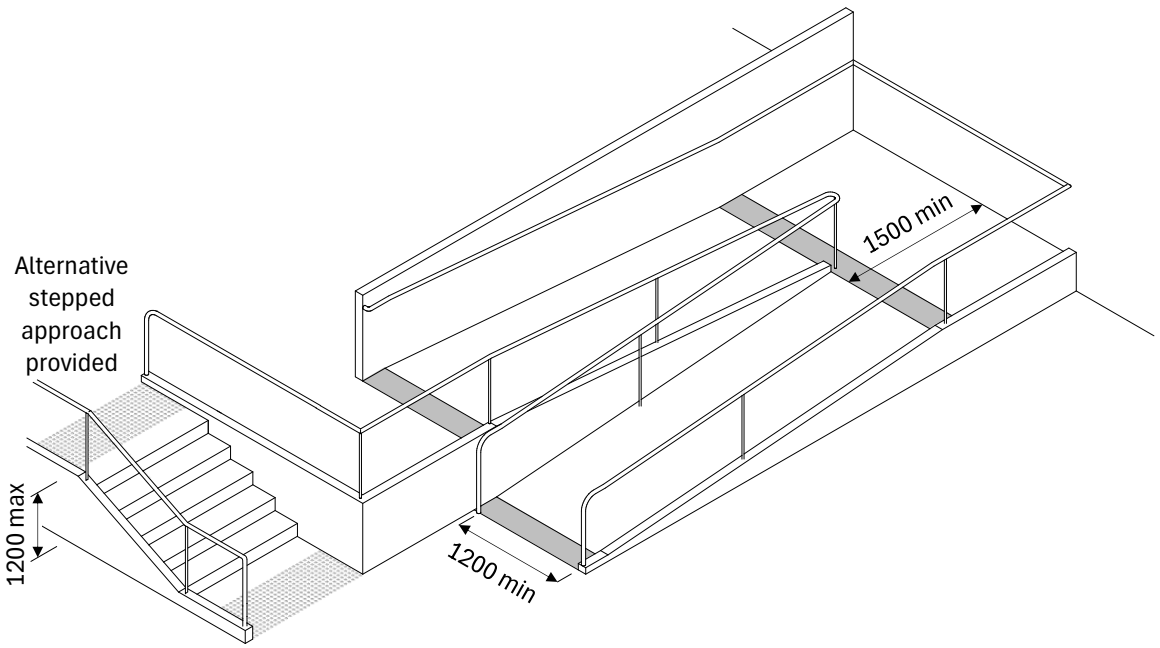


Figure 31
Minimum Ramp Width with Alternative Stepped Approach

4.6.4 Surfaces

4.6.4.1 Ramps and landing surfaces must be stable, firm and slip-resistant.

4.6.5 Landings

4.6.5.1 Ramps must have a level landing at the top and bottom of each run and also where the run changes direction, as shown in Figure 32.

4.6.5.2 Every landing must:

(a) have a level platform with clear space of minimum 1500 mm depth and the width of the ramp;

(b) be provided at regular intervals based on the gradient provided and the run of the ramp must not be more than what is shown in Table 5; and

(c) where served by a doorway, be in accordance with clause 4.4.6.

Table 5
Gradient and Length of Ramps

Gradient of ramp	Maximum run of ramp (mm)	Provision of colour contrast, handrails and edge protection
1:12	6000	Mandatory
1:14	9000	
1:16	12000	
1:20	15000	
1:24	18000	
1:25 or gentler	Non-mandatory	

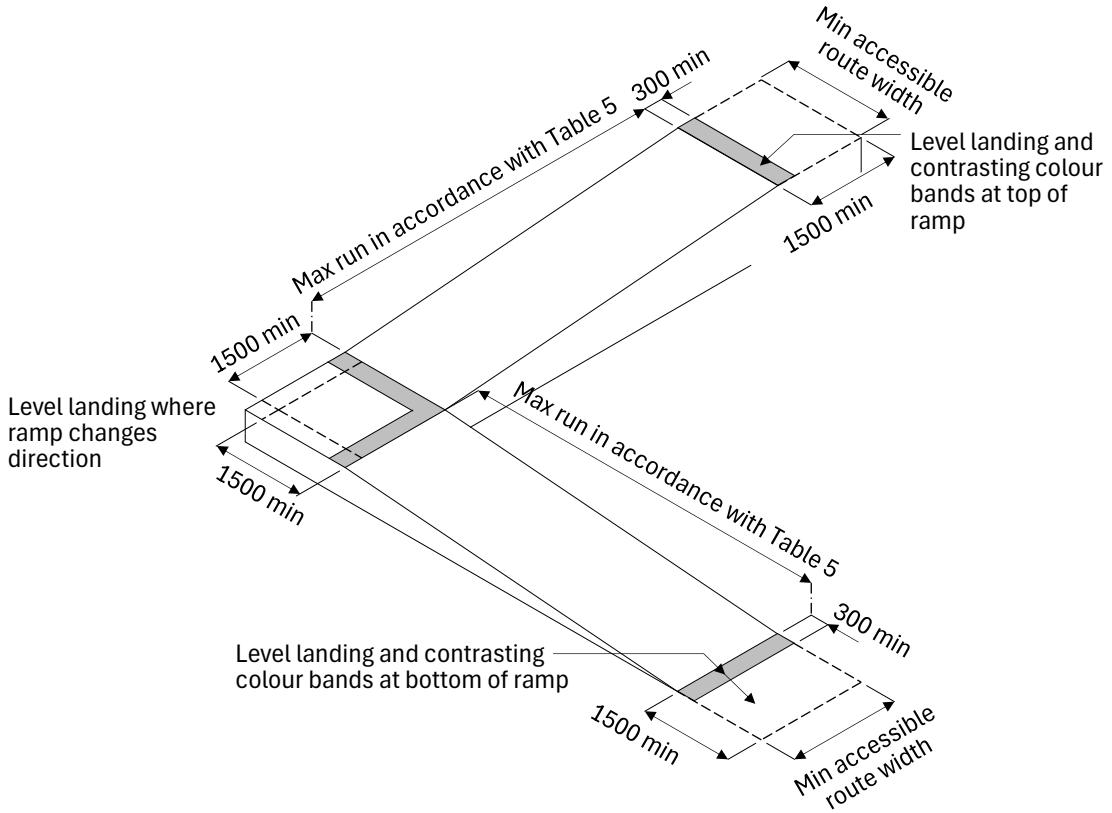


Figure 32
Ramps and Landings

4.6.5.3 For ramps connecting different storeys, tactile and Braille signs complying with clause 8.5 must be installed on adjacent walls or handrail extensions to indicate the floor levels.

Note Clause 4.6.5.3 does not apply to residential developments, preschools, primary and secondary schools, factories, workshops, industrial buildings and purpose-built workers' dormitories.

4.6.6 Ramp Handrails

4.6.6.1 A ramp run with rise greater than 175 mm must have handrails that are:

(a) on both sides;

(b) in accordance with clause 9.3;

(c) placed at a height of between 800 mm and 900 mm above the floor level; and

(d) continuous along the entire length of the ramp.

4.6.6.2 Handrail extensions as shown in Figure 33 must:

(a) extend horizontally in the direction of the run for a distance of 300 mm or more beyond the top and bottom of the ramp;

(b) not project into another path of travel; and

(c) return to the wall, floor or post.

Note Clause 4.6.6 does not apply if the gradient of a ramp is equal to or gentler than 1:25.

4.6.7 Edge Protection

4.6.7.1 Ramps and landings not adjacent to a wall must have an edge protection such as:

(a) a kerb with a minimum height of 75 mm;

(b) a raised barrier with its lower edge at 75 mm or less from the ramp or landing surface; or

(c) a rail with the bottom edge at 75 mm or less from the ramp or landing surface.

4.6.8 Curved Ramps

4.6.8.1 Curved ramps must:

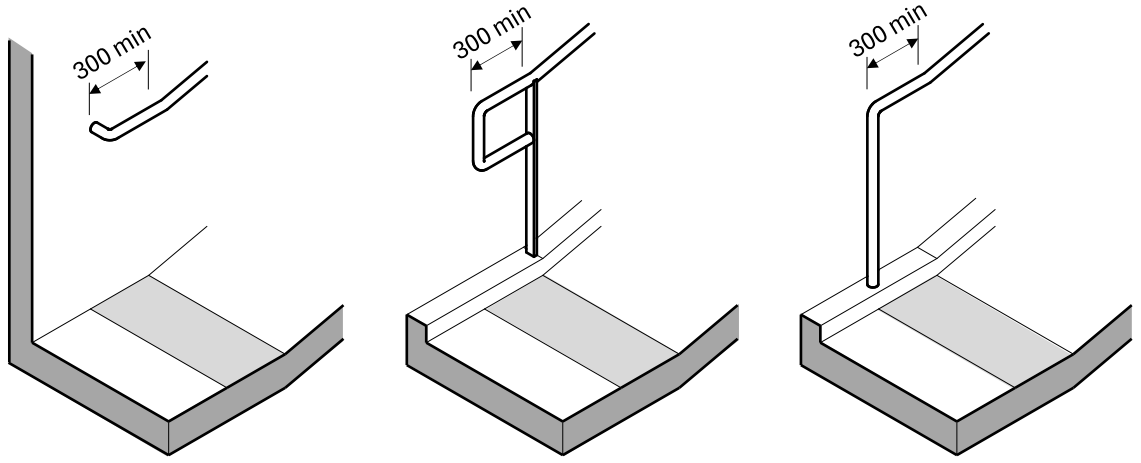
(a) have width in accordance with Table 3;

(b) have gradient equal to 1:16 or gentler;

(c) be in accordance with clauses 4.6.5.2, 4.6.5.3, 4.6.4, 4.6.6, 4.6.7 and Table 5; and

(d) where there is cross-fall, be in accordance with clause 4.1.4 and be towards the centre of curvature.

Note Clause 4.6 does not apply to the footpath within the road reserve that is generally parallel and adjacent to the road.



(a) Return to wall (b) Return to post (c) Return to floor

Figure 33
Handrail Extensions

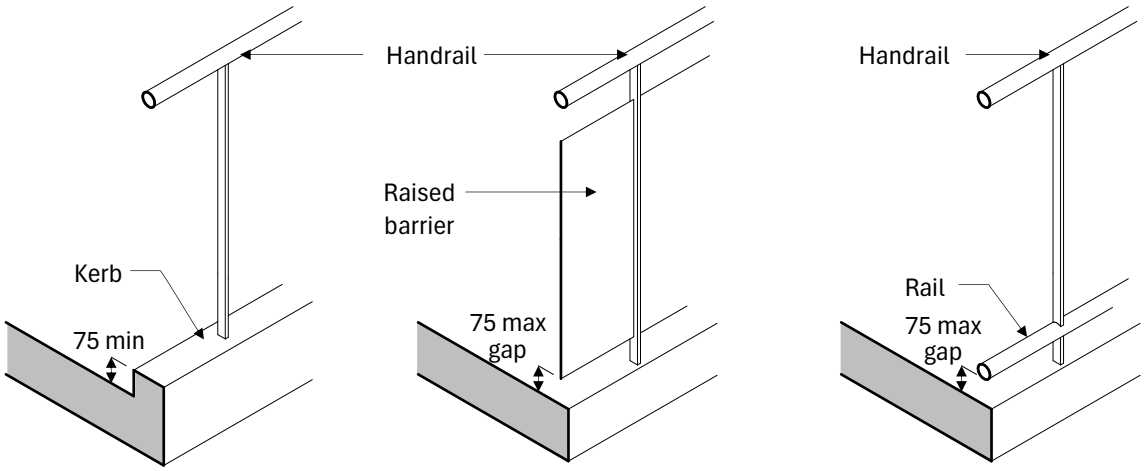


Figure 34
Sectional View of Edge Protections

4.7 Stairs

Functional Intent

Stairs must be designed with safety features for persons with ambulant mobility impairment and persons with visual impairment, incorporating both visual and tactile elements to provide warning and guidance.

4.7.1 General

4.7.1.1 Staircases must be designed with the following requirements:

(a) step profile in accordance with clause 4.7.2;

(b) stair handrails in accordance with clause 4.7.3;

(c) warning TGSI in accordance with clause 4.7.4; and

(d) where staircases connect one storey to another, tactile and Braille signs in accordance with clause 8.5 must be installed on adjacent walls or handrail extensions to indicate the floor level as shown in Figure 35.

Note 1 Clause 4.7.1.1 does not apply within residential units.

Note 2 Clause 4.7.1.1(c) does not apply within purpose-built workers' dormitories.

Note 3 Clause 4.7.1.1(d) does not apply to residential developments, preschools, primary and secondary schools, factories, workshops, industrial buildings and purpose-built workers' dormitories.

4.7.2 Step Profile

4.7.2.1 Stair nosing must not project beyond the face of the riser and the riser must be vertical or have a splay backwards up to a maximum of 25 mm.

4.7.2.2 All steps must be fitted with slip-resistant nosing strips between 50 mm and 75 mm in width.

4.7.2.3 Nosing strips must be of a colour that contrasts with the steps to make the drop edge of each step clearly visible.

4.7.2.4 The treads and walls of the staircase must have contrasting colours to alert persons with visual impairments to the presence of steps.

4.7.3 Stair Handrails

4.7.3.1 Handrails for stairs must:

(a) be in accordance with clause 9.3;

(b) be positioned between 800 mm and 1000 mm measured from the pitch line vertically to the top of the handrails;

(c) be continuous throughout the entire length of stairs and enclosed intermediate landings where they do not lead to another path of travel;

(d) extend not less than 300 mm in the direction of the flight of stairs beyond the top and bottom steps; and

(e) return to the wall, floor or post.

Note 1 Clause 4.7.3.1(c) does not apply to the section of the handrail that is interrupted by a staircase storey shelter blast door.

Note 2 Clause 4.7.3.1(d) does not apply within purpose-built workers' dormitories.

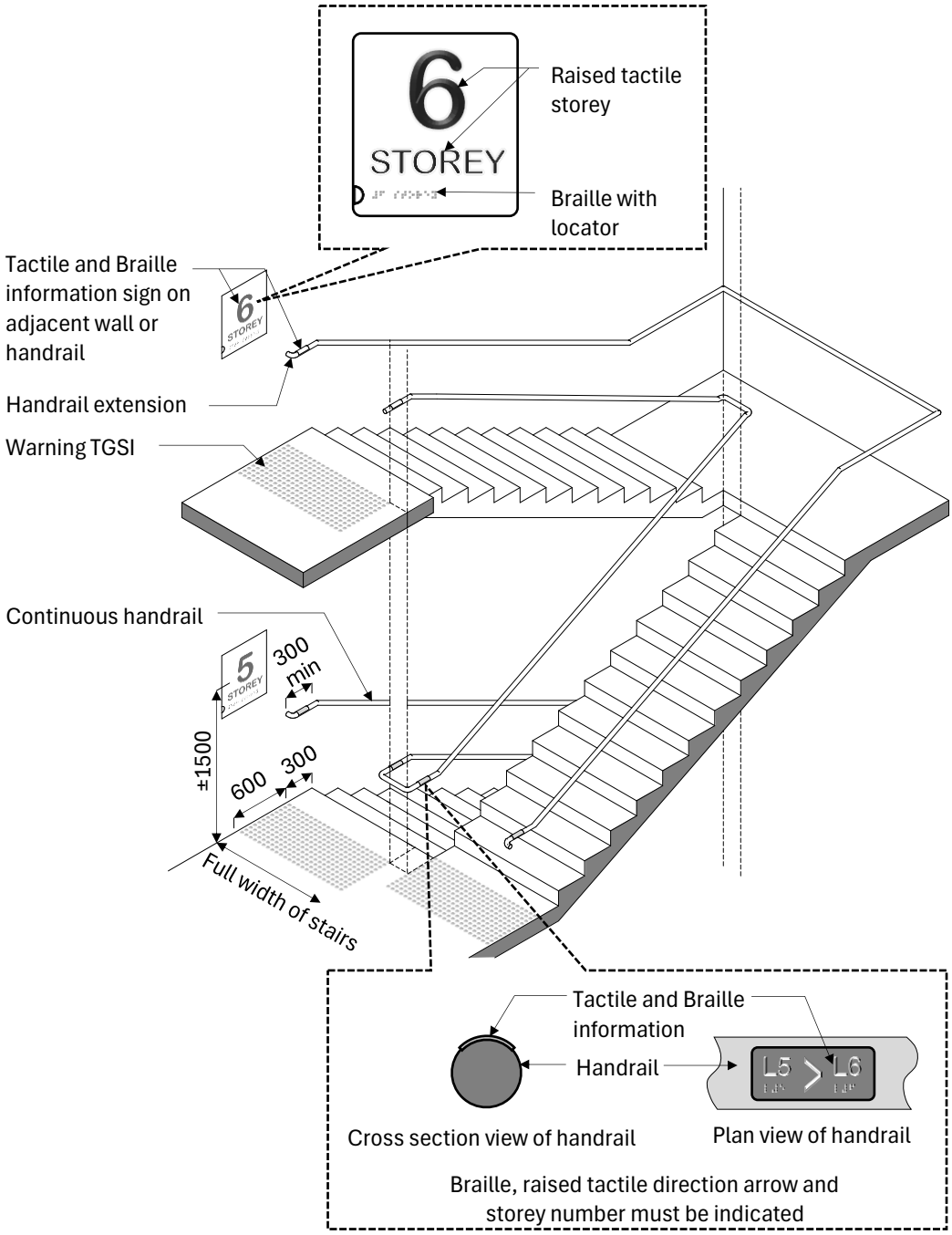


Figure 35
Example of Tactile and Braille Signs at a Staircase

4.7.4 Warning TGSI

4.7.4.1 Warning TGSI in accordance with clause 9.7 must:

(a) be provided at the top, bottom and intermediate landings leading to another path of travel;

(b) extend the full width of the stairs for a depth of 600 mm commencing 300 mm back from the stairs; and

(c) be contrasting in colour with the surrounding flooring material.

Note Where a staircase storey shelter blast door interrupts the placement of the warning TGSI, the warning TGSI may be positioned slightly more than 300 mm away from the last step.

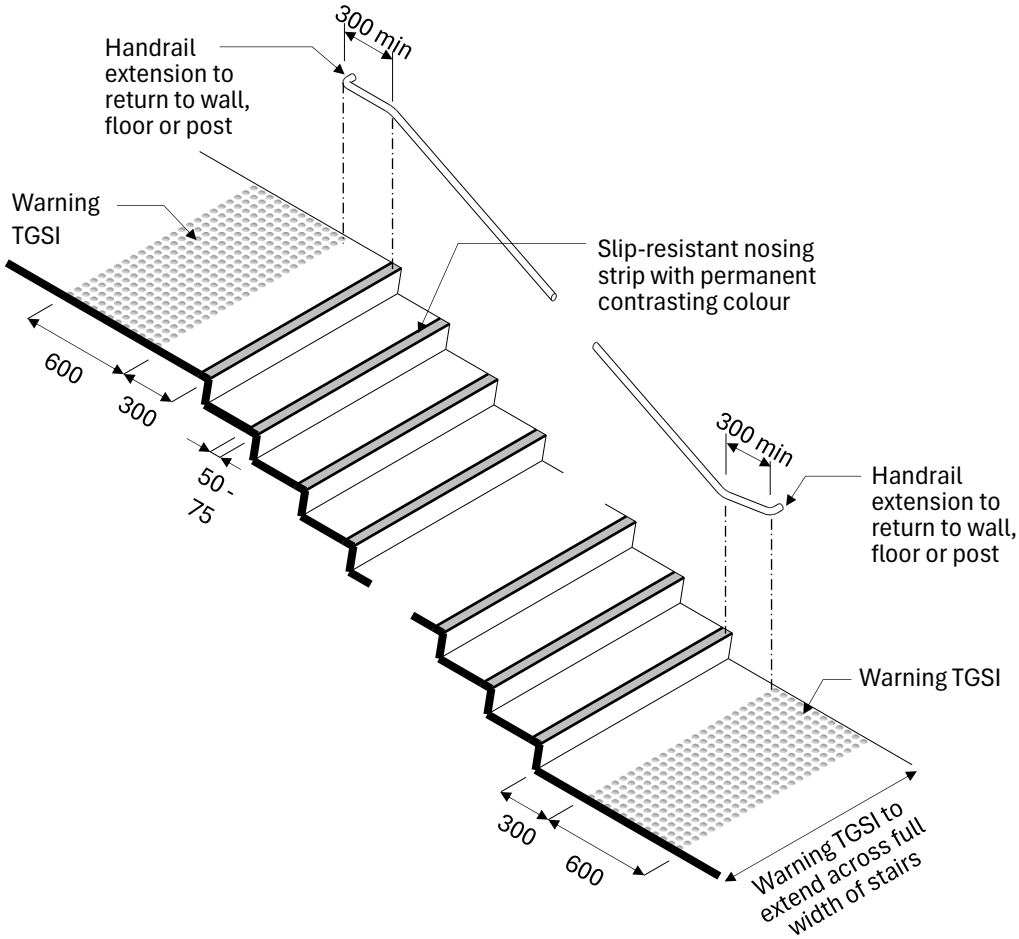


Figure 36
Staircase

4.8 Passenger Lifts

Functional Intent

All passenger lifts must be designed with accessible controls and safety features, incorporating tactile, audio and visual information to ensure ease of use for persons with ambulant mobility impairment or sensory impairment.

4.8.1 General

4.8.1.1 All passenger lifts provided in a building must include suitable provisions for persons with ambulant mobility impairment and persons with sensory impairment as a means of access from one level to another.

4.8.1.2 In addition to clause 4.8.1.1, at least one lift designated for wheelchair users must be provided in accordance with clause 4.9.

4.8.1.3 The emergency bell in the lift must be connected to a blinking light in the lift car to signal to persons who are deaf or hard-of-hearing that the emergency bell has been activated.

4.8.1.4 Lift lobby must have both visible, and audible signals or voice announcements to alert waiting passengers of the lift car's arrival and guide them to the correct lift car.

4.8.1.5 Lift car must have visible signals indicating its position and voice announcements of the floor level reached before the lift doors open.

4.8.1.6 An audible signal must be provided to signal the closing of lift car doors.

4.8.2 Lift Landing Call Buttons and Lift Car Control Buttons

4.8.2.1 Lift landing call buttons must be mounted adjacent to the lift.

4.8.2.2 Lift landing call buttons and lift car control buttons must:

(a) have an audible signal for each call registered;

(b) have a colour that contrasts with the background of either the lift control panel or wall finish; and

(c) provide tactile and Braille markings in accordance with clauses 4.8.2.4 and 4.8.2.5.

4.8.2.3 Lift landing call buttons and lift car control buttons that are:

(a) force/pressure-activated must have a minimum activation force of 2.5 N to 5.0 N and have tactile and Braille markings provided on the buttons or to the left of the buttons, as shown in Figure 37;

(b) non-force/non-pressure-activated, such as touch-sensitive or touch-less buttons, must have tactile and Braille markings provided to the left of the buttons, as shown in Figure 37(c).

4.8.2.4 Tactile markings must:

(a) be in Arabic numerals or symbols;

(b) have a dimension of between 15 mm and 40 mm high;

(c) be raised at a minimum of 1 mm; and

(d) be in high contrasting colour to the background.

4.8.2.5 Braille markings must be placed at a minimum distance of 3 mm from tactile markings, and:

(a) be below the tactile markings, as shown in Figure 37(a); or

(b) to the left of the tactile markings only if it is not possible to be placed below the tactile markings, as shown in Figure 37(b).

4.8.2.6 Lift car control buttons for floor selection must be arranged in accordance with the following, as shown in Figure 38:

(a) for a single horizontal row shall be from left to right;

(b) for a single vertical row shall be from the bottom to the top;

(c) for multiple vertical rows from left to right and then from bottom to the top.

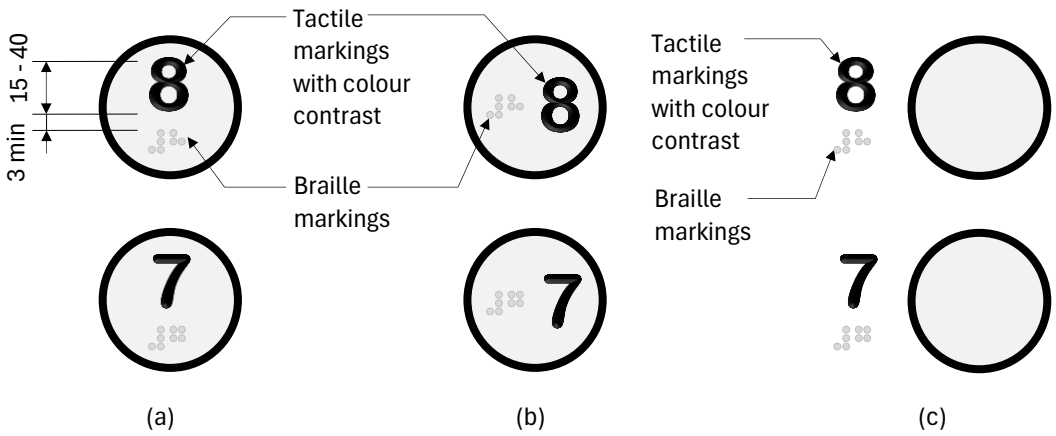


Figure 37
Tactile and Braille Markings for Lift Buttons

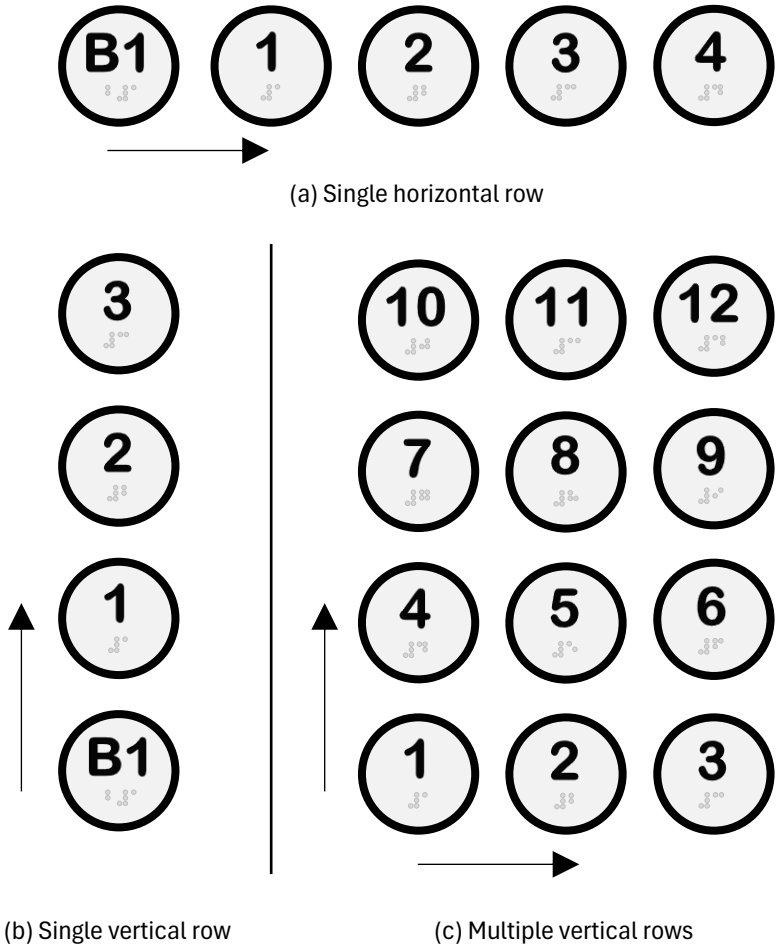


Figure 38
Arrangement of Lift Car Control Buttons

4.8.2.7 Where a destination control system is provided, an accessibility button marked with the Symbol of Access must be integrated into or placed next to the control device, to activate visual and voice announcements for the selected floor and allocated lift.

4.8.2.8 Where keypads are used for floor selection, at least one set must be in accordance with clause 9.2 and the following:

(a) be arranged in the same way as a telephone keypad as shown in Figure 39 with a maximum width of 120 mm and a maximum height of 160 mm;

(b) have a distance of 5 mm to 15 mm between the push buttons;

(c) have numbers on the push buttons engraved, without Braille;

(d) have a single raised dot on the number '5' key; and

(e) have tactile "star" (main floor) and "minus" (basement/cancel) symbols.

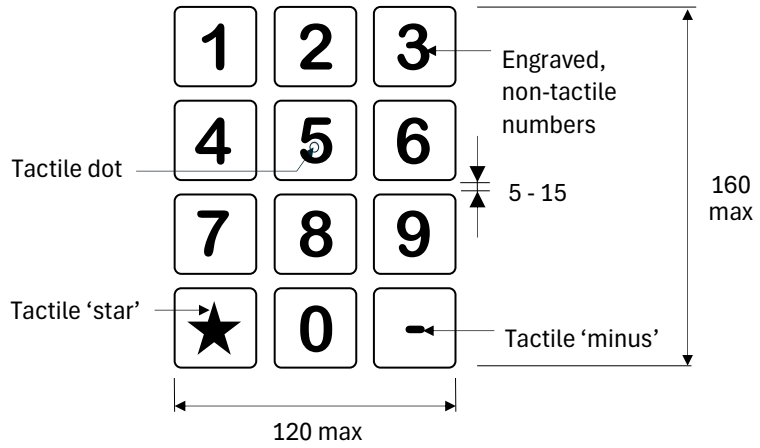


Figure 39
Keypad Buttons

4.8.3 Grab bars

4.8.3.1 Grab bars must be in accordance with clause 9.4 and:

(a) be placed at a height where the top of the grab bars is between 800 mm and 900 mm from the floor level;

(b) be continuous on all sides of the lift car except where the lift doors are; and

(c) where the grab bars are not continuous at corners, the gap between grab bars must not exceed 150 mm.

Note The grab bar need not extend across a vertical control panel if doing so would obstruct panel maintenance.

4.9 Lifts Designated for Wheelchair Users

Functional Intent

Wheelchair users must be able to approach and use a lift to access all levels intended for access by wheelchair users. Clear signage and information must be displayed to enable wheelchair users to locate the lift. The lift and lift lobby must be provided with adequate manoeuvring space, accessible controls and safety features to ensure ease of use by wheelchair users.

4.9.1 General

4.9.1.1 Where passenger lifts are provided in a building, at least one lift must be made accessible for wheelchair users from the entrance level for vertical circulation.

4.9.1.2 The lift must serve all levels intended for access by wheelchair users.

4.9.1.3 Lift lobby space with lifts designated for wheelchair users must have a clear floor space in front of the lift door. The minimum clear floor space must be either at least 1500 mm by 1500 mm or 1800 mm by 1800 mm based on the building types and the required clear width as prescribed in Table 3.

Note The clear floor space in front of the lift door, as stipulated in Clause 4.9.1.3, may overlap with the clear floor space required for the lift landing call button, as specified in Clause 4.9.4.1(b), provided that the overlap does not impede the use of either space.

4.9.2 Lift Car

4.9.2.1 The minimum internal lift car size must be 1200 mm wide by 1500 mm deep.

4.9.2.2 Safety glass mirror or mirror-like finish surfaces must be provided on the interior wall of the lift car opposite the lift door, and:

(a) the bottom edge of the mirror must be at a maximum height of 500 mm from floor level;

(b) the top edge of the mirror must be at least the height of the lift door; and

(c) the mirror must be placed directly opposite and be at least the width of the lift door opening.

Note Clause 4.9.2.2 does not apply to through-car lift that serves only two landings.

4.9.3 Lift Car Door

4.9.3.1 The lift car must have a clear door opening of at least 900 mm.

Advisory to clause 4.9.3

- A door dwell time (lift door closing delay) of at least 6 seconds is recommended for lifts designated for wheelchair users.

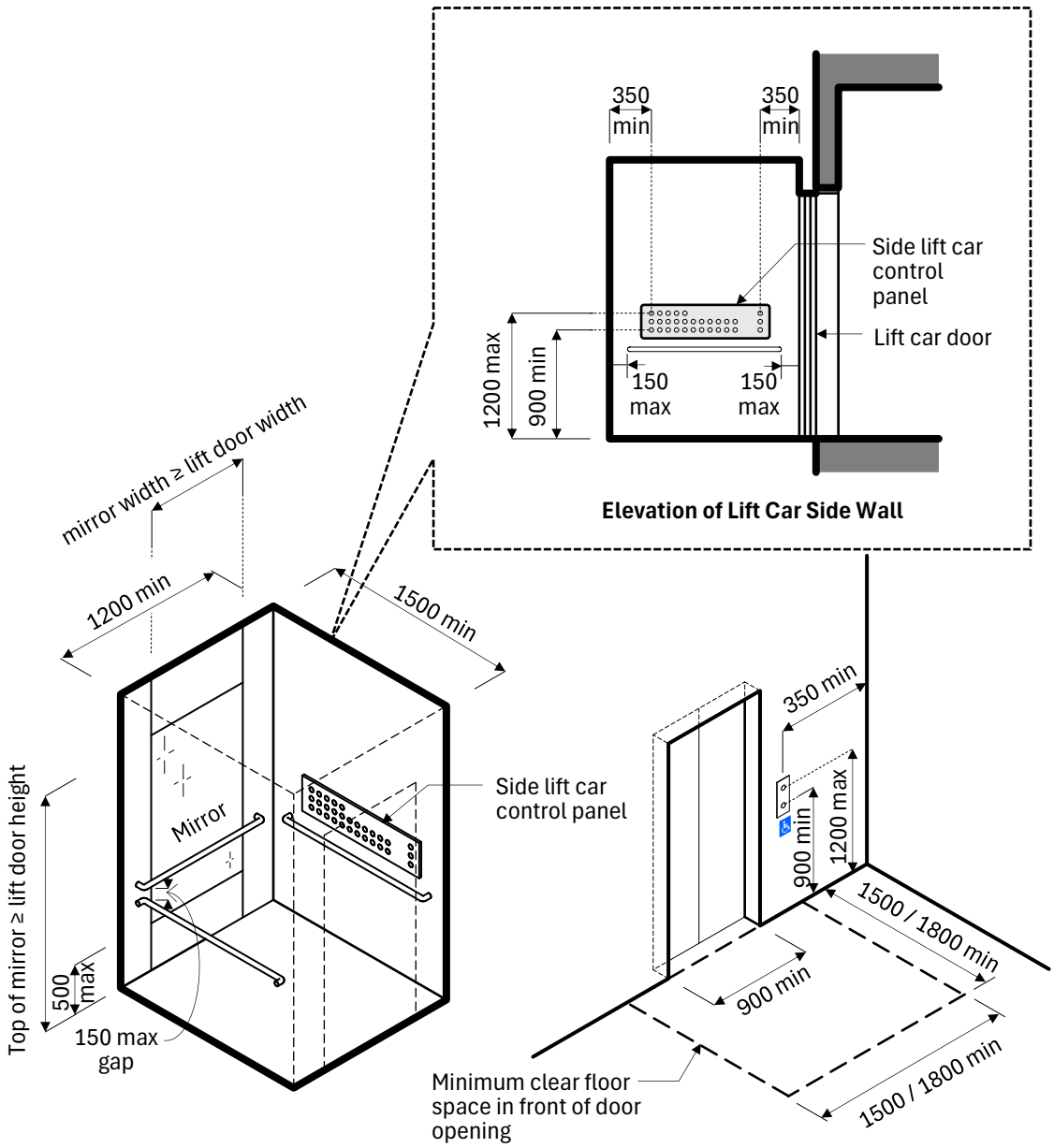


Figure 40
Lift for Wheelchair Users

4.9.4 Lift Landing Call Button

4.9.4.1 The lift landing call button, including control devices for destination control system, located outside the lift must be:

(a) placed at a height of between 900 mm and 1200 mm from the floor level;

(b) located adjacent to a minimum clear floor space of 900 mm by 1200 mm;

(c) located at least 350 mm away from a wall or obstruction; and

(d) dedicated to call the lift designated for wheelchair users.

4.9.5 Lift Car Control Buttons

4.9.5.1 At least one set of lift car control buttons located inside the lift must:

(a) have its control panel placed on the side wall;

(b) be placed at a height of between 900 mm and 1200 mm from the floor level; and

(c) be located at 350 mm or more from any internal corner of the lift car.

Note Where other forms of lift control devices such as keypads and card readers are used, Clause 4.9.4 and Clause 4.9.5 must be read in conjunction with the relevant parts of Clause 9.2.

Advisory to clause 4.9.5.1

- Lift car control buttons for wheelchair users are recommended to be placed at a height not exceeding 1100 mm from the floor level and on the right-hand wall when entering the lift.

4.9.5.2 Where there are two control panels inside the lift car, there must be one control panel serving wheelchair users in accordance with clause 4.9.5.1, and one control panel at eye level serving persons with sensory impairment.

4.9.6 Signage

4.9.6.1 The Symbol of Access must be used to identify the location of such lifts in accordance with the requirements of clause 8.2.

4.10 Platform Lifts and Wheelchair Stairlifts

Functional Intent

In exceptional cases, platform lifts and wheelchair stairlifts may substitute for passenger lifts and ramps. These must be provided with adequate wheelchair manoeuvring space, accessible controls and safety features to ensure ease of use by persons with disabilities. Clear signage and information must be displayed to enable users to locate the platform lifts and stairlifts and seek assistance.

4.10.1 General

4.10.1.1 A passenger lift is the most suitable form of access for people moving from one storey to another. Platform lifts and wheelchair stairlifts are not equivalent alternatives. Where it is impracticable to provide a ramp or passenger lift, a platform lift may be considered. Wheelchair stairlifts should only be considered for existing buildings in exceptional circumstances.

4.10.2 Platform Lift

4.10.2.1 Where a ramp or passenger lift cannot be accommodated, a platform lift may be considered as an alternative option. Where provided, a platform lift, as shown in Figure 41, must have:

(a) a minimum clear door opening of 900 mm; and

(b) a minimum clear floor space of 1500 mm by 1500 mm.

4.10.2.2 The minimum internal size of a platform lift must be 1100 mm wide by 1400 mm deep to allow a person in a wheelchair to enter and exit without turns.

4.10.2.3 The platform lift must have an enclosure in accordance with the requirements of EN81-41 – "Safety rules for the construction and installation of lifts – Special lifts for the transport of persons and goods - Vertical platforms intended for use by persons with impaired mobility".

4.10.2.4 The door handle must be in accordance with clause 4.4.8.

4.10.2.5 Lift landing call buttons and lift control buttons must be in accordance with clauses 4.8.2, 4.9.4 and 4.9.5.

4.10.2.6 At least one grab bar in accordance with clause 9.4 must be placed on one side of the lift.

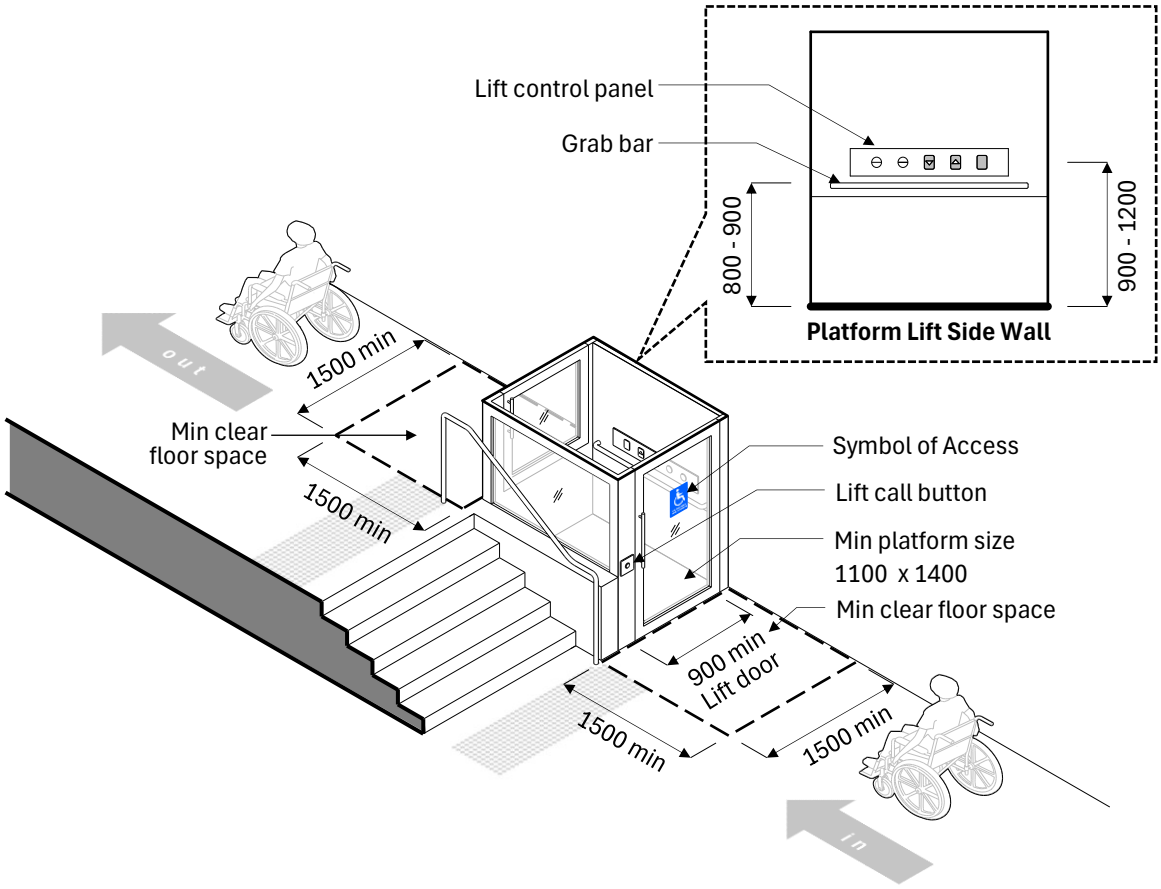


Figure 41
Example of Platform Lift

4.10.3 Wheelchair Stairlift

4.10.3.1 Where it is impracticable to provide a passenger lift, a ramp or platform lift in an existing building, a wheelchair stairlift may be considered to overcome a difference in level between spaces of up to one storey.

4.10.3.2 The minimum internal size of the platform must be 800 mm wide by 1250 mm deep.

4.10.3.3 A minimum clear floor space of 1200 mm by 1200 mm measured from the edge of the flip-up ramp of the wheelchair stairlift platform must be provided at the top and bottom landing, as shown in Figure 42.

4.10.3.4 Signage bearing the Symbol of Access must be used to identify the location of platform lifts and wheelchair stairlifts and must:

(a) be in accordance with clause 8.2; and

(b) provide information or a means to contact the building management, Town Council or the relevant authority for the purpose of requesting assistance to operate the platform lift or wheelchair stairlift.

Note When in a parked position, a wheelchair stairlift must not obstruct the required clear width of a stairway, pose a hazard for persons with visual impairment using the stairway or adjoining landings, or interfere with the use of handrails.

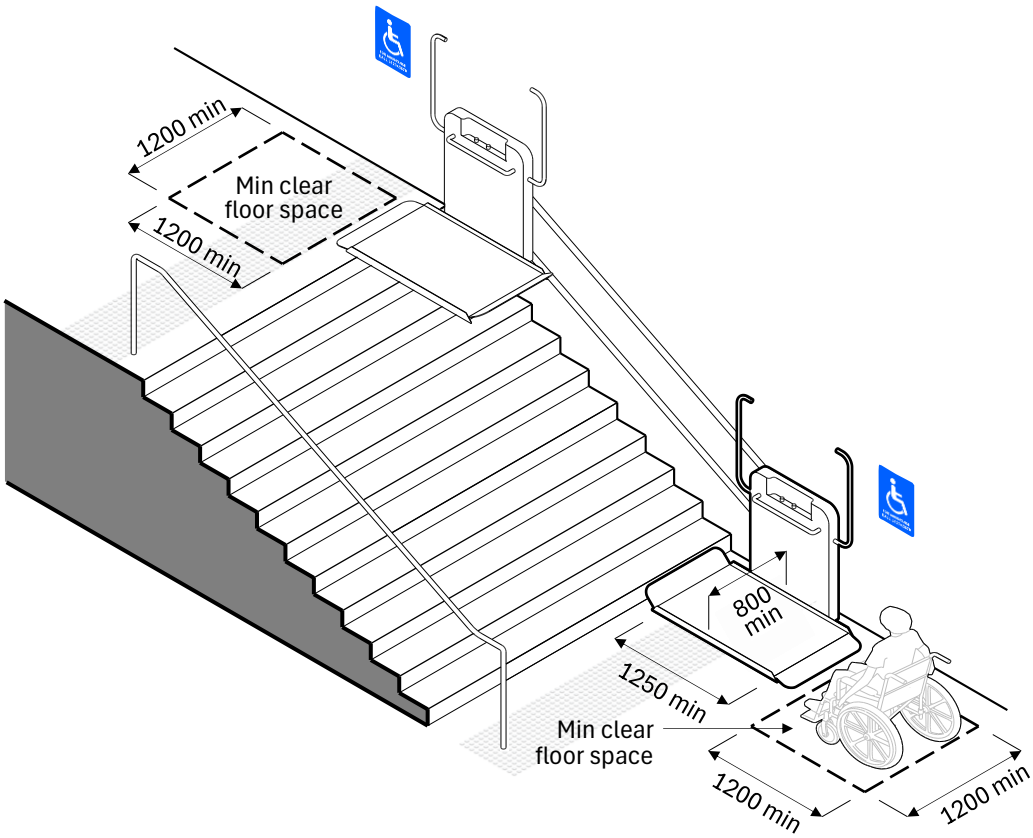


Figure 42
Example of Wheelchair Stairlift

Chapter 5:
Sanitary Provisions

5.1 General

Functional Intent

Washrooms and shower facilities must be accessible and usable by persons with disabilities. Clear signage and information must be provided to allow persons with disabilities to identify and locate these facilities.

5.1.1 Where toilets are provided, at least one accessible individual washroom in accordance with clause 5.2 must be provided at every toilet cluster.

Note Clause 5.1.1 does not apply to factories, workshops, warehouses or industrial buildings. However, at least one accessible individual washroom must be provided at every level where toilets are provided.

5.1.2 In addition to clause 5.1.1, where two or more clusters of toilets are provided at the same level but at different locations, an accessible individual washroom may be replaced with an accessible water closet cubicle in the male and female toilets in accordance with clause 5.6, provided that there is at least one accessible individual washroom on the same level.

Note Clauses 5.1.1 and 5.1.2 do not apply to bathrooms within residential units; guestrooms for hotels, serviced apartments, hostels and dormitories; wards in hospitals, nursing homes, homes for the aged, welfare homes and living quarters of workers' dormitories.

5.1.3 Where toilets are provided, at least one larger accessible individual washroom in accordance with clause 5.2 must be provided at every level in the following buildings:

(a) shopping centres and multi-purpose complexes;
(b) sports facilities and public swimming pools;
(c) places of public resort;
(d) markets, hawker or food centres;
(e) transport terminals and stations;
(f) colleges, universities and other institutions of learning;
(g) hospitals; and
(h) polyclinics, health-care centres and specialist outpatient clinics.

5.1.4 For schools, including their hostels, halls of residence and dormitories, the provision of accessible washroom to every cluster of toilets need not be in accordance with clause 5.1.1 if the following conditions are met:

(a) the accessible individual washroom provided serves every function area at that level;
(b) the accessible individual washroom is 50 m or less from each function area; and

(c) directional signs from each function area to the accessible individual washroom are provided.

5.1.5 Where water closet cubicles are provided, at least one water closet cubicle for persons with ambulant mobility impairment as described in clause 5.4 must be provided for every four numbers of water closet cubicles or part thereof.

5.1.6 Where urinals are provided, at least one urinal for persons with ambulant mobility impairment as described in clause 5.5 must be provided.

Note Clauses 5.1.5 and 5.1.6 do not apply to children's toilet and purpose-built workers' dormitories.

5.1.7 At least one accessible changing room in accordance with clause 5.3 must be provided at an appropriate location within the following buildings:

(a) shopping centres and multi-purpose complexes of 20,000 m^2 or more in gross floor area;

(b) sports facilities and public swimming pools;

(c) theme parks, amusement centres, community clubs and country clubs;

(d) major transport terminals/interchanges;

(e) hospitals; and

(f) polyclinics, health-care centres and specialist outpatient clinics.

Note An accessible changing room may be provided in-lieu of an accessible individual washroom.

5.1.8 Where shower facilities are provided, at least one accessible individual shower facility in accordance with clause 5.7 must be provided at every toilet cluster with shower facilities.

5.1.9 In addition to clause 5.1.8, where two or more clusters of shower facilities are provided at the same level but at different locations, the accessible individual shower facility may be replaced with an accessible shower cubicle within the male and female shower areas, provided there is at least one accessible individual shower facility on the same level.

Note Clauses 5.1.8 and 5.1.9 do not apply to children's toilet; hospital wards, nursing homes, homes for the aged, welfare homes and living quarters of workers' dormitories.

5.1.10 Tactile and Braille signs at accessible individual washrooms, accessible changing rooms, accessible individual showers, and entrances to toilets containing accessible water closet cubicles and accessible shower cubicles must be in accordance with symbols as described in Chapter 8 and clause 5.8.11.

5.1.11 In addition to clause 5.1.10, tactile and Braille signs must be provided at entrances to male and female toilets in accordance with clause 5.8.11.

Note Clauses 5.1.10 and 5.1.11 do not apply to residential developments; pre-schools, primary and secondary schools including their hostels, halls of residence and dormitories; nursing homes, homes for the aged and welfare homes; factories, workshops, warehouses and industrial buildings; and purpose-built workers' dormitories.

5.2 Accessible Individual Washroom

Functional Intent

A standalone wheelchair-accessible washroom (accessible individual washroom) must be provided to accommodate independent use by a person with disability, who may be accompanied by a caregiver. The washroom must be equipped with appropriate accessible sanitary features and have sufficient manoeuvring space to facilitate a wheelchair user to transfer onto the water closet. Alert system for assistance must be provided. Clear signage and information must be displayed to enable users to easily identify and locate the washroom. Sanitary features include fixtures, fittings and other necessary accessories needed by persons with disabilities.

5.2.1 Accessible individual washrooms and larger accessible individual washrooms must have clear internal dimensions as shown in Figure 43 and Figure 44:

(a) at least 1750 mm by 1750 mm for accessible individual washrooms; and

(b) at least 1800 mm wide by 2100 mm deep for larger accessible individual washrooms.

5.2.2 Accessible individual washrooms, larger accessible individual washrooms and accessible changing rooms must:

(a) be equipped with a door in accordance with clause 5.8.1;

(b) have grab bars in accordance with clause 5.8.2.1;

(c) have essential washroom accessories in accordance with clause 5.8.3;

(d) be equipped with an emergency call bell in accordance with clause 5.8.4;

(e) have a wash basin in accordance with clause 5.8.5;

(f) have a water closet in accordance with clause 5.8.6;

(g) be equipped with two coat hooks mounted on a side wall at two different heights of about 1500 mm and 1100 mm from the floor level. The hooks must not project more than 40 mm from the wall;

(h) be equipped with a self-closing water spray head connected by a flexible hose beside the water closet;

(i) have a toilet roll dispenser that is reachable and does not obstruct the use of grab bars. The dispenser must:

  (i) be mounted below the horizontal grab bar at 300 mm or less from the front edge of the seat and at a height of between 50 mm and 250 mm from the top of the water closet seat; or

  (ii) where jumbo toilet roll dispenser is provided, be mounted at a height of between 150 mm and 200 mm above the horizontal grab bar, approximately 50 mm from the front edge of the seat to the centreline of the toilet roll dispenser and be at least 150 mm away from the vertical grab bar, as shown in Figure 43.

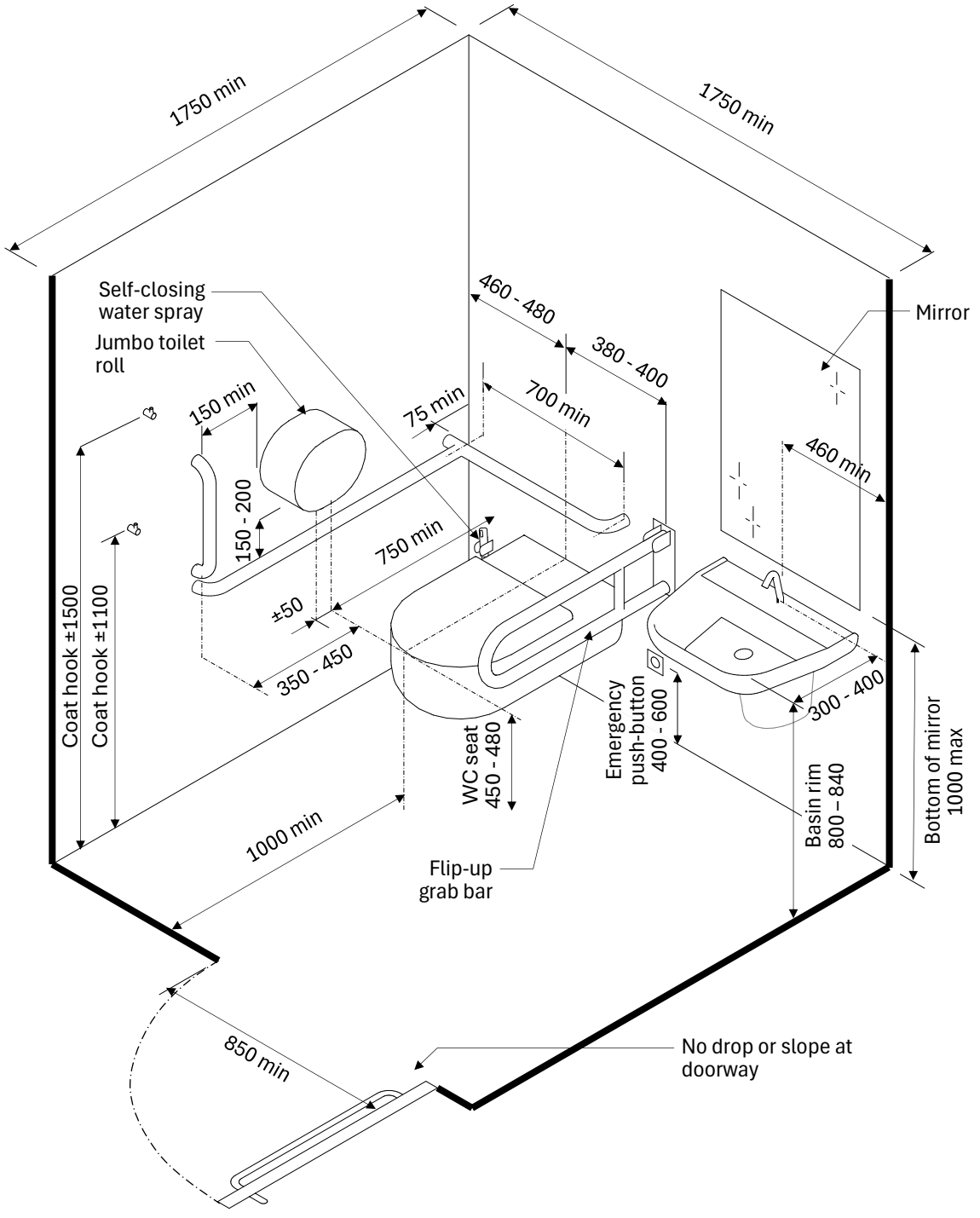


Figure 43
Accessible Individual Washroom

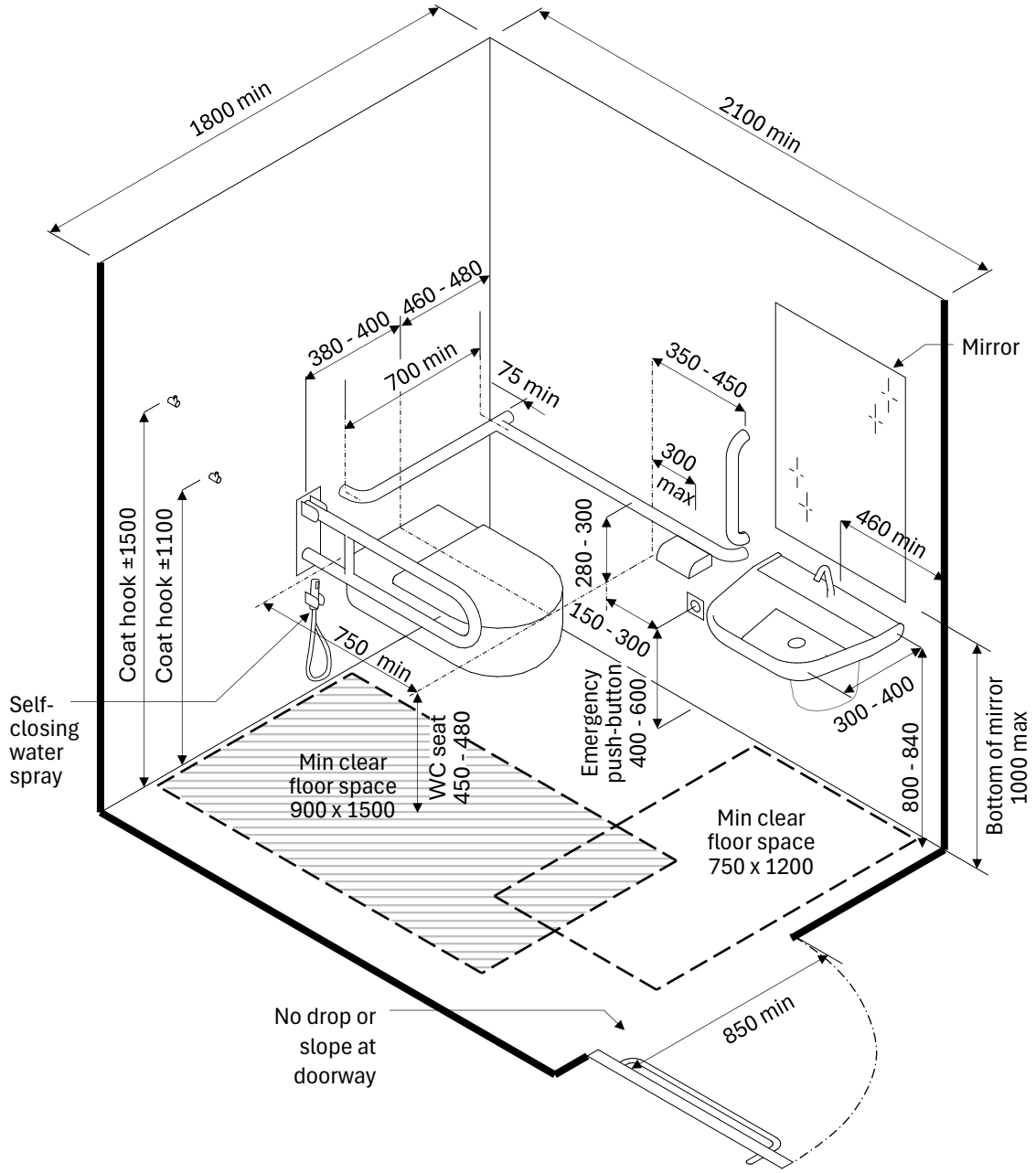


Figure 44
Larger Accessible Individual Washroom

5.3 Accessible Changing Room

Functional Intent

A standalone wheelchair-accessible washroom with changing bed for adults with disabilities (accessible changing room) must be equipped with appropriate accessible sanitary features and have sufficient manoeuvring space to facilitate wheelchair transfer onto water closet and changing bed. Alert system for assistance must be provided. Clear signage and information must be displayed to enable users to easily identify and locate the accessible changing room.

5.3.1 Accessible changing rooms must have clear internal dimensions of at least 2600 mm wide by 2300 mm deep.

5.3.2 Accessible changing rooms, as shown in Figure 45, must have:

(a) accessible individual washroom facilities in accordance with clause 5.2.2;

(b) a height-adjustable bench or bed of a minimum size of 1800 mm long by 750 mm wide that is capable of supporting a safe working load of 200 kg; and

(c) the accompanying symbol shown in Figure 46 in accordance with clause 5.8.11.

Advisory to clause 5.3.2

- A hoist system should be provided in the accessible changing room for caregivers to assist persons with disabilities with less physical effort.

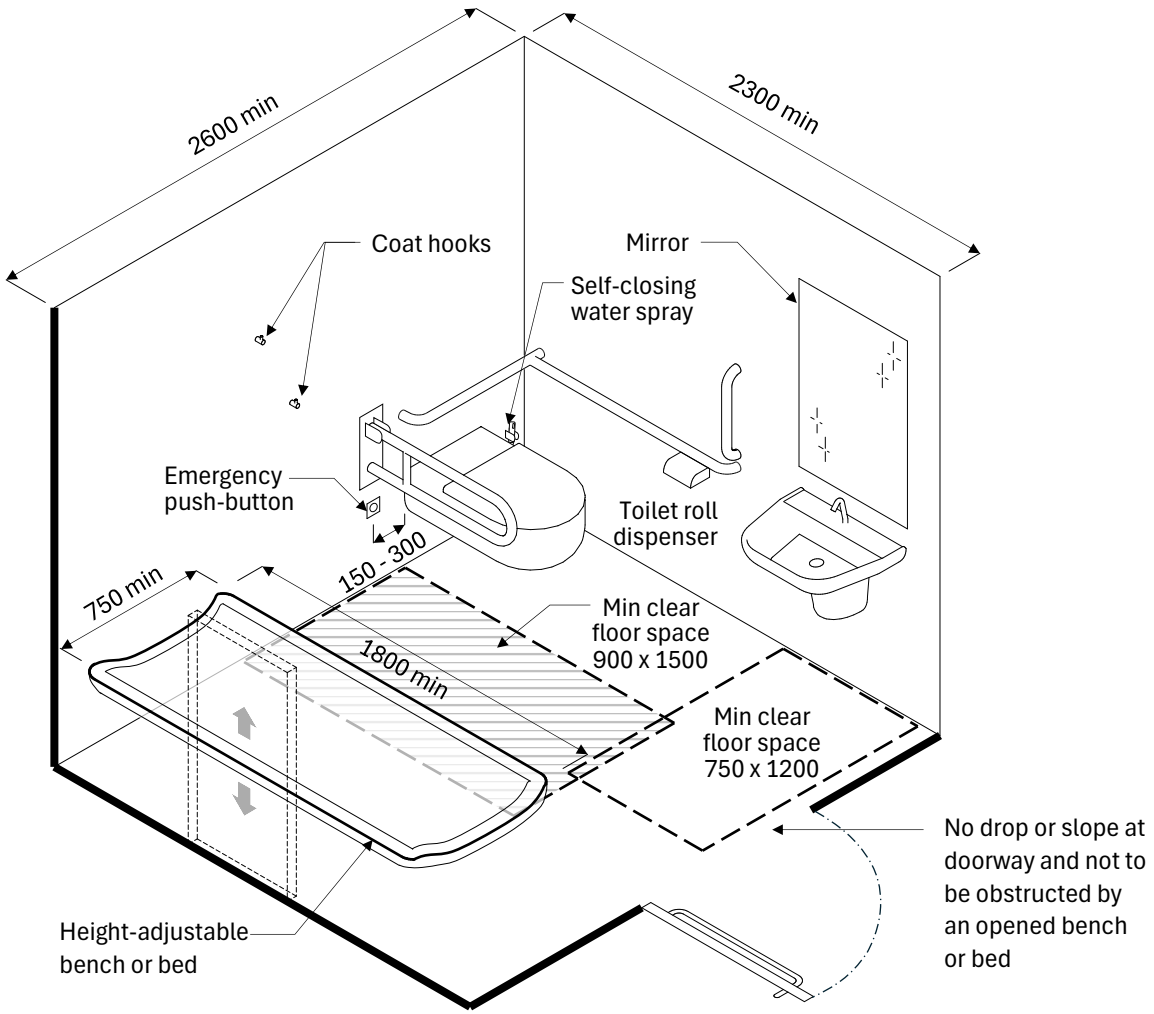


Figure 45
Accessible Changing Room

Figure 46
Symbol for Accessible Changing Room

5.4 Water Closet Cubicles for Persons with Ambulant Mobility Impairment

Functional Intent

Water closet cubicles for persons with ambulant mobility impairment must have sufficient space and appropriate accessibility features to ensure safe and independent use. Clear signage and information must be displayed to enable users to easily identify and locate the water closet cubicles.

5.4.1 Water closet cubicles for persons with ambulant mobility impairment must:

(a) have internal dimensions of a minimum width of 900 mm;

(b) have grab bars in accordance with clause 9.4:

(i) on both sides of the cubicle as shown in Figure 47;

(ii) at a distance between 350 mm and 400 mm from the centreline of the water closet and be equidistant on both sides; and

(iii) be provided in a L-shaped configuration of at least 450 mm high and 500 mm long, mounted between 280 mm and 300 mm above the seat of the water closet and not less than 200 mm from the front edge of the water closet; or

(iv) be provided with a flip-up grab bar in accordance with clause 5.8.2.1(e).

5.4.2 Water closet cubicles for persons with ambulant mobility impairment must be equipped with a door that provides a clear opening of at least 800 mm.

5.4.3 The door must:

(a) be designed to:

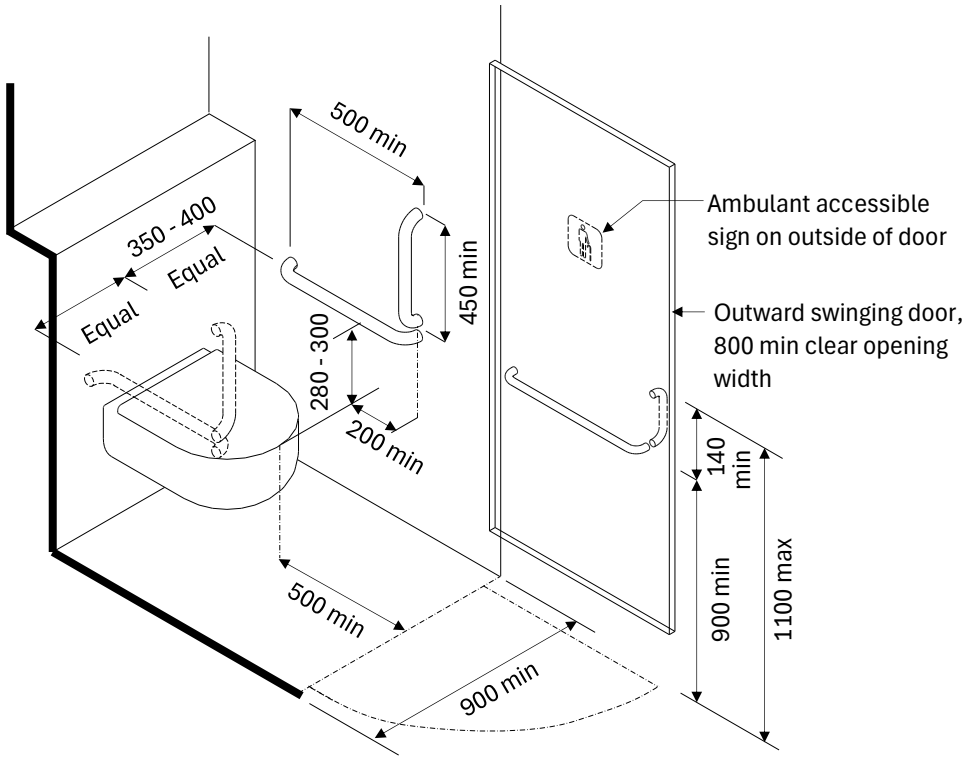
(i) be a sliding/folding door in accordance with clause 4.4.4; or

(ii) swing outwards with a minimum clear space of 500 mm between the edge of the water closet and the closed door, and be in accordance with clauses 5.8.1.1(c) and 5.8.1.2; or

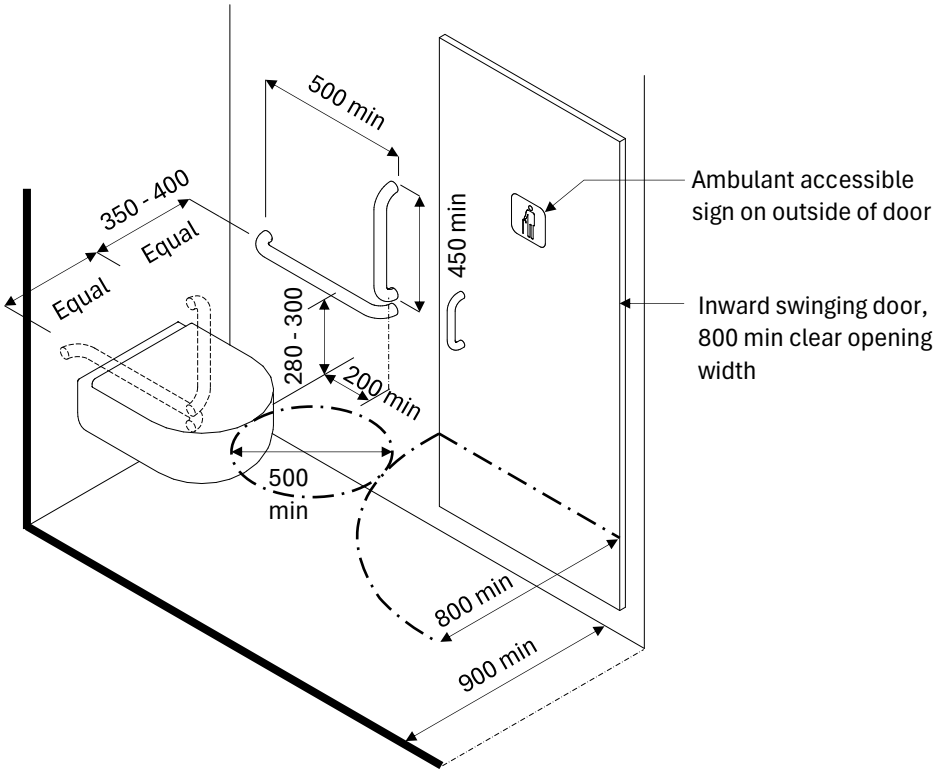
(iii) swing inwards with a minimum clear space of 500 mm diameter centred and from the edge of the water closet and the door swing; and

(b) have an ambulant accessible sign, mounted on the outside of the door to indicate that the cubicle is suitable for persons requiring grab bars as shown in the example Figure 48.

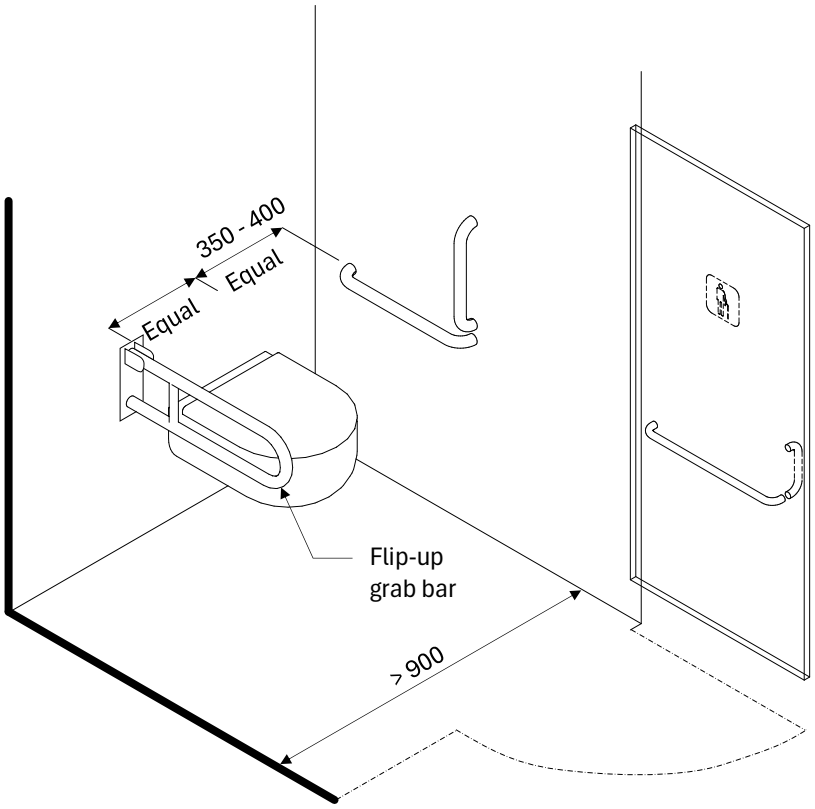
5.4.4 The wall structure and fixings supporting the grab bars must be capable of withstanding the user loads and comply with clause 5.4.1(b).



(a) Water closet cubicle for persons with ambulant mobility impairment, with outward swinging door



(b) Water closet cubicle for persons with ambulant mobility impairment, with inward swinging door



(c) Larger water closet cubicle for persons with ambulant mobility impairment

Figure 47
Water Closet Cubicle for Persons with Ambulant Mobility Impairment

Figure 48
Example of an Ambulant Accessible Sign

5.5 Urinals for Persons with Ambulant Mobility Impairment

Functional Intent

Urinals for persons with ambulant mobility impairment must be installed at an appropriate height and have sufficient space and appropriate accessibility features to ensure safe and independent use.

5.5.1 Urinals for persons with ambulant mobility impairment, as shown in Figure 49 must:

(a) be of the wall-hung type with a rim height of 500 mm or less from the floor level;

(b) have a minimum clear floor space of 750 mm wide by 1200 mm deep from the edge of the urinal and without steps in front of the urinal;

(c) have a depth of between 350 mm and 450 mm; and

(d) where privacy shields are provided, do not extend beyond the edge of the urinal rim.

5.5.2 Vertical grab bars, in accordance with clause 9.4, must be provided on both sides of the urinals. The grab bars must:

(a) be positioned with the lower point of the grab bars no higher than 800 mm from the floor level;

(b) extend to a minimum height of 1400 mm from the floor level;

(c) have a minimum clear space of 150 mm from internal corners or obstructions such as privacy shields;

(d) be mounted 120 mm from the wall surface; and

(e) be mounted at the same height with 500 mm to 650 mm spacing between the two grab bars.

5.5.3 Flush controls must:

(a) be in accordance with clause 9.2; and

(b) be located at a height between 900 mm and 1200 mm or less from the floor level.

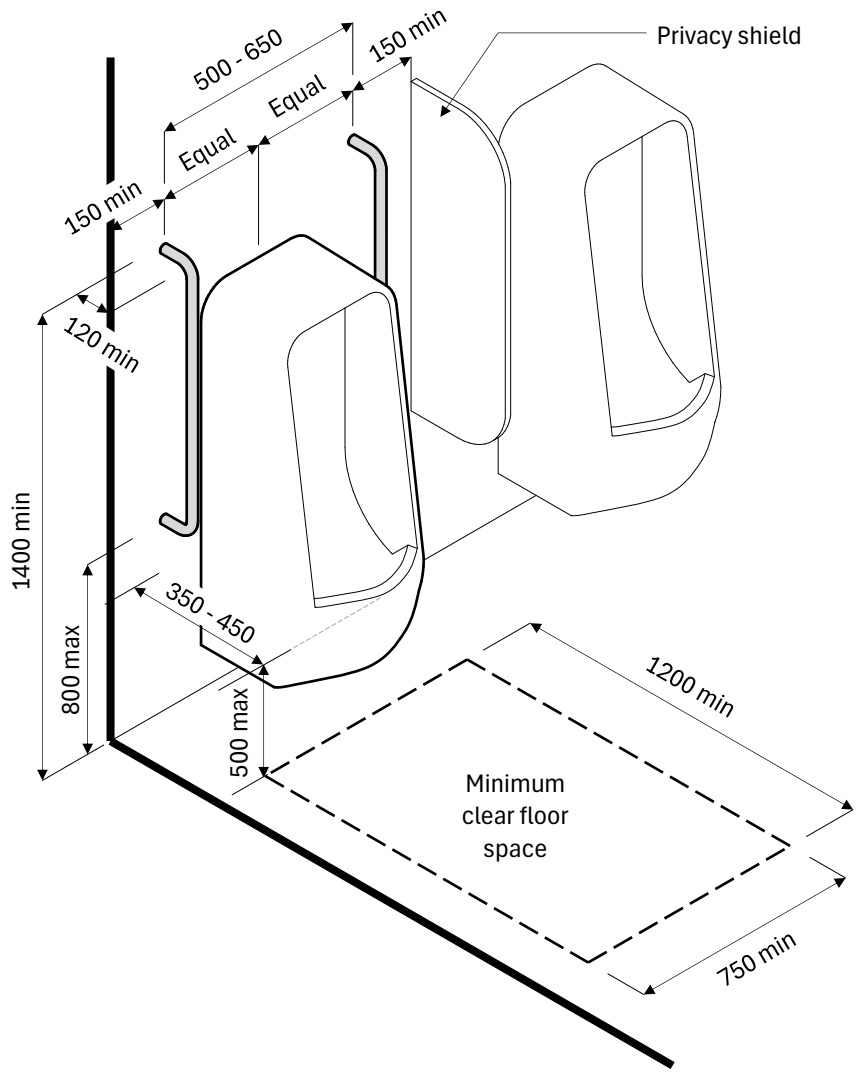


Figure 49
Urinal for Persons with Ambulant Mobility Impairment

5.6 Accessible Water Closet Cubicles

Functional Intent

A wheelchair-accessible water closet cubicle must have sufficient manoeuvring space to facilitate a wheelchair user to transfer onto the water closet. Alert system for assistance must be provided. Clear signage and information must be displayed to enable users to easily identify and locate the washroom. The toilet in which the cubicle is located must be equipped with appropriate accessible sanitary features. Sanitary features include fixtures, fittings and other necessary accessories needed by persons with disabilities.

5.6.1 An accessible water closet cubicle must:

(a) have clear internal dimensions of at least 1500 mm by 1750 mm;

(b) be in accordance with clauses 5.2.2 except (c) and (e).

5.6.2 At least one wash basin and washroom accessories in accordance with clauses 5.2.2(c) and 5.2.2(e) must be provided in the toilet cluster with accessible water closet cubicles.

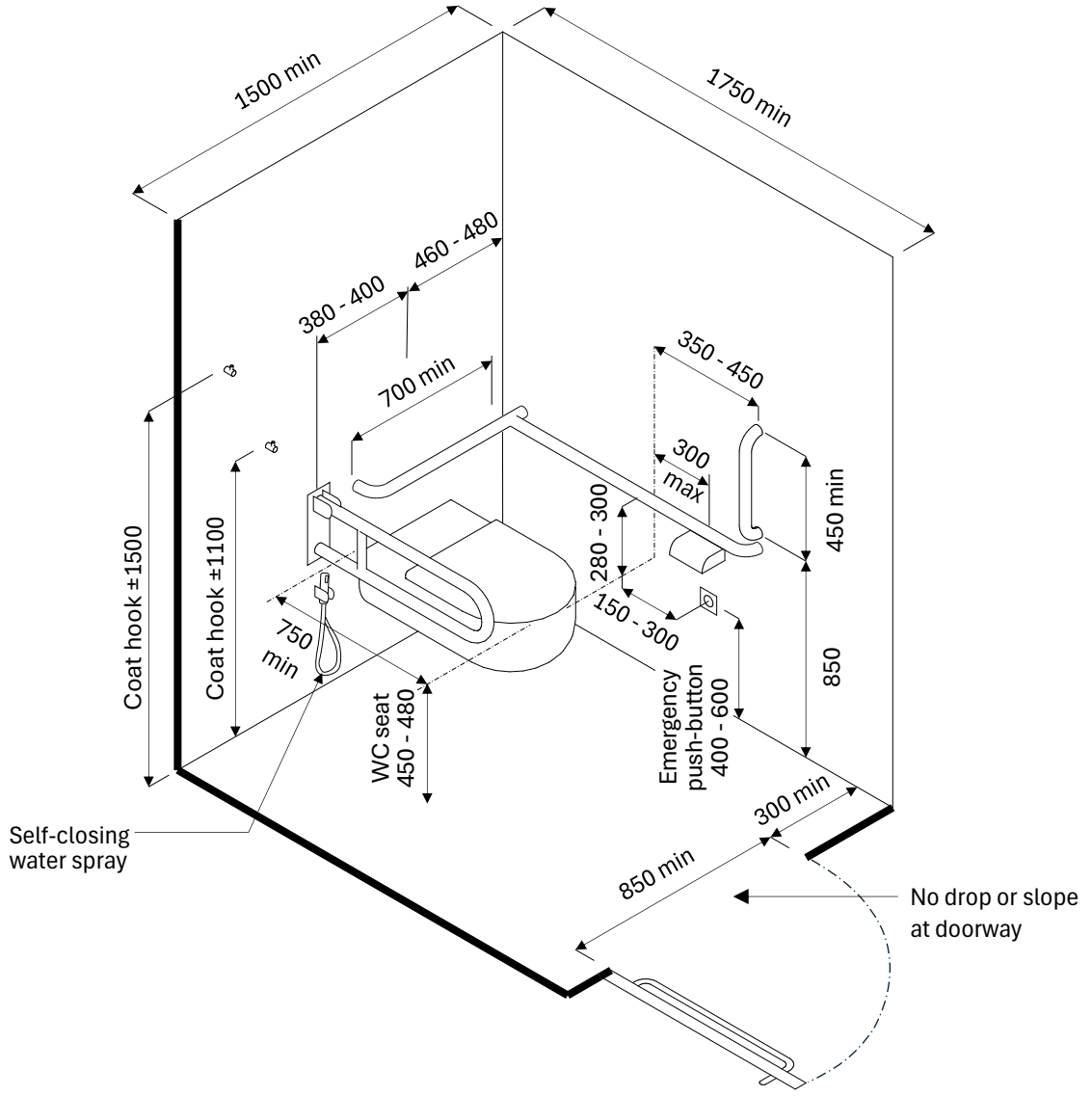


Figure 50
Accessible Water Closet Cubicle within a Toilet Cluster

5.7 Accessible Shower and Bath Facilities

Functional Intent

Accessible shower and bath facilities must have sufficient space and appropriate accessibility features to ensure safe access and independent use by wheelchair users. Alert system for assistance must be provided. Clear signage and information must be displayed to enable persons with disabilities to easily identify and locate the facilities.

5.7.1 Accessible Shower Facility

5.7.1.1 An accessible shower facility must have clear internal dimensions of at least 1500 mm by 1500 mm, as shown in Figure 51.

5.7.1.2 Where an accessible individual washroom is designed to include an accessible shower facility, the minimum internal dimensions must be 2000 mm by 1750 mm, as shown in Figure 52.

5.7.1.3 The accessible shower facility must:

(a) have a minimum clear floor space of 900 mm by 1500 mm for transfer;

(b) have floor that is slip-resistant;

(c) have taps and shower heads in accordance with clauses 5.8.8 and 5.8.9 respectively;

(d) have grab bars in accordance with clause 5.8.2.2;

(e) have a shower seat that:

(i) has a rounded edge, is self-draining and is anti-slip;

(ii) is installed on the wall nearest to the controls;

(iii) has a minimum dimension of 500 mm wide;

(iv) has a depth of between 400 mm and 500 mm from the wall to the front edge of the shower seat;

(v) where it is a flip-up type, has seat depth of a minimum of 350 mm; and

(vi) has its top between 450 mm and 480 mm from the floor level;

(f) be equipped with an emergency push-button or pull-cord in accordance with clause 5.8.4 that can be reached by a person near the shower seat.

5.7.1.4 The grab bars and shower seat must be able to withstand a force of 1.3 kN, applied at any position and in any direction.

5.7.1.5 Where enclosures are provided to accessible shower facilities, they must be in accordance with clause 5.8.10.

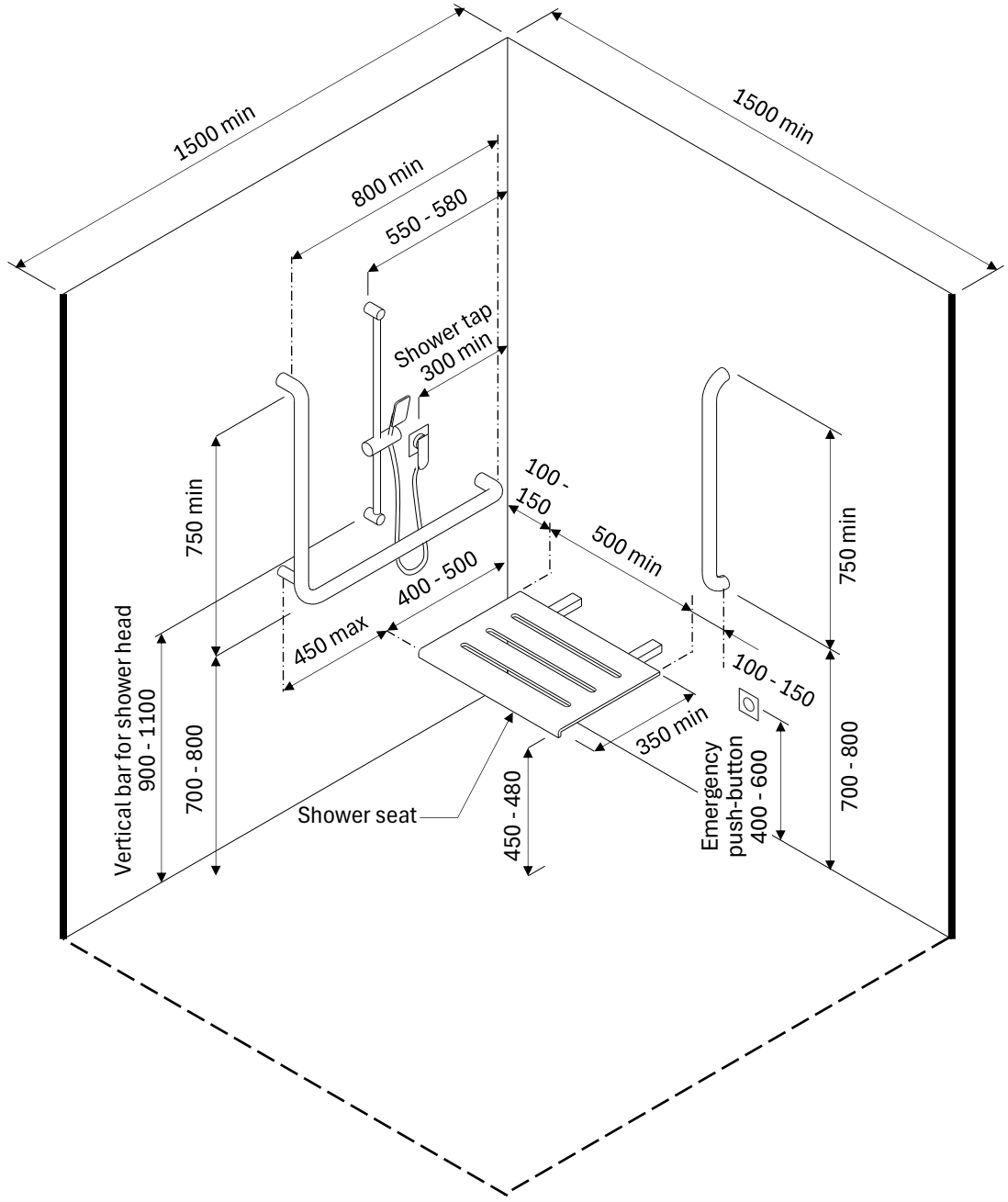


Figure 51
Accessible Shower Facility for Wheelchair Users

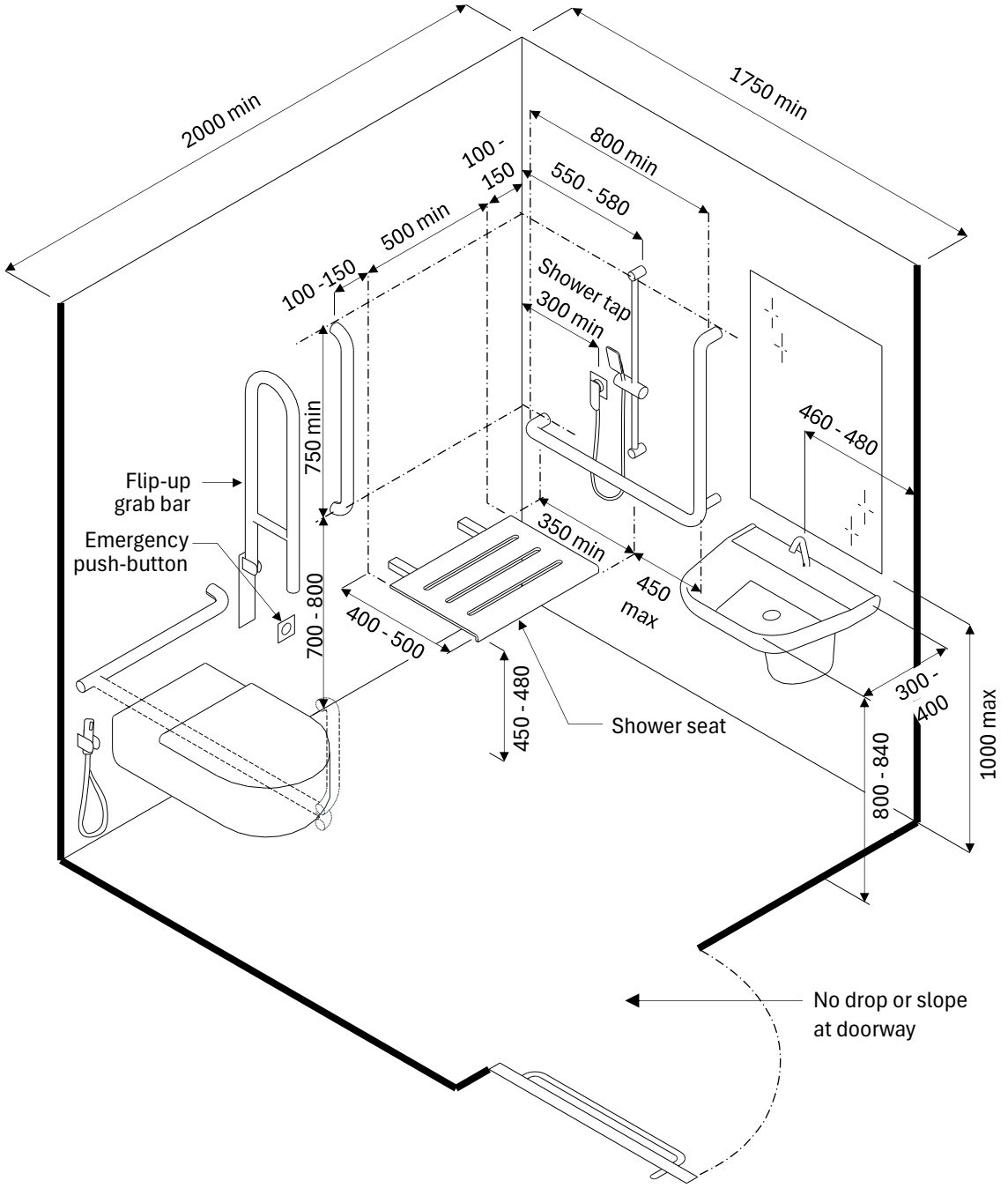


Figure 52
Accessible Individual Washroom with Shower Facility

5.7.2 Bathtub for Wheelchair Users

5.7.2.1 There must be a clear floor space of at least 900 mm by 1500 mm in front of the bathtub. The wash basin may encroach up to a maximum of 300 mm into this space, provided there is a clear knee and toe space under the wash basin.

5.7.2.2 The bathtub must be provided with a seat of:

(a) at least 250 mm wide along its entire length and at a height of between 450 mm and 480 mm; or

(b) at least 400 mm deep, across its width and at the opposite end of the controls.

5.7.2.3 The base of the bathtub must be anti-slip. Where this is not possible, an anti-slip rubber mat must be provided.

5.7.2.4 Grab bars for bathtubs in accordance with clause 5.8.2.3 must be provided.

5.7.2.5 The bathtub must be equipped with an emergency push-button or pull-cord in accordance with clause 5.8.4 that can be reached by a person in the bathtub.

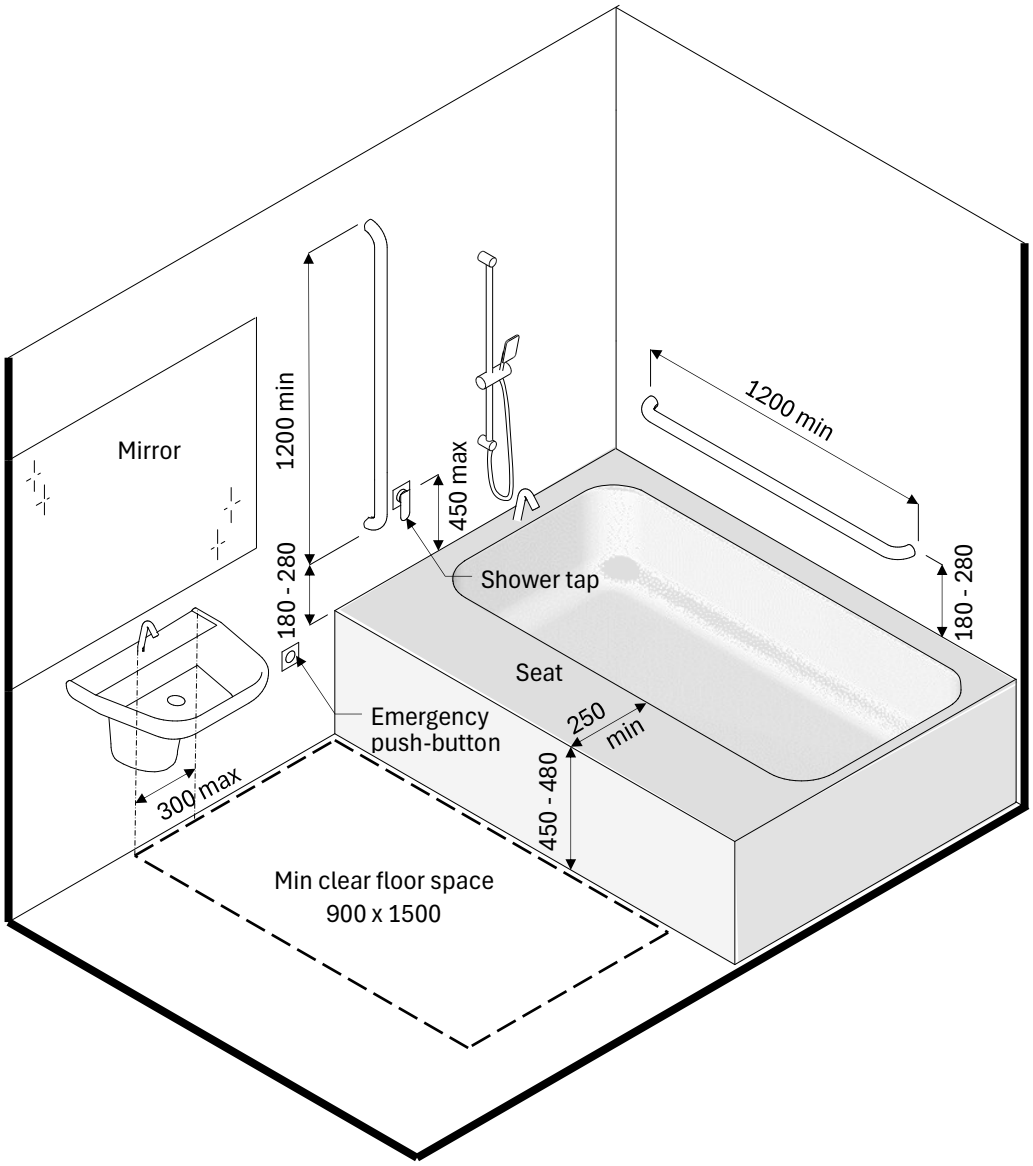


Figure 53
Bathtub for Wheelchair Users

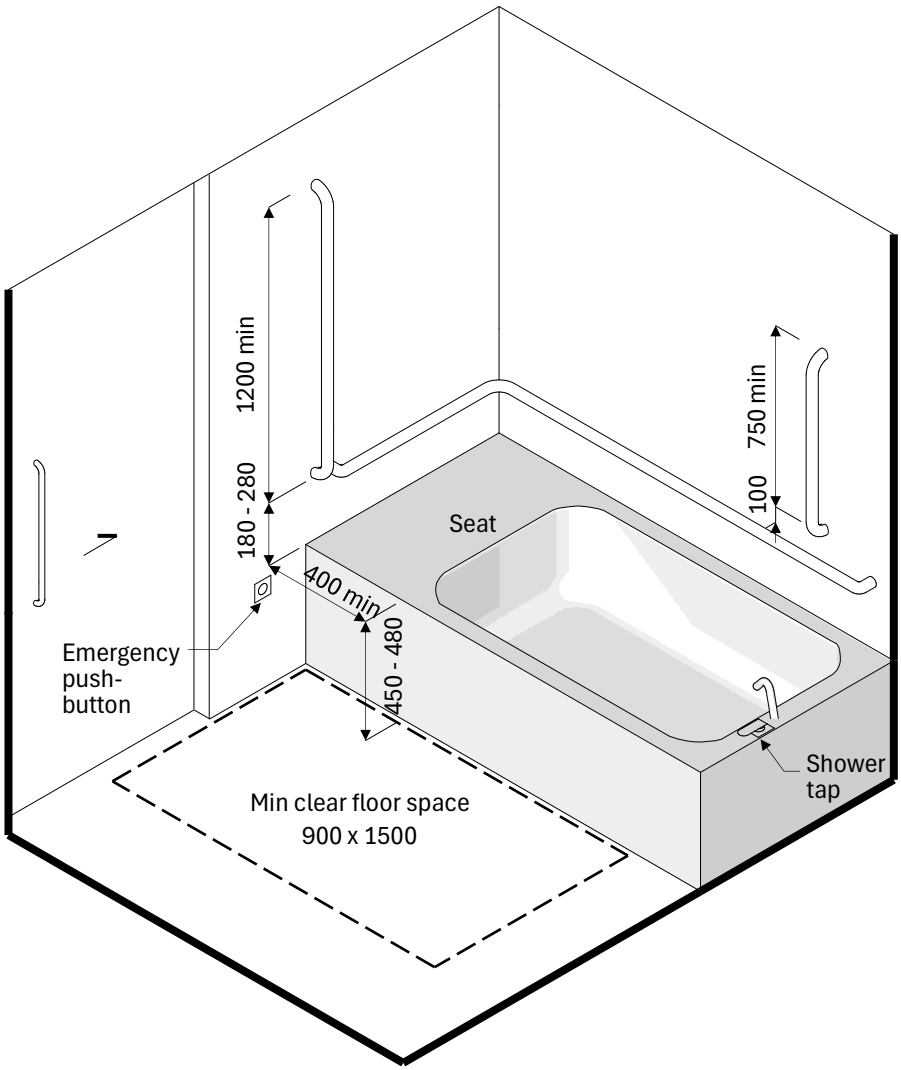


Figure 54
Alternative Bathtub Configuration for Wheelchair Users

5.8 Components in the Accessible Sanitary Facilities

5.8.1 Doors

5.8.1.1 Doors to accessible individual washrooms, accessible water closet cubicles, accessible changing rooms and accessible shower and bath facilities must:

(a) swing outwards in accordance with clause 5.8.1.2, or be designed as a sliding/folding door in accordance with clause 4.4.4;

(b) have a minimum clear opening of 850 mm when in the fully opened position in accordance with clause 4.4.2; and

(c) be capable of being locked from the inside by a device that is operable with one hand and activated by a force of not more than 22 N, and which does not require:

(i) fine finger control;

(ii) tight grasping; and

(iii) pinching or twisting of the wrist.

5.8.1.2 Where swing doors are provided, the doors must:

(a) be provided with a horizontal pull-bar with a diameter of between 19 mm and 45 mm on the inside that is:

(i) at least 600 mm long;

(ii) located so that it is 130 mm or less from the hinged side of the door; and

(iii) fixed at a height of between 900 mm and 1100 mm.

(b) be provided with a vertical/horizontal pull-handle/bar with a diameter of between 19 mm and 45 mm on the outside that is:

(i) at least 140 mm long;

(ii) located so that the pull-handle is 130 mm or less from the latch side of the door; and

(iii) placed at a height of between 900 mm and 1100 mm.

Advisory to clause 5.8.1

- Accessible toilet doors should be designed to allow entry if someone falls behind the door. Use locks and latches that can be opened from the outside with simple devices for emergencies.
- Control and operating devices for power-operated doors should feature tactile markings and Braille. Voice announcements should be provided to inform users when the door is locked, closing, or opening.

5.8.2 Grab Bars

5.8.2.1 Grab bars must be provided in accessible individual washrooms, accessible water closet cubicles and accessible changing rooms as shown in Figure 43, Figure 44, Figure 45 and Figure 50 and must:

(a) be in accordance with clause 9.4;

(b) be mounted at a height of between 280 mm and 300 mm from the top of the water closet seat;

(c) have one horizontal grab bar to be mounted on the side wall closest to the water closet extending from the rear wall to at least 450 mm in front of the water closet seat;

(d) have one vertical grab bar to be mounted on the side wall closest to the water closet and:

(i) located between 350 mm and 450 mm from the front edge of the water closet seat; and

(ii) at least 450 mm in length.

(e) have one flip-up grab bar to be mounted on the wide side of the cubicle/washroom adjacent to the water closet and must be able to remain in a vertical position when not in use. When lowered, it must:

(i) be at the same height as the grab bar mounted on the side wall closest to the water closet;

(ii) extend not more than 100 mm from the front of the water closet seat; and

(iii) be between 380 mm and 400 mm to the centreline of the water closet.

(f) have one horizontal grab bar of at least 700 mm long to be mounted on the wall behind the water closet.

5.8.2.2 Grab bars must be provided in accessible shower facilities as shown in Figure 51 and Figure 52 and must:

(a) be in accordance with clause 9.4;

(b) comprise of an L-shaped bar or two bars arranged in an L-shaped configuration, and be:

(i) at least 750 mm high by 800 mm wide;

(ii) mounted between 700 mm and 800 mm from the shower floor; and

(iii) mounted not more than 450 mm from the edge of shower seat.

(c) have a vertical bar:

(i) of at least 750 mm; and

(ii) mounted between 100 mm and 150 mm from the shower seat.

5.8.2.3 Grab bars must be provided for bathtubs in accessible bath facilities as shown in Figure 53 and Figure 54 and must:

(a) in accordance with clause 9.4;

(b) located horizontally along the length of the bathtub and be:

(i) at least 1200 mm long; and

(ii) between 180 mm and 280 mm above the bathtub rim;

(c) located vertically at the control end of the bathtub adjacent to the clear floor space and be:

(i) at least 1200 mm long; and

(ii) located with the lower end between 180 mm and 280 mm above the bathtub rim.

Note All dimensions in clause 5.8.2 must be taken from the centreline of the bar.

5.8.3 Washroom Accessories

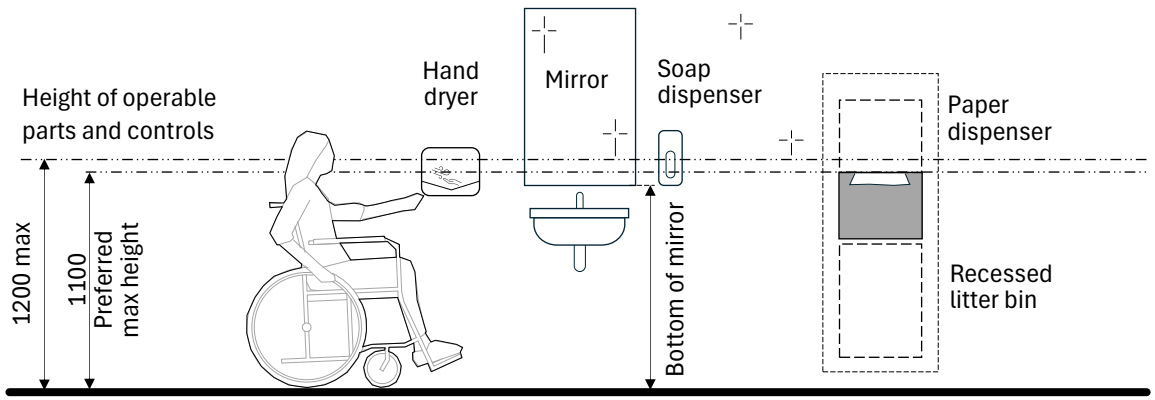
5.8.3.1 Washroom accessories must comprise the following:

(a) a mirror, with the bottom edge positioned at a height of 1000 mm or less from the floor level, as shown in Figure 55; and

(b) paper towel dispensers or hand dryers, soap dispensers, litter bins and other washroom accessories must:

(i) contrast in colour and tone with the surrounding wall surfaces; and

(ii) be positioned such that the operable parts and controls are at a height of between 900 mm and 1200 mm from the floor level.



Accessories should be placed in close proximity to the accessible basin to avoid having a person wheeling a chair with wet hands.

Figure 55
Washroom Accessories

5.8.4 Emergency Assistance Alarm System

5.8.4.1 The emergency assistance alarm system must be activated by a waterproof push-button or pull-cord.

5.8.4.2 The push-button or pull-cord must:

(a) be located at a height of between 400 mm and 600 mm above the floor level;

(b) have a colour that contrasts with the background; and

(c) have a notice stating "Emergency Call" prominently affixed next to the push-button or pull-cord.

5.8.4.3 Emergency assistance alarm indicators in the form of audible and/or visible signals must be provided to alert caregivers or responsible persons in a management office. The indicators must be:

(a) installed outside the accessible individual washroom, accessible changing room, accessible shower and accessible rooms; and

(b) connected to the management office, fire command centre or caregiver's office.

5.8.5 Wash Basin

5.8.5.1 Wash basins, as shown in Figure 56, must:

(a) not interfere with the manoeuvring space of wheelchair users while transferring to the water closet;

(b) be mounted such that the minimum distance between the centreline of the fixture and the side wall is 460 mm;

(c) be mounted such that the top edge is between 800 mm and 840 mm from the floor level;

(d) have a knee space of at least 750 mm wide by 200 mm deep by 700 mm high with an additional toe space of at least 750 mm wide by 230 mm deep by 230 mm high;

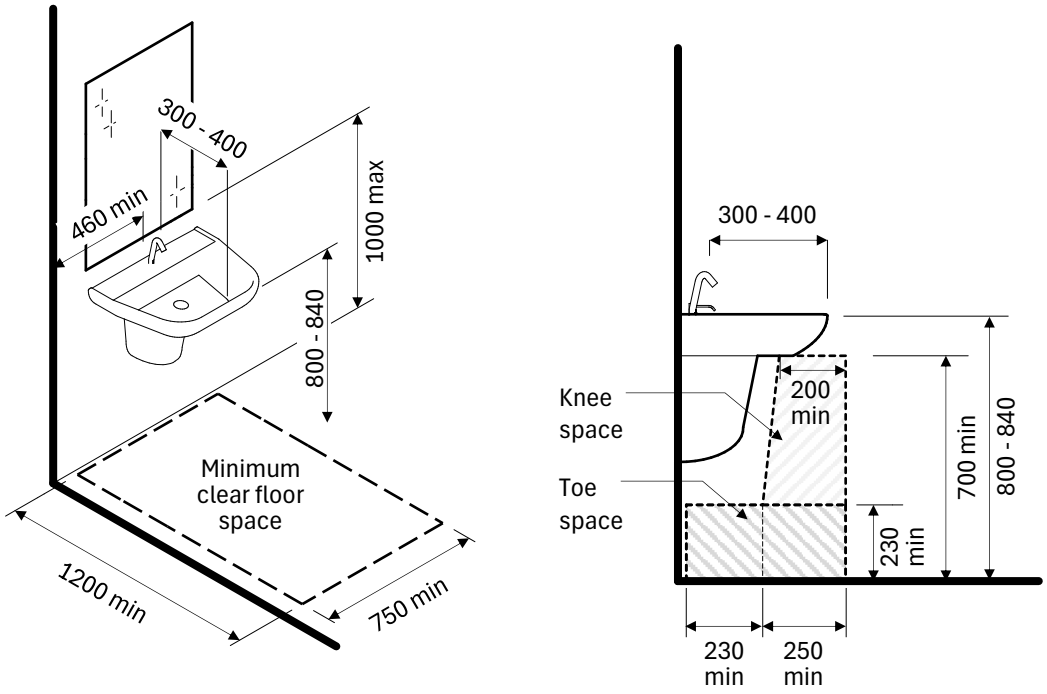
(e) have a minimum clear floor space of 750 mm wide by 1200 mm deep of which a maximum of 480 mm in depth may be under the wash basin; and

(f) have a dimension of between 300 mm and 400 mm from the front edge of the basin to the centre of the tap.

5.8.5.2 The hot water and drainpipes located within the knee or toe space must be properly insulated.

5.8.5.3 Taps and other controls provided must have levers or be sensor-operated and be in accordance with clause 9.2.

5.8.5.4 Where vanity counters are provided, all dimensions relating to height, circulation, knee and toe spaces must be in accordance with clause 5.8.5.1 as specified for basins.



(a) Isometric view (b) Side view

Figure 56
Wash Basin for Persons with Disabilities

Advisory to clause 5.8.5.3

- Where wheelchair-accessible wash basins are placed together with other basins for general use, the taps provided must be in accordance with the National Environment Agency's Code of Practice for Environmental Health.

5.8.6 Water Closet

5.8.6.1 Water closets must be in accordance with the following:

(a) be located between 460 mm and 480 mm from the centreline of the water closet to the adjacent wall;

(b) have a minimum dimension of 750 mm from the front edge of the water closet to the rear wall;

(c) have a minimum clear floor space of 900 mm by 1500 mm or more adjacent to the water closet;

(d) the top of the water closet seat must be between 450 mm and 480 mm from the floor level;

(e) have no spring-activated seats;

(f) have flush control:

(i) in accordance with clause 9.2;

(ii) that is located at a height of between 800 mm and 1100 mm from the floor level; and

(iii) where it is hand-operated, must be located on the transfer side of the water closet.

5.8.6.2 Where a built-up wall is provided behind the water closet to be in accordance with clause 5.8.6.1(b), this built-up wall must not extend beyond the sides and top of the water closet as shown in Figure 57.

5.8.6.3 The water closet must be equipped with an emergency push-button or pull-cord in accordance with clause 5.8.4 and be located between 150 mm and 300 mm from either the front or side edges of the water closet.

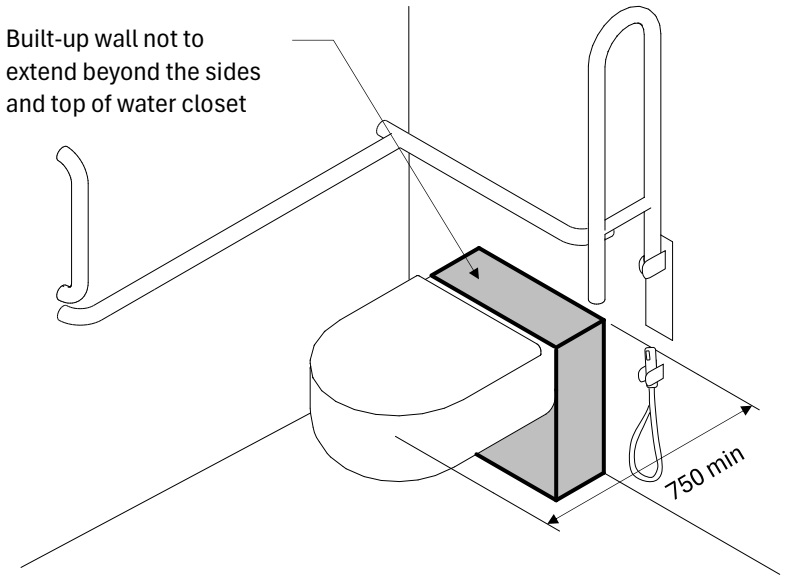


Figure 57
Water Closet with Built-Up Wall

5.8.7 Motion Sensor Lighting

5.8.7.1 Where motion-sensor-type lighting switches are used within the accessible facilities (individual washroom, accessible water closet cubicle, accessible changing room or accessible shower), they must be in accordance with the following:

(a) switch controllers are equipped for fail-safe operation;

(b) illumination timers are set for a minimum duration of 30 minutes; and

(c) sensors must be appropriately located and easily activated by any occupant movement in the toilet.

5.8.8 Taps and Controls for Shower and Bath Facilities

5.8.8.1 Taps and other controls must:

(a) be in accordance with clause 9.2 for both bathtub and shower facilities;

(b) be located at the control end of the bathtub between the centreline and the outer edge;

(c) be 450 mm or less above the bathtub rim, as shown in Figure 53;

(d) have clearly visible colour contrast and embossed signs indicating hot and cold-water supply; and

(e) have a pressure-equalising valve or an automatic, thermostatically controlled valve to control the temperature of hot water supply.

5.8.9 Shower Heads

5.8.9.1 Shower heads used in bathtubs and shower facilities must:

(a) be of the hand-held type;

(b) be provided with a hose of 1500 mm long or more; and

(c) allow for use in a fixed position.

5.8.9.2 Where shower heads are mounted on a vertical bar, the bar must:

(a) have a minimum length of 500 mm;

(b) be installed with the lower end located between 900 mm and 1100 mm above the floor level; and

(c) be installed so as not to obstruct the use of grab bars.

5.8.10 Bath Enclosures

5.8.10.1 Enclosures for bathtubs and showers must not:

(a) obstruct controls;

(b) interfere with a person transferring from a wheelchair; and

(c) have tracks mounted on the bathtub rim or edges of shower pans or the shower area.

5.8.11 Signs to Sanitary Facilities

5.8.11.1 Signs to sanitary facilities, as shown in Figure 58, must:

(a) have tactile and Braille signs in accordance with clause 5.8.11.2 and 5.8.11.3;

(b) be mounted on the wall next to the latch-side of the door at a distance between 50 mm and 100 mm from the door jamb to the side of the sign;

(c) where there is no wall space to the latch-side of the door including double-leaf doors, signs must be mounted on the nearest adjacent wall; and

(d) be mounted at a height between 1200 mm and 1500 mm from the floor level to the centreline of the sign.

5.8.11.2 Signs to accessible individual washroom, accessible changing room and accessible shower facility, and at entrance to toilets with accessible water closet cubicles or accessible shower facilities must comprise:

(a) a tactile Symbol of Access in accordance with clause 8.2;

(b) tactile characters in accordance with clause 8.5; and

(c) corresponding Braille in accordance with clause 8.5.

5.8.11.3 Signs to male and female toilets must comprise:

(a) a tactile pictogram or characters in accordance with clause 8.5; and

(b) corresponding Braille in accordance with clause 8.5.

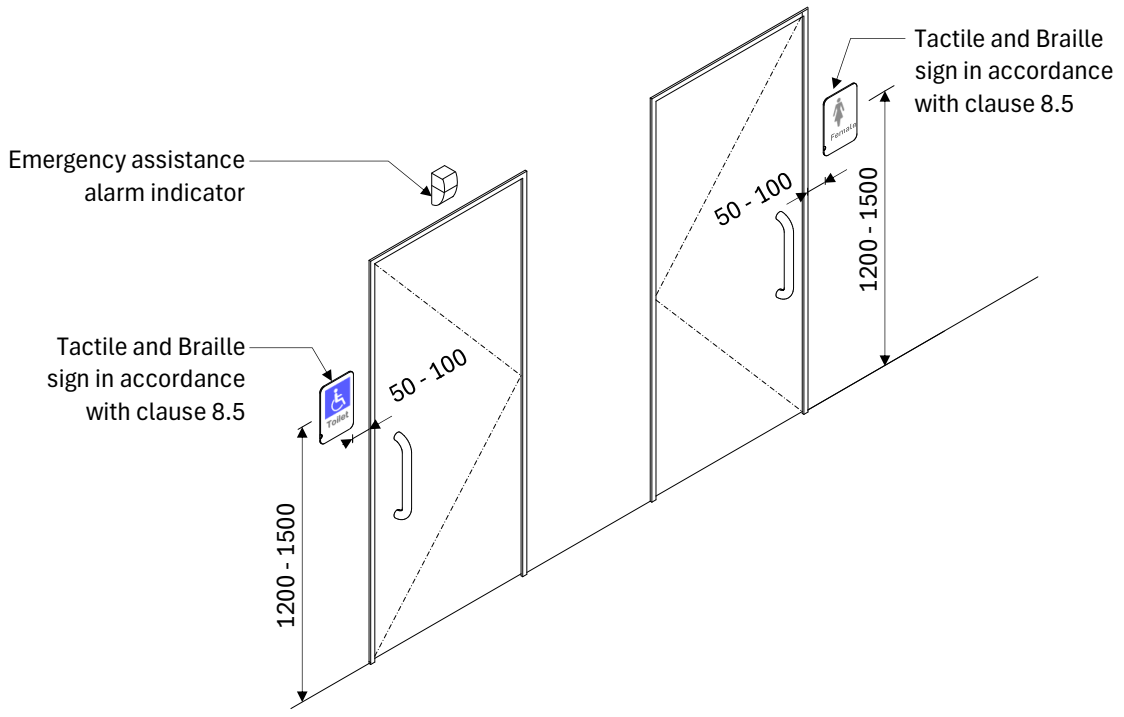


Figure 58
Signs to Toilets

Chapter 6:
Family-friendly Provisions

6.1 General

Functional Intent

Buildings that are frequently accessed by nursing mothers and families with young children must be provided with appropriate facilities to serve the needs of nursing women, young children and their caregivers. Clear signage and information must be displayed to enable users to easily identify and locate the facilities.

6.1.1 The following buildings must provide family-friendly sanitary and car parking facilities:

(a) shopping centres and multi-purpose complexes of 10,000 m^2 or more in gross floor area;

(b) sports facilities and public swimming pools;

(c) theme parks, amusement centres and community clubs; and

(d) transport terminals and stations.

6.1.2 Where a building is required to provide family-friendly sanitary and car parking facilities in accordance with clause 6.1.1, the following must be provided for each applicable use:

(a) where vehicle parks are provided, at least one family car parking lots must be provided in accordance with clause 6.2;

(b) where toilets are provided, the following family-friendly sanitary facilities for young children and their caregivers must be provided at every toilet cluster:

(i) diaper changing stations in accordance with clause 6.3;

(ii) child protection seats in accordance with clause 6.4;

(iii) child-sized wash basins and water closets in accordance with clause 6.5; and

(iv) where urinals are provided, child-friendly urinals in accordance with clause 6.6.

6.1.3 The following buildings must provide lactation rooms in accordance with clause 6.8:

(a) offices and business parks of 5,000 m^2 or more in gross floor area;

(b) shopping centres and multi-purpose complexes of 5,000 m^2 or more in gross floor area;

(c) sports facilities and public swimming pools;

(d) theme parks, amusement centres and community clubs;

(e) transport terminals and stations;

(f) schools of 5,000 m^2 or more in gross floor area;

(g) hospitals;

(h) polyclinics, health-care centres and specialist outpatient clinics; and

(i) mixed developments where the non-residential component is 5,000 m^2 or more in gross floor area. Each non-residential component must be provided with the required number of lactation rooms.

6.1.4 Appropriate directional and service identification signs in accordance with Chapter 8 must be displayed to show the location of family-friendly and lactation facilities. Appropriate symbols for persons with different needs are shown in Figure 59.

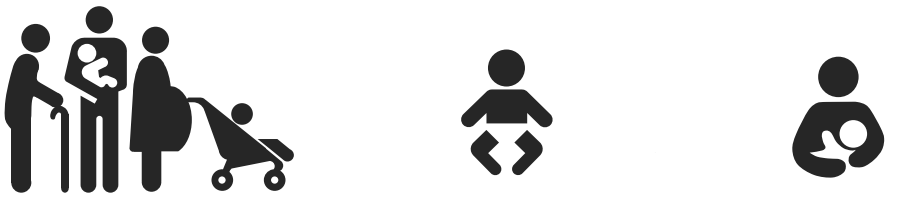
6.2 Family Car Parking

Functional Intent

Designated family car parking lots must be provided for use by families with mobility aids such as wheelchairs, walkers or prams. The family car parking lots must be differentiated from other parking lots, easy to locate and access.

6.2.1 At least one designated family car parking lot must be provided near an accessible entrance or lift lobby.

6.2.2 A family car parking lot must be at least 4800 mm long by 3600 mm wide, as shown in Figure 60.



(a) Facilities for family with young children

(b) Facilities for infants

(c) Facilities for nursing mothers

Figure 59
Example of Symbols for Persons with Different Needs

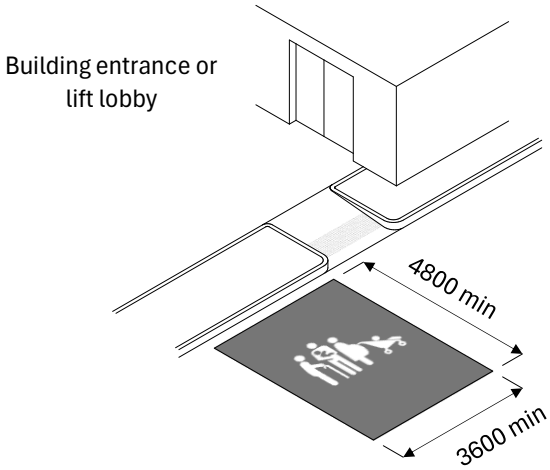


Figure 60
Family Car Parking Lot

6.3 Diaper Changing Station

Functional Intent

Diaper changing facilities must be provided at appropriate locations for infants or young children and their caregivers of any gender. The diaper changing station must have a secure, horizontal surface to place the infant on while changing, and incorporate features that reduce the risk of falling.

6.3.1 At least one diaper changing station must be located either in:

(a) both male and female toilet clusters; or

(b) individual family washrooms.

6.3.2 Diaper changing stations must:

(a) have a concave changing surface with safety straps or equivalent safety features to prevent risk of fall;

(b) support a child up to a weight of 22 kg;

(c) be mounted on a stable substrate; and

(d) be mounted so that the highest edge or lip of the pull-down deck when opened, is between 700 mm and 850 mm above the floor finish.

6.4 Child Protection Seat

Functional Intent

Child protection seats must be provided at appropriate locations for caregivers of infants or young children to seat the child while they are using the water closet. The child protection seat must be robust and safe for use.

6.4.1 At least one child protection seat must be located either in:

(a) one of the adult-sized water closet cubicles in both male and female toilet clusters; or

(b) individual family washrooms.

6.4.2 Child protection seats, as shown in Figure 61, must:

(a) be equipped with straps or equivalent safety features to prevent risk of fall;

(b) support a seated child up to a weight of 22 kg;

(c) be mounted on a stable substrate;

(d) be mounted so that the bottom of the seat is at least 400 mm above the floor finish; and

(e) have a minimum clearance of 450 mm radius from any obstruction, including the door swing and the edge of the water closet.

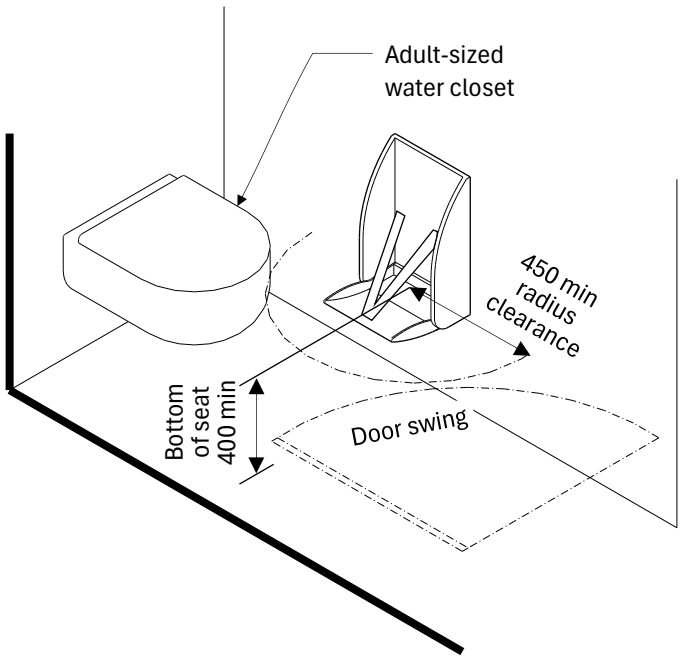


Figure 61
Child Protection Seat in Water Closet Cubicle

6.5 Child-sized Wash Basin and Water Closet

Functional Intent

Child-sized wash basins and child-sized water closets must be provided at appropriate locations for safe and independent use by young children.

6.5.1 At least one child-sized wash basin and water closet must be located either in:

(a) both male and female toilet clusters;

(b) individual family washrooms; or

(c) the stand-alone children's toilet at a toilet cluster.

6.5.2 Child-sized wash basins must:

(a) be mounted such that the top edge does not exceed a height of 550 mm from the floor level; and

(b) have a dimension of not more than 350 mm from the front edge of the basin to the centre of the tap.

6.5.3 Child-sized water closets must:

(a) have a water closet seat with a height between 250 mm and 350 mm from the floor level; and

(b) have flush controls located at a height between 500 mm and 900 mm from the floor level.

Note 1 For alteration works to existing toilets with space constraints, a child-adapter seat on a standard-sized water closet may be provided in-lieu of a child-sized water closet as specified in clause 6.5.3(a). In such cases, clause 6.5.3(b) need not apply.

Note 2 A stand-alone children's toilet is defined as a facility equipped with wash basins and water closets designed to serve multiple children.

6.6 Child-friendly Urinal

Functional Intent

Child-friendly urinals must be provided at appropriate locations for safe and independent use by young children.

6.6.1 Where urinals are provided, at least one child-friendly urinal must be located either in:

(a) the male toilet; or

(b) the standalone children's toilet at a toilet cluster.

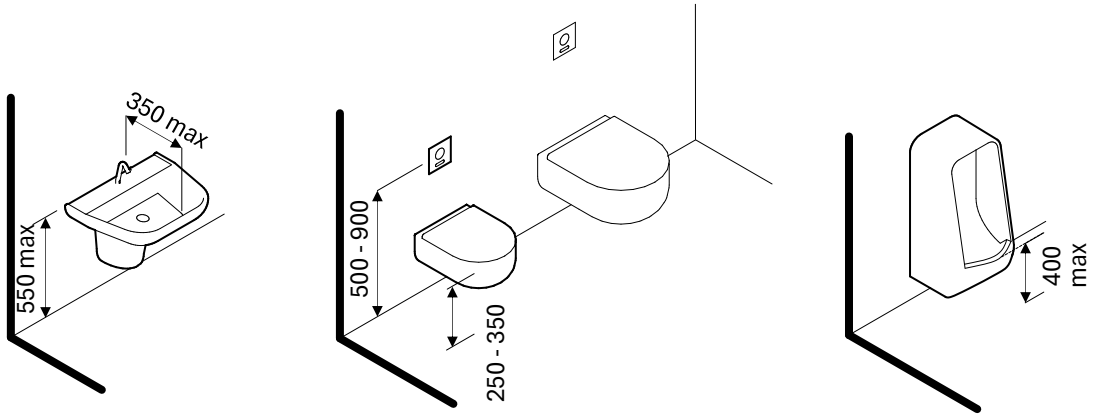
6.6.2 The rim of a child-friendly urinal must be mounted no higher than 400 mm from the floor level.

6.7 Individual Family Washroom

6.7.1 An individual family washroom is a public, unisex washroom serving a family, where users can be accompanied by children, family members or caregivers, as shown in Figure 63.

Note To safeguard access for persons with disabilities, family-friendly facilities should not be integrated with accessible individual washrooms, accessible changing rooms or accessible shower facilities.

6.7.2 For alteration works to existing toilets with exceptional circumstances, an individual family washroom may be combined with an individual accessible washroom. The clear internal dimensions of this combined facility must be at least 2500 mm by 2300 mm.



(a) Child-sized wash (b) Child-sized water closet (c) Child-friendly urinal

Figure 62
Child-friendly Sanitary Facilities

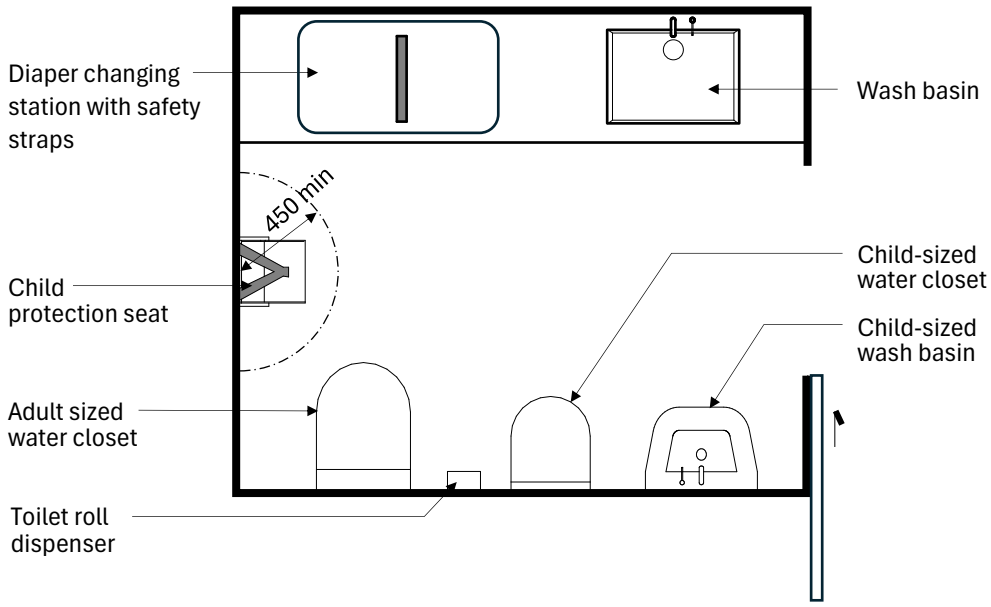


Figure 63
Example of Individual Family Washroom

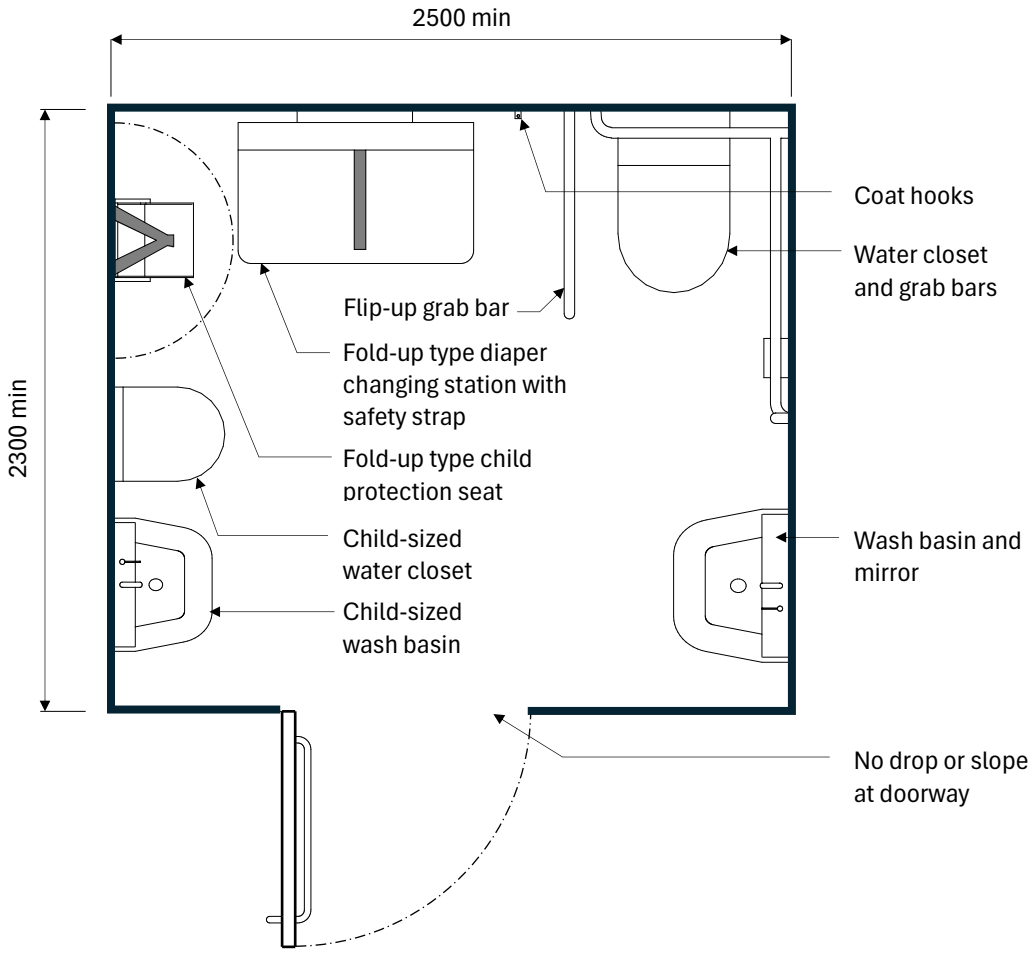


Figure 64
Example of Individual Accessible Family Washroom in Existing Buildings

6.8 Lactation Rooms

Functional Intent

Lactation rooms must be provided at appropriate locations for nursing mothers to breastfeed their infants or express milk. These rooms must ensure privacy and comfort, and be equipped with appropriate facilities to support breastfeeding or expressing milk. Clear signage and information must be displayed to enable users to easily identify and locate the lactation rooms.

6.8.1 Lactation rooms are places where mothers can express milk or breastfeed their infants in a private and comfortable environment.

6.8.2 Lactation rooms must be provided at appropriate locations within common areas to serve intended users.

6.8.3 The minimum number of lactation rooms provided must be in accordance with Table 6.

Table 6
Provision of Lactation Rooms

Type of Use	Gross floor area	Minimum number of lactation rooms required
Office and Business Parks; Shopping centres and multi-purpose complexes; Other non-residential components in mixed developments not listed in this table.	From 5,000 m^2 to 20,000 m^2	1
	Every subsequent 20,000 m^2 or part thereof	1 additional lactation room
Hospitals; Polyclinics, health-care centres and specialist outpatient clinics; Transport terminals and stations; Sports facilities and public swimming pools; Theme parks, amusement centres and community clubs	First 20,000 m^2	1
	Every subsequent 20,000 m^2 or part thereof	1 additional lactation room
Schools, including preschools, primary and secondary school, colleges, universities and other institutions of learning	5,000 m^2 or more	1

6.8.4 A lactation room for a single user, as shown in Figure 65, must:

(a) be a private space that is shielded from view and free from intrusion with a lockable door;

(b) be well-illuminated and ventilated;

(c) not be located within toilets;

(d) have clear internal dimensions of at least 1200 mm by 1500 mm;

(e) have an appropriate seat for breastfeeding or expressing milk;

(f) be equipped with socket outlets located at table height;

(g) have a table or ledge to place breast pumps and personal items; and

(h) have a fixed mirror for adjusting attire.

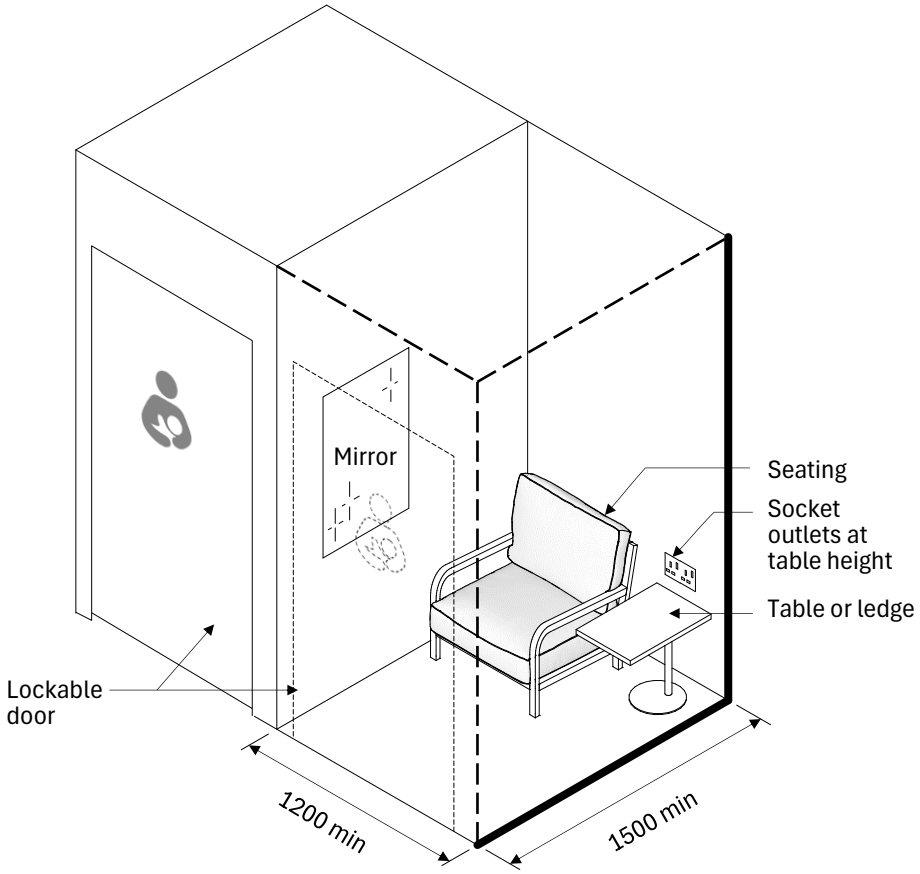


Figure 65
Lactation Room

Advisory to clause 6.8

- In larger buildings, lactation rooms should be distributed to offer convenience and reduce travel time for users. A larger lactation room comprising two or more stations may minimise scheduling conflicts and reduce wait times. In a large room with multiple stations, each nursing station should be equipped with privacy screens or partitions to ensure visual separation between users.
- When lactation rooms are situated near sanitary facilities such as infant diaper changing areas, measures should be taken to segregate these functions to prevent unpleasant odours from sanitary activities affecting mothers using the lactation rooms.
- A lactation room should be provided with a waste bin, a water point for wash basin and a dispenser for hot/cold water. The room should be designed with sound attenuation to minimise sound transmission into adjacent spaces.

Chapter 7:
Residential, Serviced Apartments, Hotels, Hostels and Dormitories

7.1 Residential Development

Functional Intent

All residential buildings must allow persons with disabilities to safely and independently access the site, approach and enter the building and make use of the common facilities. The accessible route connecting between the alighting or boarding points and the residential units must be sheltered and incorporate appropriate resting areas. Residential units must be accessible and adaptable to support ageing-in-place, allowing easy retrofitting without major structural alterations.

7.1.1 At least one accessible and sheltered passenger alighting and boarding point must be provided:

(a) with direct sheltered access to every block of the residential development; and

(b) with seats that do not impede the movement of the wheelchair user.

Advisory to clause 7.1.1(b)

- Seating areas should include designated spaces for wheelchairs. The colour of seats should contrast with their surroundings, avoid causing glare, and feature armrests and backrests to provide support for people whilst resting.

7.1.2 The minimum width for accessible routes to all common facilities must be in accordance with clause 4.2.1.

7.1.3 An open scupper drain is allowed within the required clear width of accessible corridors serving residential units if the scupper drain:

(a) has a width of 150 mm or less and a depth of 50 mm or less; and

(b) is located along one side of the corridor and adjacent to a wall.

7.1.4 Where toilets and showers are provided for common facilities, they must be in accordance with clause 5.1.

7.1.5 At least one entrance in accordance with clause 7.2 must be provided for every residential unit.

7.1.6 At least one bathroom for future retrofitting in accordance with clause 7.3 must be provided in every residential unit so that it can be easily retrofitted for the elderly and wheelchair users.

7.1.7 The clear width of the accessible route from the entrance of a residential unit to the bathroom for future retrofitting must be at least 1000 mm and must be in accordance with Table 7 where the route turns at doorways.

7.1.8 Switches and socket outlets in accordance with clause 7.4 must be provided in every residential unit.

7.2 Entrances to Residential Units

Functional Intent

Entrances to residential units must be accessible or designed to facilitate easy retrofitting for future wheelchair access. The entrance door and its adjacent spaces must have sufficient clearance for wheelchair users to manoeuvre and pass through independently.

7.2.1 The doorway of the entrance must be at least 850 mm for a single leaf door. If the doorway has two independently operated door leaves, at least one active leaf must provide a minimum clear width of 850 mm.

7.2.2 The manoeuvring space at the entrance, as shown in Figure 66, must:

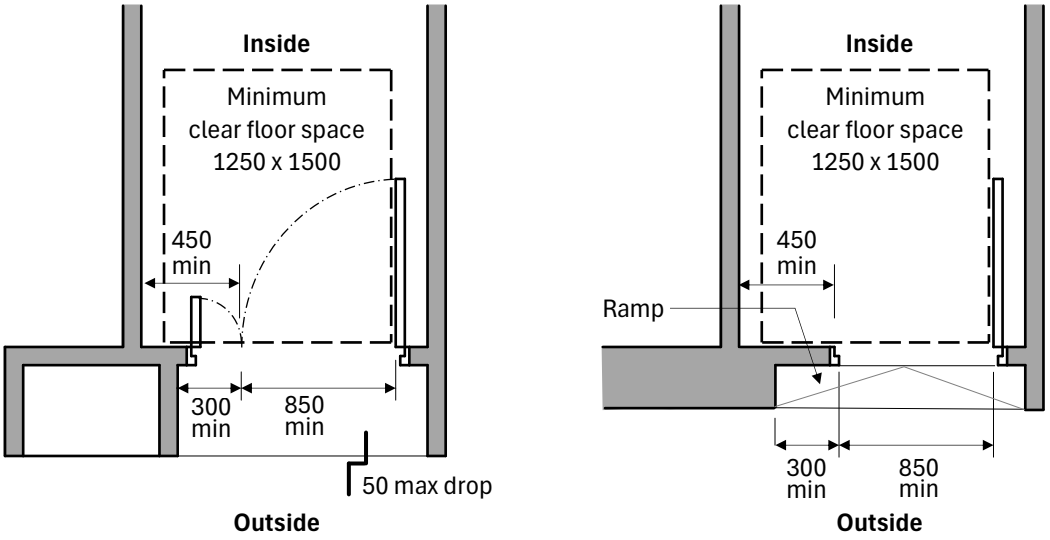
(a) within the unit, have a minimum space of 450 mm adjacent to the leading edge of the door and a minimum clear floor space of 1250 mm wide by 1500 mm deep;

(b) on the push side, have a minimum space of 300 mm adjacent to the leading edge of the door; and

(c) the leading edge of the door leaf must be in accordance with clause 4.4.6.2.

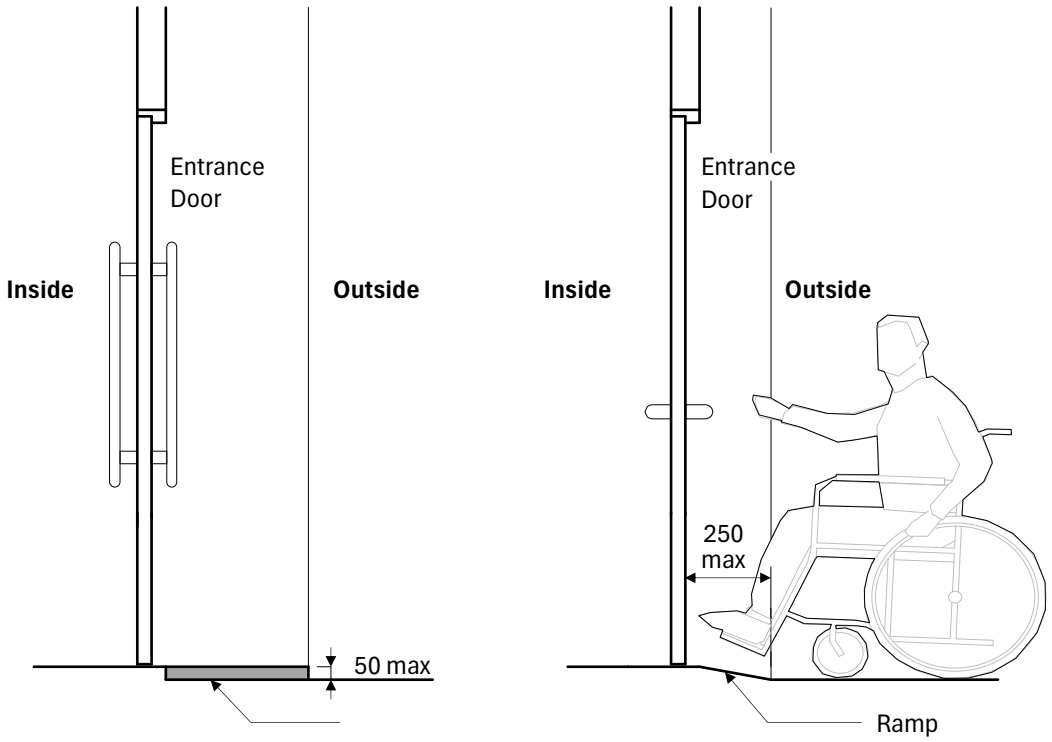
7.2.3 The difference in levels between the floor of the entrance to the residential unit and the abutting common area must not exceed 50 mm. Where the difference in level exceeds 25 mm, the raised level fronting the entrance must consist of non-structural elements that can be easily removed for ramp installation when required, as shown in Figure 67.

7.2.4 Where a ramp is installed at the entrance to the unit, the ramp must not extend more than 250 mm from the face of the door and have a gradient in accordance with Table 4.



(a) Double-leaf Doorway (b) Single-leaf Doorway

Figure 66
Manoeuvring Spaces at Entrance to Residential Units



(a) Maximum level difference at entrance to unit (b) Ramp at entrance to unit

Figure 67
Level Difference at Entrance to Residential Units

7.3 Bathroom for Future Retrofitting in Residential Units

Functional Intent

Bathrooms and corridors within residential units must be accessible or designed to facilitate easy retrofitting for future wheelchair access without requiring extensive alterations.

7.3.1 The bathroom for future retrofitting must comprise a water closet, wash basin and shower facility.

7.3.2 The bathroom must be located at the same level as the entrance of the unit.

7.3.3 The doorway of the bathroom and the minimum clear floor space in front of the doorway must be in accordance with the dimensions in Table 7.

Table 7
Minimum Clear Floor Space at Door Openings in Residential Units

Clear width of doorway (mm)	Minimum clear floor space outside door, centred to doorway (mm)
900 or wider	1000 x 1000
850	1100 x 1100
800	1200 x 1200

7.3.4 The bathroom, as shown in Figure 68, must be in accordance with the following:

(a) have no change in level of more than 25 mm at the doorway of the bathroom;

(b) have an unobstructed passageway with a minimum width of 1000 mm leading from the doorway to the water closet and wash basin;

(c) have a clear floor space of at least 1000 mm by 1000 mm at the front edge of and centred to the water closet; and

(d) provide at least 450 mm clear space on one side of the water closet, measured from its centre to any obstruction to accommodate future installation of grab bars.

7.3.5 Provisions must be made in the bathroom walls so as to allow the installation and safe use of grab bars in accordance with clause 9.4.

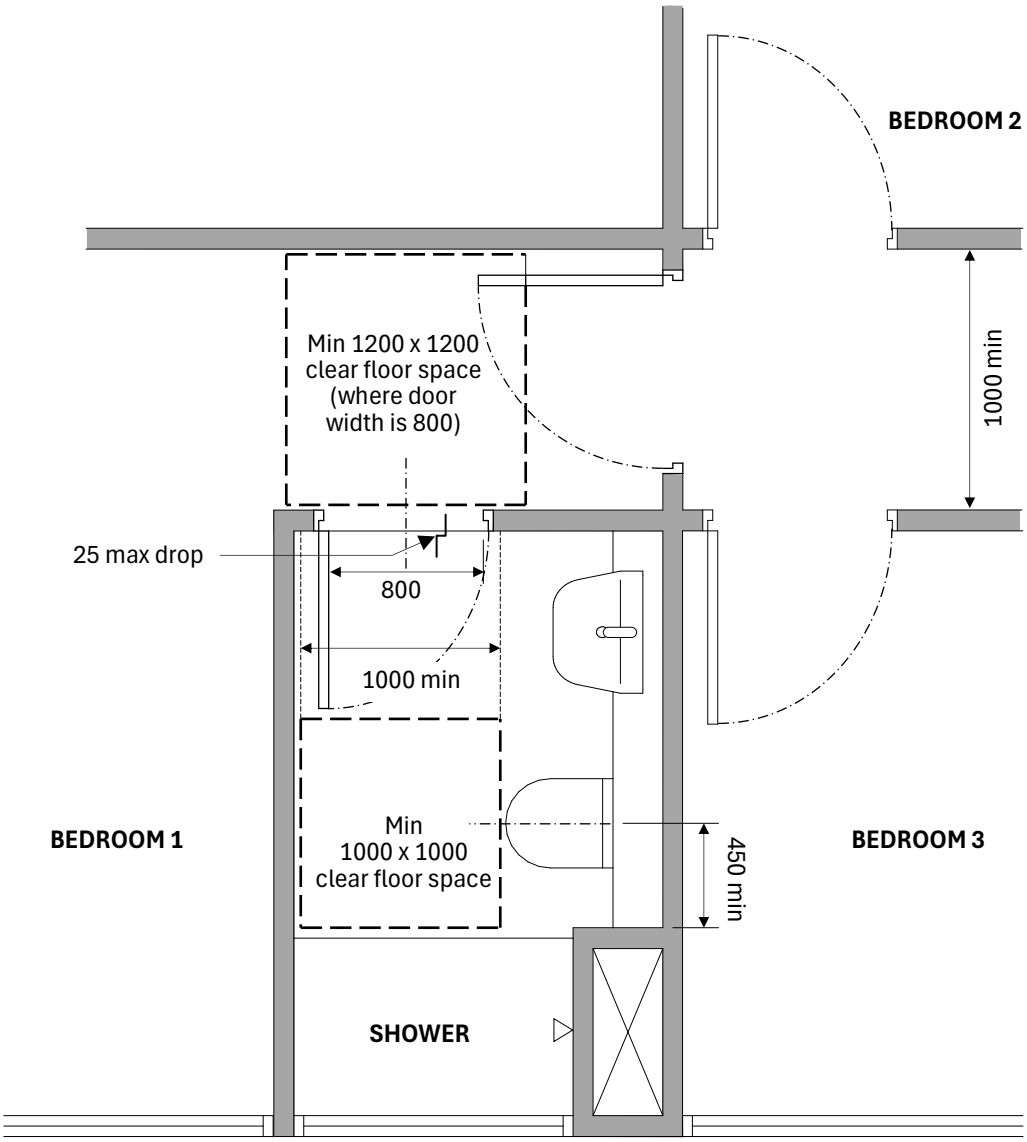


Figure 68
Clear Floor Spaces Along Route to Bathroom for Future Retrofitting

7.4 Switches and Socket Outlets

Functional Intent

Switches and socket outlets in residential units and accessible rooms must be located at appropriate reach heights for wheelchair users.

7.4.1 The switches and socket outlets must be provided at a height of between 450 mm and 1200 mm from the floor level to the centreline of the switches and socket outlets.

Note Clause 7.4 does not apply to dedicated switches and socket outlets that are not readily accessible, nor to those in kitchens intended for appliances designed to remain continuously connected during normal use.

7.5 Accessible Rooms, Guestrooms and Serviced Apartments

Functional Intent

Hotels, boarding houses, chalets, serviced apartments and other similar accommodation facilities must be accessible to persons with disabilities. Accessible rooms suitable for wheelchair users and the elderly must be provided on a proportional basis. These rooms must have sufficient wheelchair manoeuvring spaces and appropriate accessible features to ensure safe and independent use.

7.5.1 The minimum width for accessible routes to all rooms and facilities must be in accordance with clause 4.2.1.

7.5.2 In hotels, boarding houses, chalets, backpacker hotels and serviced apartments, at least one in every 100 guestrooms/serviced apartments or part thereof must be accessible in accordance with clauses 7.5.4 and 7.5.5.

7.5.3 In addition, at least one in every 50 guestrooms or part thereof must be provided with elder-friendly features such as grab bars adjacent to the water closet and shower or bathtub.

Note Clause 7.5.3 does not apply to serviced apartments.

Advisory to clauses 7.5.2 and 7.5.3

- Accessible rooms, guestrooms or serviced apartments should offer a choice of locations and types, provide standard facilities equivalent to that of other rooms or units and be connectable to an adjoining room.

7.5.4 Doorways to entrances of accessible rooms, guestrooms and serviced apartments must:

(a) be level; and

(b) have manoeuvring spaces in accordance with clauses 7.2.1 and 7.2.2.

7.5.5 Sanitary and shower/bath facilities serving accessible rooms, guestrooms and serviced apartments must be in accordance with clauses 5.2 and 5.7.

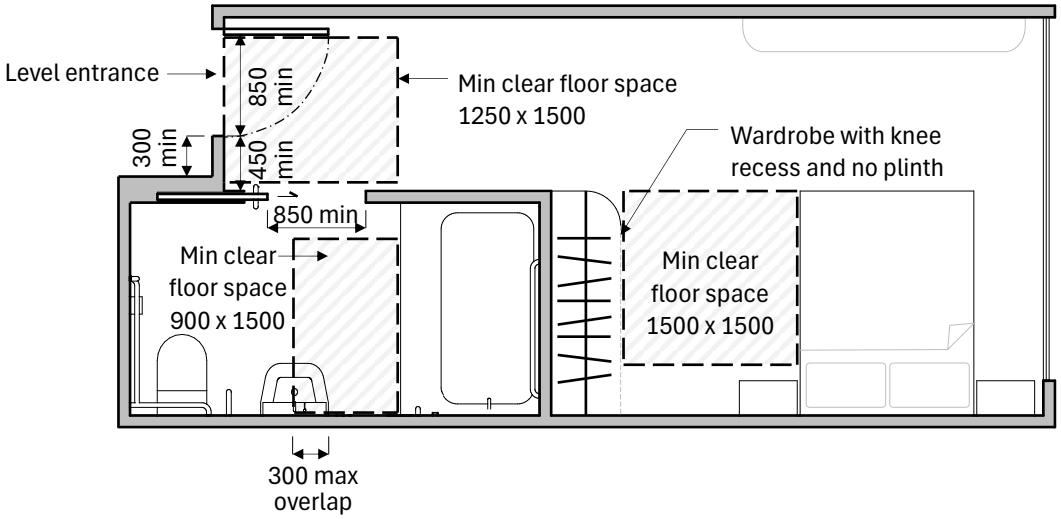
Note Where other standard rooms provide en-suite sanitary facilities, accessible rooms, guestrooms and serviced apartments must also be equipped with en-suite sanitary facilities.

Advisory to clause 7.5.5

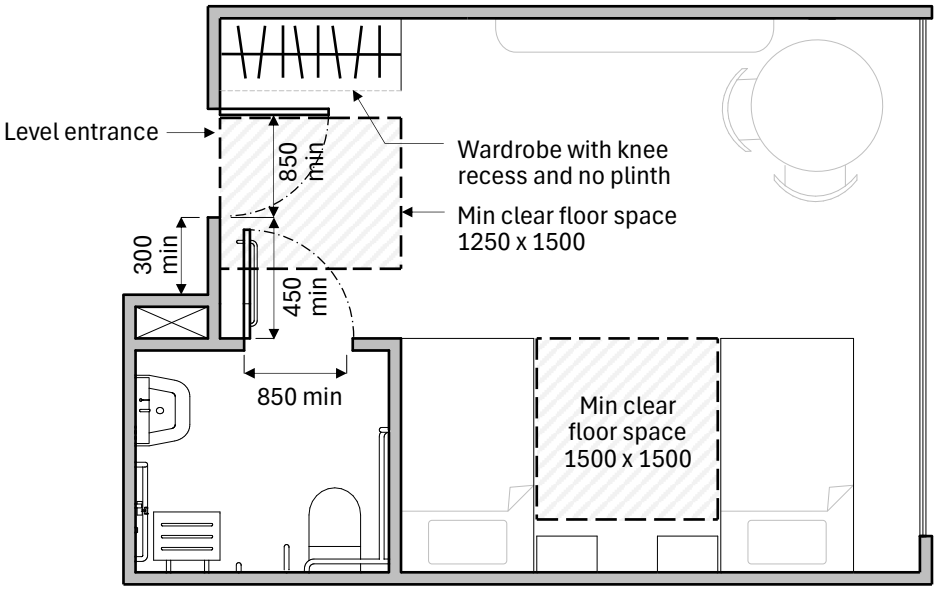
- Where only one accessible room, guestroom and serviced apartment with en-suite facility is provided, it should include an accessible shower rather than a bath, as many persons with disabilities and the elderly can only independently use a shower.

7.5.6 An unobstructed clear floor space of at least 1500 mm by 1500 mm must be provided for wheelchairs to manoeuvre within the accessible room, guestrooms or serviced apartment.

7.5.7 Switches and socket outlets in accessible rooms must be provided in accordance with clause 7.4.



(a) Example of accessible guestroom with en-suite bathroom with bathtub



(b) Example of accessible guestroom with en-suite bathroom with shower seat

Figure 69
Example of Accessible Rooms in Hotels

7.6 Student Hostels, Halls of Residence and Dormitories

Functional Intent

Student hostels, halls of residence, dormitories and other similar accommodation facilities must be accessible to persons with disabilities. Accessible rooms suitable for wheelchair users must be provided on a proportional basis, have sufficient wheelchair manoeuvring spaces and appropriate accessible features to ensure safe and independent use.

7.6.1 The minimum width for accessible routes to all rooms and facilities must be in accordance with clause 4.2.1.

7.6.2 In student hostels, halls of residence and dormitories, at least one in every 100 guestrooms or part thereof must be accessible, and accessible sanitary and shower/bath facilities must be provided in accordance with clauses 5.2 and 5.7.

7.6.3 Switches and socket outlets in accessible rooms must be provided in accordance with clause 7.4.

7.7 Purpose-built Workers' Dormitories

Functional Intent

Purpose-built workers' dormitories must include accessible facilities for residents who are temporarily injured and require the use of a wheelchair. Accessible rooms equipped with suitable shower or bath facilities must be provided.

7.7.1 The minimum width for accessible routes to the accessible room and common facilities must be in accordance with clause 4.2.1.

7.7.2 In purpose-built workers' dormitories, at least one room must be accessible, and accessible sanitary and shower/bath facilities must be provided in accordance with clauses 5.2 and 5.7.

7.7.3 Switches and socket outlets in accessible rooms must be provided in accordance with clause 7.4.

Chapter 8:
Signage and Wayfinding

8.1 International Symbol of Access for Persons with Disabilities

Functional Intent

The universally recognised International Symbol of Access must be used to identify accessible features and facilities used by persons with disabilities.

8.1.1 General

8.1.1.1 Where a building is required to be made accessible, all users must be made aware of the available facilities to ensure that persons with disabilities are informed of suitable provisions for them.

8.1.1.2 The International Symbol of Access must be permanently and conspicuously displayed to direct or indicate the location of various accessible facilities in the building. The signs provided must be of durable material.

8.1.2 Symbol of Access

8.1.2.1 The Symbol of Access must be displayed to identify accessible features and facilities designed for use by persons with disabilities.

8.1.2.2 The form of the Symbol of Access must be in accordance with the following:

(a) it must consist of two elements, namely, a white symbolised figure in a wheelchair and a plain blue square background;

(b) the proportional layout of the symbolised figure must be in accordance with Figure 70 and be of a sufficient size for visibility, at least 60 mm along the shorter dimension;

(c) the symbolised figure must face to the right.

8.1.2.3 The Symbol of Access must be displayed:

(a) outside the building to identify buildings with accessible facilities; and

(b) at areas where facilities are provided for persons with disabilities.

8.2 Signs Identifying Accessible Facilities

Functional Intent

Signage incorporating the Symbol of Access must be displayed prominently for persons with disabilities to identify the facilities intended for them.

8.2.1 The Symbol of Access, as shown in Figure 70, must be displayed at various facilities and destinations for persons with disabilities such as lifts, entrances, toilets, vehicle parks, service and information counters and the like.

8.3 Directional Signs

Functional Intent

Directional signs incorporating the Symbol of Access and the destination facility must be displayed prominently for persons with disabilities to find their way to the facilities intended for them.

8.3.1 Directional signs incorporating the Symbol of Access with indication of the facility, as shown in Figure 71, must be displayed at main lobbies or passageways and at points where there is a change of direction in order to direct persons with disabilities to the various facilities such as lifts, entrances, toilets, vehicle parks and the like.

8.3.2 Where the location of the designated facility is not obvious or is distant from the approach viewpoints, directional signs incorporating the Symbol of Access, as shown in Figure 71, must be placed along the route leading to the facility.

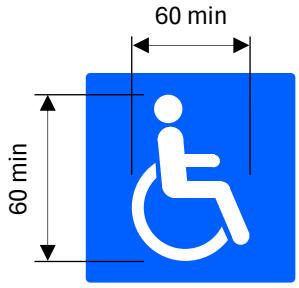


Figure 70
Symbol of Access for Persons with Disabilities

(a) To accessible facility (b) To accessible ramp/route (c) To accessible lift (d) To accessible parking

(e) To accessible individual washroom (f) To toilet facilities with accessible washroom

Figure 71
Examples of Directional Signs for Facilities

8.4 Signage

Functional Intent

Signage must be clearly visible, with graphical symbols and text that are easy to read and understand.

8.4.1 All characters and graphical symbols on signage must:

(a) be glare free; and

(b) have colours and tones that contrast with the following background:

(i) within the signs; and

(ii) with the surrounding or substrate.

8.4.2 The size of graphical symbols on signage must be of a sufficient size for visibility, at least 60 mm along the shorter dimension.

Advisory to clause 8.4

- The content of signs should be simple, short and easy to understand through consistent use of graphical symbols or pictograms and text throughout a building.
- Letters and numbers on signs should use sans serif font and use Arabic numbers. Multi-word text should be arranged with left alignment, begin with an upper-case letter, continue with lower case letters for better readability.
- Where arrows are part of a sign, arrows should be located on the side of the sign to which they are pointing.
- Consideration should also be given to the location of signs so that they are clearly visible to people who may be walking, standing or seated, or in a crowded situation.
- Careful consideration of lighting is essential, as poor illumination can create glare and strong shadows that reduce the legibility of signs.
- Additional guidance for design of signage can be found in SS 599 – Guide for wayfinding signage in public areas.

8.5 Tactile and Braille

Functional Intent

Tactile information and Braille must be incorporated in the signage to allow persons with visual impairment to easily identify accessible facilities.

8.5.1 Tactile

8.5.1.1 Tactile signs must:

(a) have raised tactile characters, graphical symbols or pictograms that:

(i) have a raised relief of at least 1 mm; and

(ii) are between 16 mm and 50 mm high; and

(b) be duplicated in Braille in accordance with clause 8.5.2.

8.5.2 Braille

8.5.2.1 Where Braille forms a part of a sign, a locator (e.g. semi-circular notch or tactile shape) must be located at the left-hand edge of the sign to help locate the Braille message as shown in Figure 72.

8.5.2.2 Braille must:

(a) be located directly below the text and arranged with left alignment;

(b) where an arrow is used in the sign, provide a small arrow for Braille readers;

(c) be raised, dome-shaped and comfortable to touch without any sharp edges; and

(d) be in accordance with the specification for Braille on signs as shown in Figure 73:

(i) dot-based diameter is 1.5 mm;

(ii) distance between dots in same cell is 2.5 mm;

(iii) distance between corresponding dots in adjacent cells is 6.5 mm;

(iv) distance between corresponding dots from one cell directly below is 10 mm;

(v) dot height is between 0.6 mm and 0.9 mm.

Advisory to clause 8.5

- To inform persons with visual impairment of signs with tactile and Braille information, TGSI, measuring 600 mm wide by 300 mm deep, commencing 300 mm away from the edge of the wall surface, should be provided on the floor.

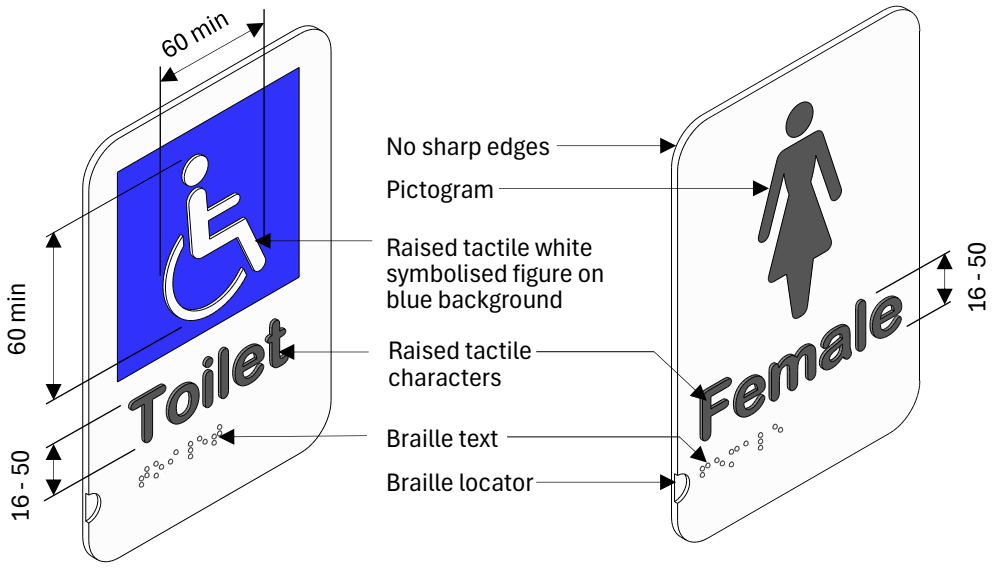


Figure 72
Example of Tactile and Braille Signs

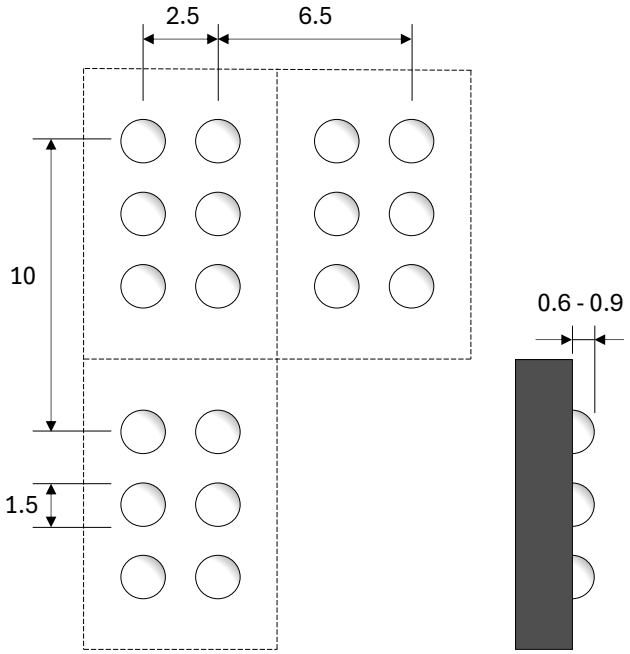


Figure 73
Specifications for Braille on Signage

8.6 Service and Information Counters

Functional Intent

Service counters must be accessible to and usable by wheelchair users. They must be equipped with appropriate assistive listening system for people who are hard-of-hearing.

8.6.1 Where service counters are provided, at least one counter must be catered for wheelchair users and persons who are hard-of-hearing. These service counters must:

(a) have part of the counter catered for wheelchair users and:

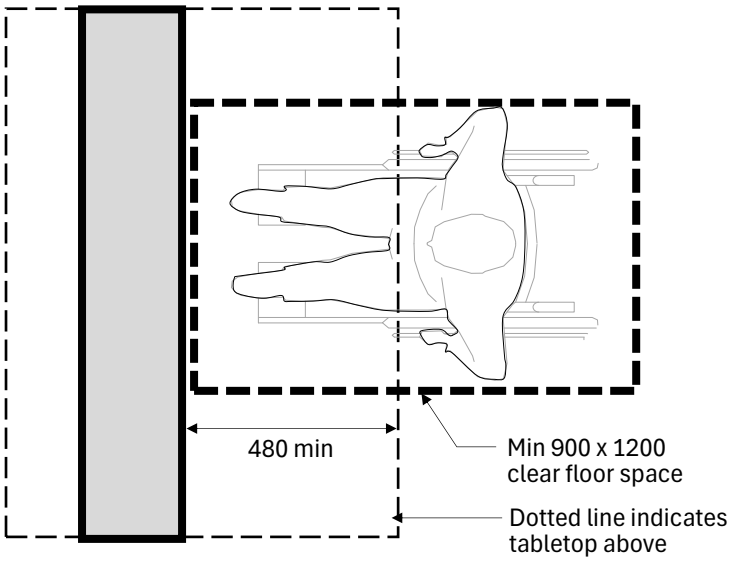
(i) where it serves as a writing surface, must not be more than 800 mm from the floor level and be provided with the required clear knee and toe space as shown in Figure 74; or

(ii) where it does not serve as a writing surface, must not be more than 860 mm from the floor level;

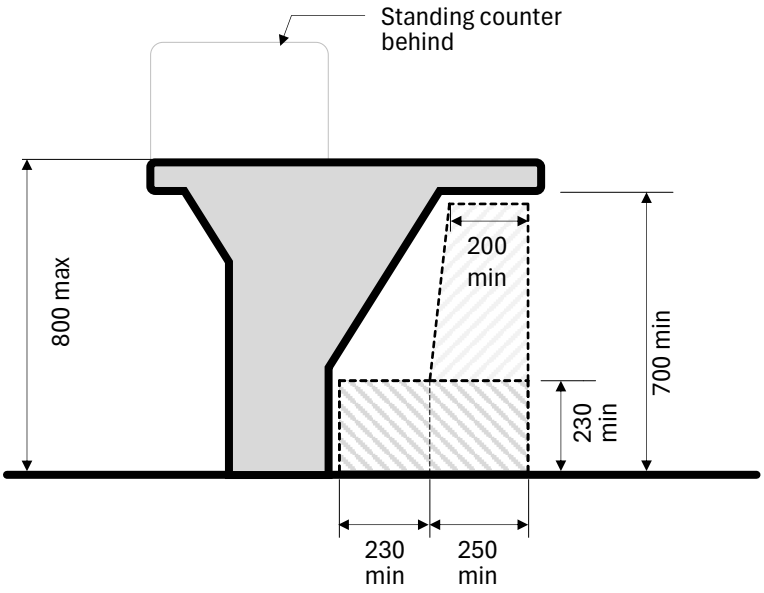
(b) have a hearing enhancement system provided in accordance with clause 9.6.

8.6.2 A clear floor space of at least 900 mm by 1200 mm must be provided at counters catered for wheelchair users.

8.6.3 Where a forward approach is used, a clear knee space of at least 900 mm wide, 480 mm deep and 700 mm high must be provided which may overlap the clear floor space by a maximum of 480 mm.



(a) Plan of service counter with forward approach



(b) Section of service counter with clear knee space

Figure 74
Service and Information Counters

Chapter 9:
Components of a Building

9.1 Illumination

Functional Intent

Lighting must provide sufficient illumination suitable for people who are partially sighted, enabling them to navigate and use the premises safely and effectively.

9.1.1 Lighting must be uniform with no extreme difference in the level of brightness.

9.1.2 Lighting must not cause reflection, glare, or strong shadows that would affect wayfinding, perception of hazards, or give rise to optical illusions.

Advisory to clause 9.1

- Controls and operating mechanisms should be illuminated to at least a level of 100 lux, while signage should be illuminated to at least a level of 200 lux.

9.2 Controls and Operating Devices

Functional Intent

The design, construction and installation of controls and operating devices must enable independent and safe use by persons with disabilities.

9.2.1 Controls and operating devices include but are not limited to, levers or mixer taps, activation devices, window openers, locks and switches, keypads, card readers and intercom buttons, etc.

9.2.2 The operable parts of controls, as shown in Figure 75, must be:

(a) located at 350 mm or more from the internal corner of a space or any obstruction;

(b) located at a height of between 450 mm and 1200 mm from the floor level;

(c) located adjacent to a minimum clear floor space of 900 mm by 1200 mm;

(d) operable with a force of 22 N or less;

(e) operable by one hand; and

(f) of a type that does not require tight grasping, pinching or twisting of the wrist.

9.2.3 Controls for power-operated swing doors, as shown in Figure 76, must:

(a) be in accordance with clauses 9.2.2(b) to (f);

(b) be located at least 600 mm from the internal corner of a room or obstruction;

(c) have a clear 1000 mm minimum distance from the swing of the arc of the door;

(d) allow sufficient opening time for persons with mobility aids to pass through the door safely before it closes; and

(e) contrast in colour with their background.

Advisory to clause 9.2

- Operating controls and devices should be designed and installed consistently to facilitate identification and use by persons with disabilities. All switches and controls should be easy to understand without requiring specialist knowledge. For devices that wheelchair users need to view and interact with, such as keypads, card readers, and touchscreen display, installation should be at a height between 800 mm and 1000 mm from the floor level.
- Manual controls for power-operated doors should be distinguishable against the background and should not be located such that a person, having used the control, needs to move to avoid contact with the door as it opens.
- Controls for power-operated sliding doors should not be mounted on the sliding door. Where it is mounted on the sliding door, the height should be between 800 mm and 1000 mm from the floor level.

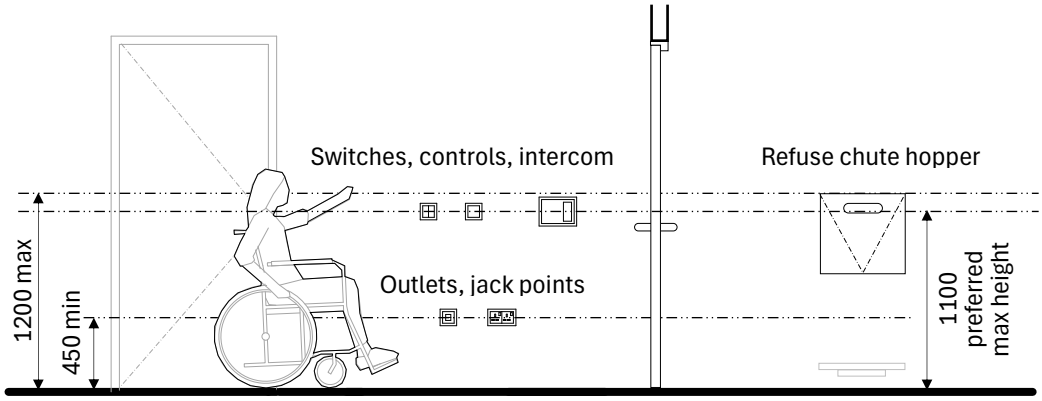


Figure 75
Controls and Operating Mechanisms

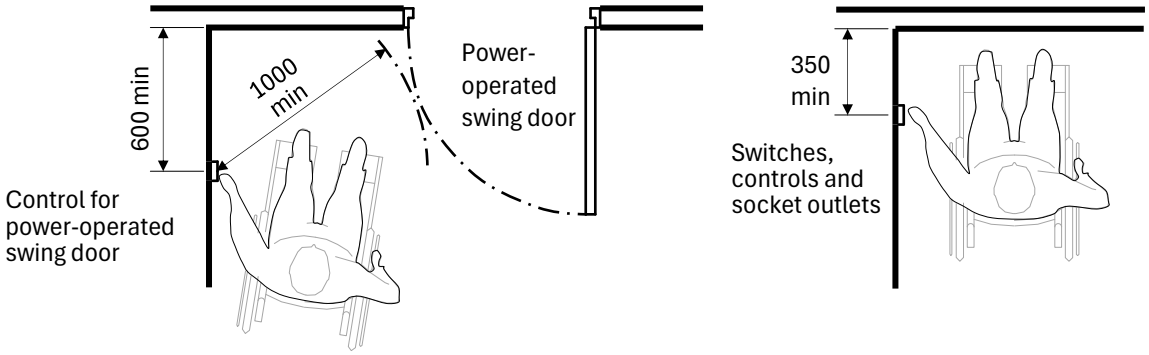


Figure 76
Distance of Controls from Obstructions

9.3 Handrails

Functional Intent

Handrails must be robust and provide comfortable support and guidance for users.

9.3.1 Handrails must:

(a) have adequate resistance to hand slippage;

(b) be free of any sharp or abrasive elements;

(c) be installed to resist a force of at least 1.3 kN applied at any position and in any direction without deformation or loosening or rotation of the fastenings or fittings;

(d) have continuous gripping surfaces, without interruptions or obstructions that can break a hand hold;

(e) have a circular section of 32 mm to 50 mm in diameter or an equivalent gripping surface as shown in Figure 77(a); and

(f) have a clear space between the handrail and all wall surfaces as shown in Figure 77(b) of:

(i) a minimum of 40 mm; or

(ii) a minimum of 60 mm where the wall has a rough surface.

9.3.2 A recess containing a handrail must extend at least 450 mm above the top of the handrail as shown in Figure 77(b).

9.4 Grab Bars

Functional Intent

Grab bars must be robust and allow safe and comfortable use by users for support.

9.4.1 Grab bars must:

(a) have adequate resistance to hand slippage;

(b) be free of any sharp or abrasive elements;

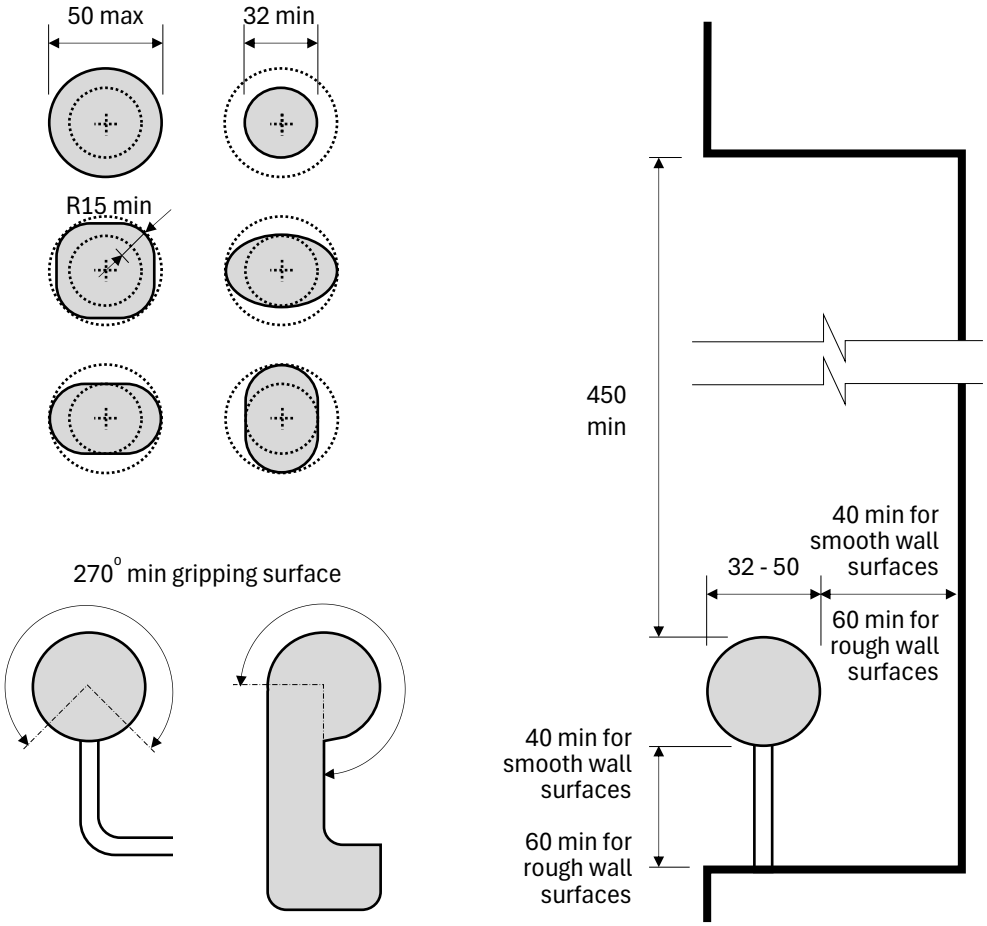
(c) be installed to resist a force of at least 1.3 kN applied at any position and in any direction without deformation or loosening or rotation of the fastenings or fittings;

(d) have a diameter of between 32 mm and 45 mm or a shape that provides an equivalent gripping surface; and

(e) have a clear space between the grab bar and all wall surfaces of:

(i) a minimum of 40 mm; or

(ii) a minimum of 60 mm where the wall has a rough surface.



(a) Examples of acceptable handrail cross-sectional profiles

(b) Handrail in recess and clearances from wall

Figure 77
Handrails

9.5 Seating Spaces for Wheelchair Users

Functional Intent

Adequate seating spaces for people using mobility aids, including wheelchair users, must be provided on a proportional basis at appropriate locations. These spaces must be easily identifiable and integrated among standard seating areas.

9.5.1 General

9.5.1.1 Where fixed seating arrangements are provided, seating spaces for wheelchair users must be provided.

9.5.1.2 Seating spaces must be connected to accessible routes and access must be direct and unobstructed.

9.5.1.3 Directional signs in accordance with clause 8.3 must be clearly displayed to direct persons with disabilities to the seating spaces.

Advisory to clause 9.5

- Where fixed seats are provided, empty spaces across different locations and types should be provided between the seats to accommodate wheelchair users. In addition, where two or more wheelchair spaces are provided, at least two wheelchair spaces should be located side by side to allow two wheelchair users to sit together and alongside fixed seats.
- There should be good sight lines from all seating positions so that viewers are able to see the speaker, a person assisting with sign language, the projection screen, and the presentation, performance, or sports event.

9.5.2 Seating Spaces

9.5.2.1 Where fixed seating arrangements are provided, including in cinemas, theatres, concert halls, stadia, retractable tiered seatings and the like, at least two seating spaces for wheelchair users must be provided for the first 200 seats. One additional seating space for wheelchair users must be provided for every subsequent 200 seats or part thereof.

9.5.2.2 Seating spaces for wheelchair users among fixed seating arrangements, as shown in Figure 78, must:

(a) be clearly identified; and

(b) have a clear floor space of not less than 900 mm wide by 1200 mm deep.

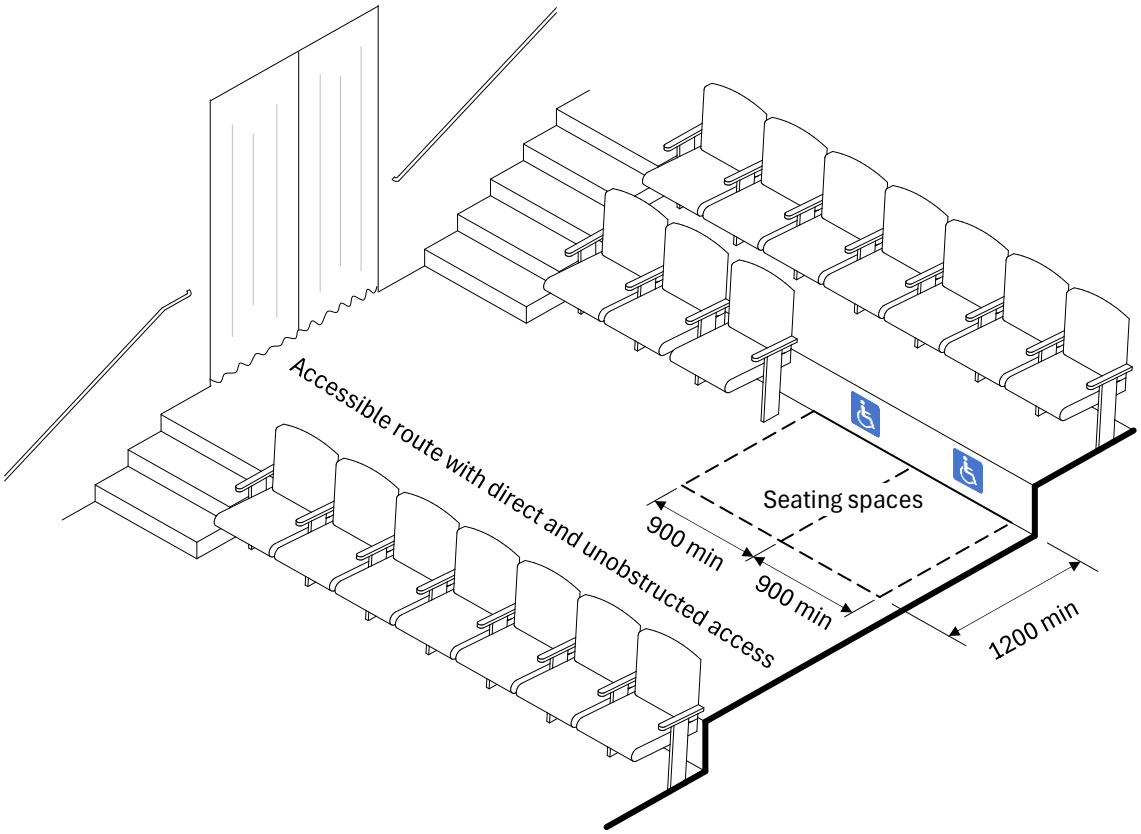


Figure 78
Seating Spaces

9.5.3 Seating Spaces at Eating Establishments

9.5.3.1 Where fixed seating is provided in hawker centres, food courts and other eating outlets and establishments, at least two tables for use by persons with disabilities must be provided for the first 20 tables. One additional table must be provided for every subsequent 10 tables or part thereof.

9.5.3.2 The Symbol of Access in accordance with Chapter 8 must be conspicuously displayed on the tables intended for wheelchair users.

9.5.3.3 The height of the table provided for wheelchair users must not be higher than 800 mm with a minimum clear knee space of 700 mm high and 480 mm deep.

9.5.3.4 A minimum clear space of 750 mm along the edge of the table must be provided where the seating space for wheelchair users is located.

9.5.3.5 An accessible route with a minimum clear width of 1800 mm must be provided in front of the stalls.

9.5.3.6 An accessible route with a minimum clear width of 900 mm must be provided from the primary accessible route to the tables intended for wheelchair users.

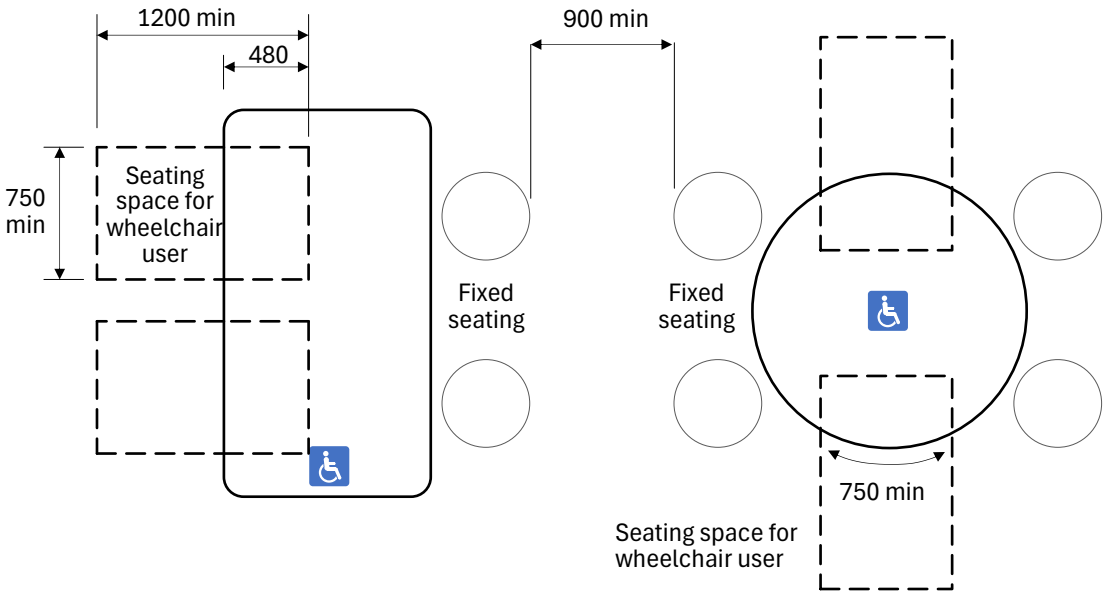


Figure 79
Examples of Seating Spaces at Eating Establishments

9.6 Hearing Enhancement Systems

Functional Intent

Suitable hearing enhancement systems for persons who are hard-of-hearing must be provided at information/service counters and in rooms and spaces where audible information is conveyed to a captive audience.

9.6.1 A hearing enhancement system must be provided:

(a) in any space or room with a floor area more than 75 m^2 used for conferences, meetings, lectures, classes, presentations, performances or films and the like; and

(b) at the main public information/service counters, including reception desk, information points and the like.

Note Clause 9.6.1 does not apply to residential developments, parks and open spaces including civic plazas; markets, hawker or food centres and eating establishments, classrooms in pre-schools, primary, secondary schools and pre-university, factories, workshops, industrial buildings and office/showroom areas in warehouses, and purpose-built workers' dormitories.

9.6.2 Hearing enhancement systems that comply with clause 9.6.1(a) must:

(a) where an induction loop is used, have an area of coverage not less than 75% of the floor area of the room; or

(b) where the system requires the use of receivers or similar devices:

(i) have an area of coverage not less than 75% of the floor area of the room;

(ii) provide at least two receivers for the first 100 persons; and

(iii) provide one additional receiver for every subsequent 50 persons or any part thereof.

9.6.3 Where a hearing enhancement system is provided in accordance with clause 9.6.1, the International Symbol of Access for persons who are hard-of-hearing must be conspicuously displayed, in accordance with clause 8.4, and as shown in Figure 80.

(a) Symbol of Access for persons who are hard-of-hearing

(b) Hearing enhancement system that operates with telecoil

Figure 80
Symbol of Access for Persons who are Hard-of-hearing

Advisory to clause 9.6

- Hearing enhancement systems, such as those utilising induction loop, infrared, radio frequency, Bluetooth or Wi-Fi, are commonly used to provide an enhanced level of sound. Expert advice should be sought when selecting an appropriate system for the specific situation and purpose.
- To ensure the proper installation and functionality of an induction loop system, the system should be designed and installed to suit the room size and shape. The system should be tested and commissioned in accordance with IEC 60118-4.
- Public address systems should be clearly audible and equipped with a hearing enhancement system and visual information display systems to show important messages.

9.7 Warning Tactile Ground Surface Indicators (TGSI)

Functional Intent

Warning tactile ground surface indicators must be provided consistently to facilitate detection of hazards for persons with visual impairment.

9.7.1 The warning TGSI must comprise of truncated domes that:

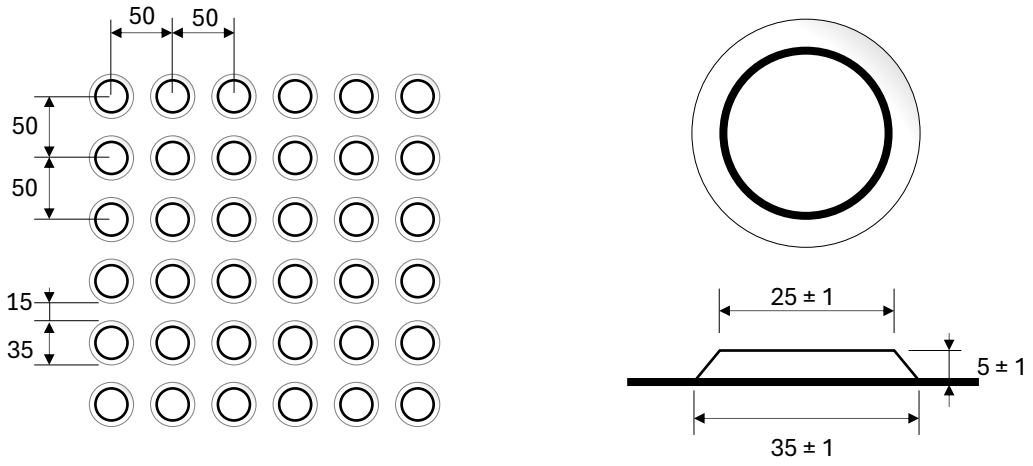
(a) have a base diameter of 35 mm ± 1 mm;

(b) have a top diameter of 25 mm ± 1 mm;

(c) have a height of 5 mm ± 1 mm;

(d) are spaced 50 mm apart, centre to centre; and

(e) are slip-resistant.



(a) Plan view (b) Detail of truncated dome

Figure 81
Warning Tactile Ground Surface Indicators (TGSI)

Composition of the Code Review Committee

The Code Review Committee comprised representatives from the following organisations:

1 Government Agencies

(a) Building and Construction Authority (Chair)

(b) Housing and Development Board

(c) Land Transport Authority

(d) National Parks Board

(e) Urban Redevelopment Authority

2 Institutions

(a) National University of Singapore

(b) Singapore Association of Occupational Therapists

(c) Singapore University of Technology and Design

3 Social Service Agencies

(a) Disabled People's Association

(b) Handicaps Welfare Association

(c) Muscular Dystrophy Association (Singapore)

(d) Singapore Association of the Visually Handicapped

(e) SPD

4 Trade Associations and Chambers

(a) Real Estate Developers' Association of Singapore

(b) Singapore Institute of Architects

The Building and Construction Authority would like to extend its appreciation to all persons with disabilities, representatives from interest groups and industry associations who have contributed their invaluable time, inputs and efforts towards the review and development of this Code.