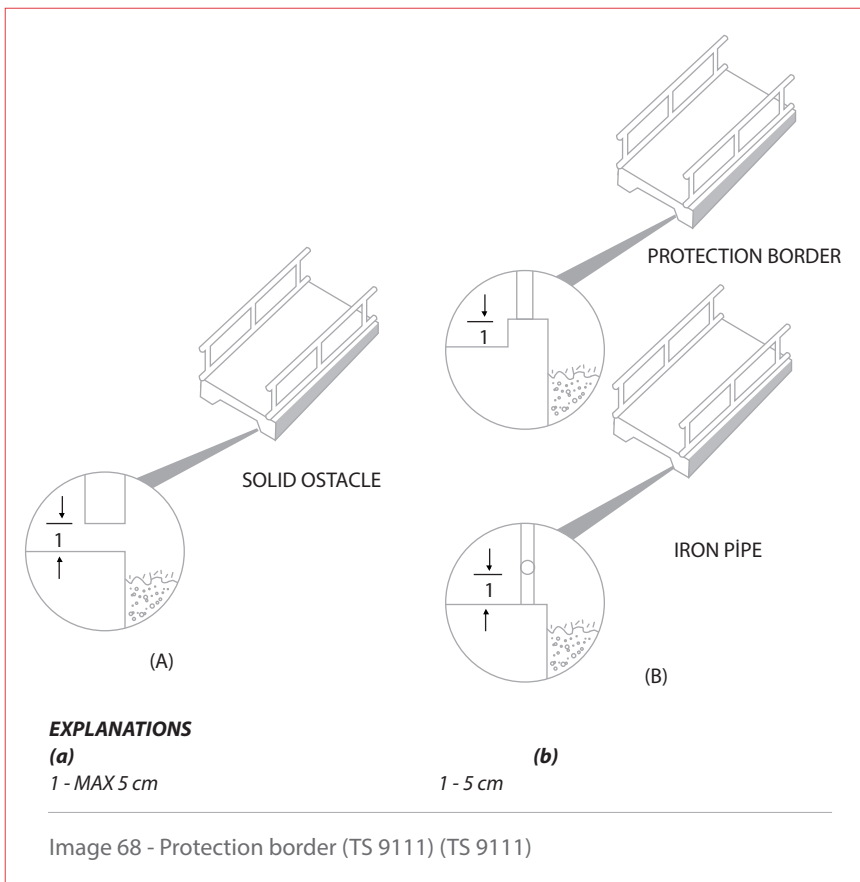
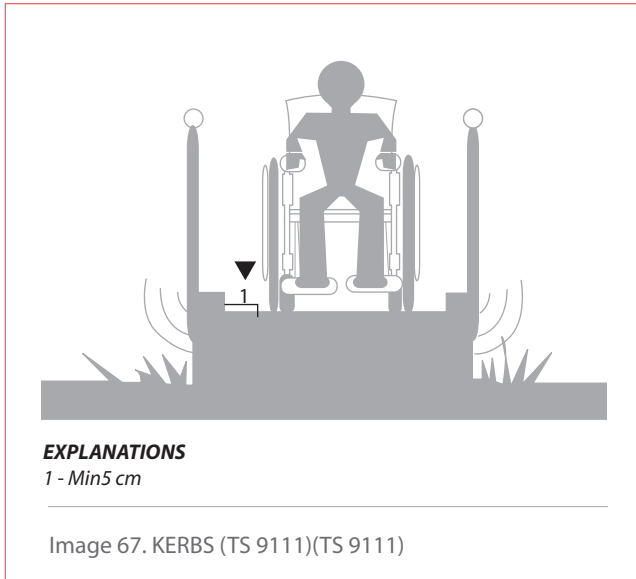




13.7.10. Kerbs

Kerbs min 5 cm should be placed where ramps and platforms do not have a protection.





13.7.11. Doormat

Doormat should be fairly rigid to withstand heavy traffic and absorb dirt and moisture. The doormat can be inserted into the floor so that it is level with the floor surface or have a rubber backed surface to minimise slipping and bunching. (TS 9111).

13.7.12. Mailbox

Mailbox (not the postal box) should be accessible from both the interior and exterior of the building. If the mailbox is located on the door then the receptacle should have a maximum height of 750 mm when measured from the underside of the door to the opening of the box where the mail is deposited. (TS 9111)

13.7.13. Entrance door

Entrances in buildings should meet certain requirements when designing for accessibility, safety and function because entrances that are accessible will benefit everyone, including persons with disabilities.

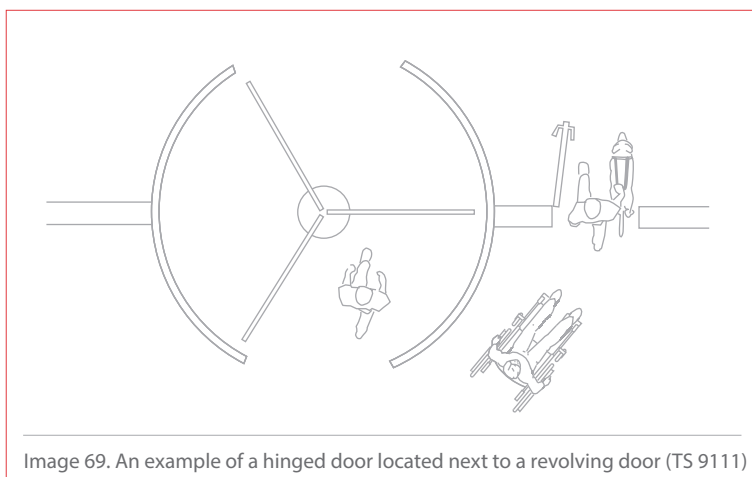
The primary or main entrance should be designed with an open door width of no less than 150 cm clear to allow for ease of access to the building. If there is a pair of doors (side-by-side), each of the doors should have a minimum width of 100 cm (in the event only 1 door is operated by a power-assist). There should be no threshold at the entrance; however, if it is necessary to have a threshold then the height of the threshold should be no higher than 13 mm to allow a person using a wheelchair or other mobility device to overcome the difference. The threshold should be beveled or a flexible threshold is an acceptable preference.

Ensure that there are no obstacles at the entrance or entranceway to interfere with the ease of movement for persons with disabilities.

Buildings may require intercom systems for security reasons should locate the intercom or call buttons for ease of access at a height between 90 and 140 cm – whether it is in the interior, exterior or both – when measured from the midline of the call button to the finished floor. If the call systems are on the exterior of the building then it should be protected from inclement weather conditions, including the element of wind.

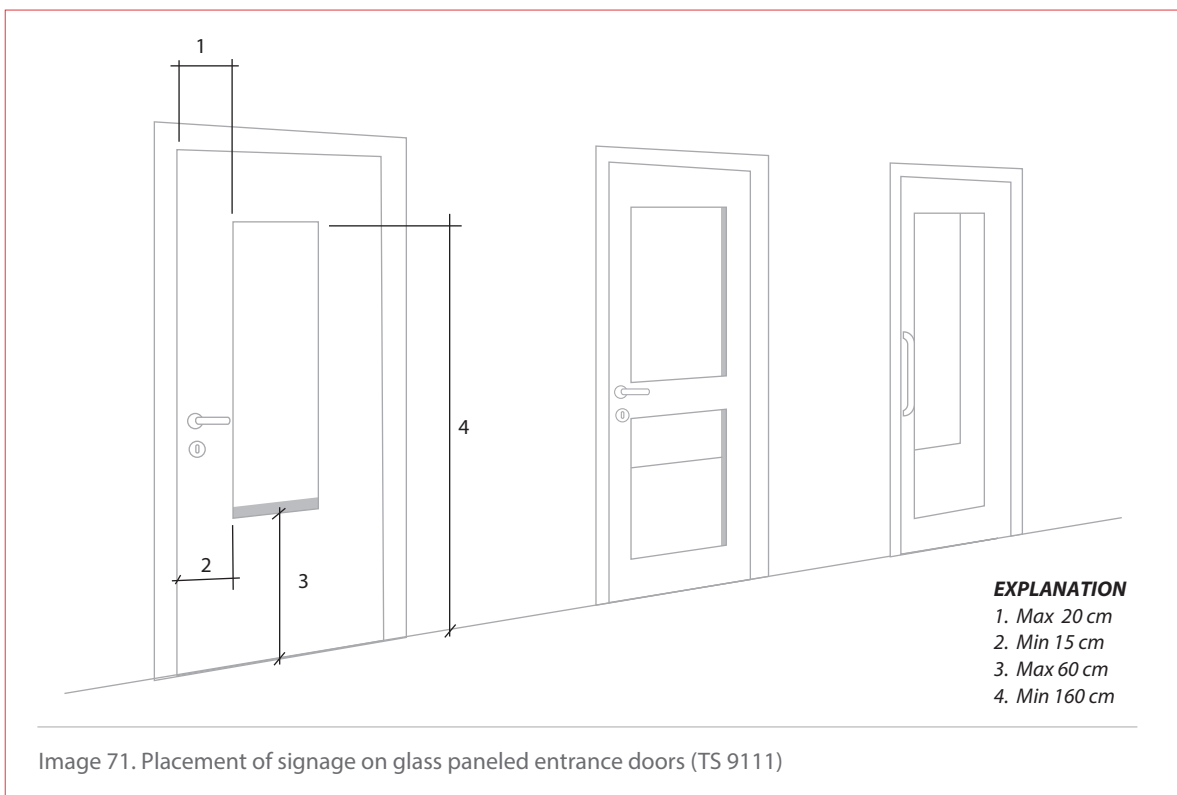
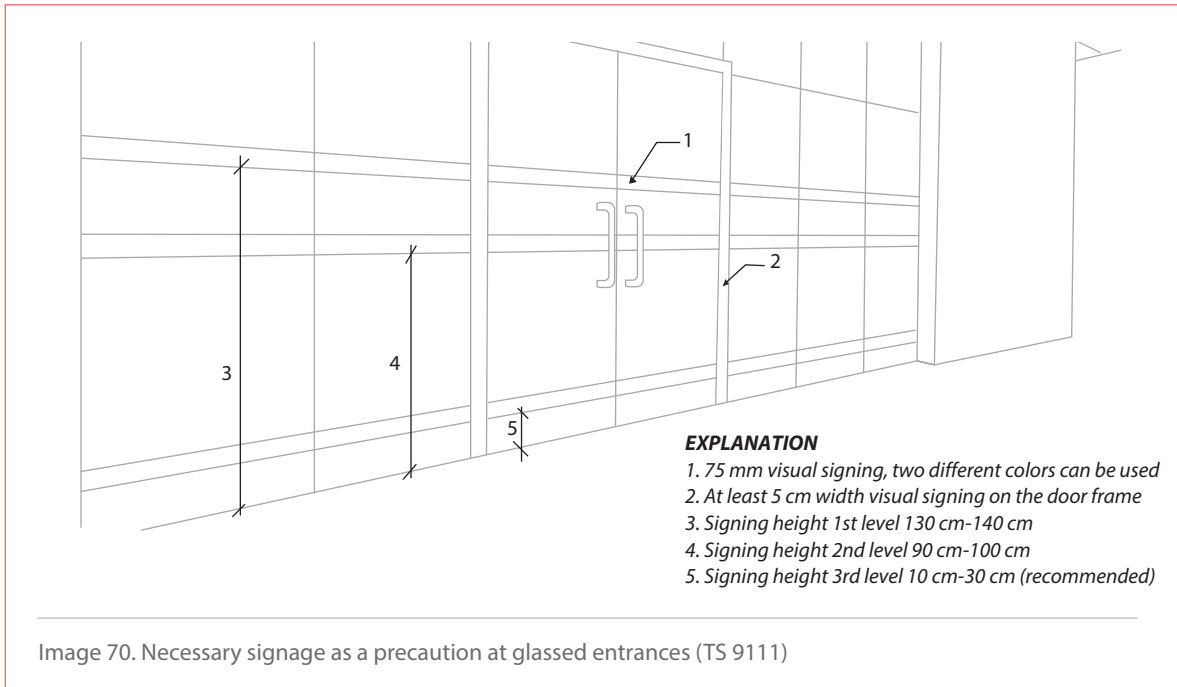
Exterior doors not aided by a power-assist to automatically open doors then the doors should not require more than 37.8 N (3.6 kg) of force to open a door. Power-assist doors should have a delay of 20 seconds before closing to allow people with disabilities and the elderly the time it may require to pass through the entrance.

Revolving doors should be avoided unless they are larger enough to accommodate a wheelchair and if there is a way to slow the speed at which it revolves. If there is a revolving door is not barrier-free then a hinged must be available to gain access to the building





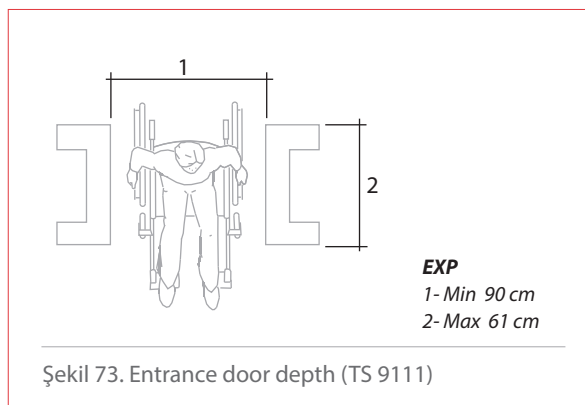
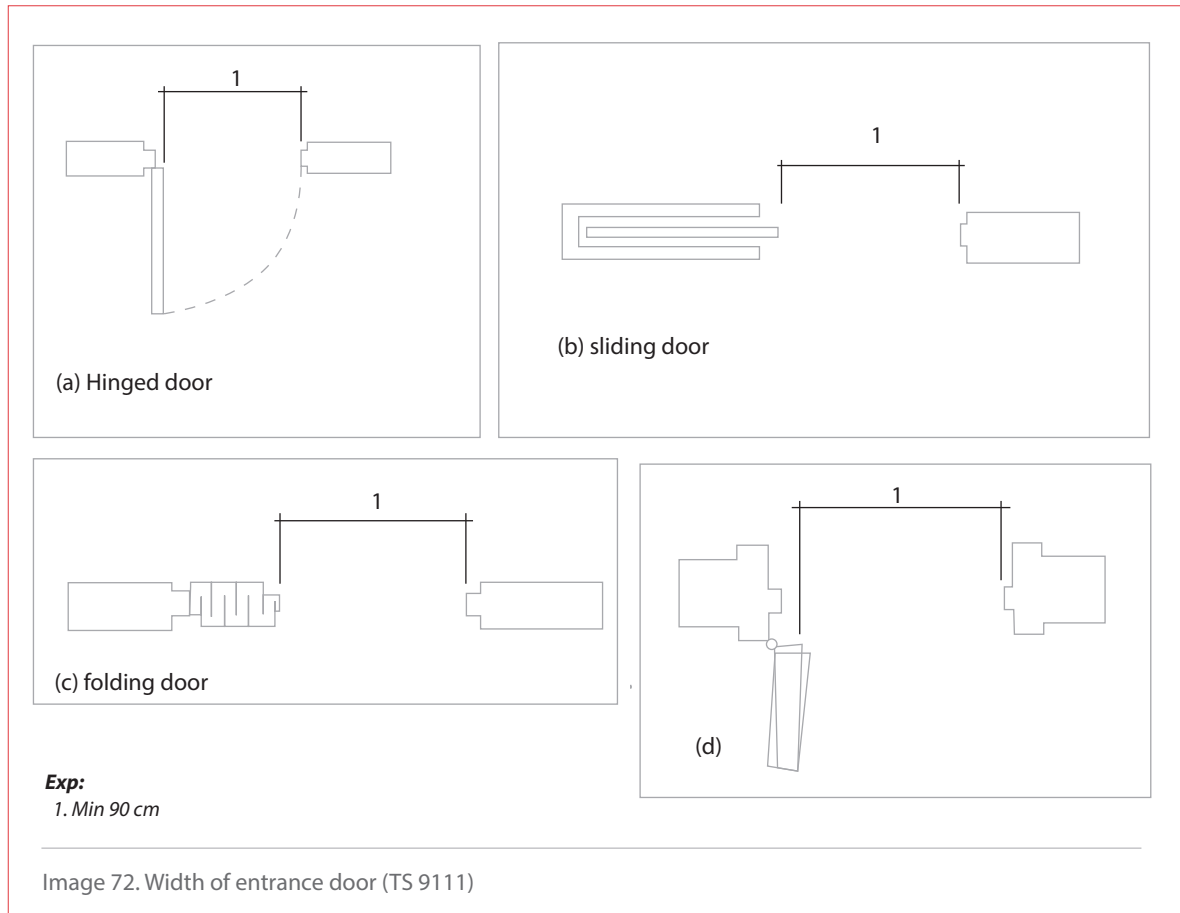
Precautions need to be taken if the entrance is located in a wall of glass or has a reflective surface in order to prevent individuals with lower vision or someone who may become disoriented from walking the wall for safety reasons the walls and doors should be partially frosted, have decals added or a barrier such as planters to prevent injury or embarrassment. Proper signage announcing the barrier-free path of travel to the entrance and the entrance itself is required for direction and safety for all people.

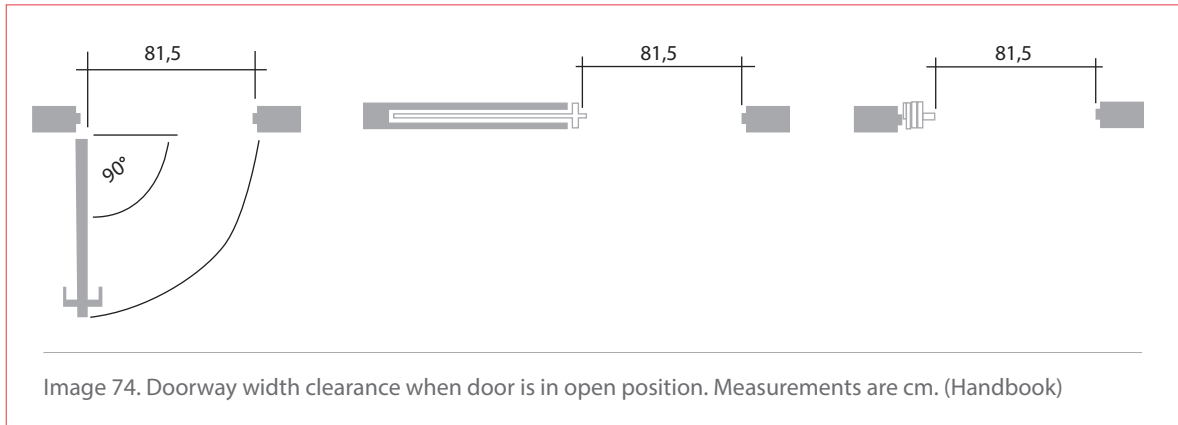




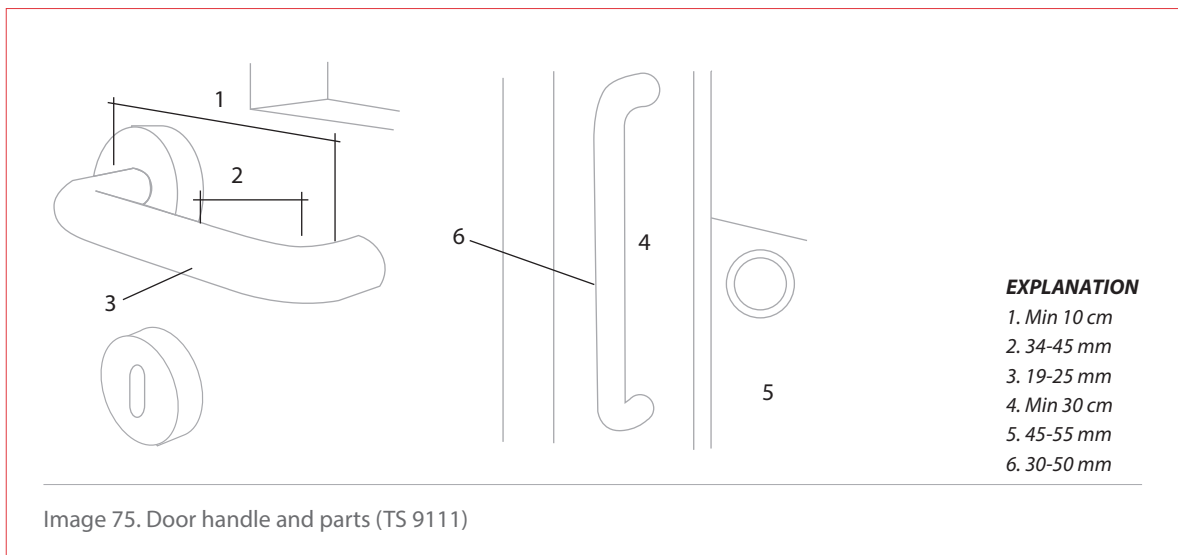
13.7.14. Interior Door and Features

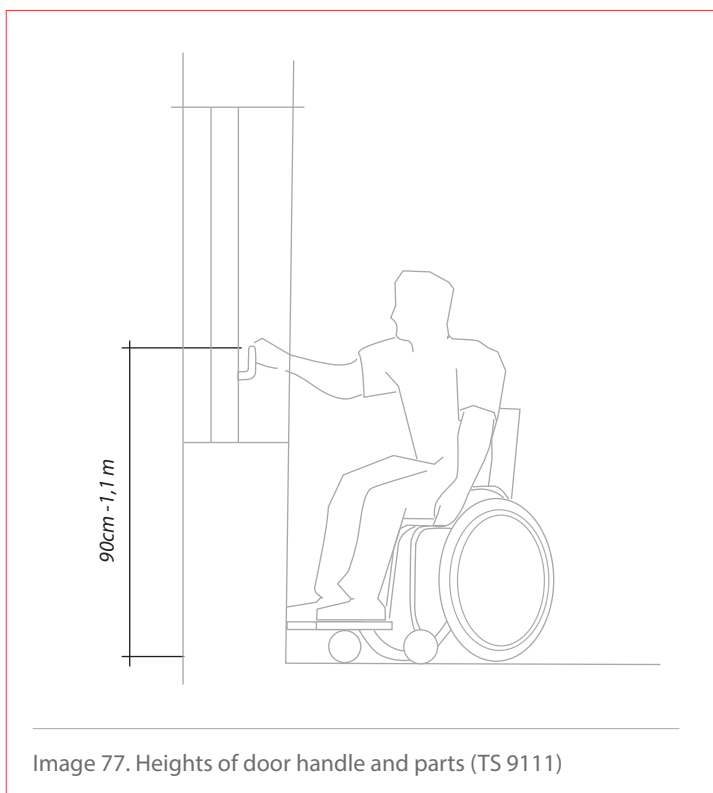
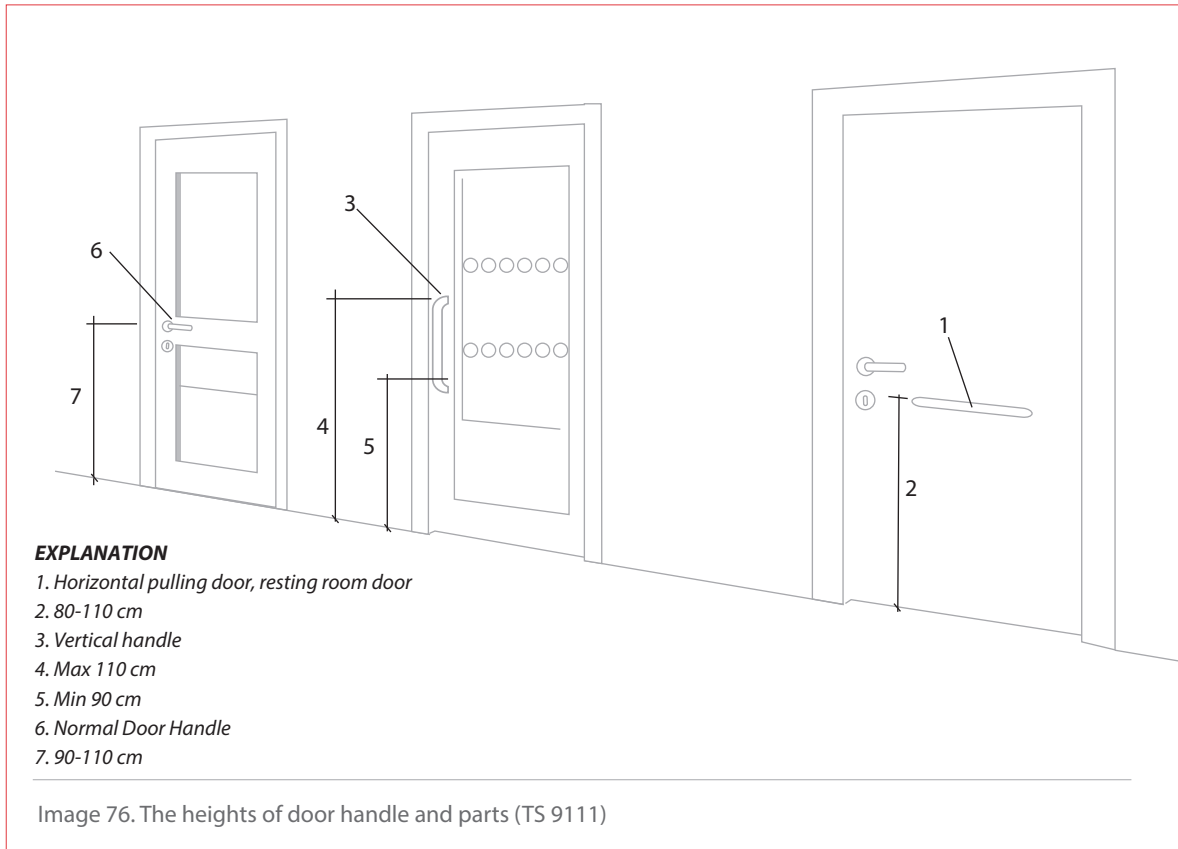
The door and door frame should be contrasting in colour to assist people with lower vision to identify the correct path of travel. Glass doors should be modified with decals, a coloured band situated at 1 m and repeated at 1.5 to identify the entrance. Each room or space should be identified with raised lettering/numbering or at least have the numbers painted on the door to identify the rooms for individuals with visual disabilities. Doorways should have a clear width of 815 mm or greater with the door in open position. (TS 9111)

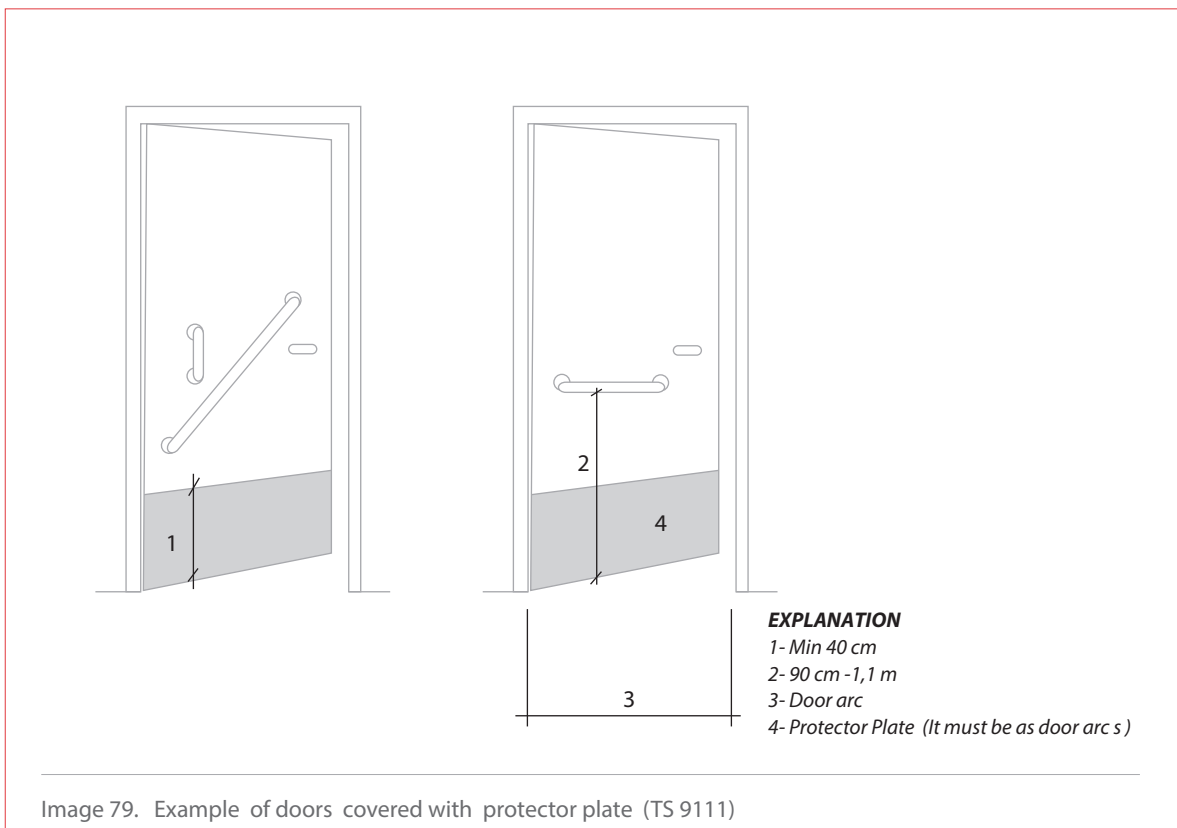
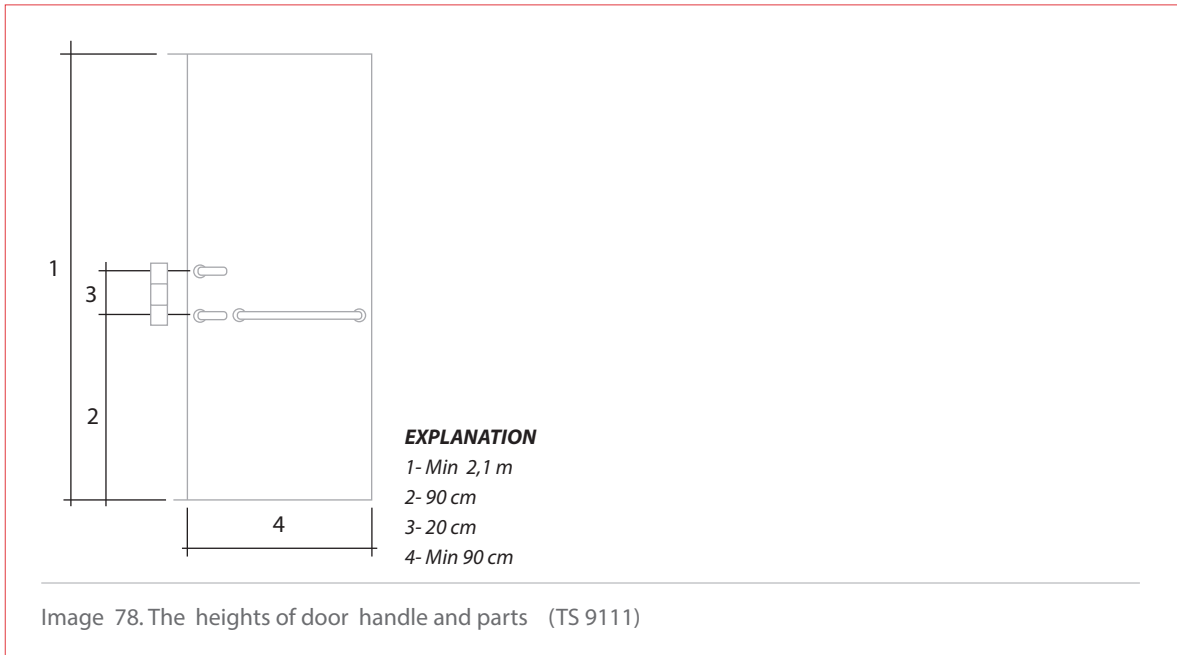




Door handles, locks and other door parts should be easy to use: without requiring grasping, excessive grip or twisting of the wrist or hand. Recommended door handle designs are D-shaped handles and lever-action and locking mechanisms such as bolts should have larger or exaggerated handles for grasping. The height of the door handle should be between 90 cm and 110 cm when measured from the mid-line of the handle to the finished floor.









13.7.15. Entrance Configurations (Types of the doors)

The design of entrances is crucial when the area is to be used with ease for persons who use wheelchairs and other mobility devices, especially, when the doors are to be operated manually.

Each entrance should provide sufficient area to manoeuvre a wheelchair. When the door opens toward the individual, an area with a minimum of 60 cm adjacent to the door shall be required to allow a person to approach with ease. If the door opens away from the individual, a minimum of 30 cm adjacent to the door is required. If the entrance requires a 180° turning area, the space should consider making the manoeuvrable space 150 cm X 200 cm.

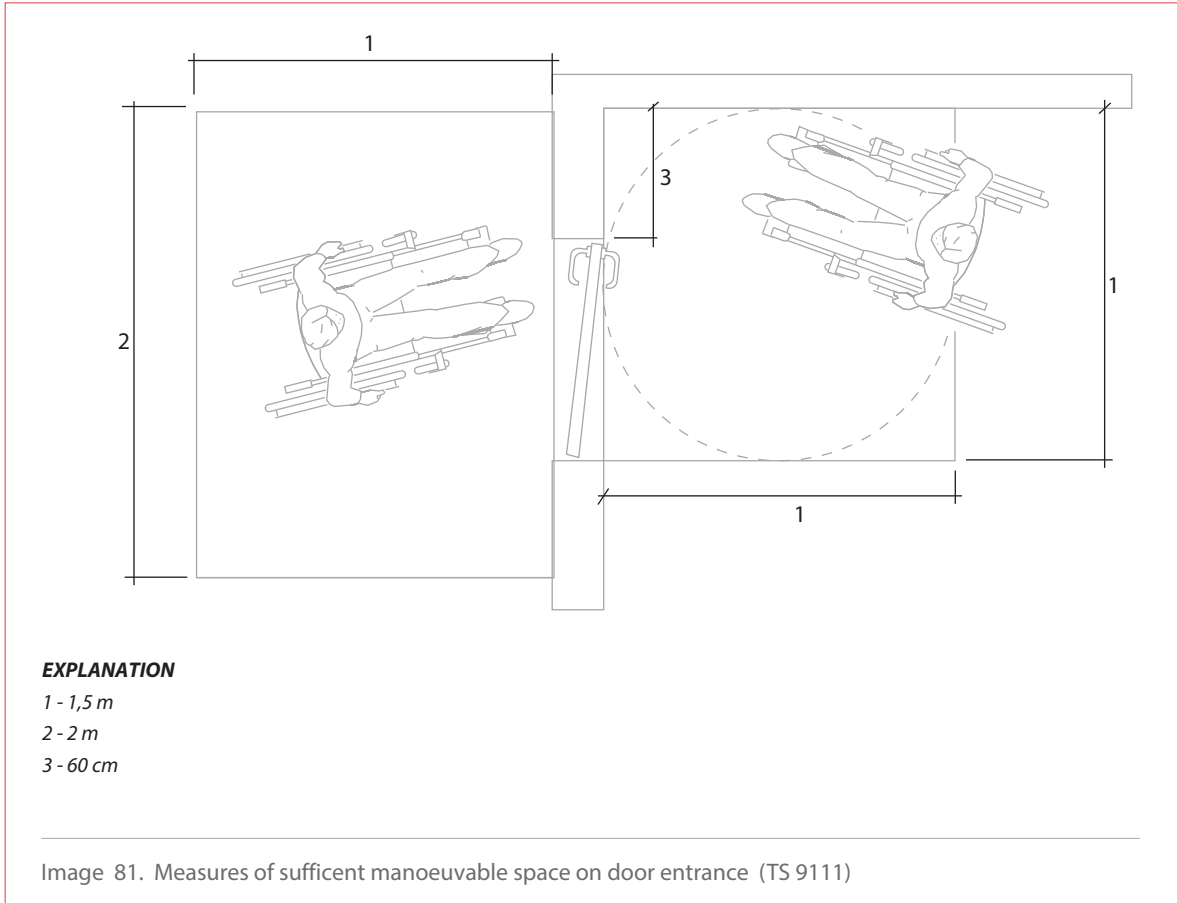
Each entrance configuration differs slightly. See the diagrams and their explanations below.

a. Single door

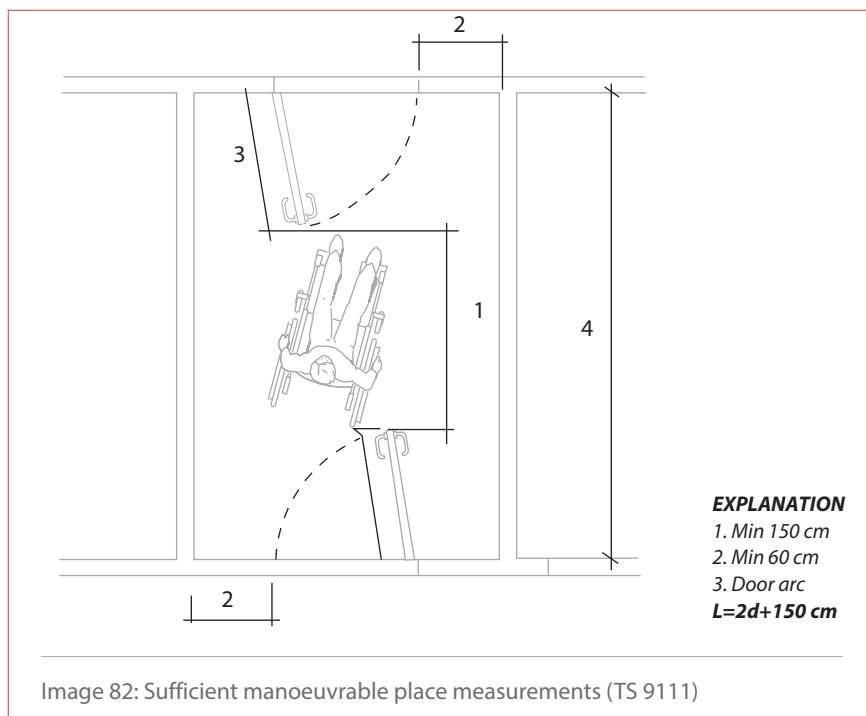
$X + Y = 2\text{ m}$

1	2
60 cm	60 cm
40cm	80cm
20cm	100cm
<20cm	120cm

Image 80. Measures of sufficient manoeuvrable space on door entrance (TS 9111)

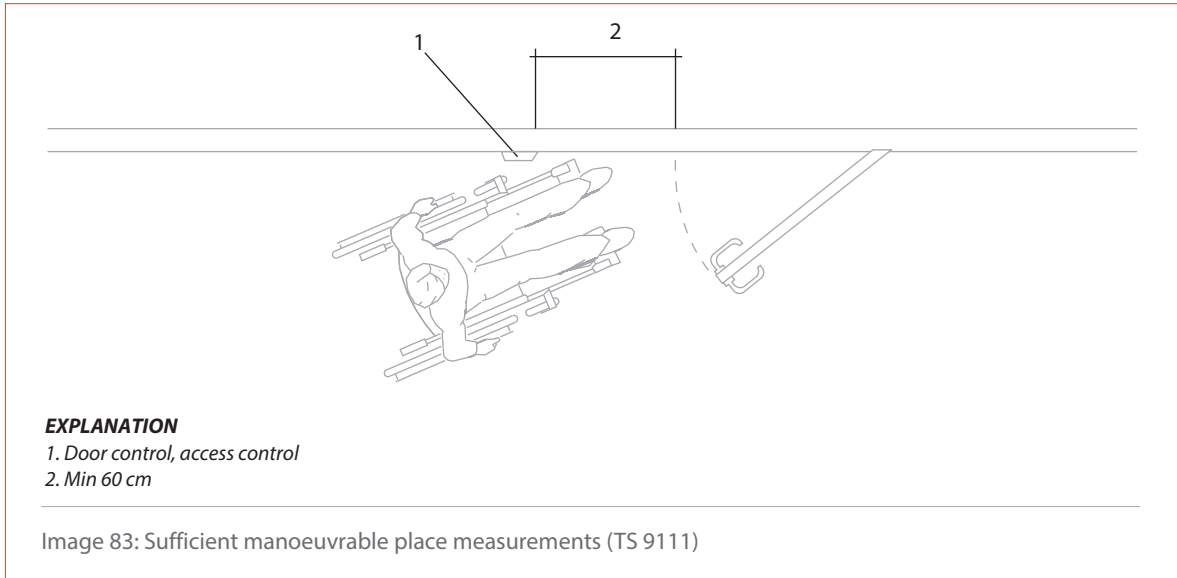


b. Vestibule



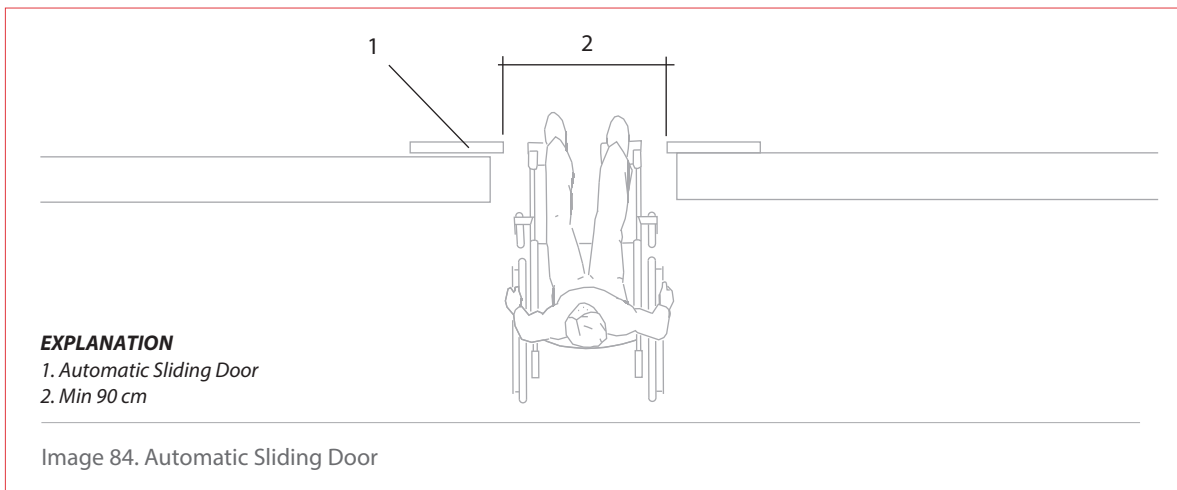


c. Single door with secure access

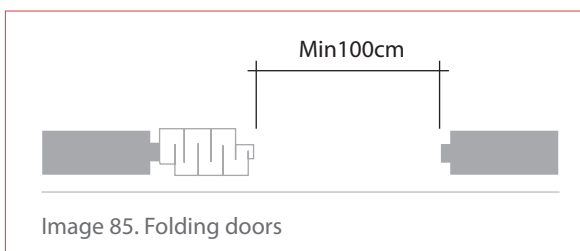


A- Sliding Doors

Sliding doors are preferred in narrow places that are difficult to manoeuvre in like bathroom or toilet stalls.



B- Folding Doors



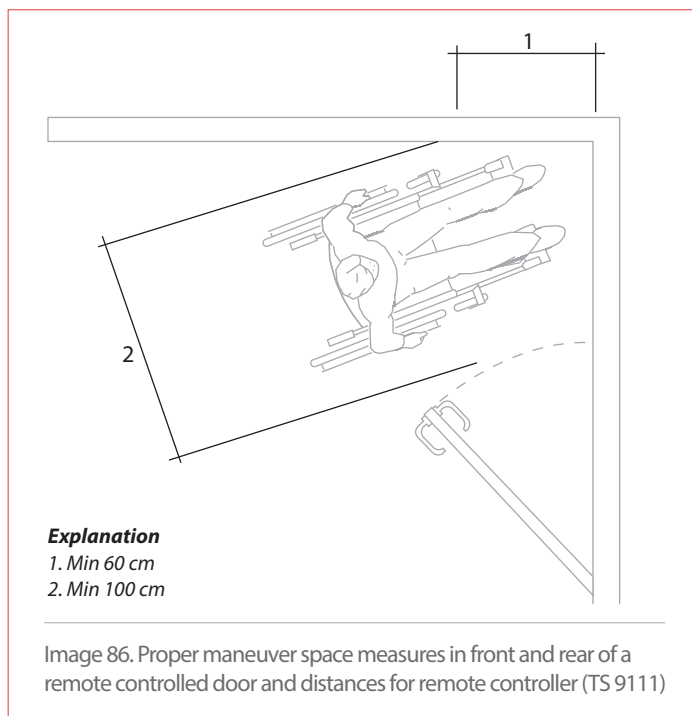


Power-assist Doors

Automatic doors can be activated through sensors on the ground, motion-sensor signals triggered by proximity or with buttons that are depressed manually.

The ground sensors should be sensitive enough to be activated by the weight of a Guide dog.

Button-activated doors require the button or plate to be accessible and located back from the swing of the door. The graphic below shows the button is adjacent to the door and set back 60 cm. Ideally, the button or plate should be set 100 cm back from the swing of the door.

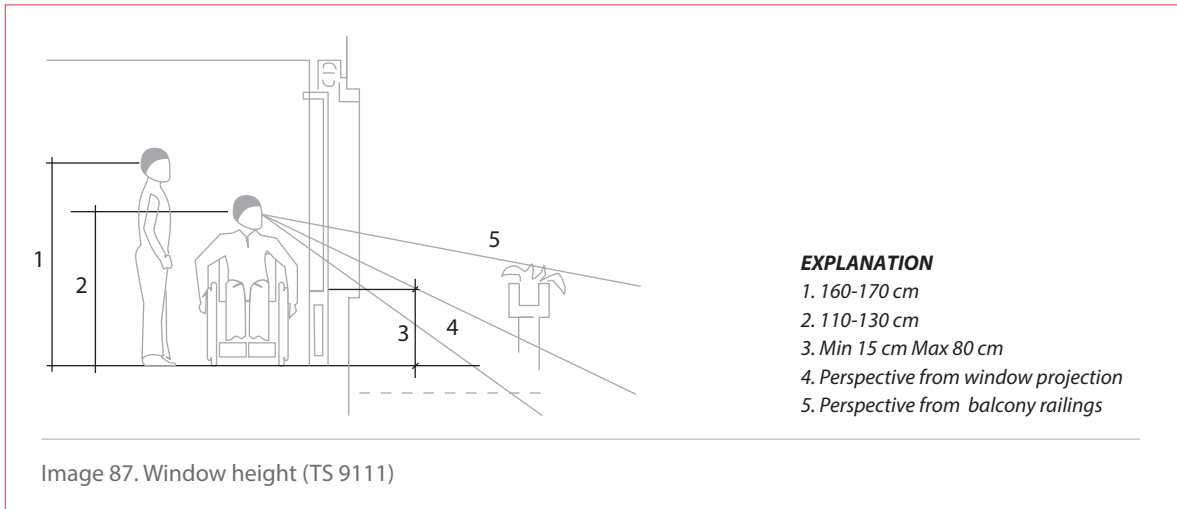


13.7.16.Windows

Windows are necessary to allow natural light into the space and it can also act as an effective means of safety for people, including persons with disabilities, by allowing the person to check the exterior for activity or the weather conditions before exiting the occupied space. People with impaired vision can be affected negatively by extreme light coming through the windows but this can be minimised with the correct use of window coverings or other solutions. These solutions could prevent individuals with minimal sight from injury and/or embarrassment.

A design that may accommodate all people with disabilities, including individuals with minimal sight, is to insert the window into a wall. The window should be installed no lower than 15cm and no higher than 80 cm in height when measured from the bottom of the window to the finished floor. If the windows have the ability to open, the locking device should be located at the bottom of the window or else it may be located between 90 cm – 120 cm. The window should require 22 N or less of force to open and close.

Windows below eye level are preferred by seated persons but transom windows are an acceptable alternative.



13.7.17. Surface Texture

Surface of An accessible route should be designed to allow for ease of travel and be safe to use for all people but, in particular, people who use wheelchairs and other mobility devices. The design would consider the surface texture as a necessary element of a barrier-free route of travel whether indoors or outdoors. The surface of floor should be hard, stable and slip-resistant.

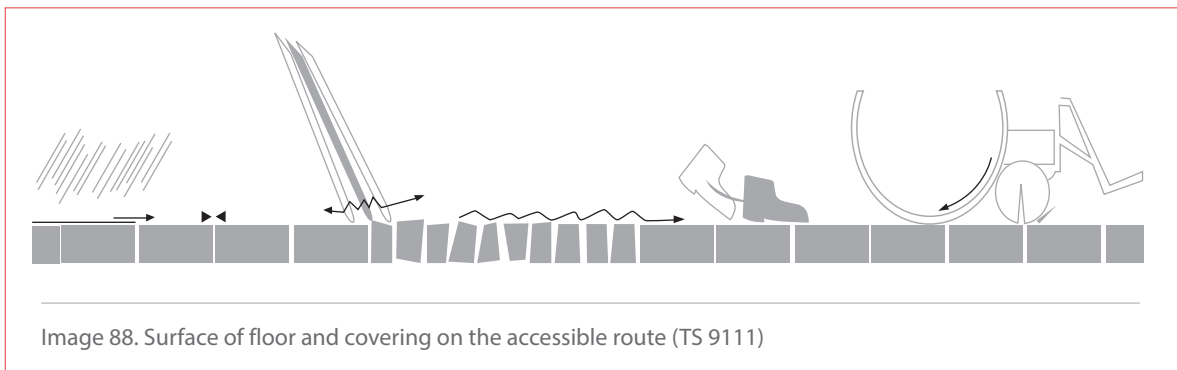
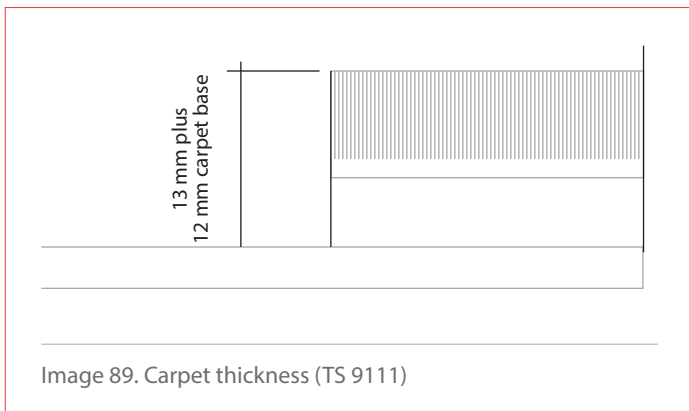


Image 88. Surface of floor and covering on the accessible route (TS 9111)

If a carpet must be used, it should have a nap as low as possible and then be securely fastened to the floor to prevent tripping, slipping and creating a difficult situation for the user of a wheelchair when the carpet bunches around the wheels. The pile of the carpet should not be deeper than 13 mm





Persons with visual disabilities use sound to navigate through the environment. Navigation through sound is particularly useful in buildings so it becomes important to use sound reflective surfaces on the floor area (as well as walls and ceilings). Buildings with poor acoustics can cause problems with concentration and navigation. If floor coverings such as carpet is used to absorb sound and vibration, then it is necessary to ensure reflective surfaces in the walls, ceilings and furniture to assist with the safely negotiate the environment

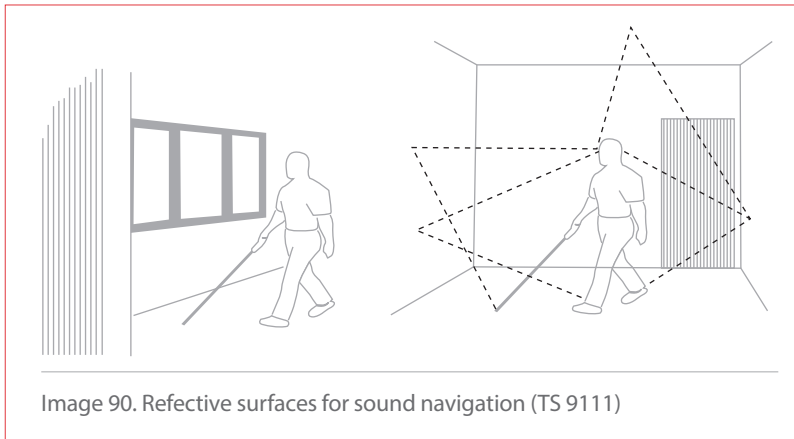


Image 90. Reflective surfaces for sound navigation (TS 9111)

13.7.18. Interior Building Horizontal Circulation

The interior of the building should be accessible for all users, including people with disabilities. Differences in levels within a corridors, hallways and occupied areas should not exist. Otherwise, they may be overcome with properly designed ramps. Areas at entrances, in front of telephones, ATMs, drinking fountains and all other public fixtures and kiosks that provide services such as ticket sales, pay wickets and currency exchange booths should be taken in consideration access and manoeuvrability (ADA,1994)

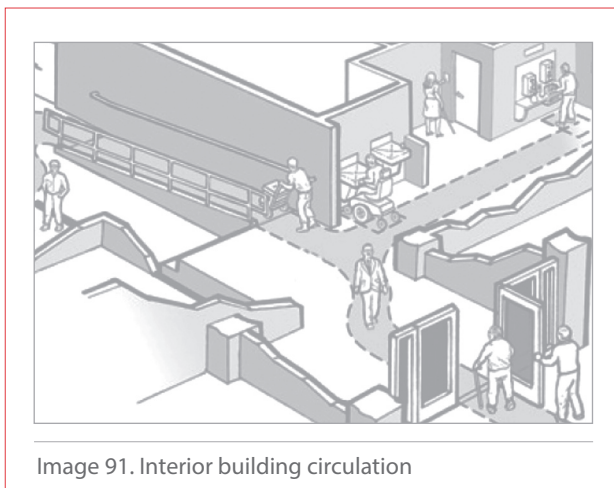
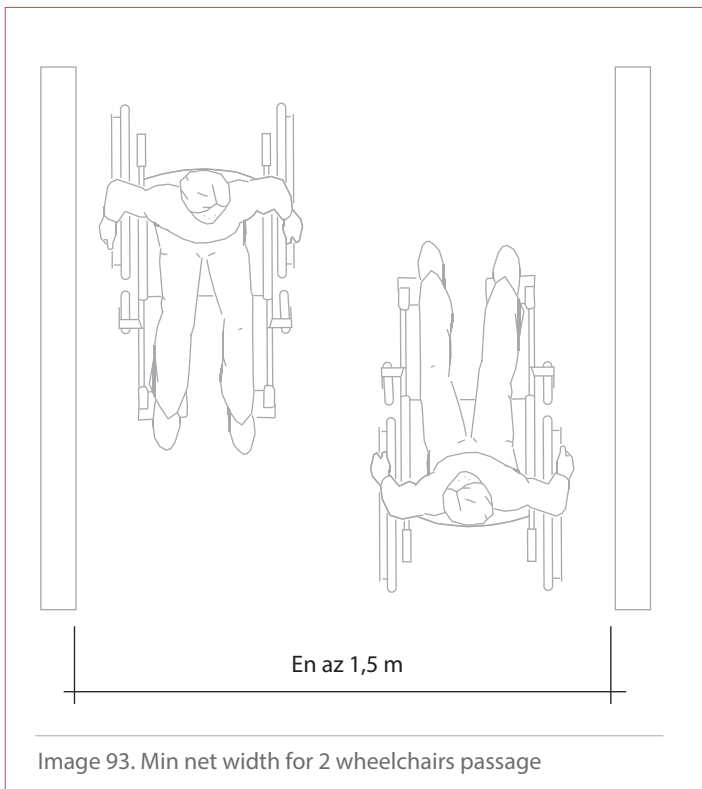
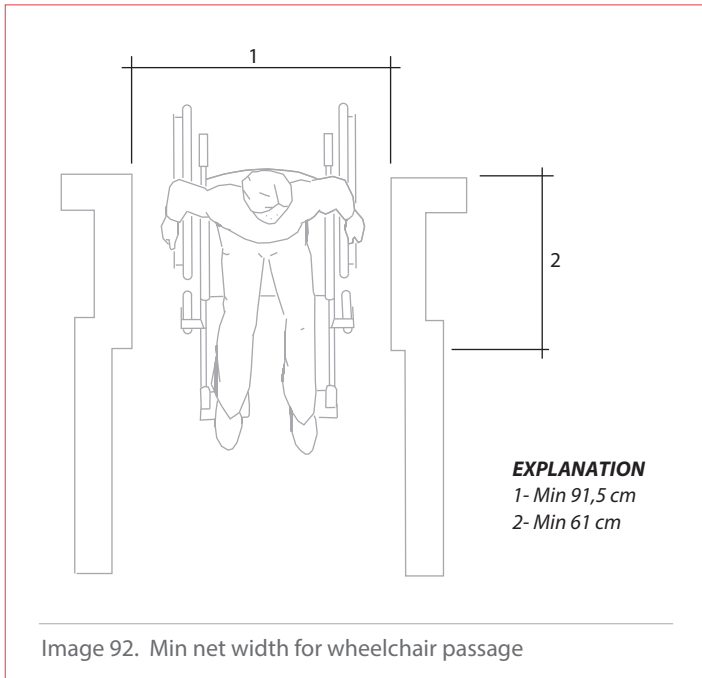
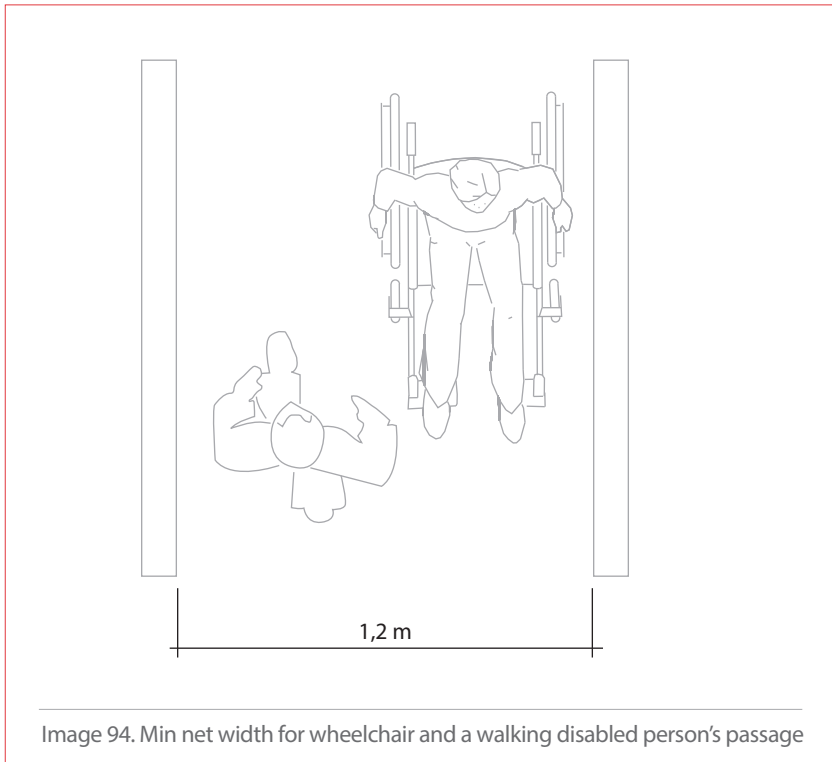


Image 91. Interior building circulation

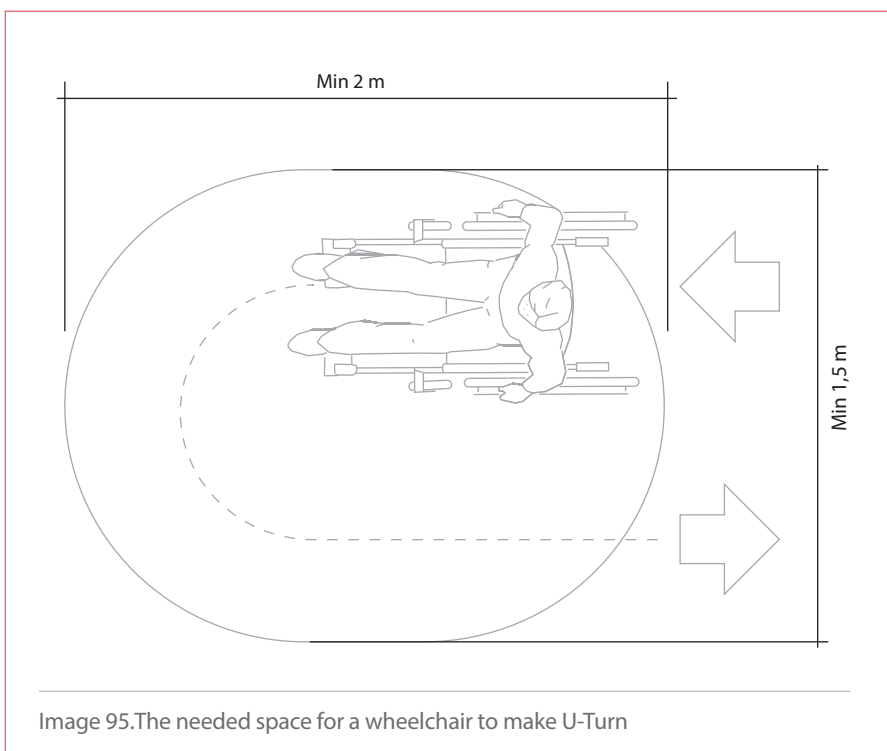
An acceptable width for ramps is a minimum of 90 cm and a minimum turning diameter of 150 cm to allow for manoeuvrability of wheelchair or scooters in a barrier-free path of travel for horizontal and vertical circulation within a building. (ADA, 1994)

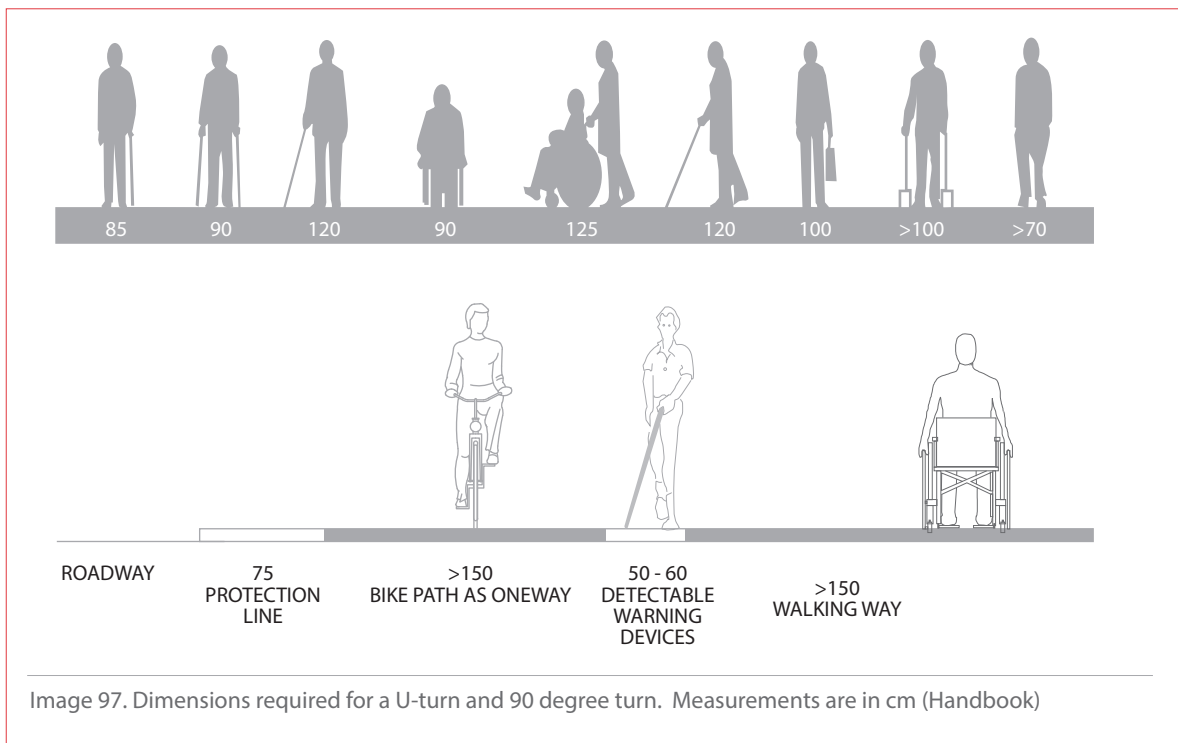
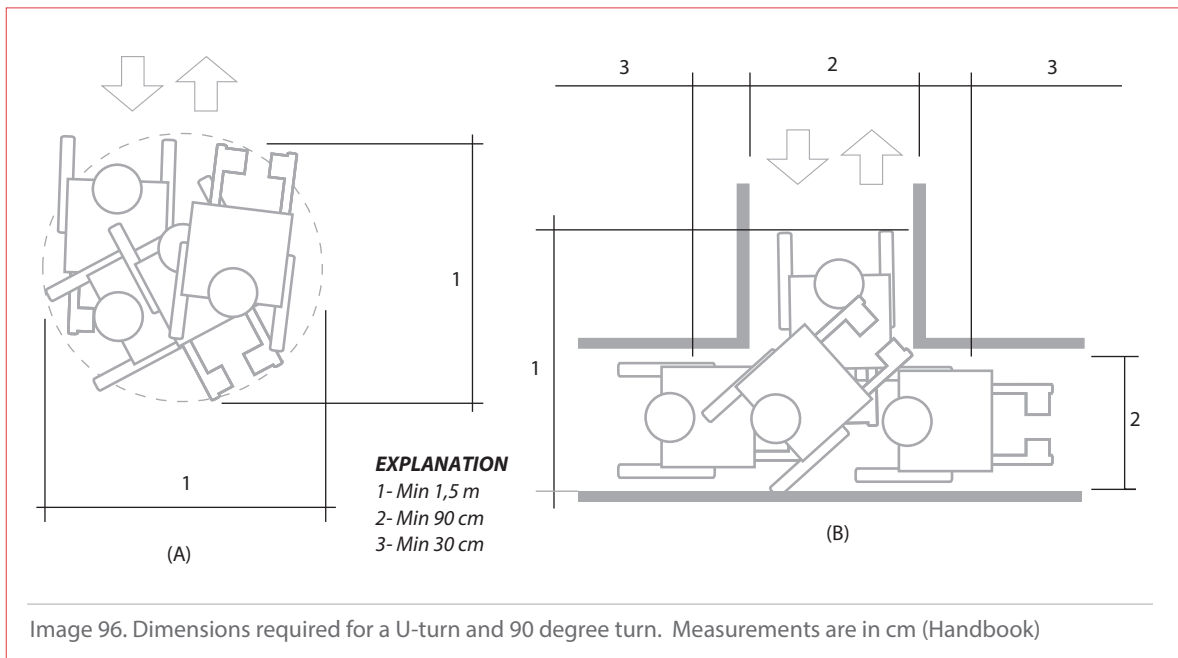
A minimum width of 81.5 cm is required for a single wheelchair to travel safely through a corridor or hallway with no obstacles; however, a minimum width of 91.5 cm is preferred. A corridor that is 152.5 – 162.5 in width will allow 2 wheelchairs to pass side by side comfortably. The minimum width of 122 cm would allow an individual to pass side by side with an individual using a wheelchair. (TS 9111)





The needed width for a wheelchair 180 degree turn is min 1,5 m

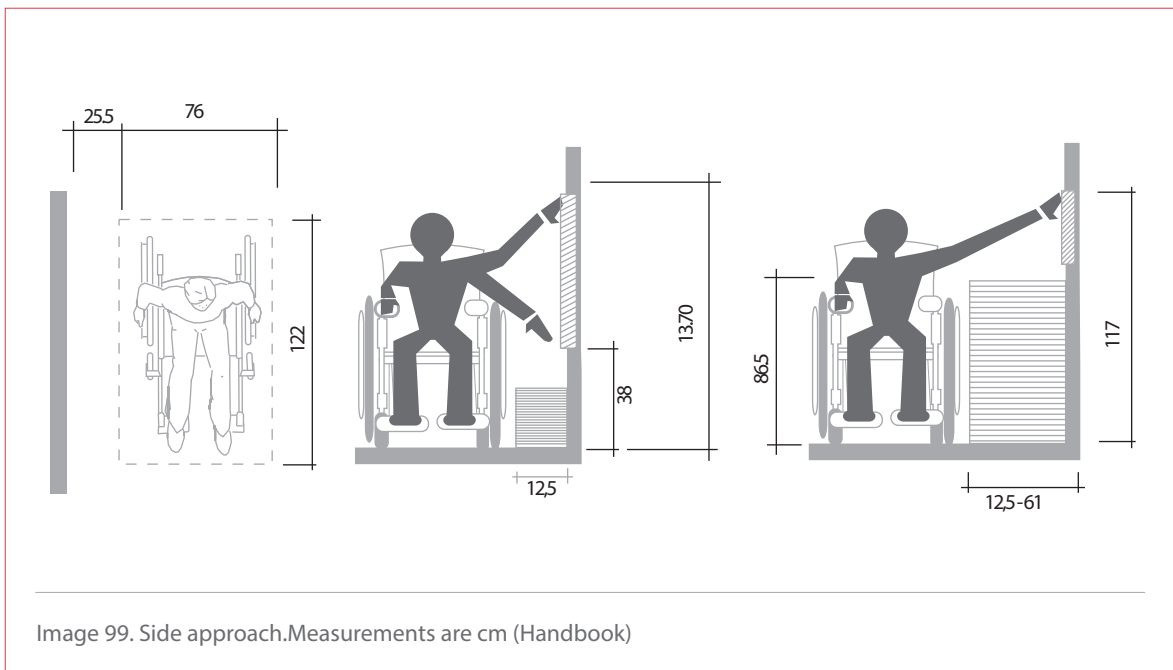
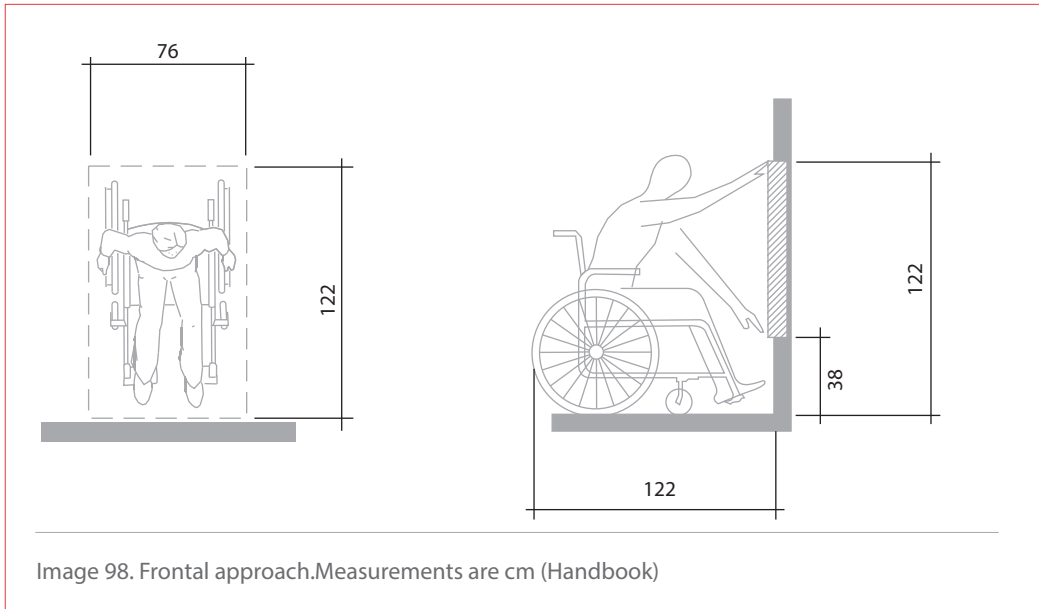




The minimum dimension of 152.5 cm is recommended for a wheelchair to make a 180 degree turn. The minimum widths recommended for a wheelchair to make a U-turn with ease from a 106.5 cm width corridor turning into a 122 cm wide space and onward.

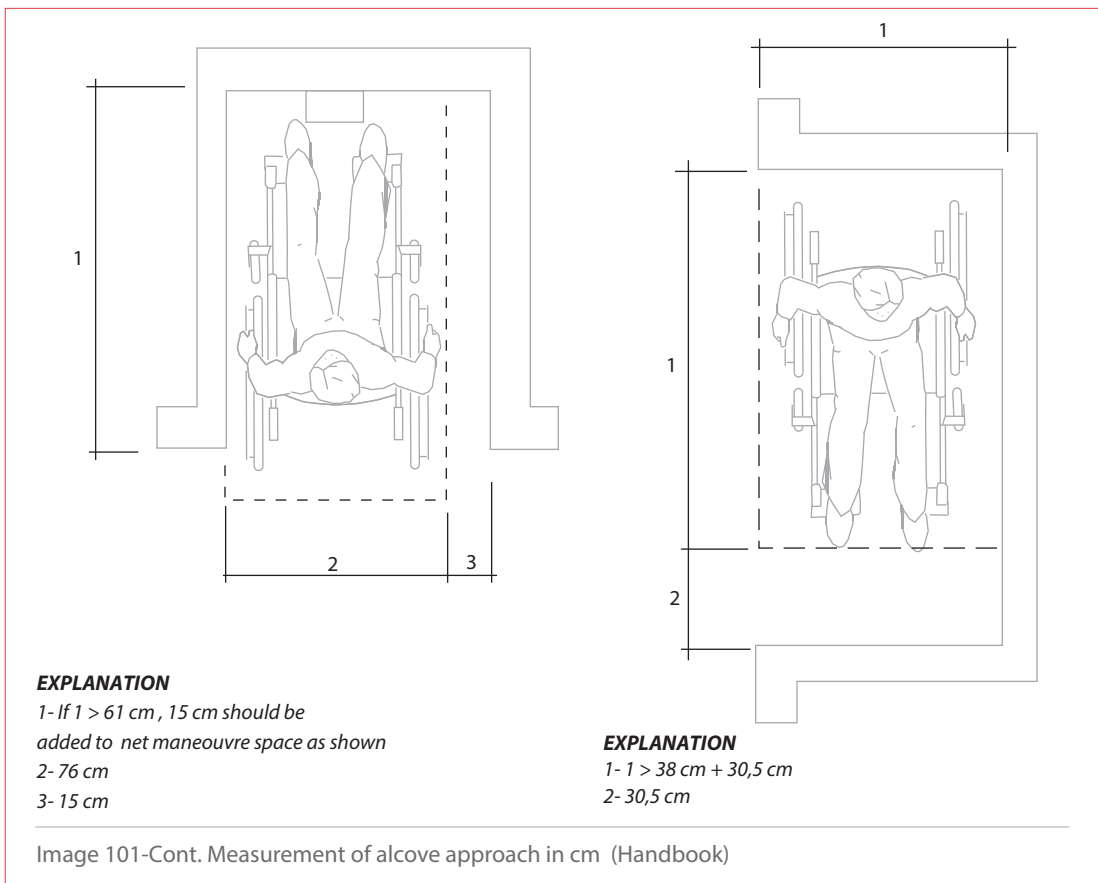
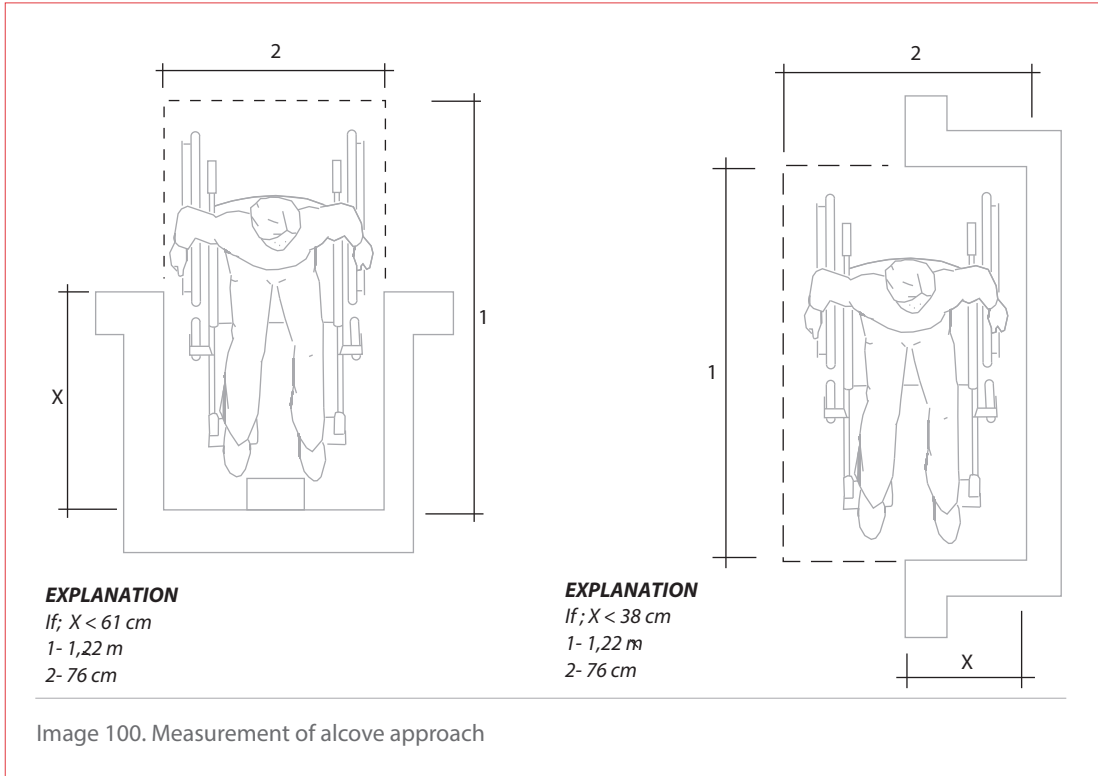


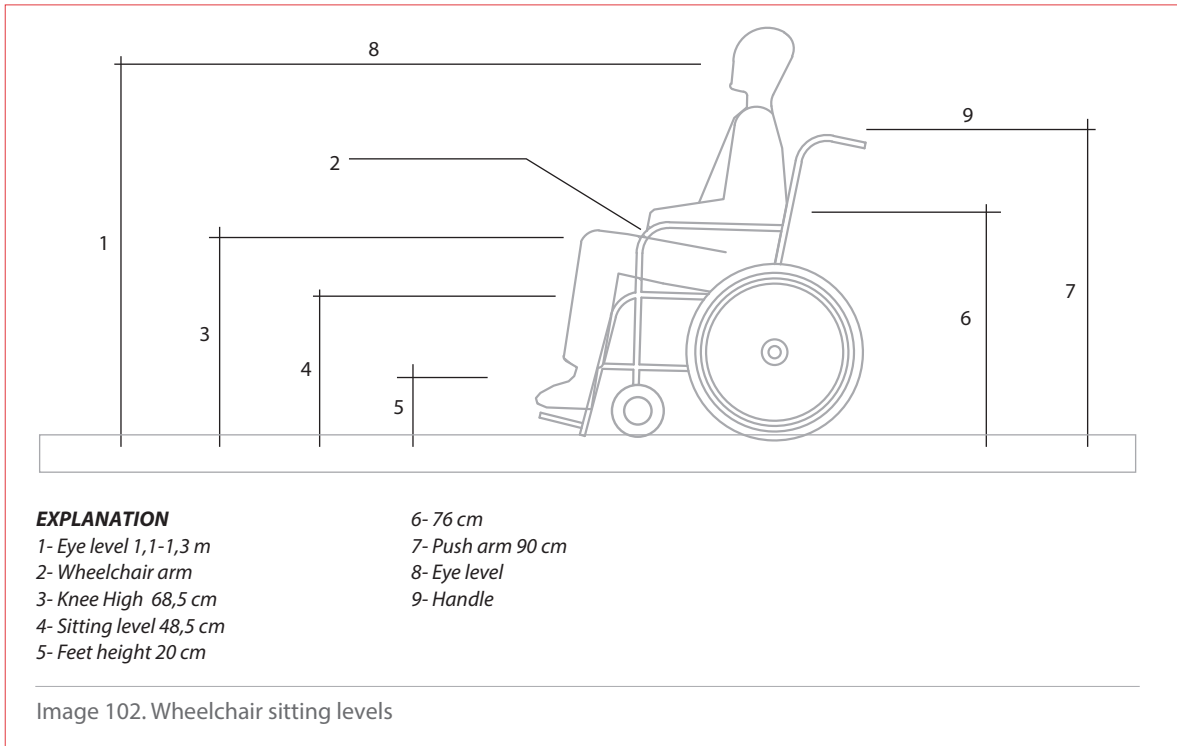
Alcoves are sometimes necessary to house equipment such as drinking fountains, telephones, banking machines in a narrow corridor or small space to ensure the equipment and the people who may use them do not become obstacles in the flow of pedestrian movement. A smaller alcove that only allows for front access by a person in a wheelchair should install the equipment between 38 to 122 cm. (TS 9111)



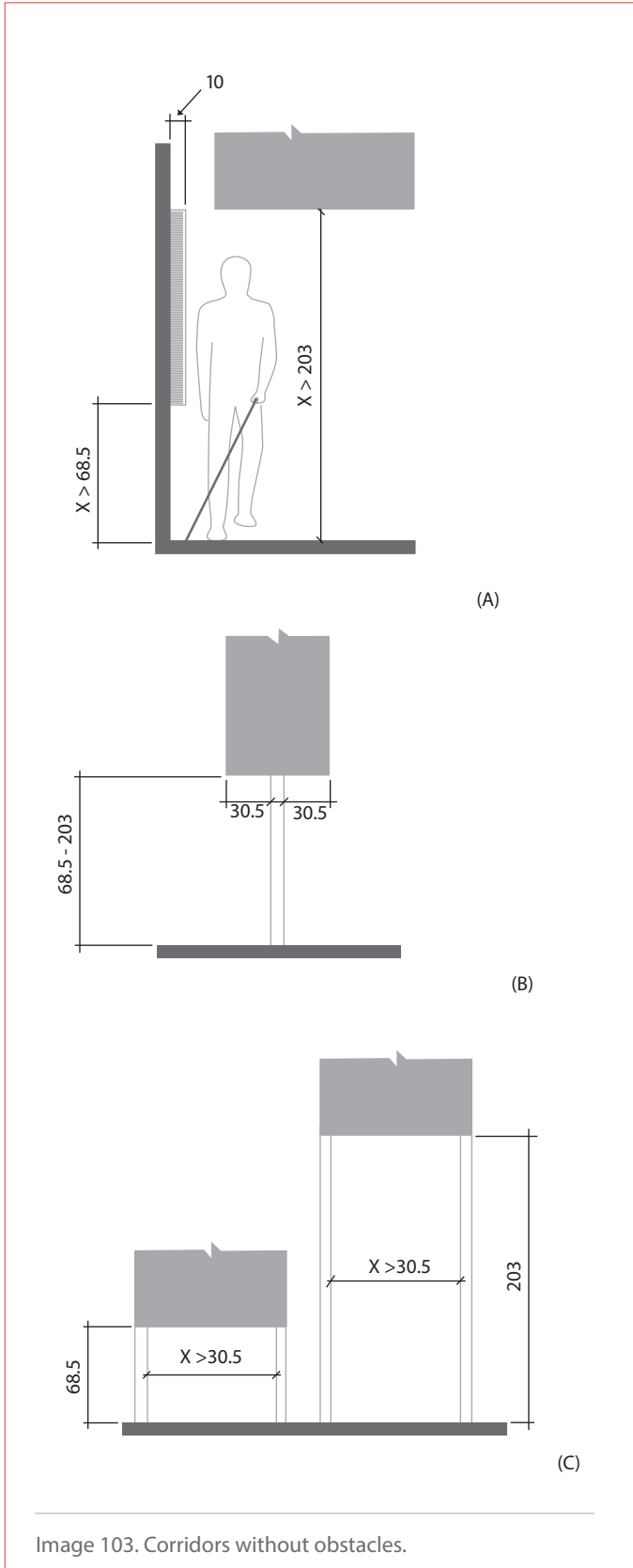
If a parallel approach is available, the equipment should be installed between 23 – 137 cm at the most to ensure sufficient and ease of access when measured from the finish floor. These measurements only apply when the obstruction(s) are no higher than 30 cm or protrude more than 12.5 cm. (TS 9111)

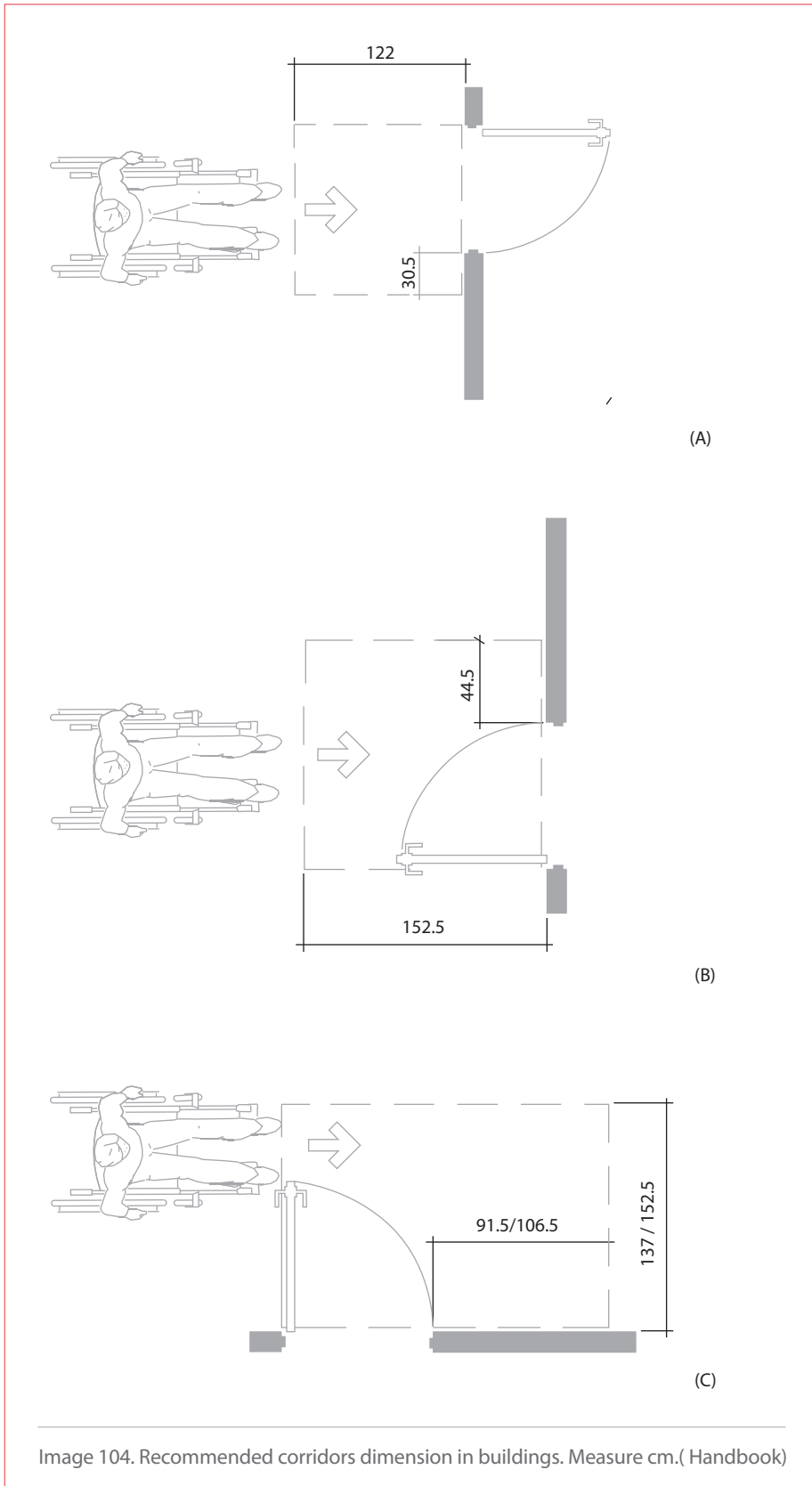
The alcove walls or the corners and any obstructions should be rounded to minimize injuries.

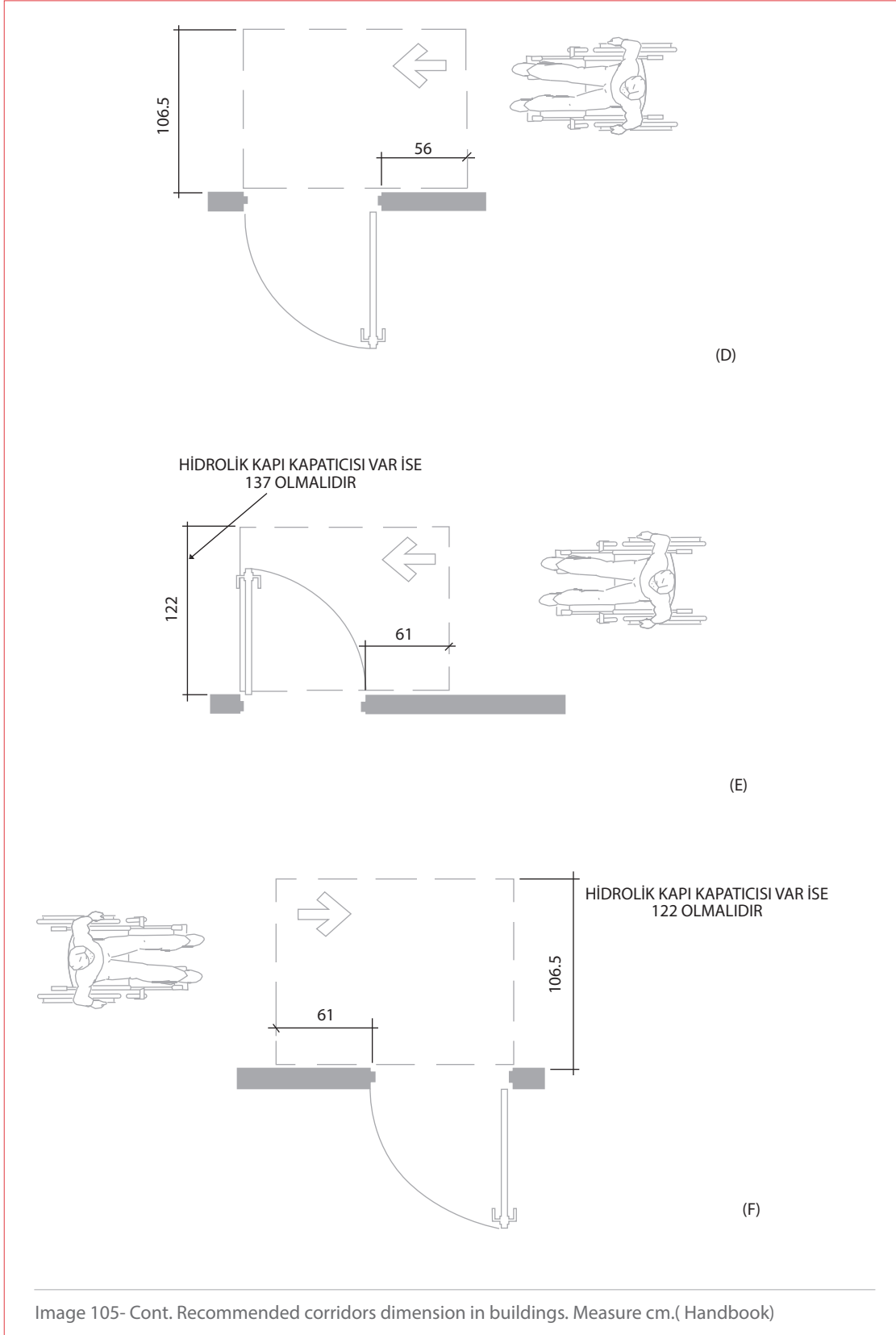


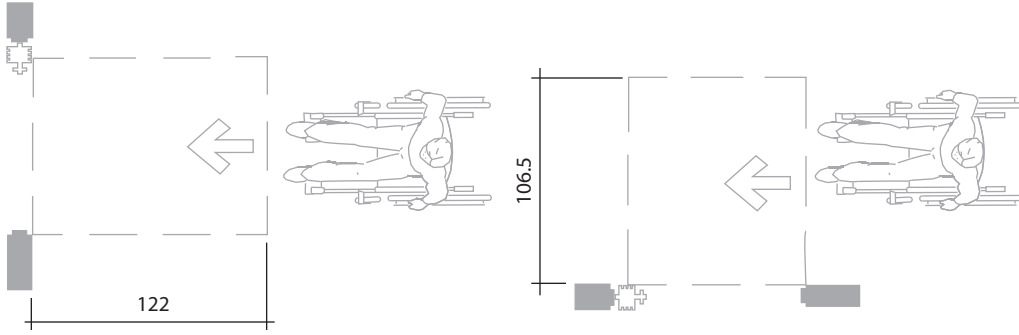


Corridors should be clear of protruding obstacles such as display cases or radiators that people may collide with including people who use wheelchairs and children. However, if it is necessary to mount such objects, the object should not be wider than 10 cm. Corridors also need to be kept clear of overhead obstacles or hazards. Signage, lamp fixtures or other hanging or protruding objects should be mounted at a minimum height of 203 cm when measured from the bottom of the object to the finished floor to minimize injury to all people, including people with visual disabilities. (TS 9111).

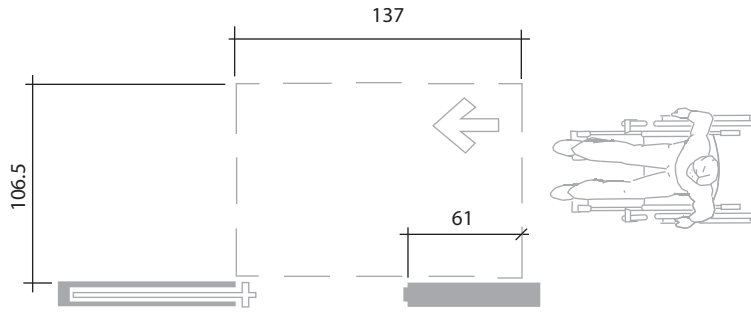




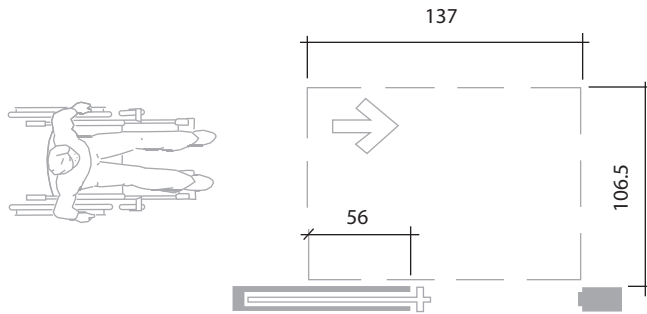




(G)

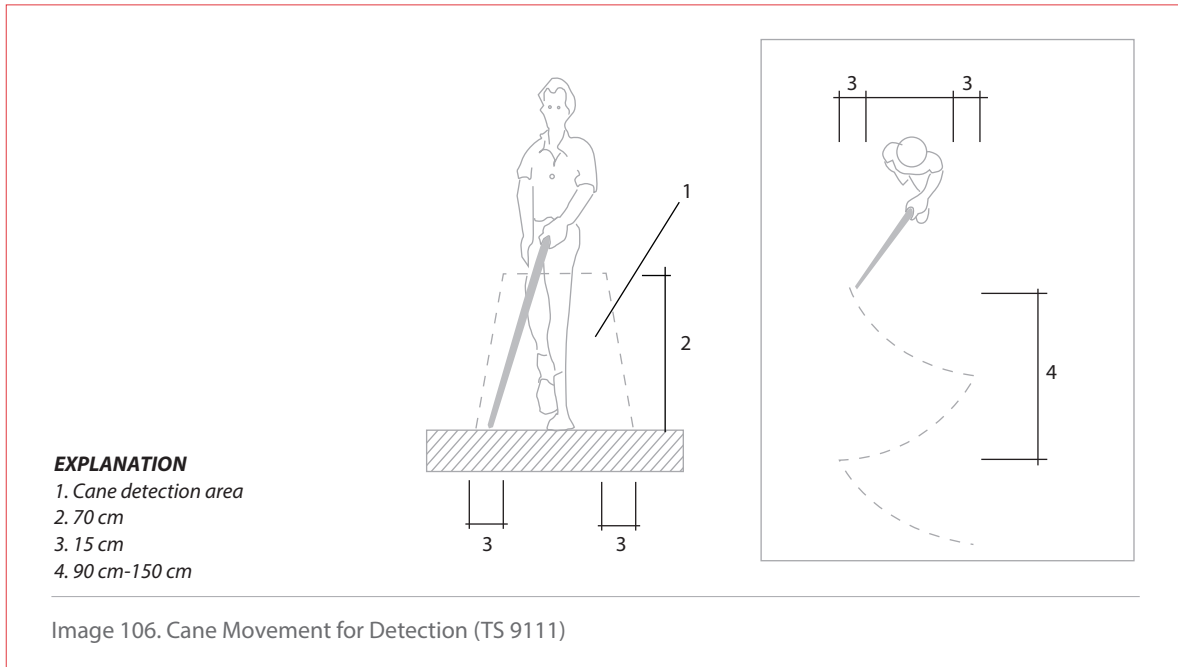


(H)



(I)

Şekil 105. Bina içindeki engelsiz koridorlara ait ölçüler. Ölçüler cm.dir. (El kitabı)



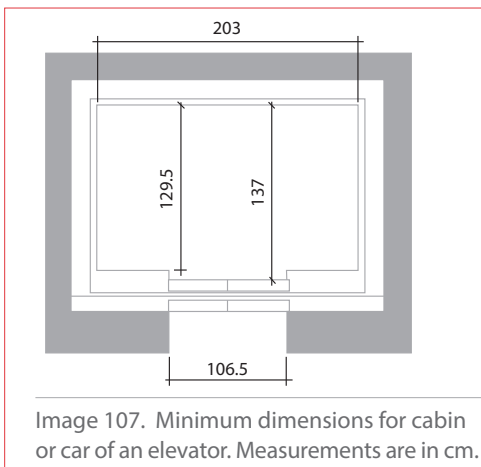
13.7.19. INTERIOR BUILDING VERTICAL CIRCULATION

A-Elevators

Elevators are important to vertical circulation between floors of buildings. The vertical circulation elements shall be designed with the necessary arrangements to accommodate the needs of persons with mobility limitations and persons with visual disabilities.

Passenger-elevating devices provided in a building should serve all floors, including mezzanine, basement and sub-basement storeys, and be designed to be usable by people with disabilities. Elevator cars shall be equipped with a self-levelling feature that will automatically bring and maintain the car at floor landings with a tolerance of ± 13 mm under rated loading or zero loading conditions.

The door opening into the elevating device shall not be narrower than 915 mm. Ideally the opening should be 106 mm or greater. Doors will remain open for 10 seconds before the doors begin to close. Elevator doors shall automatically open and close and be equipped with photocell sensor or other device to detect an object or person in the path of a closing door without requiring contact. The automatic device in elevators should be set to activate between 125 mm and 735 mm heights with a ± 25 above the floor. Door re-opening device shall remain effective for a period of no less than 20 seconds.





1- Cabin Interior

Cabin should be designed for people who use wheelchairs or other mobility devices by providing adequate space manoeuvrability and access to controls. The cabin of the elevating device should also provide adequate access for a patient stretcher when in prone position. Access is also required to the emergency telephone or intercom directly linked to building security or the contracted maintenance agency. The car should have a hand railing installed to provide greater stability and for safety for people with minimised strength or balance. A fold-down seat is also recommended.

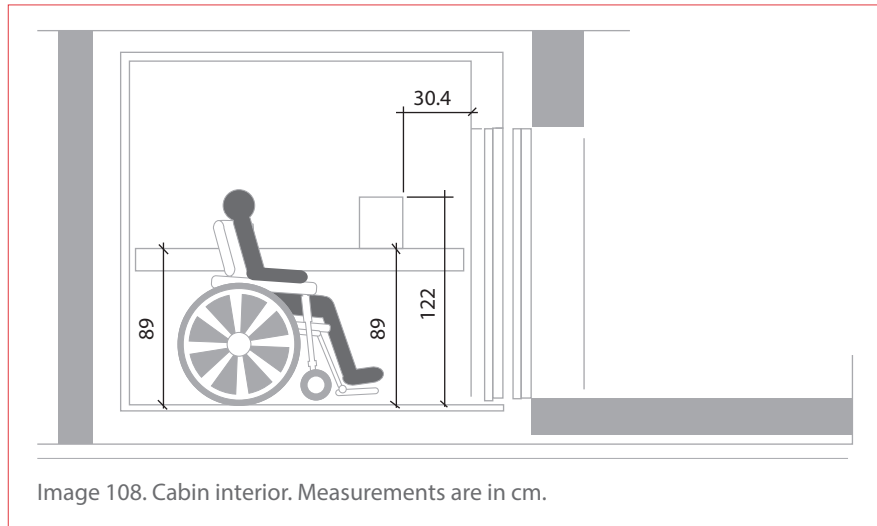


Image 108. Cabin interior. Measurements are in cm.

Note: a stable, firm and slip-resistant floor surface would allow for easy movement of wheelchairs. Secured or non-secured carpeting may be an obstacle to manoeuvrability and not recommended for use. Carpeting can create mould and contain unpleasant odours when it becomes dirty and wet.

2- Control Panel Buttons: the button dimension shall be a minimum of 19 mm. Buttons or surrounding button collars should be raised a minimum of 1.5 mm. Buttons should be arranged with the numbers in ascending order. When there are two or more columns are provided, they shall read from left to right. Tactile characters and Braille shall be placed immediately to the left of the button to which they apply.

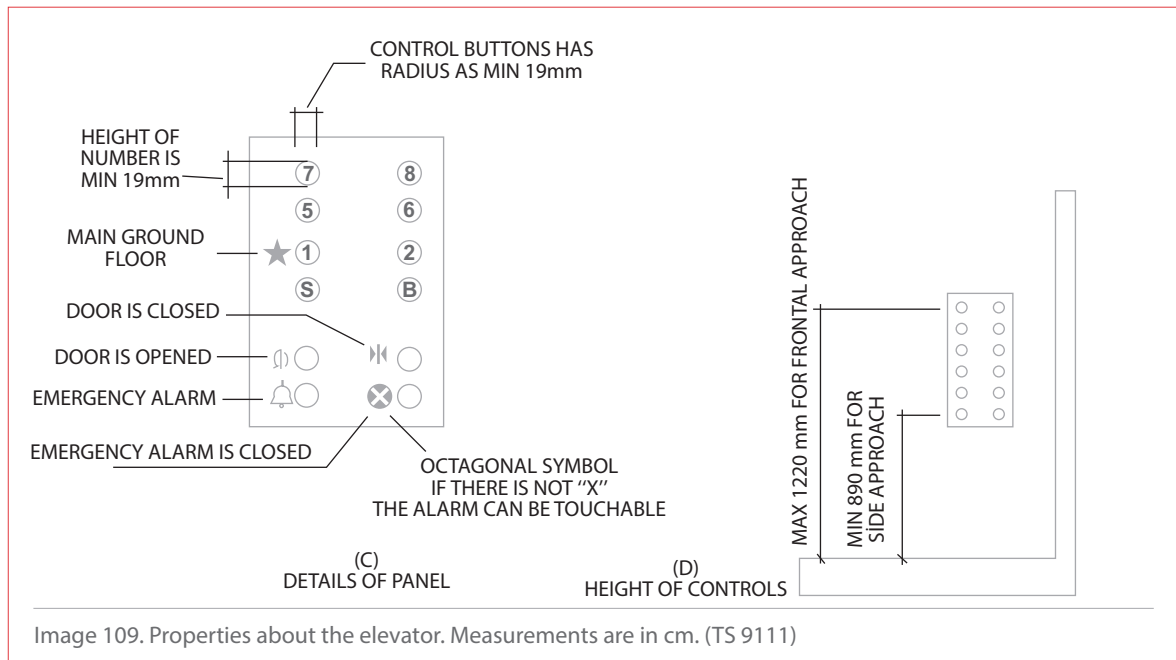


Image 109. Properties about the elevator. Measurements are in cm. (TS 9111)



The location of buttons with floor designations shall have a maximum height of 1370 mm if the approach is parallel and if it is a frontal approach the maximum height of 1220 mm is allowed when measured from the floor of the finish cab or car to the midline of the topmost button with the floor designation.

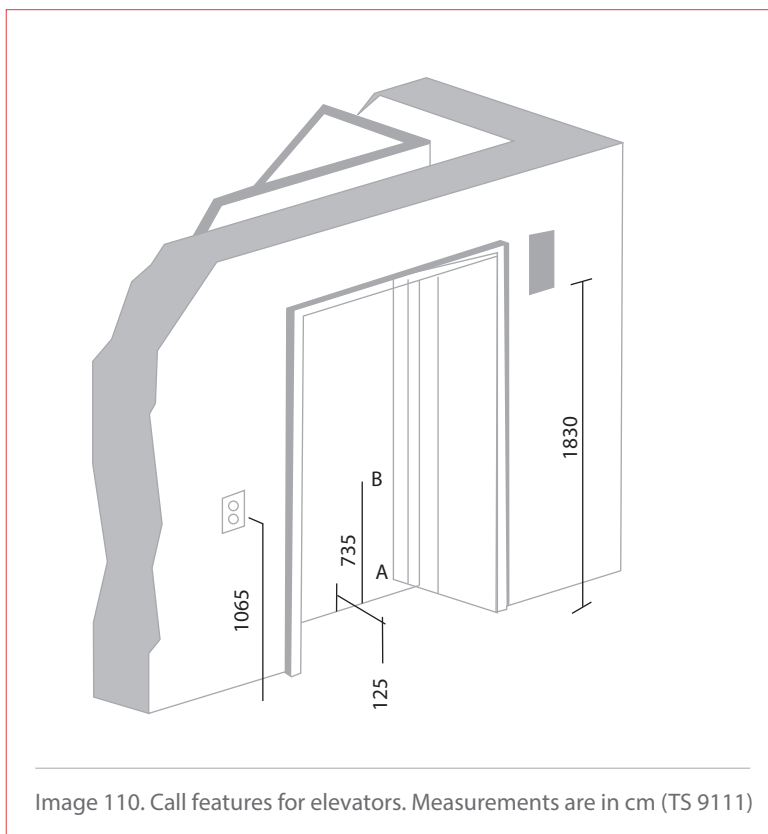
Control buttons for the emergency alarm and stop buttons, including the button to reopen the car door in case of a door obstruction, should be located below the floor designation buttons of the panel with a minimum height of 890 mm above the floor to the midline of the button. These buttons shall also be identified with tactile characters and Braille immediately to the left of the control buttons.

Telephone-style keypads may be used more prevalently in multi-storey buildings as in-car controls. This would eliminate any awkwardness experienced by people with visual disabilities. The buttons shall be a minimum of 19 mm and only require raised numbers with a minimum height of 1.5 mm.

3- Car Position Indicators: Elevator cabs should require both visual and audible indicators to identify the floor location it has passed or is stopping on. Visual indicators should be located above the control panel or above the door. The numerals shall be a minimum height of 16 mm. The audible indicator shall announce the floor it is stopping at and have a decibel at a minimum of 10 Dba over the ambient with a maximum of 80 Dba and a frequency of 1500 Hz. An automatic announcement is preferred over of sound signal like a bell or buzzer.

4- Emergency Communications: Emergency two-way communication systems may be a handset with a cord located behind an identified compartment door that is activated when the handset is removed from the cradle. A handsfree intercom that is automatically activated when the emergency alarm becomes activated is preferred to assist people with limited hand/finger dexterity or speech disabilities or in case the passenger may become incapacitated.

5- Call Buttons and Directional Signals





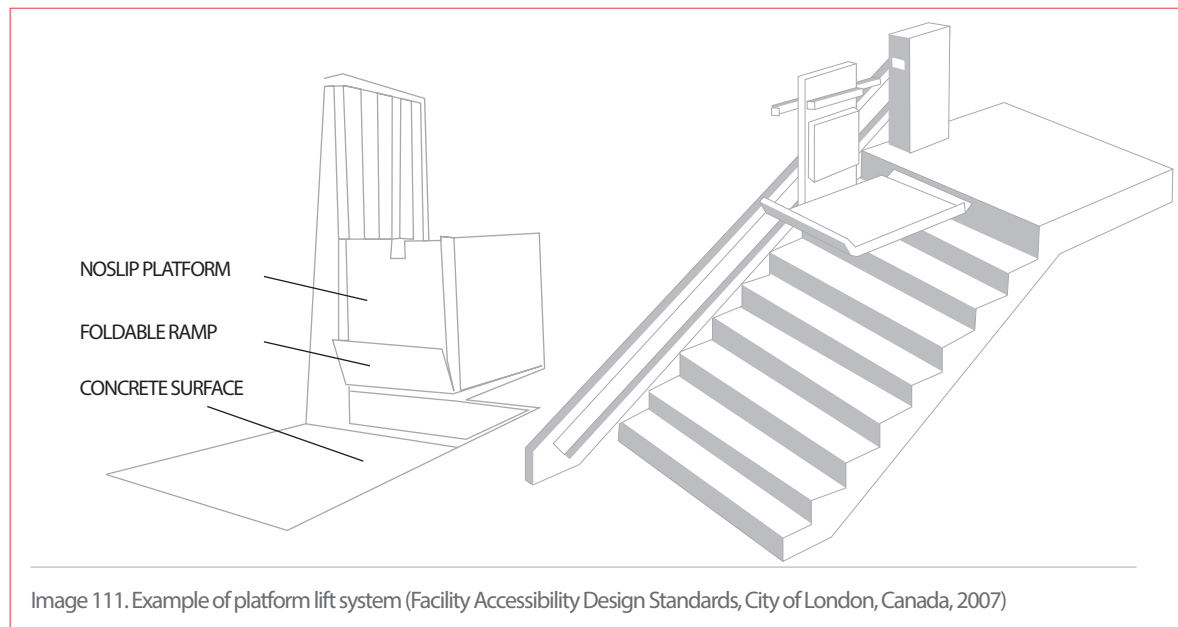
6- Call Buttons: the elevator call buttons should be located at a height of 1065 mm when measured from the midline of the lower button to the finished floor with a clear floor space of a minimum of 760 mm X 1220 mm. The calling buttons should be a minimum of 19 mm in diameter. The call buttons should light up to indicate that the car has been called and turn off when the car arrives.

7- Directional Signals: should be located above the car or adjacent and at the top of the elevating device. The visual signal shall be accompanied by an audible signal to indicate ascent or descent when the car has answered the call. The audible signal shall sound once to announce an upward direction and twice for the downward direction. The visual signal should be a minimum of 63 mm in dimension for visibility.

8- Platform Lift :A platform lift system may be used to assist persons with mobility limitations to safely ascend or descend a shallow set of stairs, only if there is no other safe alternative like an elevator or ramp. A clear and flat landing area of 1500 mm X 1500 mm is required at the top and bottom of the stairs.

A lift system should be operable without assistance by people with disabilities and seniors, even parents with strollers, who need to bypass the stairs. Exterior stairs may require protection from inclement weather and greater maintenance. Exterior stairs require protective railings on the lift as well as at the top landing. Proper signage should indicate a barrier-free path of travel to the accessible lift system.

In addition, a connection to the interior of the building is required for safety in an emergency and for protection from inclement weather (Facility Accessibility Design Standards, City of London, Canada, 2007).



B- STAIRS

Stairs are another form of vertical circulation for people, including people with sensory disabilities. Therefore, the stairs should be designed to prevent missteps, tripping or slipping for all users, including people with visual disabilities. Emergency stairwells should be designed with the same requirements.

The handles and railings of the stairs in outer places should be extended a minimum of 45 cm beyond the top and bottom step of the stairs, as differently from the stairs arrangements about the interior places. Between 80 cm – 90 cm height of the handles and railings from the stairs surface is recommended also for outer places. Railings should be designed on both sides of the outer place stairs and the distance between every railing and handle, should be max 180 cm. Water discharge grooves should be located on the sides of the outer place stairs. Stairs should be marked with 120 cm length tactile surface covering at the beginning



and the end of the stairs (TS 12576) (Image 112-113-114).

If arm of the stairs reach a height more than 180 cm, there should be a landing of min 200 cm length and if there is a direction change on the landings, area of 180 cm x 180 cm sizes should be reserved (TS 12576).

Treads and Risers

The rise of a step shall have height no less than 150 mm and no greater than 200 mm. The run shall be no less than 125 mm and no greater than 250 mm. Every tread and riser shall have a uniform run and rise, and it shall not alter significantly in run and rise in successive flights in any stair system.

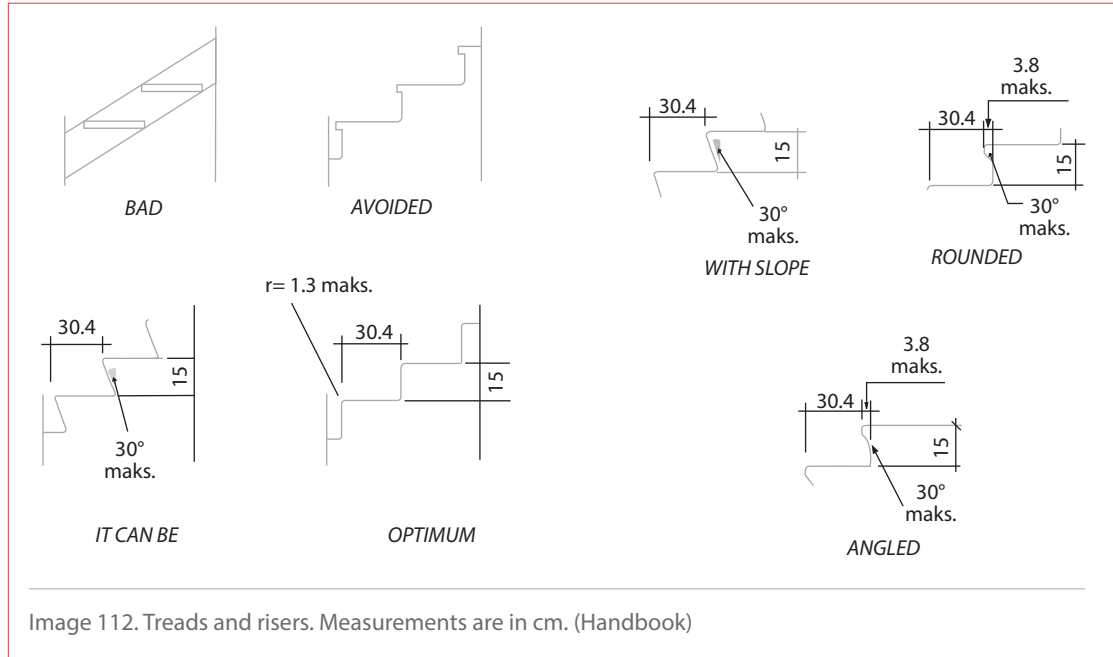
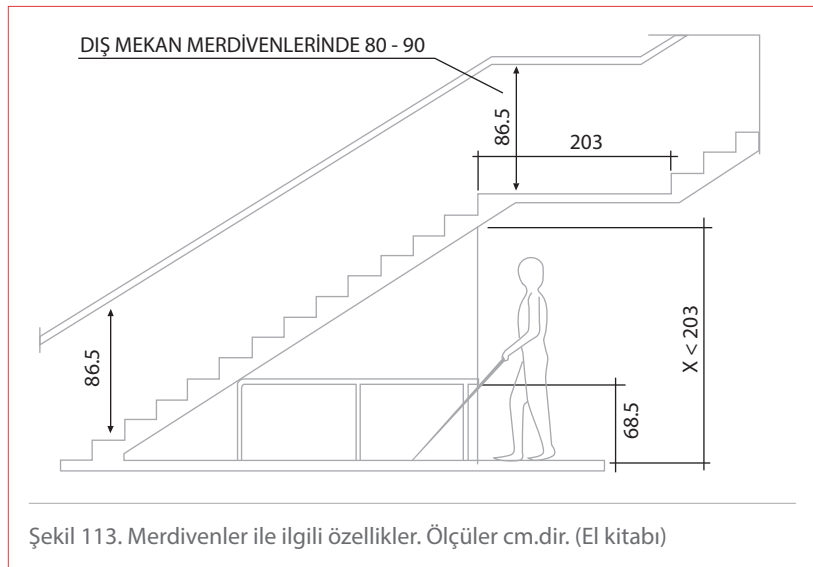


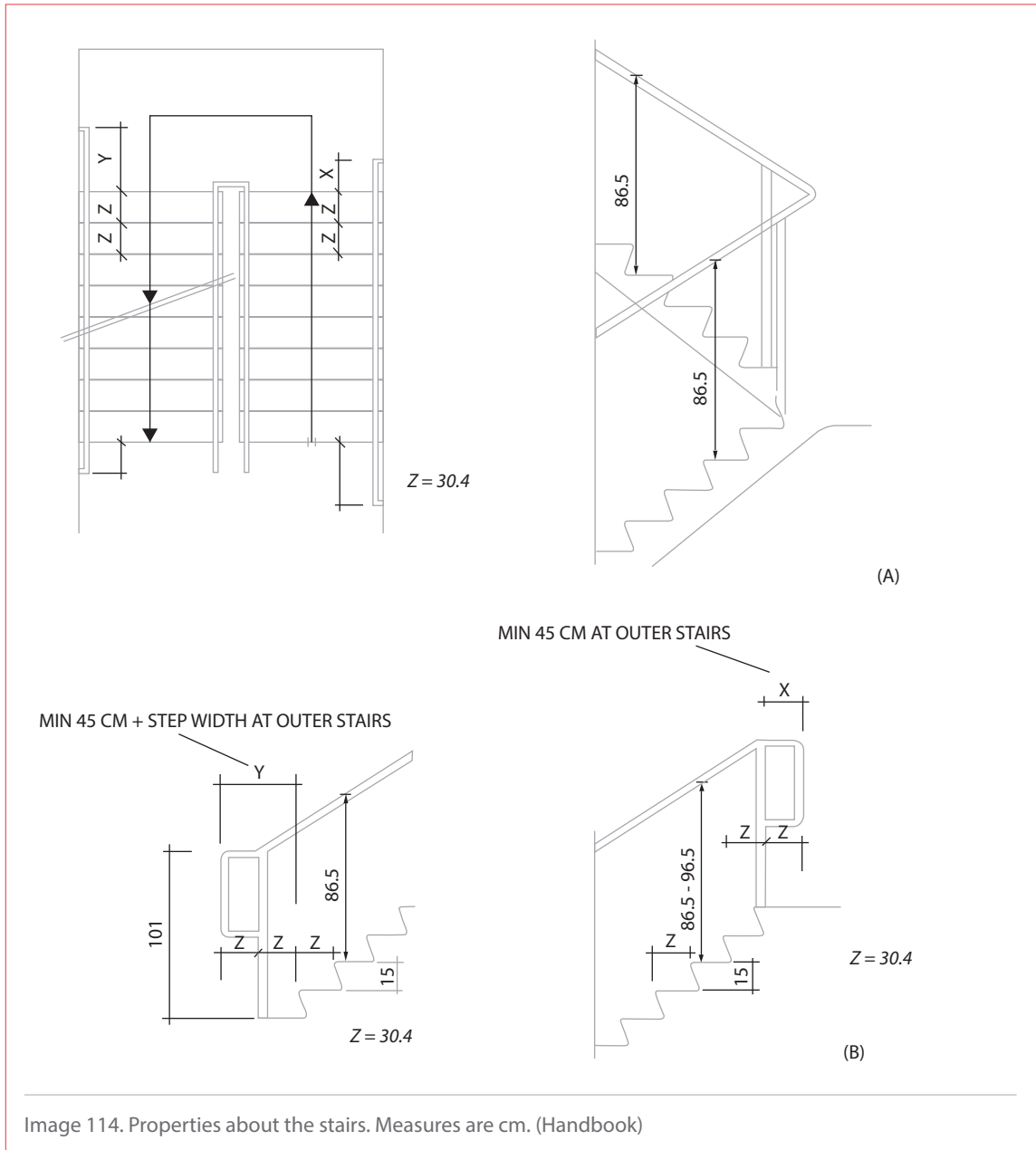
Image 112. Treads and risers. Measurements are in cm. (Handbook)

In addition, each tread and riser should be contrasting in colour or, it can be a 30 mm textured or non-slip strip on the tread and riser of colour contrast at the nosing or edge of the step. Any applied surface material should be incorporated into the step to prevent tripping of all people, including persons with visual disabilities and the elderly.

Exterior stair systems, if possible or necessary, should protect the top of the stairs against inclement weather



Şekil 113. Merdivenler ile ilgili özellikler. Ölçüler cm.dir. (El kitabı)



Landing on Path with Stairs

A stair system that travels in the same direction should have a 120 cm platform between every set of stairs 180 cm in height. At the top of the stairs system, there should be a 60 cm tactile and contrasting material to indicate that a person, including people with visual disabilities, is approaching a change in level.

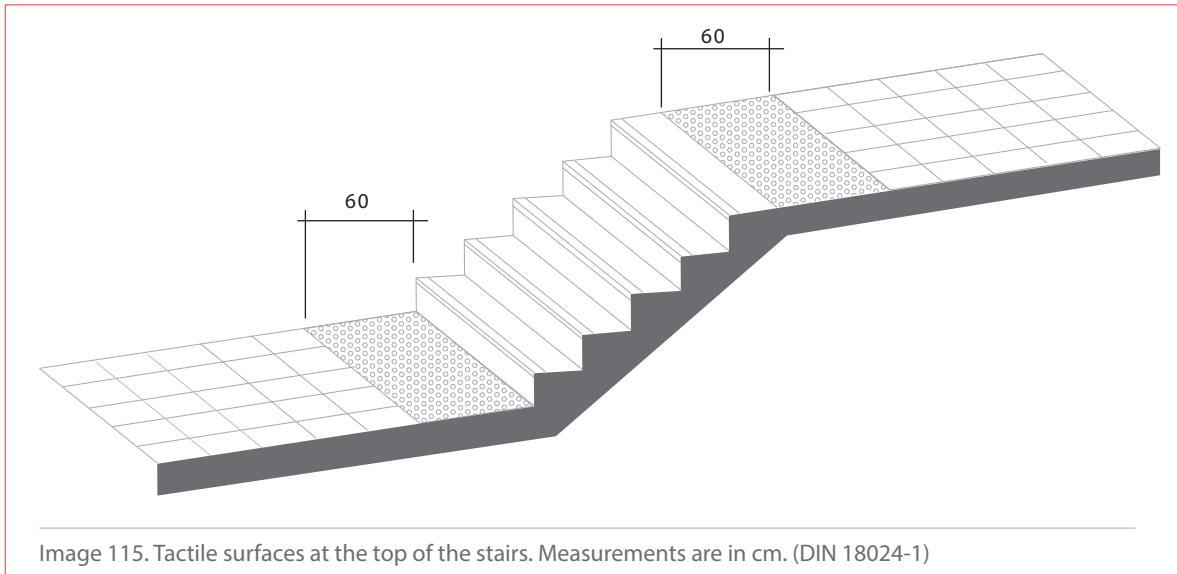


Image 115. Tactile surfaces at the top of the stairs. Measurements are in cm. (DIN 18024-1)

If the stair system changes direction, the platform area should be at least 180 cm x 180 cm. Clear width at the stairs from the railing to railing should be at least 180 cm. Water drainage gutters should be placed on the sides of the stairs (TS 12576).

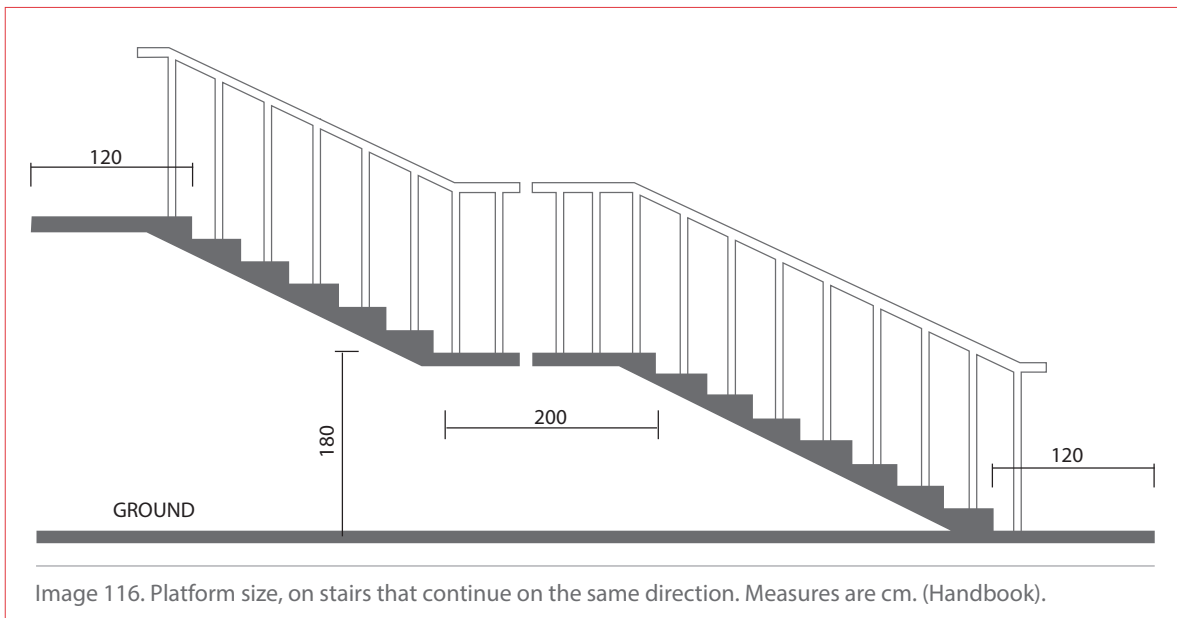


Image 116. Platform size, on stairs that continue on the same direction. Measures are cm. (Handbook).

13.7.20. Exits

Accessible routes that can serve as accessible place or unit can also serve as a connection provider for a accessible area of rescue assistance or an emergency exit.

Access to the exit should be considered in the scope of exits and evacuation accessibility exit paths. Stairs, step and escalators should not be a part of accessible exit paths. Evacuation elevators can be used as a unit of accessible exit ways in multi-floor buildings that has floors over and below the exit. In new constructions, if there isn't a automatic sprinkler system, there should be area of rescue assistance.



Area of rescue assistance should be the one of following:

- A part of a stair landing in a place with a smoke protection.
- A part of the outer balcony next to the exit stairs if it is proper for the local conditions.
- A part of the corridor next to the exit place that has one hour fire strength.
- An entering hall that is constructed with similar standards to a corridor next to the exiting place with necessary fire resistance.
- A part of the stair landing inside the exiting place that is separated with at least one hour fire resistant doors from inside the building and that goes outside.
- A room or an area that is approved by the building management and is separated from the other sides of the building with smoke barriers.

Smoke barriers should be adjacent with the Area or room of rescue assistance and should have at least one-hour fire resistance. Doors at the smoke barrier should be defined, has at least 20-minute resistance to the fire and should be automatic or self-closing.

Area or room of rescue assistance should have a direct exit to the exiting place. Area or room of rescue assistance should have the same level of fire resistance with the exiting.

System of elevator front area should get activated with smoke detectors located on every floor. This system should be reserved from the other parts of the building with construction that has at least two-hour fire resistance.

There should be at least two areas that are not smaller than 76cm x 122cm measures on all area of rescue assistance. This area of rescue assistance shouldn't be less than 1 per floor for every 200 people. Exception: If the number of users is less than 200, local management can lessen the measurements of this area of rescue assistance.

There should be visible signis at the area of rescue assistance. Signing can be provided as easy precaution as a blinking electric button that shows the way to the area of rescue assistance. All place is separated for area of rescue assistance, should be defined with an international accessibility symbol that shows the purpose of it.

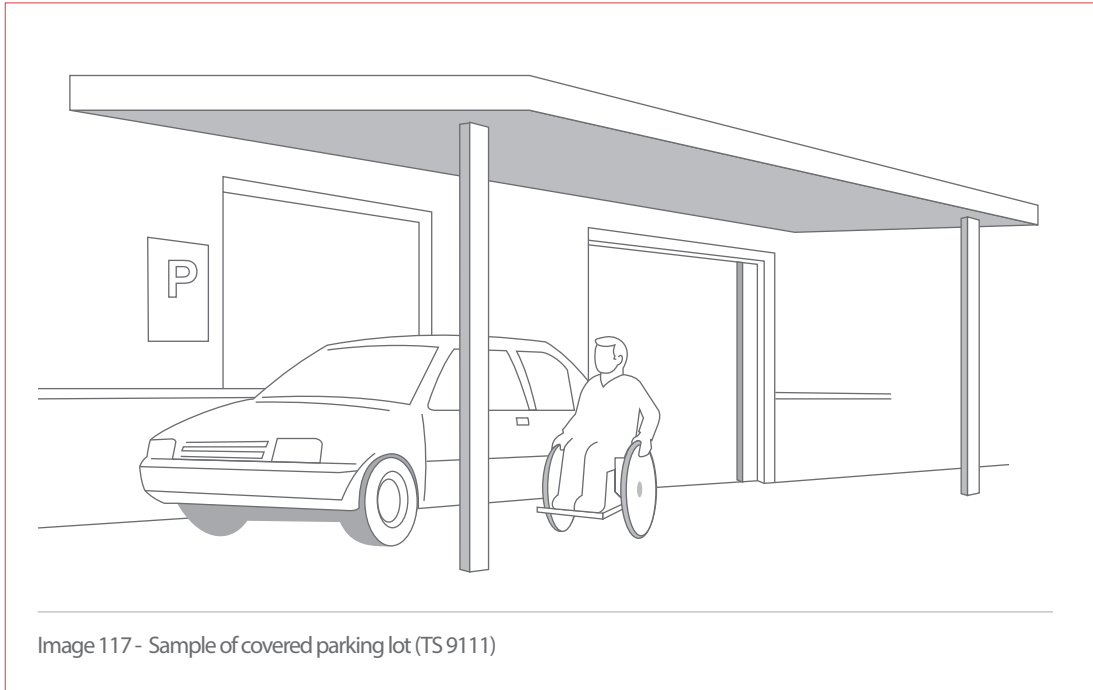
Providing emergency communication with only sound can endanger the safety of persons with hearing and speech disabled. A two way communication should be provided with visual and sound signals between the building main entrance and area of rescue assistance.

13.7.21. Rules for environment arrangements

Parking Structures

Parking Lots (TS 9111)

Disabled parking lot should not be farther away than 30 m to the building entrance, it should as closer as possible, it should have enough space to get on/off to the car and should be adjacent to the building with a safe path. Night lighting of the parking lot should be sufficient. Parking lots should be protected from weather conditions such as snow and ice and should be closed over if possible. Reserved parking lot for persons with disabilities should have min 250 cm height.

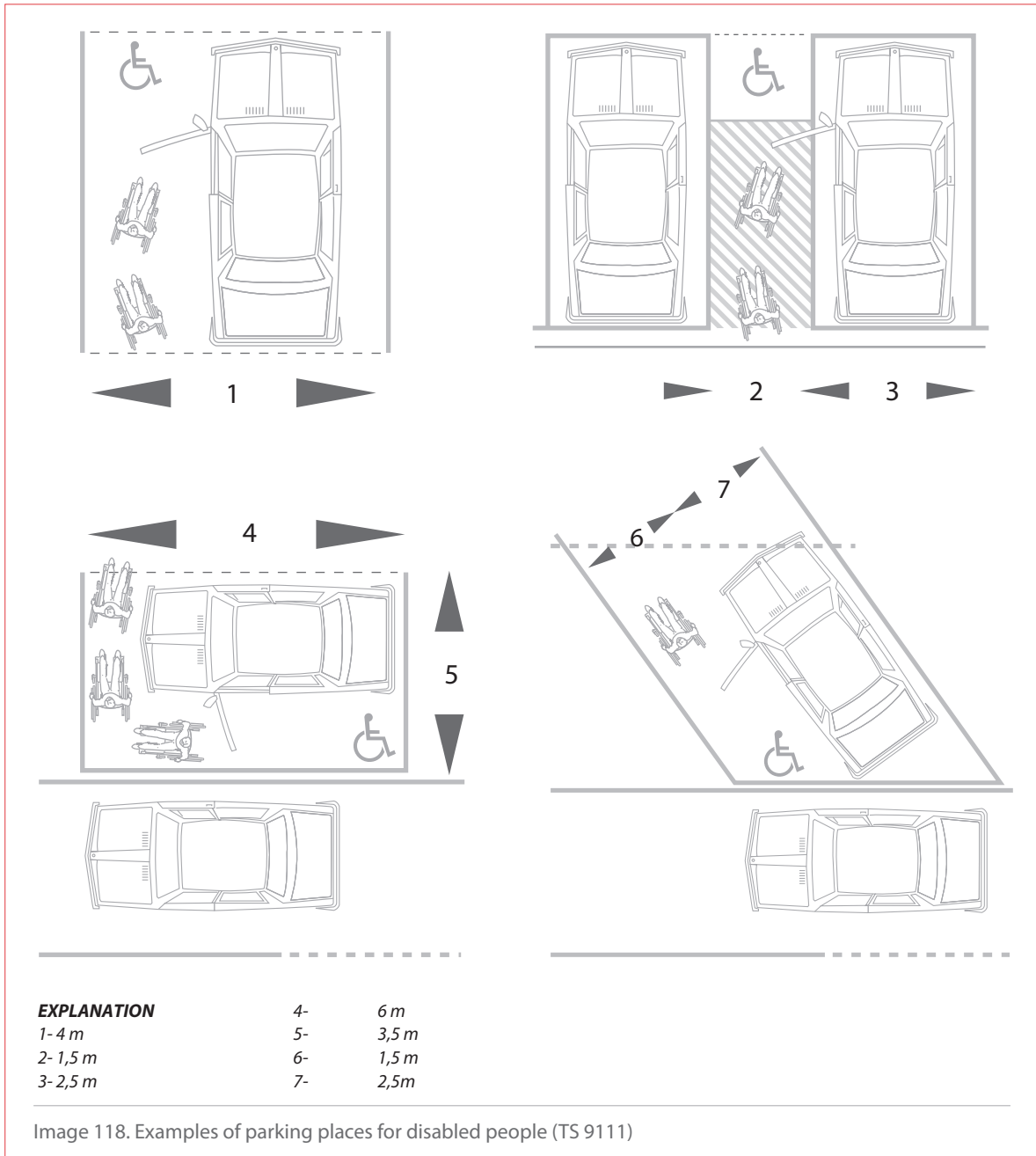


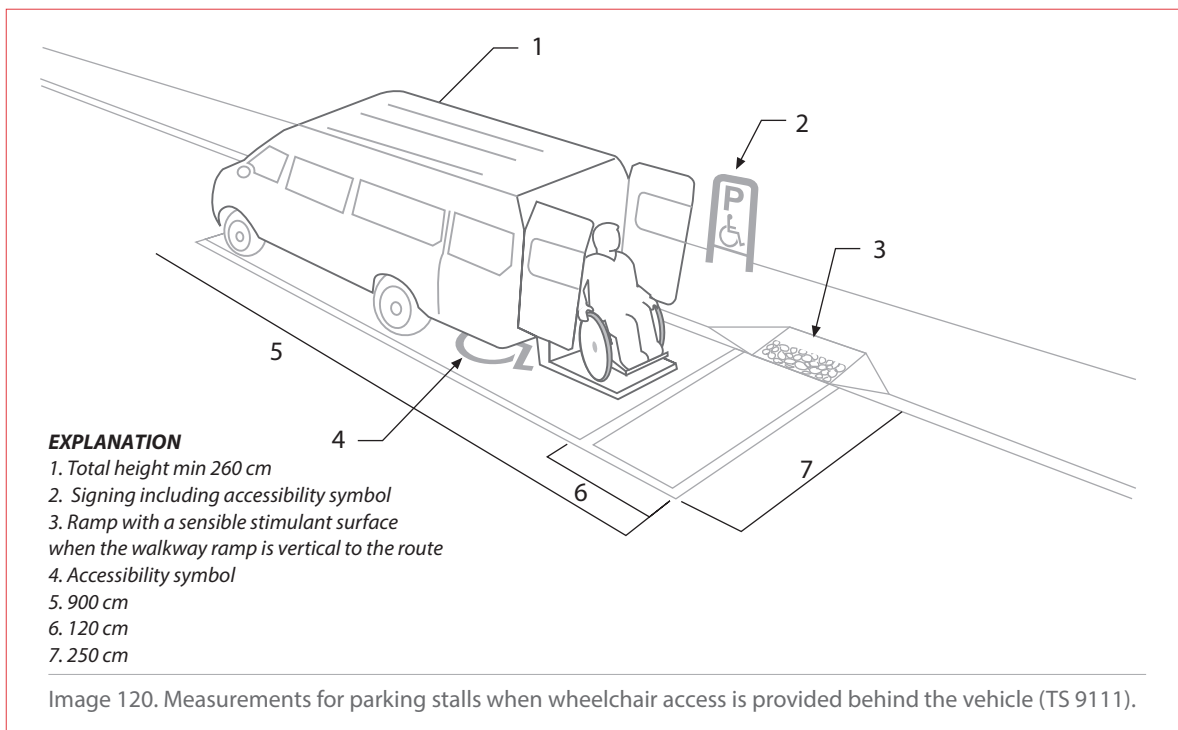
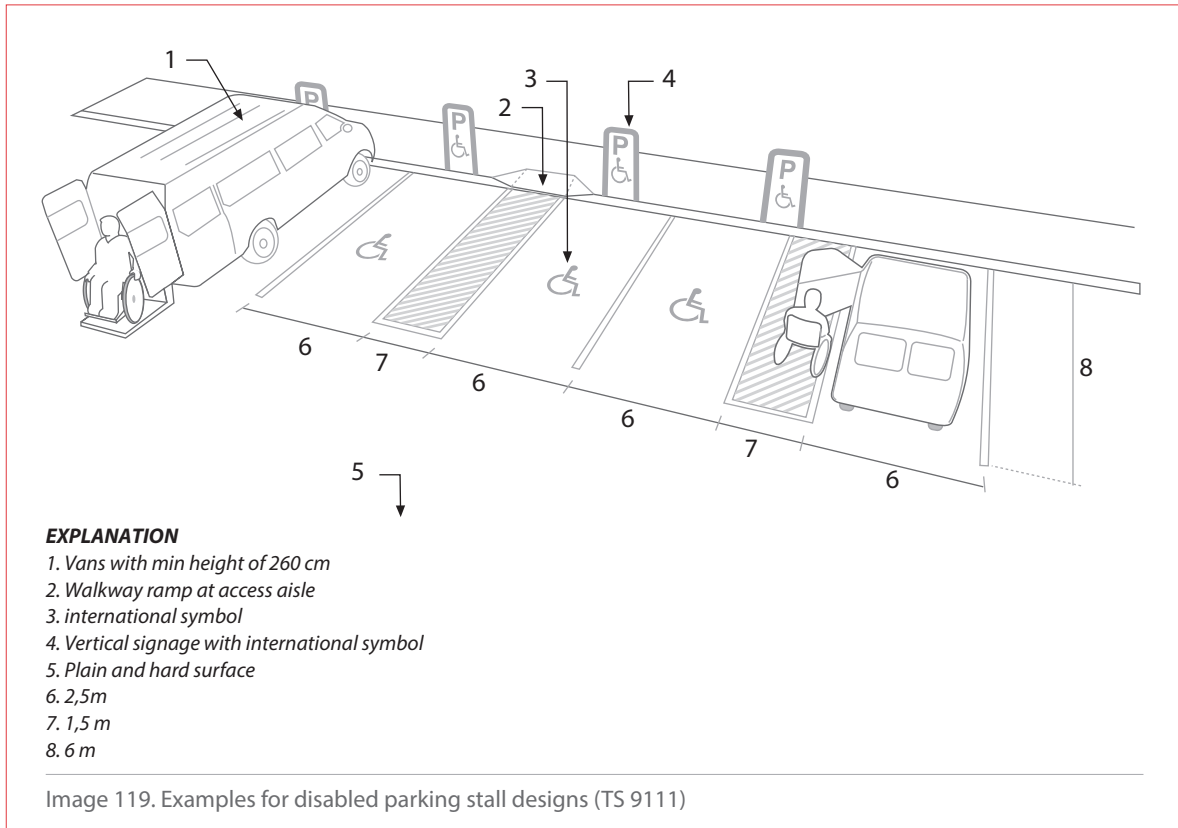
Persons shouldn't pass between vehicles for Access from the parking car to the walkway, a straight access should be provided without any intersection with the traffic. If there is only one disabled parking lot it should have min 400 cm width and 600 cm length.

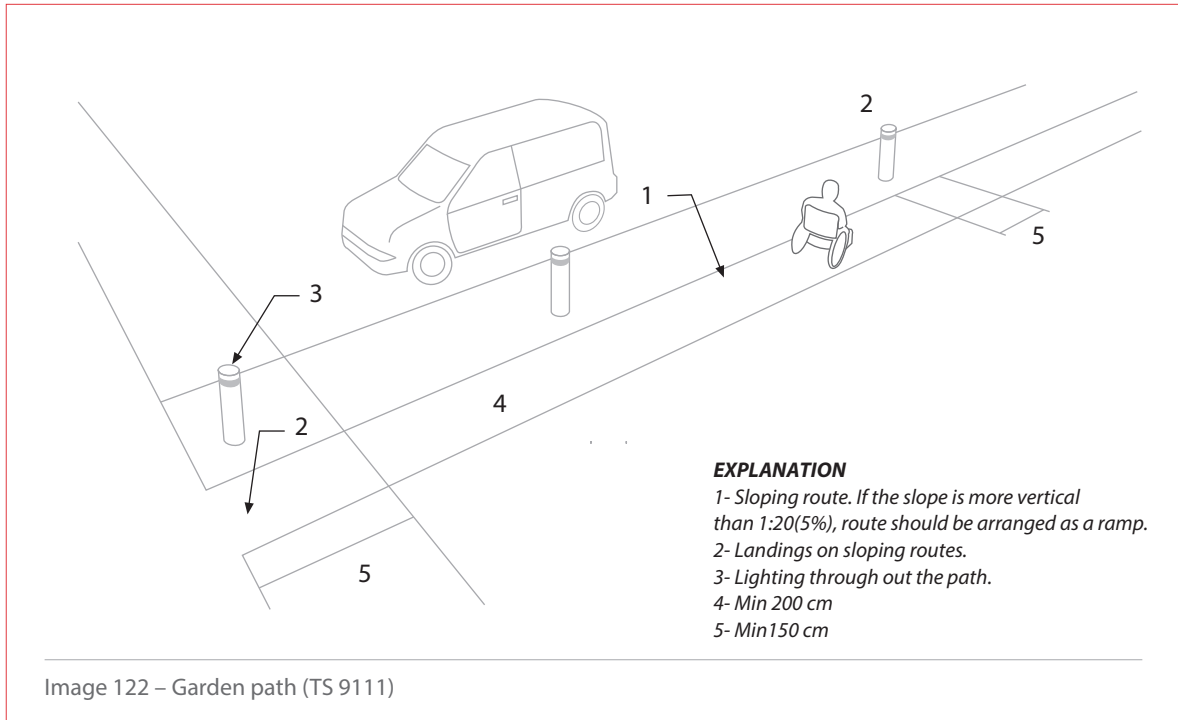
Parking lot should be thought in a place as close to the building entrance as possible and in a proper place where persons with disabilities and elders can access. If there are more than one disabled parking lot, its width should be min 250 cm. The length of the parking lot should be min 600 cm to provide easy manoeuvre around the vehicle.

Area of 150 cm width and 600 cm length, without obstacle and parallel to the vehicle, should be reserved as a manoeuvre area between two parking lots to provide easy access to the vehicle from the wheel chair. If there is a level difference between this area and where the car parks, slope should be max 1/50 (Image 117-118).

In a case of providing access for the wheel chair from behind the car, measurements for parking lot are given on Image 119.



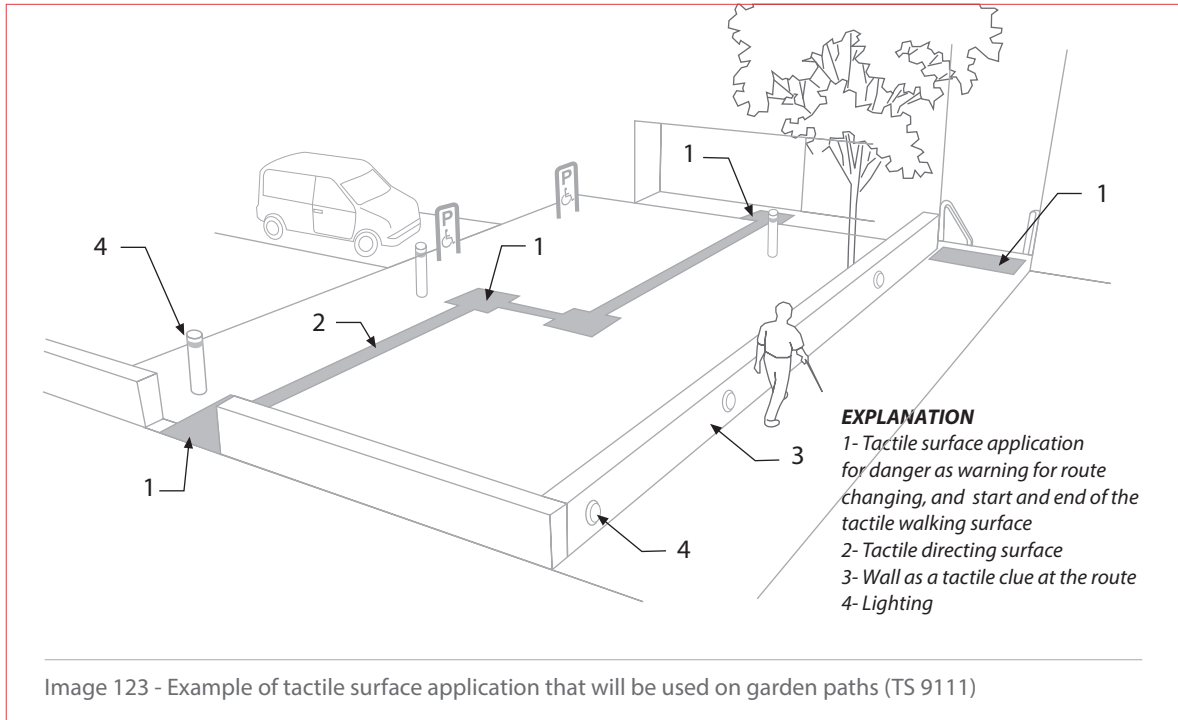




Objects, columns or footed signs that are located on the walls of the walkway should be avoided. If these kind of barriers will be used inevitably, they should be marked with clear visual stimulants. Visual stimulants should have min 75 mm length and should be located in between 90 cm- 100 cm and 150 cm- 160 cm height from the floor.

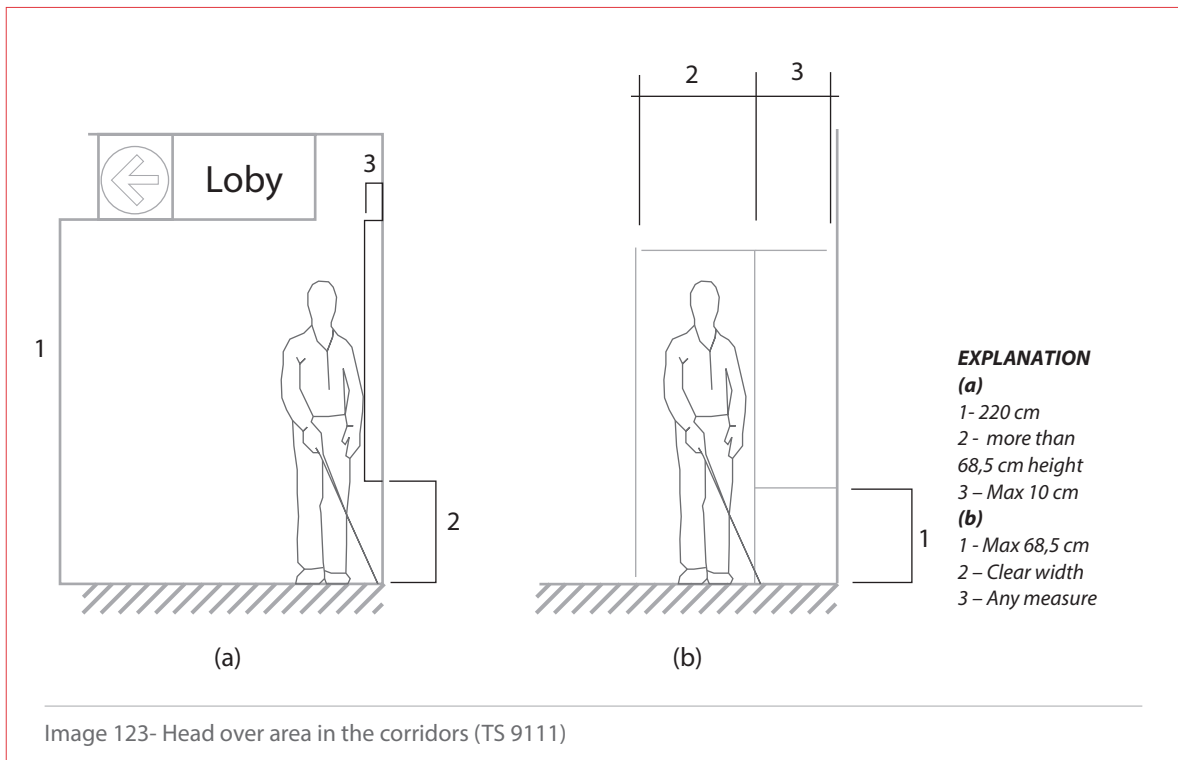
At the important decision making spots, for providing orientation and to help finding the route, additional lighting or contract brightness and information with tactile surface such as material change or tactile surface coverings .

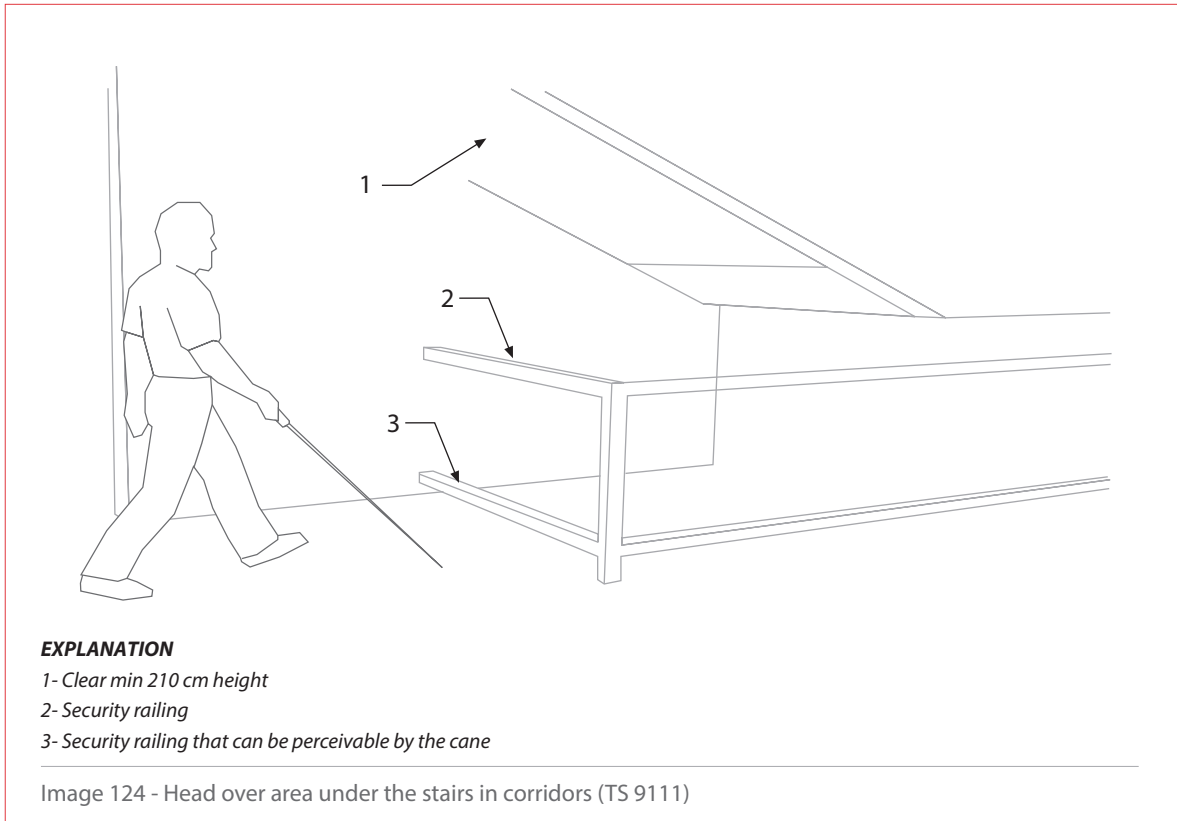
To provide directing to the building, if there aren't any other directors, linear orientation should be provided with tactile surfaces. If usage of stairs, elevators, escalators, walking bands or ramps with a slope more than 6% are inevitable on the route, tactile warning surfaces and visual signings should be provided. Objects that make sound (wall clock, fountain) can be used as a complementary essence to assist finding the route for persons with sight disabled and lesser sight, especially for individuals who have more than one disability and for elderly.



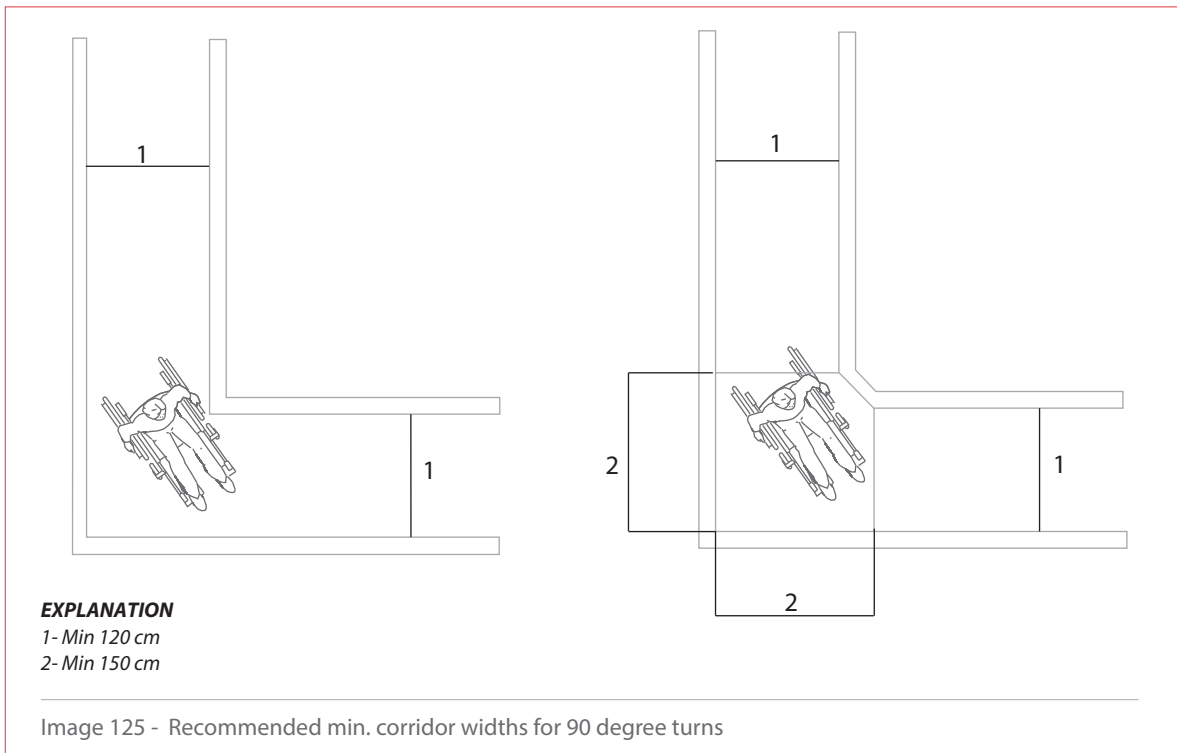
13.7.22. Corridors and Hallways (TS 9111)

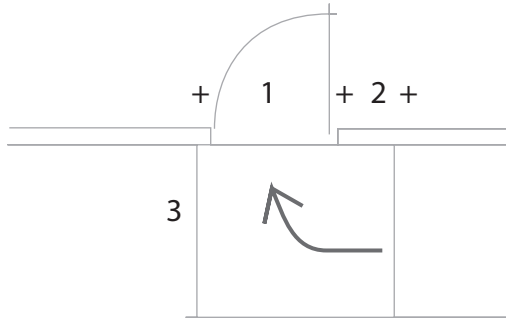
Corridors inside the building should have 90 cm clear spacing and 210 cm clear height from the floor. There shouldn't be any horizontal or vertical barriers inside this area. This height should be provided for below the stairs on the halls.





Turning (manoeuvre) examples depending on the corridor widths are given

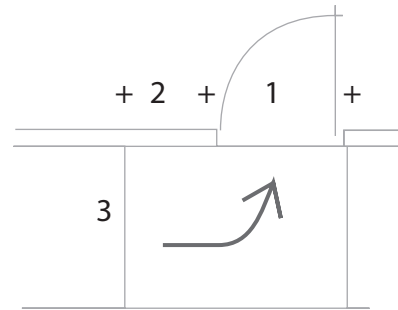




(a)

Explanation (a)

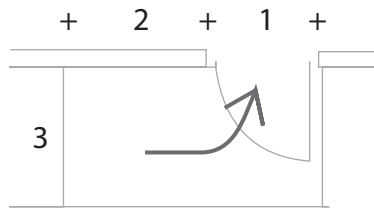
- 1- 100 cm
- 2- 50 cm
- 3- 120 cm



(b)

Explanation (b)

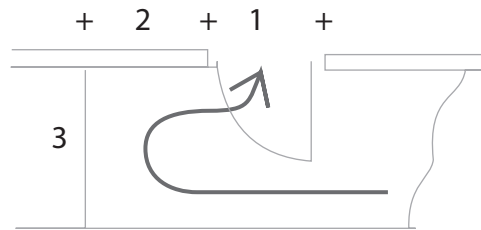
- 1- 100 cm
- 2- 65 cm
- 3- 110 cm



(c)

Explanation (c)

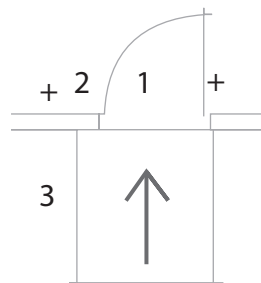
- 1- 100 cm
- 2- 130 cm
- 3- 120 cm



(d)

Explanation (d)

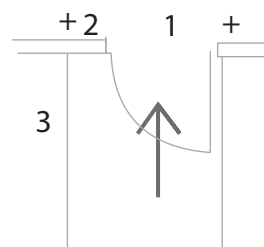
- 1- 100 cm
- 2- 110 cm
- 3- 140 cm



(e)

Explanation (e)

- 1- 100 cm
- 2- 20 cm
- 3- 140 cm

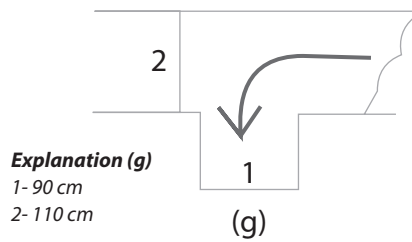


(f)

Explanation (f)

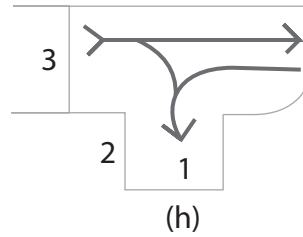
- 1- 100 cm
- 2- 35 cm
- 3- 200 cm

Image 126 – Corridor widths for manoeuvrability (TS 9111)



Explanation (g)
1- 90 cm
2- 110 cm

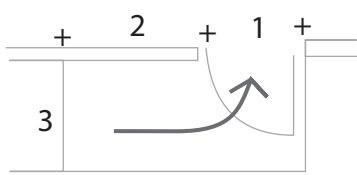
(g)



Explanation (h)
1- 90 cm
2- 55 cm
3- 120 cm

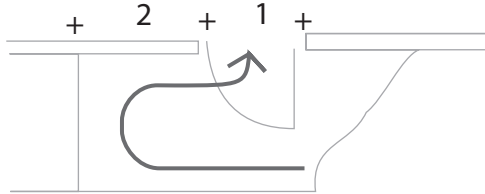
(h)

3



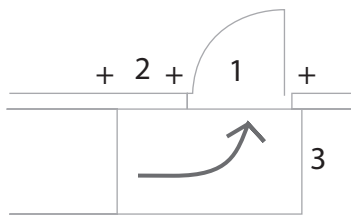
(i)

Explanation (i)
1- 90 cm
2- 130 cm
3- 100 cm



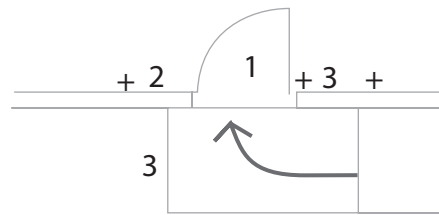
(i)

Explanation (i)
1- 90 cm.
2- 110 cm.
3- 120 cm.



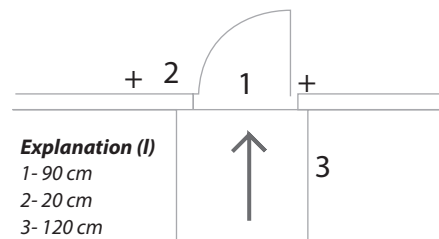
(j)

Explanation (j)
1- 90 cm
2- 65 cm
3- 100 cm



(k)

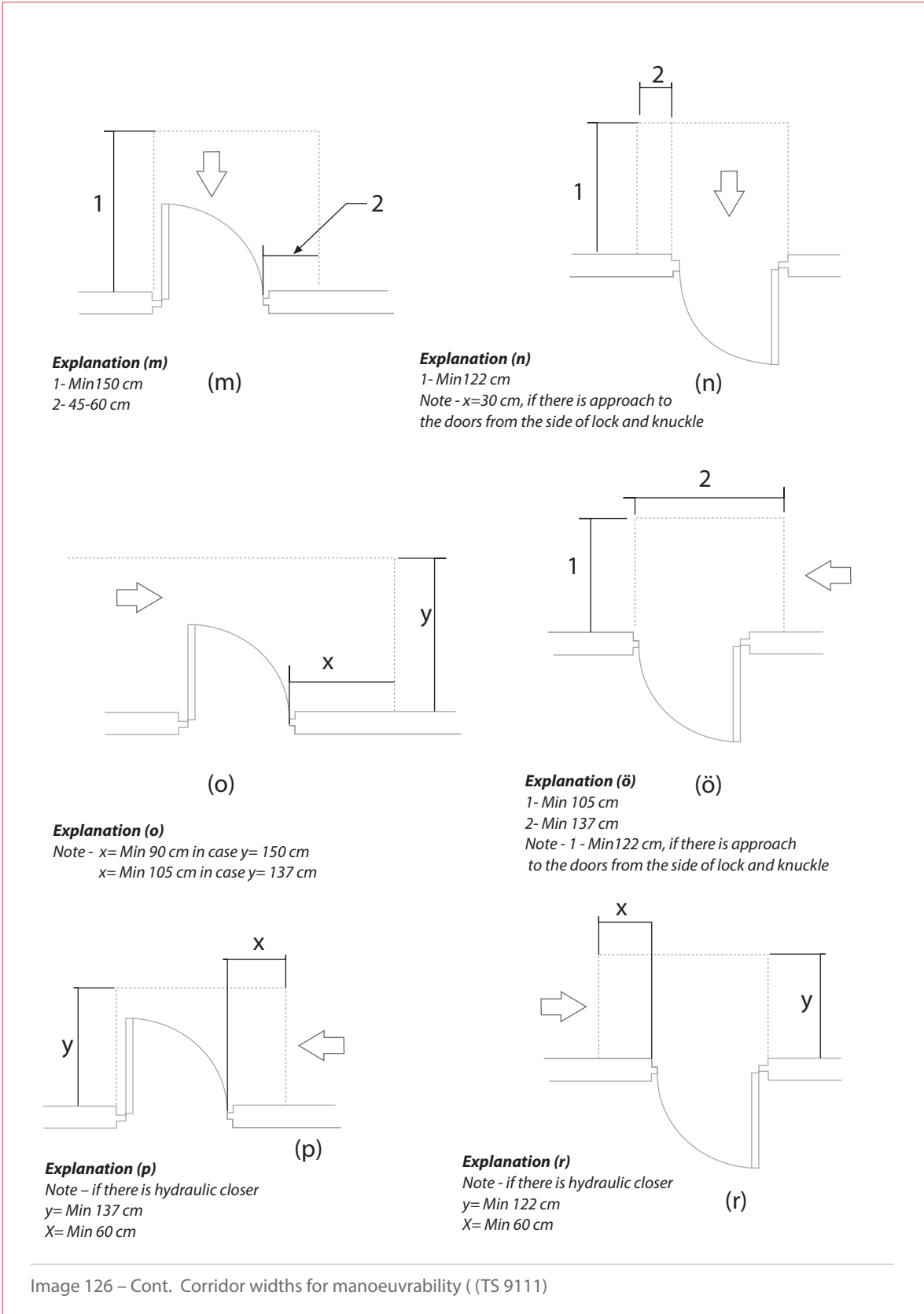
Explanation (k)
1- 90 cm
2- 10 cm
3- 50 cm



Explanation (l)
1- 90 cm
2- 20 cm
3- 120 cm

(j)

Image 126 – Cont. Corridor widths for manoeuvrability ((TS 9111)



Explanation (m)
 1- Min 150 cm
 2- 45-60 cm

(m)

Explanation (n)
 1- Min 122 cm
 Note - $x=30$ cm, if there is approach to the doors from the side of lock and knuckle

(n)

Explanation (o)
 Note - $x=$ Min 90 cm in case $y= 150$ cm
 $x=$ Min 105 cm in case $y= 137$ cm

(o)

Explanation (ö)
 1- Min 105 cm
 2- Min 137 cm
 Note - 1 - Min 122 cm, if there is approach to the doors from the side of lock and knuckle

(ö)

Explanation (p)
 Note - if there is hydraulic closer
 $y=$ Min 137 cm
 $X=$ Min 60 cm

(p)

Explanation (r)
 Note - if there is hydraulic closer
 $y=$ Min 122 cm
 $X=$ Min 60 cm

(r)

Image 126 – Cont. Corridor widths for manoeuvrability ((TS 9111))

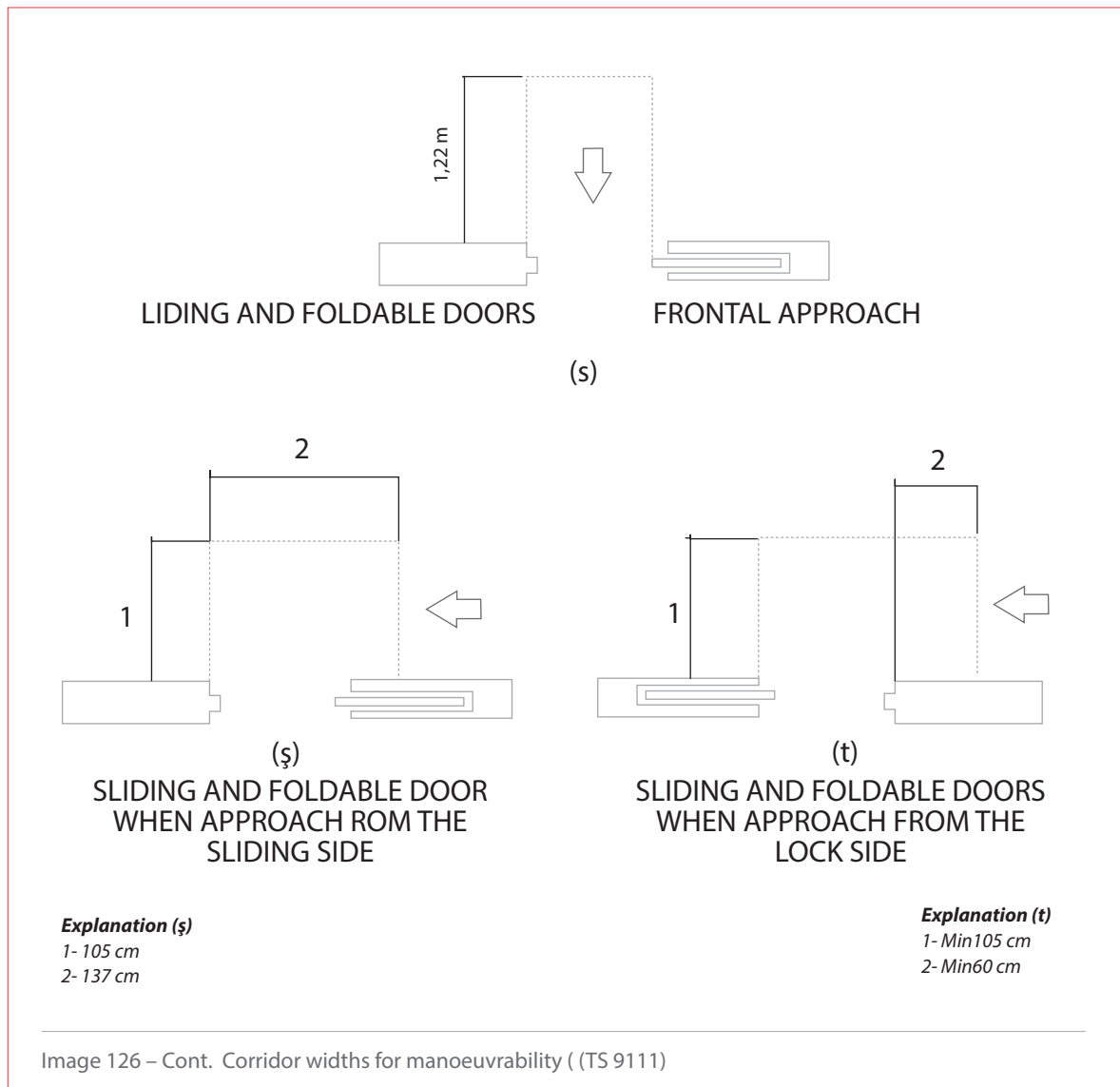


Image 126 – Cont. Corridor widths for manoeuvrability ((TS 9111)



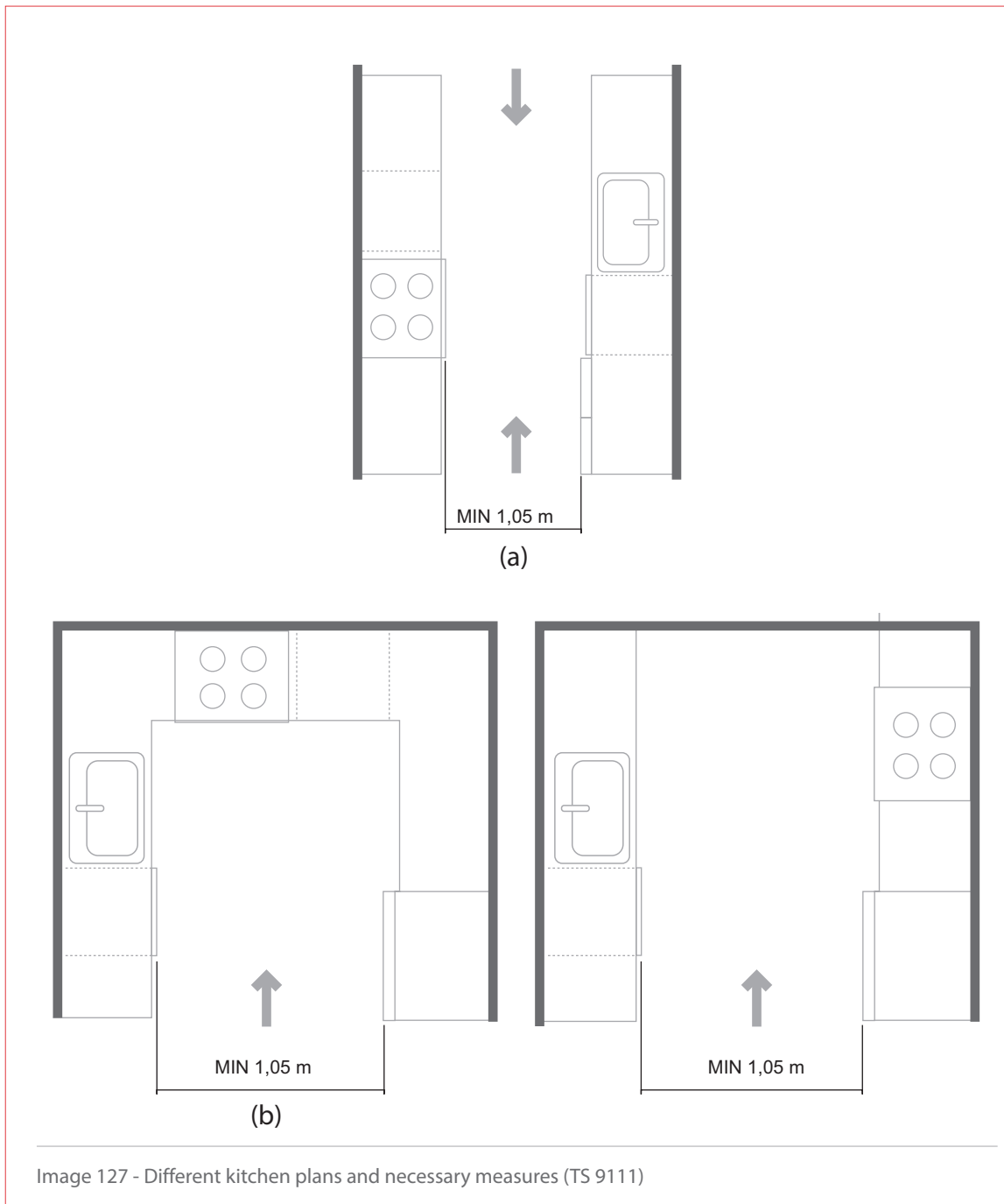
There should be handles on two different heights as 70 cm and 90 cm mounted on the walls in circulation areas. Narrow sided mold or steel panel radiators should be chosen for the radiators that will be used in circulation areas.

13.7.23. Kitchens (TS 9111)

Accessible and adaptable kitchens and their components should be on an accessible route.

Plan net usage area (TS 9111)

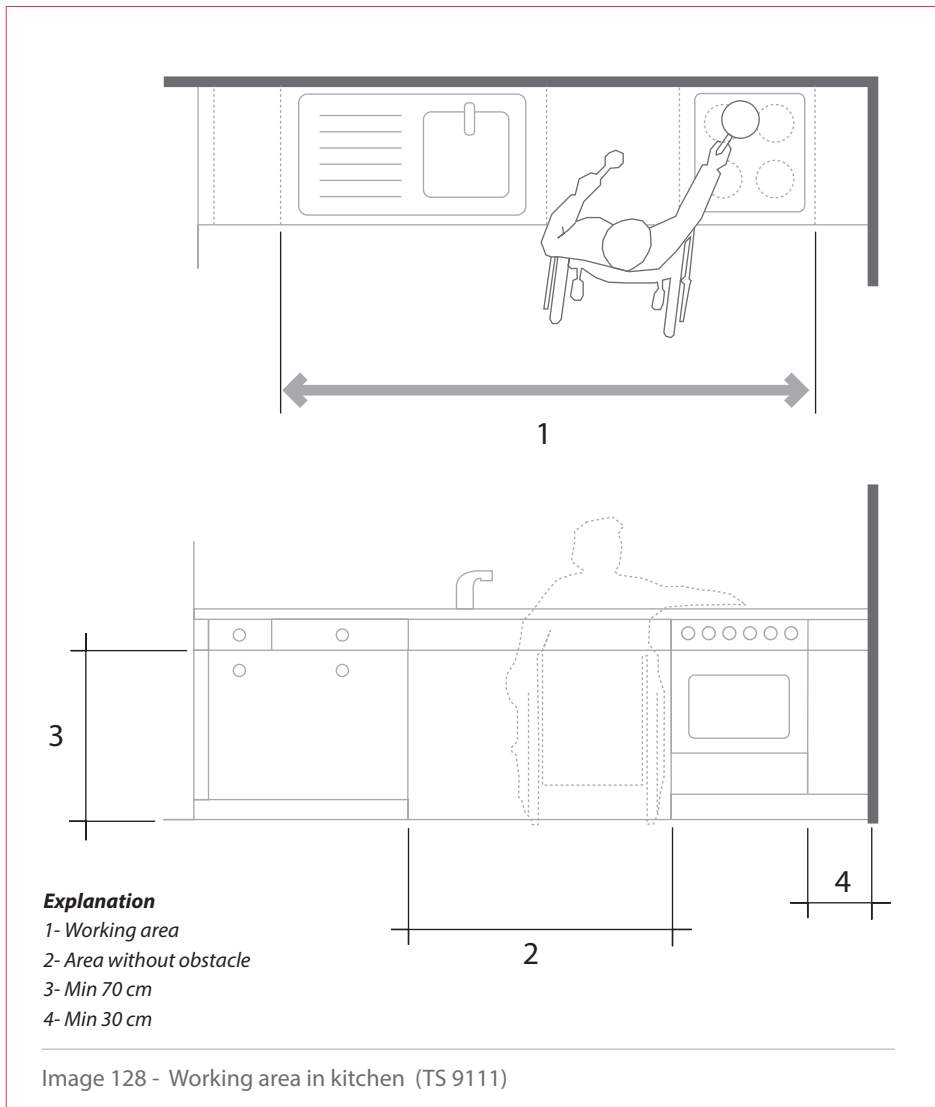
There should be an area without obstacle as min 150 cm x 150 cm measures or 150 cm radius left in the kitchens to let wheel chair users to manoeuvre. Spacing between all cupboards, benches and the walls, shouldn't be less than 105 cm (Image 127 a, b and c).





All hardware in the kitchen (oven, refrigerator/freezer, dish machine, etc.) should be arranged to allow wheel chair users to approach from front or sides and there should be a 80 cm x 122 cm measured movement area in front of these hardware.

Hardware in the kitchen (oven, refrigerator/freezer, dish machine, etc.) shouldn't be located in the corner. They should be located min 30 cm away from the inside corners (Image 128).

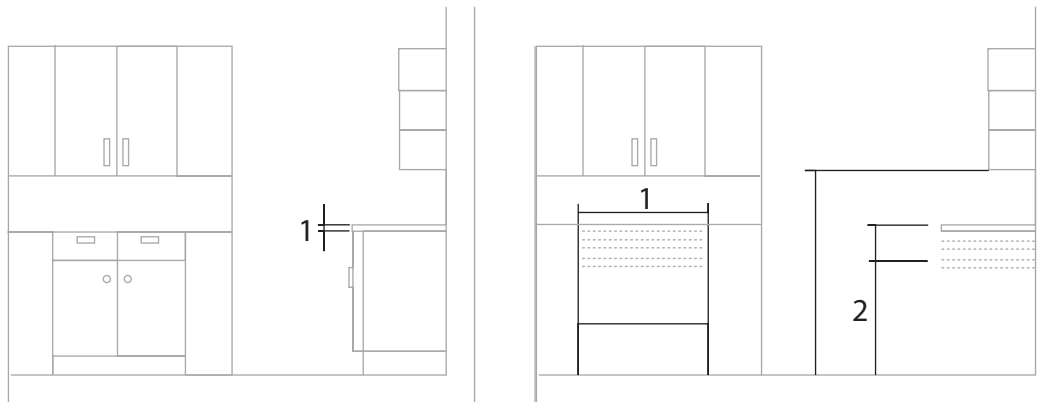


Counters and working surfaces(TS 9111)

Min 80 cm length of the kitchen counter should be arranged as a working surface like in Image 129 a, b and c. If there is a sub-cabinet, min 80 cm part of the front surface should be removable in the using process. Counter can be applied so that counter upper surface and flooring (floor covering) upper surface height will be max 86 cm, counter lower surface and flooring (floor covering) upper surface height will be min 75 cm. If the counter is not fixed, it can be adjusted to provide different heights between counter upper surfaces and flooring upper surface (71,5-81,5-91,5 cm) or it can be a replaceable unit.



At the place where flooring area is 80cm x 122cm, a wheel chair user can approach the counter from front. Clear open area has min 80 cm width, 75 cm height and min 49 cm depth, should be left at the counter for the knees. There shouldn't be any rough and disturbing surfaces under these kinds of counters.

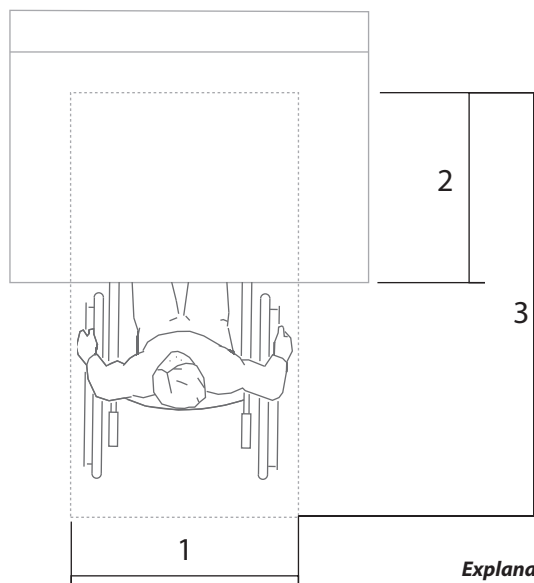


(a)
BEFORE REMOVING CUPBOARD AND SHELF

(b)
ALTERNATIVES FOR REMOVED CUPBOARD

Explanation (a)
1- 5 cm

Explanation (b)
1- 80 cm
2- 71,5 - 91,5 cm



(c)
CLEAR FLOORING AREA UNDER
WORKING TABLE

Explanation (c)
1- 80 cm
2- 49 cm
3- 1,22 m

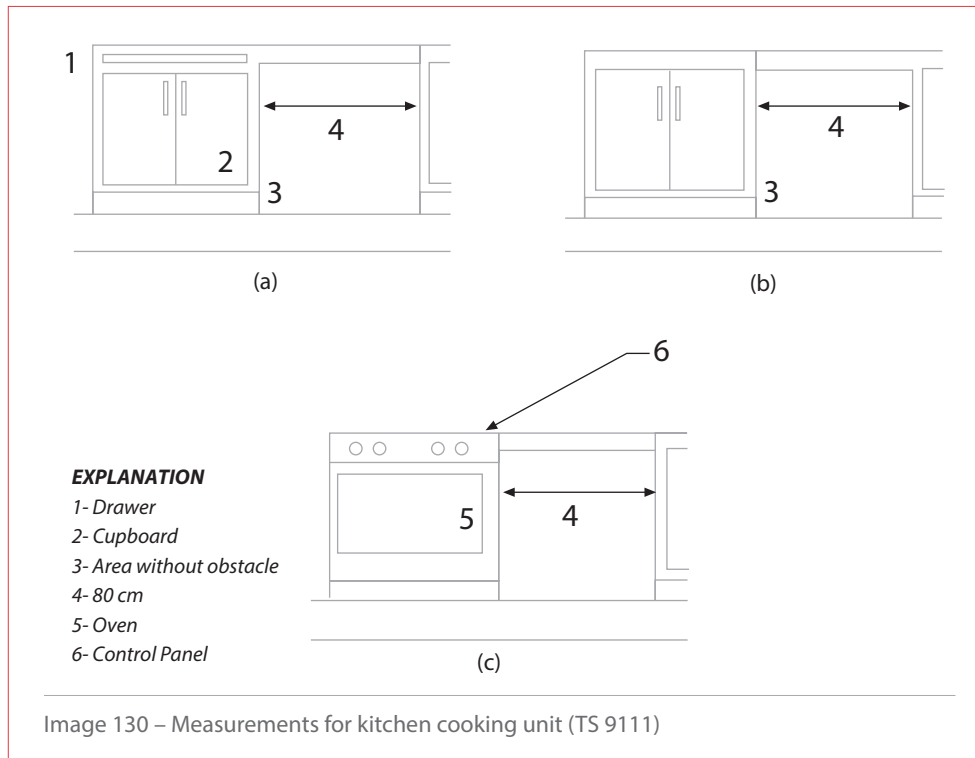
Image 129 - Kitchen counter measurements (TS 9111)



Cooking unit, cookers (TS 9111)

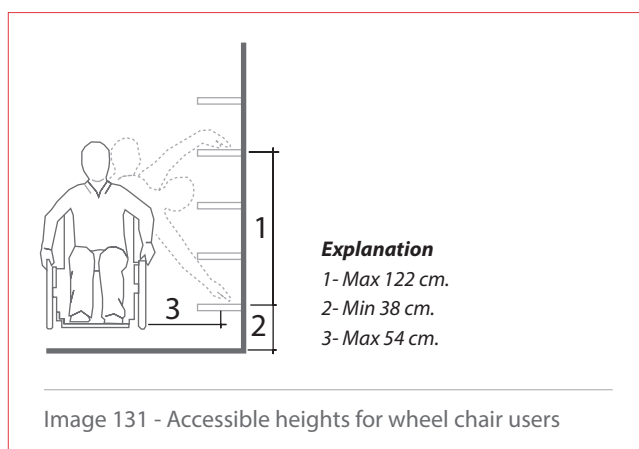
Clear open area of min 80 cm width, 70 cm height and 49 cm depth should be left for the knees under the cookers. If there are parts under the oven or the stoves that knees can get in, these should be taken into protection and isolated for preventing electric shocks and burnings.

Control buttons of ovens and stoves should be located to prevent burning on cross reaching.



Kitchen cabinets (TS 9111)

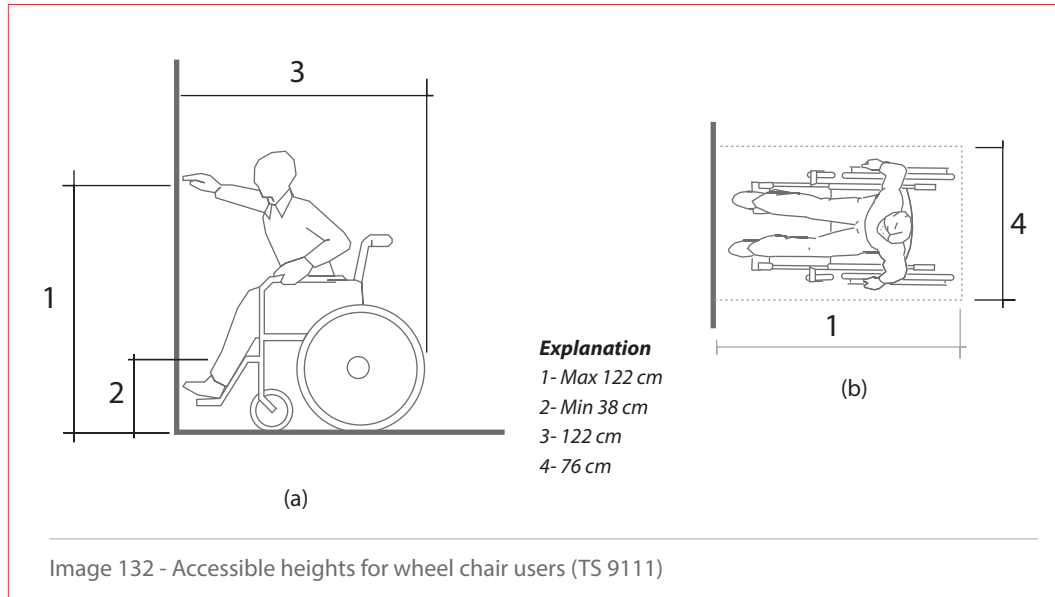
Cabinet, drawer and shelf accessibility measurements are given on Image 131.



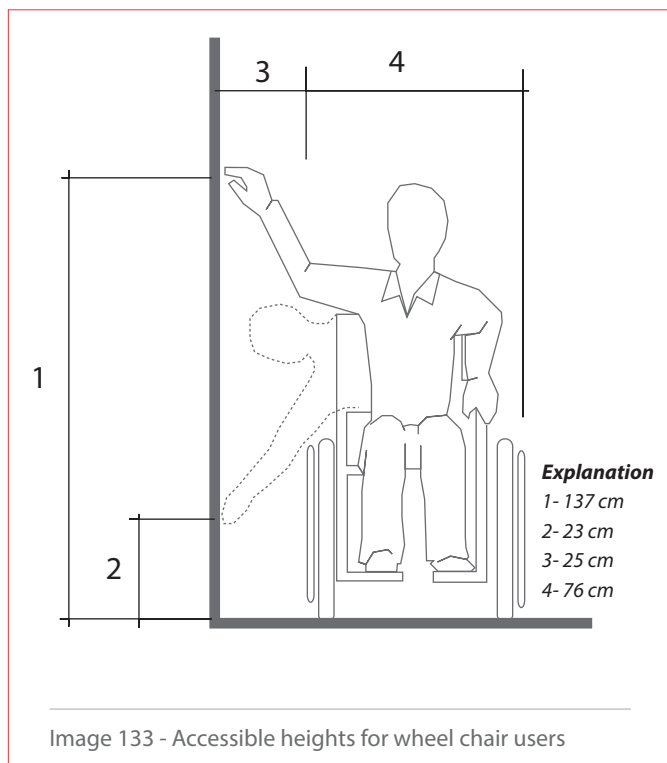


In all cabinet and storage shelves, at least one shelf should have a height of max 122 cm. Covering handles and pushing handles of upper cabinets should be as close as possible to the lower parts of the cabinet covers. Covering handles and pushing handles of lower cabinets should be as close as possible to the upper parts of the cabinet covers.

If it is only possible to get closer to an object from the front face, accessible heights should be between 38 cm to 122 cm for wheel chair users (Image 132 a and b).

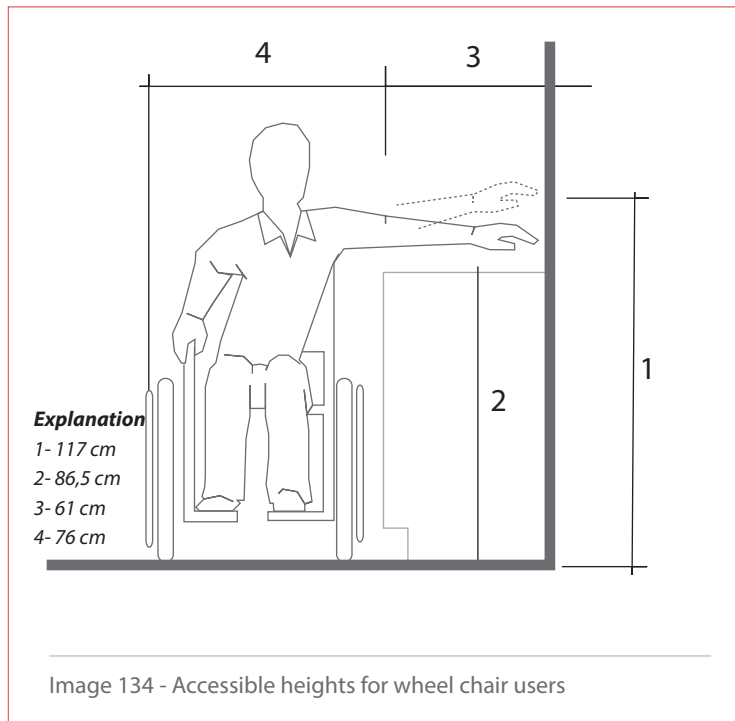


Accessible heights as parallel or from side face should be min 23 cm and max 137 cm (Image 133).





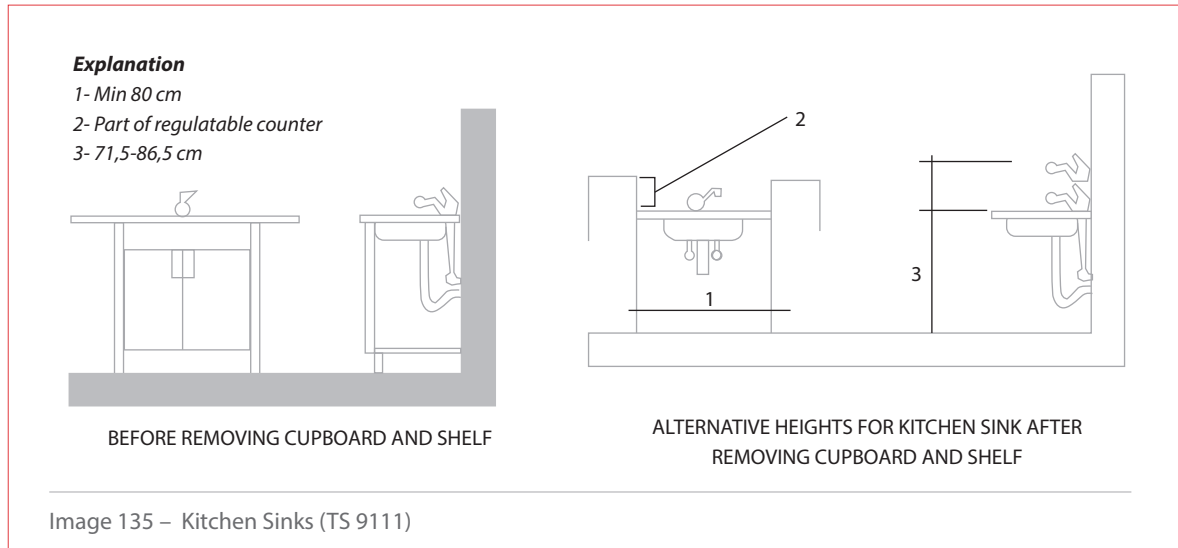
When persons wants to access counter from the side with at most 86,5 cm height and 61 cm depth, accessible height should be max 117 cm (Image 134).



Kitchen Sink (TS 9111)

Sinks and the counter around it should have following properties and should be according to Image 135.

- sink and the sink counter can be applied as max 86,5 cm height between upper surface and flooring upper surface or it can be adapted to provide different heights (71,5-81,5-91,5 cm) between counter upper surface and flooring upper surface or it can be a replaceable unit. Sink and around of counter should have total 76 cm width.
- Piping for providing water coming/leaving for sinks can be attached to 71 cm height.
- Sinkhole shouldn't be deeper than 16,5 cm. In sinks with two or three cells, it is enough that only one cell provides this condition.
- If there are lower cabinets, min 76 mm full part of the frontal face of the sink and around of counter, should be detachable/separable. On the necessary clear opening area, thickness of counter and carrying part can be max 50 mm.
- In the sizes of 760 mm x 1220 mm clear flooring surface can let frontal approach to the counter. Max 49 cm of the clear flooring surface can reach under the sink.
- Min 76 cm width and 49 cm depth of a clear open area should be left for the knees.
- There shouldn't be any disturbing and rough surfaces under the sink. Hot water and drainage pipes should be isolated or covered.



Ovens (TS 9111)

Ovens should be self-cleaning or they should be located adjacent on a counter that has knee opening and adaptable height under it. In the side opening ovens, door latch should be next to the open counter surface. Control buttons in ovens should be on the front panel.

Refrigerator/ Freezer (TS 9111)

In refrigerators combined with freezers, min 50% of the area should be less than 137 cm height from the floor. All of the refrigerator area and control buttons should be lower than 137 cm from the floor.

Trashcan (TS 9111)

Trashcans should be accessible.

13.7.24.Toilets (TS 9111)

1 woman disability toilet and 1 man disability toilet, urinal and sink should be located as accessible for max 25 persons In buildings like office, mall, store, market, bazaar, hotel etc. and for max 50 persons in public buildings like movie theatres, theatres etc.

Plan of clear usage area (TS 9111)

Toilets should be located on an accessible route. Minimum flooring surface can be arranged as left or right approach in the toilets.

Providing the door opening to the outside, minimum clear width and depths of floor surface should be 122cm x 167,5 cm on frontal approach (for a straight transfer); 122 cm x 142 cm on right approach (for a diagonal transfer); 150 cm x 142 cm on both frontal and left approach (for side transfer). When Closet is located, , middle axle should be min 46 cm away from side wall and clear width of closet should be min 92 cm. For toilets with different plans, measurements are given on Image 136, 137, 138, 139 and 140. Closets should be used in toilets.

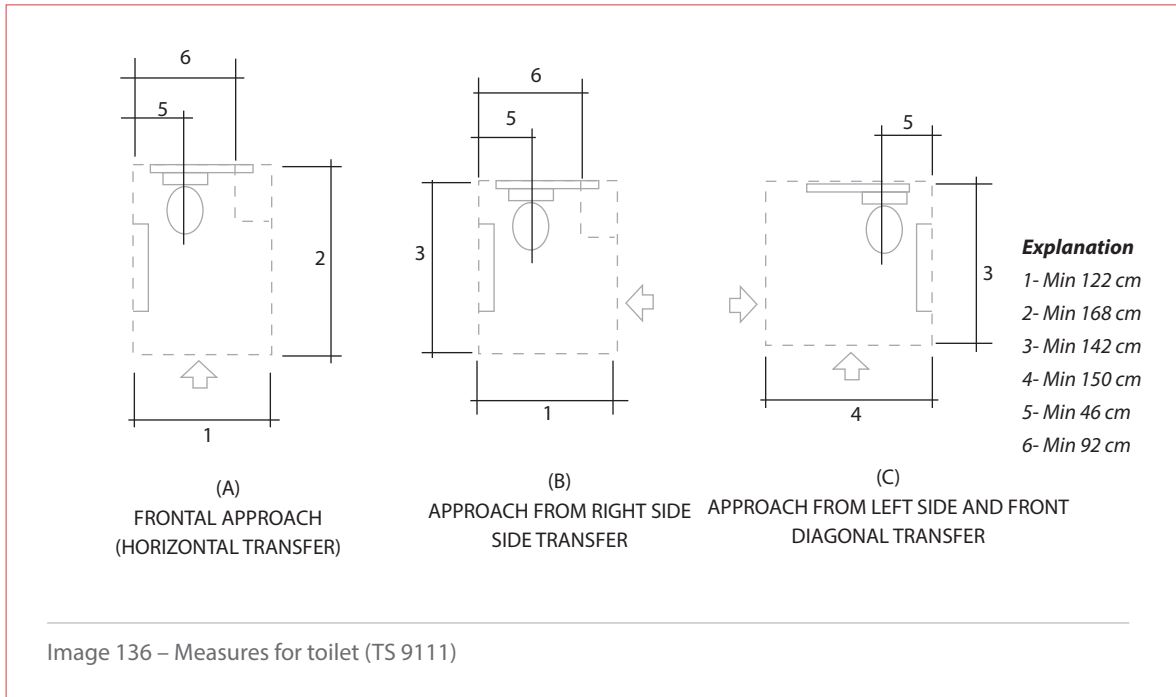


Image 136 – Measures for toilet (TS 9111)

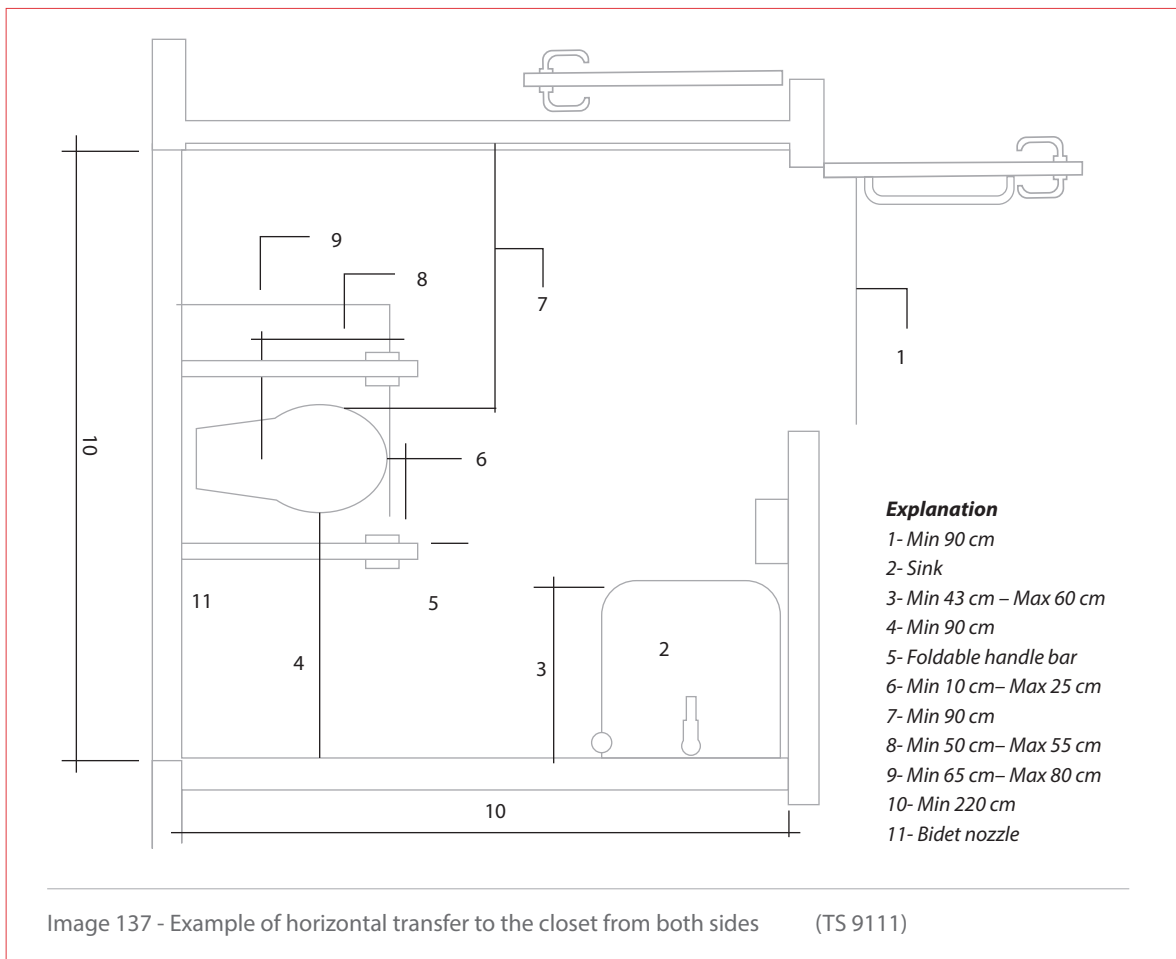


Image 137 - Example of horizontal transfer to the closet from both sides (TS 9111)

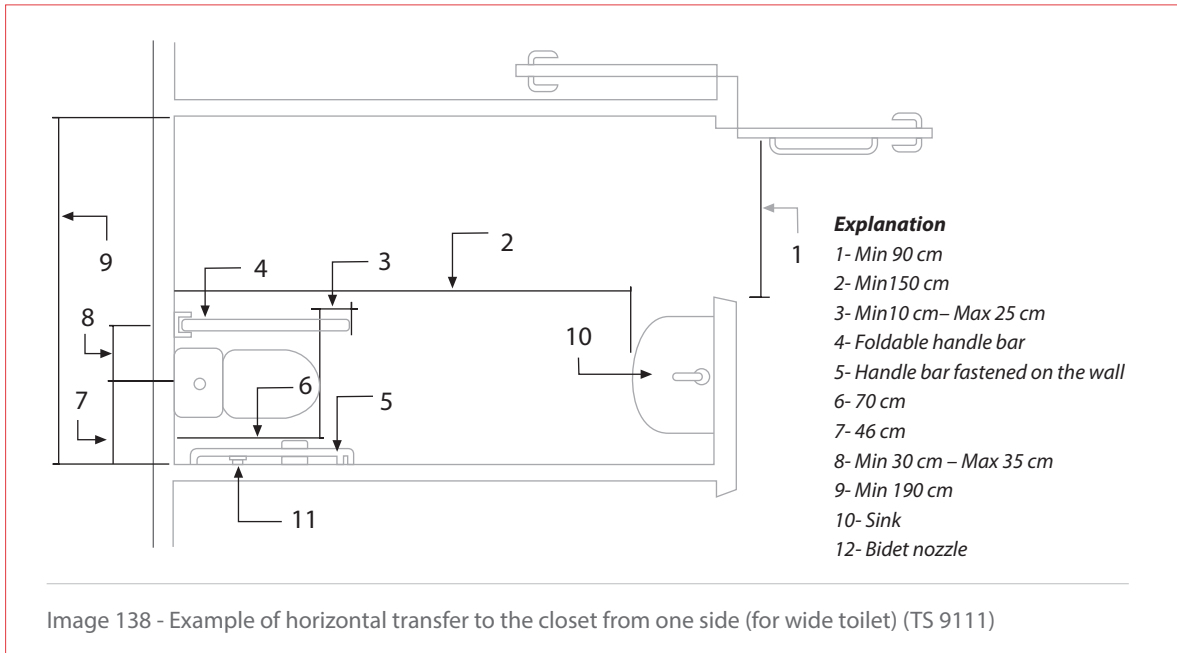


Image 138 - Example of horizontal transfer to the closet from one side (for wide toilet) (TS 9111)

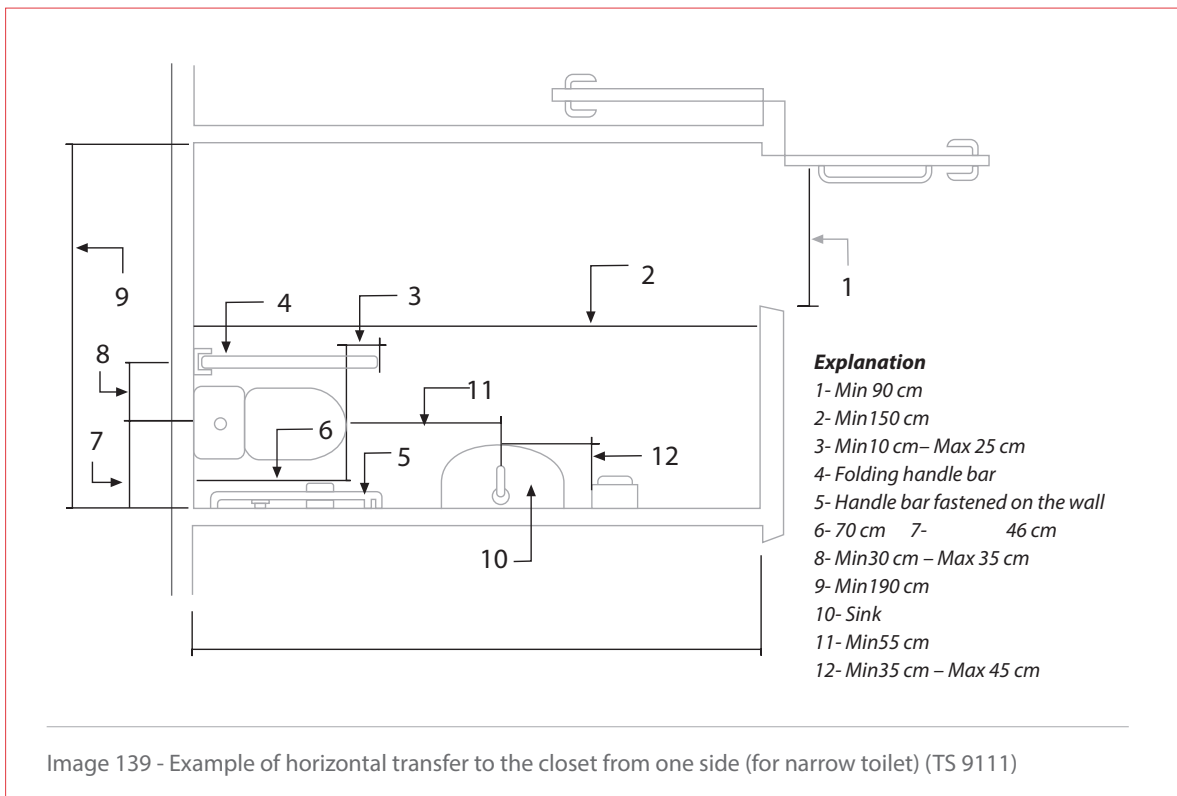
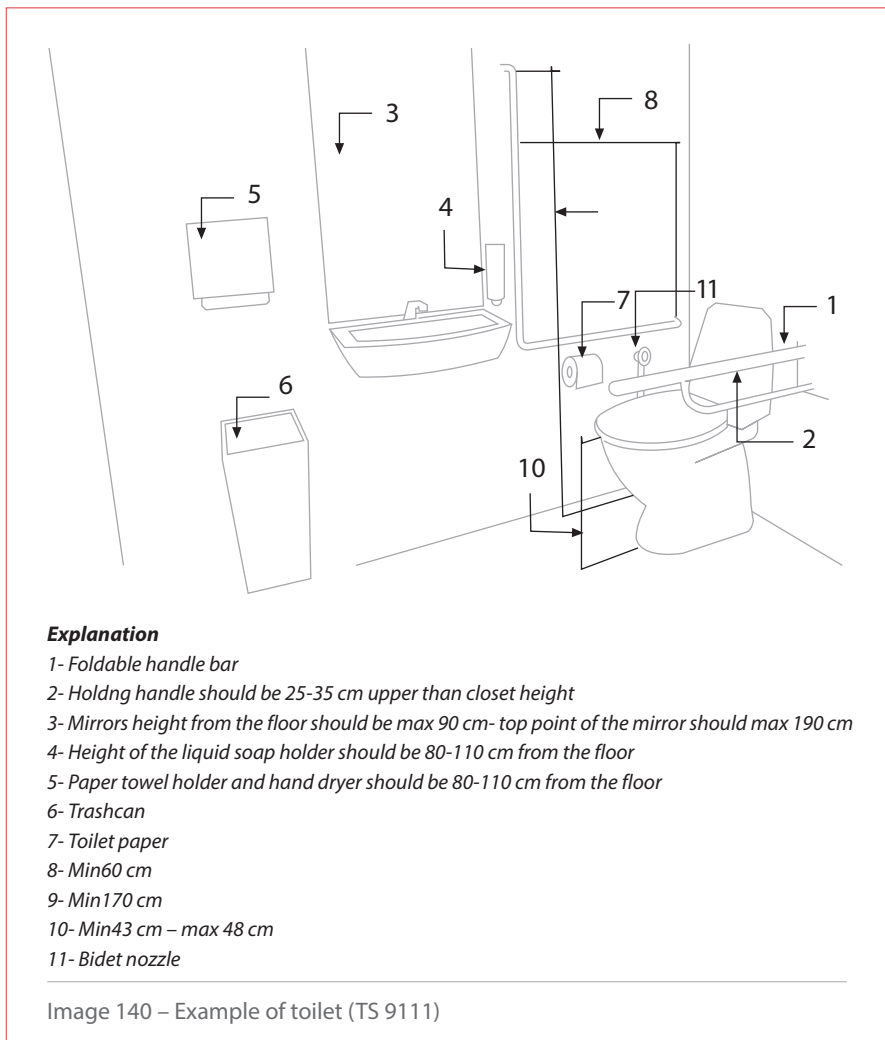


Image 139 - Example of horizontal transfer to the closet from one side (for narrow toilet) (TS 9111)



Flooring (TS 9111)

Flooring of the toilets should be designed as without level differences and not to prevent the movement of the wheel chair. If there is a level difference at the entrance, it shouldn't be more than 6 mm. Level differences between 6-13 mm should be attached with a slope not more than $\frac{1}{2}$. Bathroom and toilet outgoings should be designed to prevent water accumulation in front of the door.

Doors (TS 9111)

Hinged doors should be able to open min 90 degrees. Clear opening on the doors should be min 90 cm.

Toilet Cabinets(TS 9111)

Toilet cabinets should be at an accessible route. A standard toilet cabinet with min 150 cm width shouldn't have less than 142 cm depth if it's mounted to the wall and 150 cm, if it's mounted to the floor.

Light control switches should be inside the toilet cabins or they should be automatic with movement.

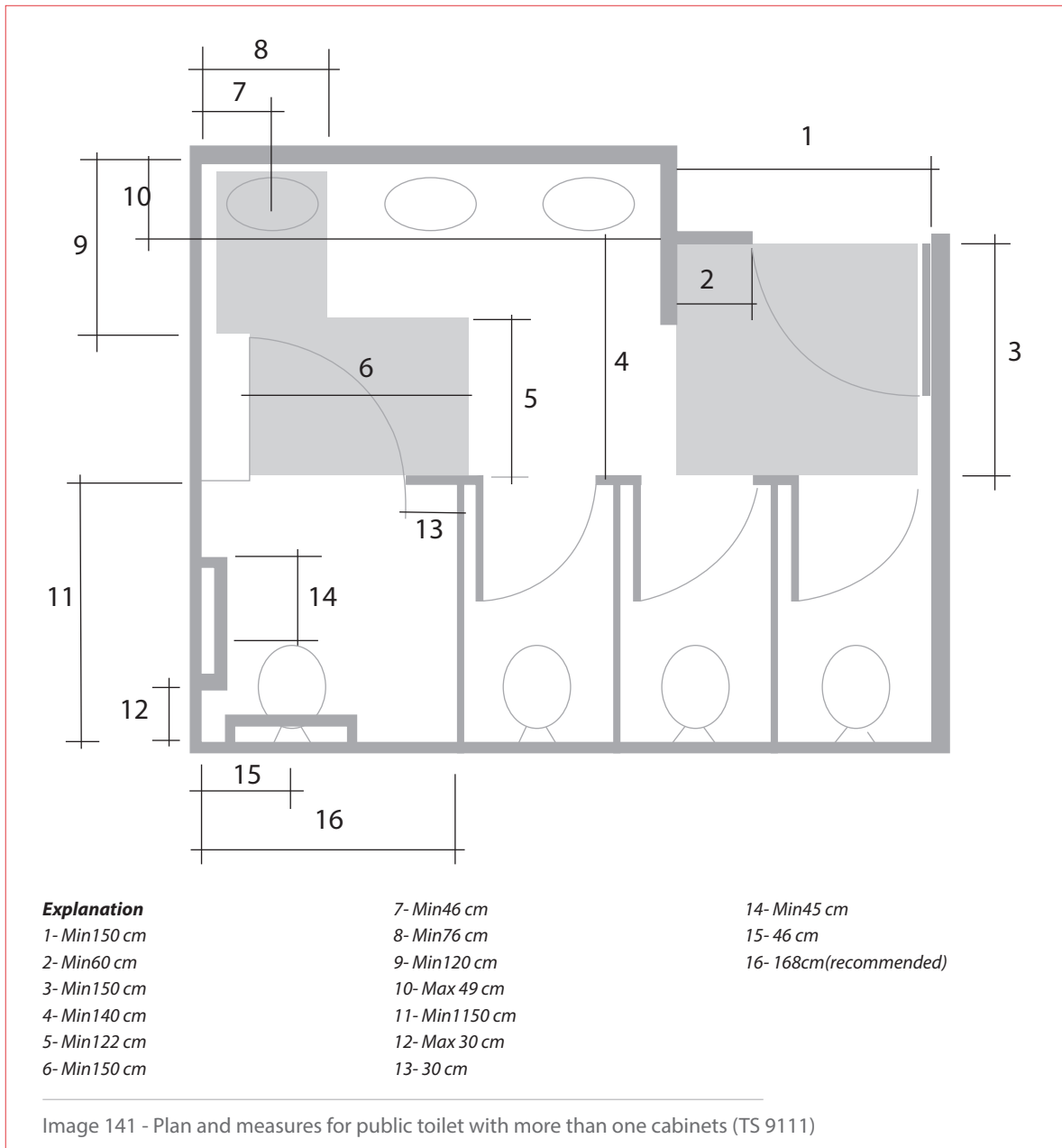
Since the time spent by persons with disabilities in the toilet and bathroom is long, toilet section and the bathroom should be arranged as separate as possible.

In public disability toilets, emergency call appliance should be located to access from the closet and the



floor and it should have a feature to work with pulling a rope.

Toilet plan and measures for public toilets with more than one cabinets are given in Image 141 and 142.



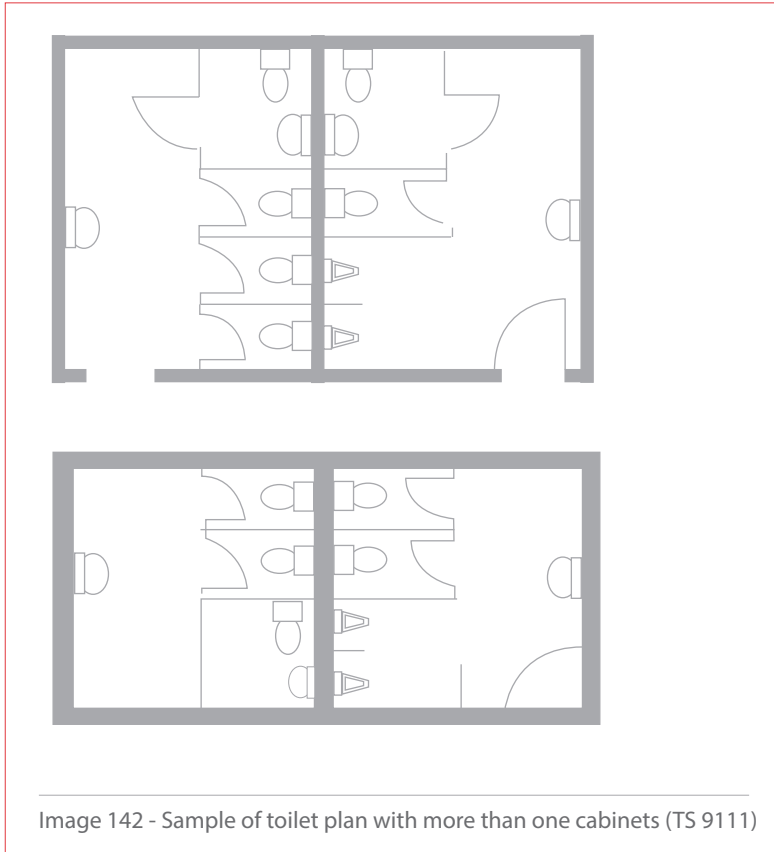


Image 142 - Sample of toilet plan with more than one cabinets (TS 9111)

Height (TS 9111)

Sitting spots of the closets should have a height between 43 cm and 48 cm. It is recommended that the closet is able to be mounted an adapter for adjusting the height

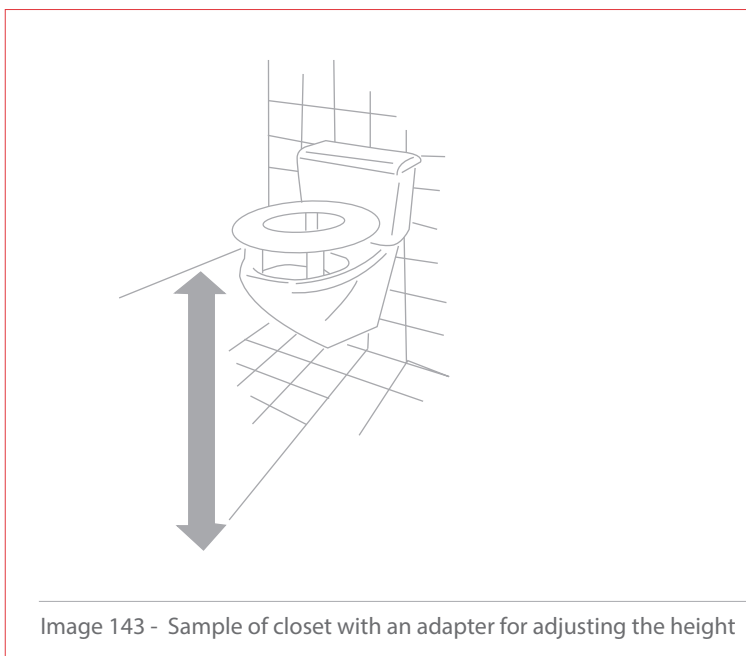
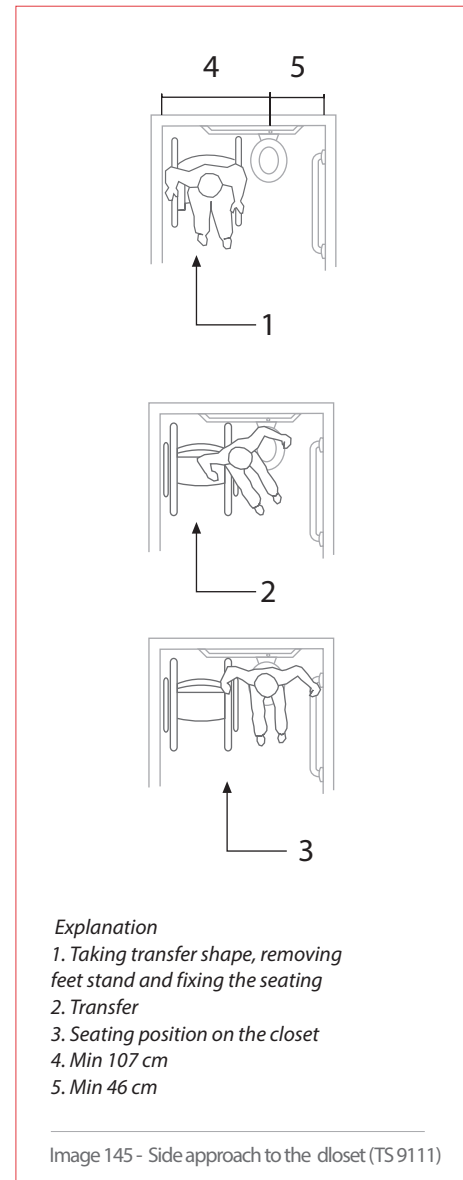
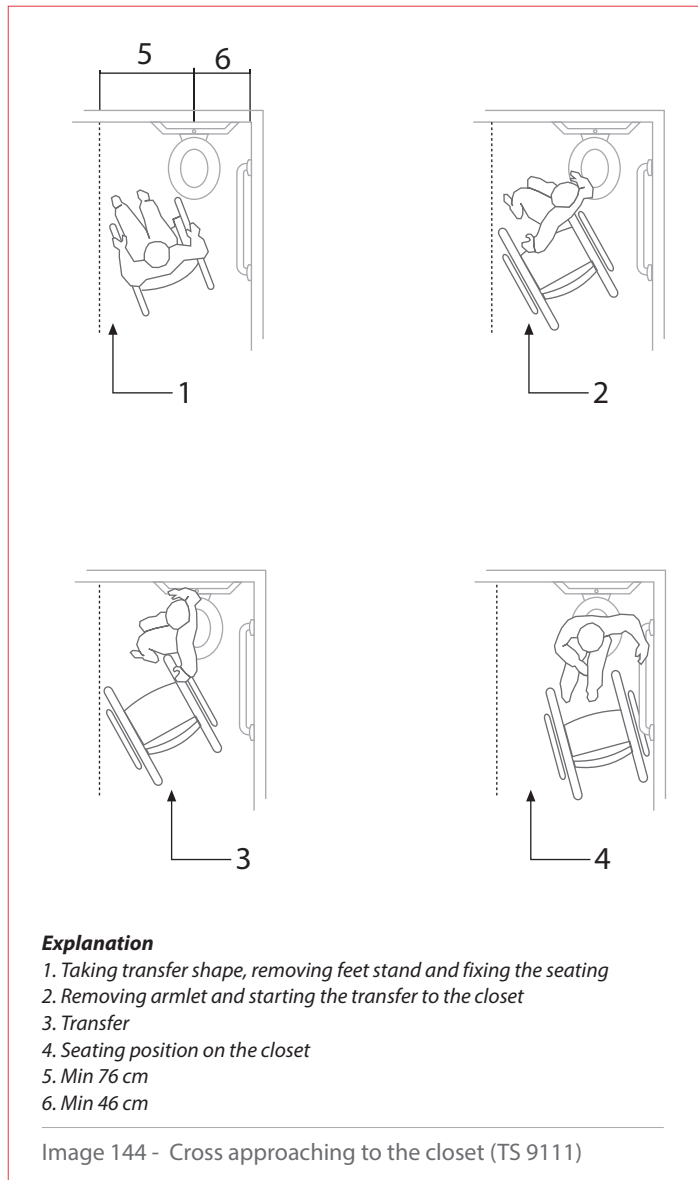


Image 143 - Sample of closet with an adapter for adjusting the height



Closet should be located to allow transfer from the wheel chair to the closet. Cross and side approaching to closet examples and measurements are given in Image 144 and Image 145.



Water control (TS 9111)

It is recommended that the flush handles should be photo celled but it can also be remote controlled by hand or automatic. These handles should be easily controlled by hand and it shouldn't require more power than 22,2 N. Flush handle should have max 112 cm height from the floor. Bidet nozzle should be easily controlled by one hand and they should be in the accessible distance.

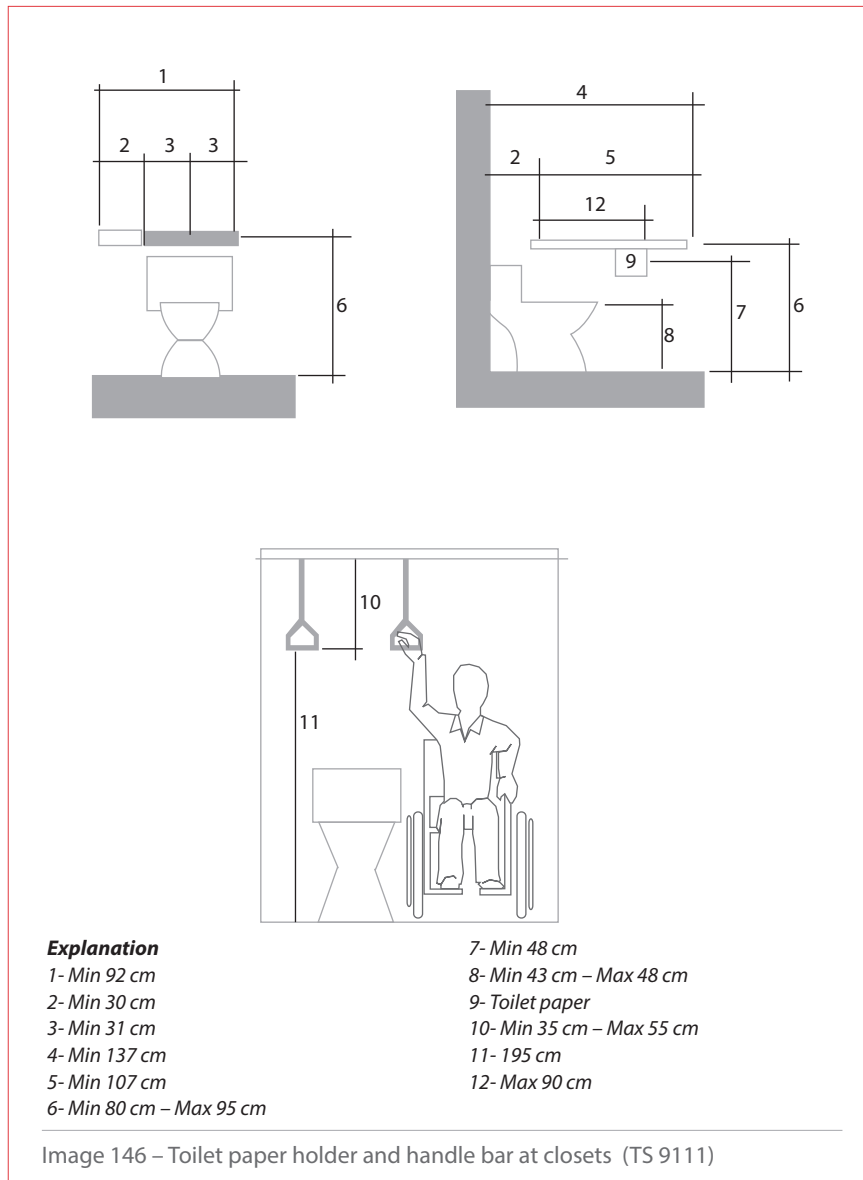
Toilet paper holder (TS 9111)

Toilet paper holders should be according to and should be located accessible height and have features as Image 146. For the closet mounted on the back wall, distance of toilet paper holder shouldn't be more than 90 cm from the wall.



Handle bar at closets (TS 9111)

Handle bar at closets should be designed according to Image 146.



Radius of the handle bar should be between 32 mm and 38 mm. if it is mounted on the wall, there should be 4 cm distance between the wall and the handle bar.

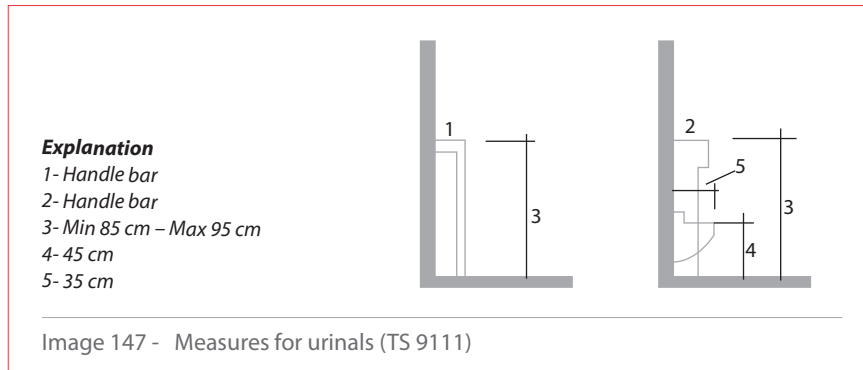
Handle bar on the back wall of the closet should have height between 80 cm and 95 cm. Handle bar on the wall that is at the back of the closet should have at least 92 cm length. Handle bar should continue min 30 cm to the right or left side from the closet. The other side of the handle bar's length should be min 62 cm.

Handle bar that are located on the side of the closet also should have max 30 cm distance to the wall and they should have min 107 cm length. Distance for the tip of this handle bar from the back wall should be min 137 cm. Handle bar on the side wall should have 80 cm – 95 cm height from the floor.



13.7.25. Urinals (TS 9111)

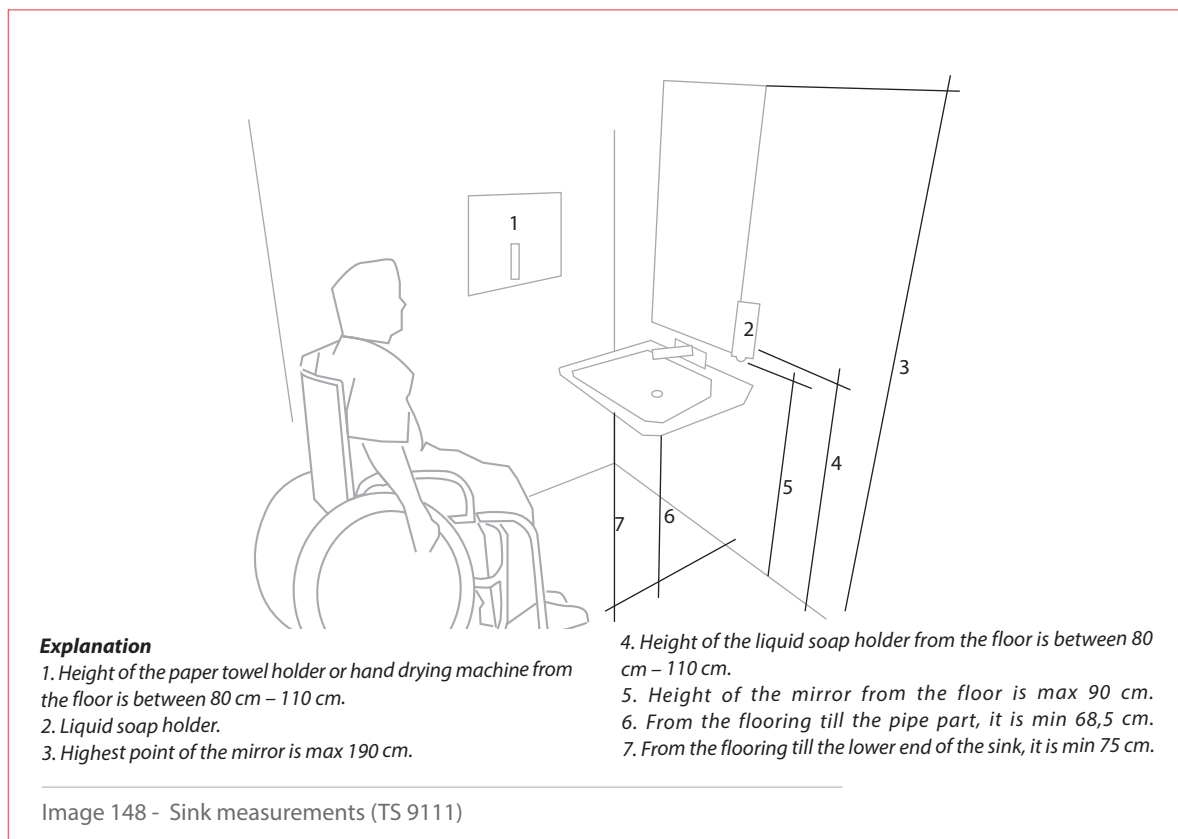
Urinals should be designed as a section or As Hanged type by longest side on the wall that have max 45 cm height from the flooring.



A clear area of 76 cm x 122 cm in front of the urinals should be provided for frontal approach. This area can cross with the accessible route. Urinal sections shouldn't be longer than urinal edges, in these cases, clear gap between urinal edges can be left as 74 cm.

13.7.26. Sinks (TS 9111)

Pedestal wash basin shouldn't be located and there shouldn't be any cabinets under the sink. Sink measurements should be according to Image 148.

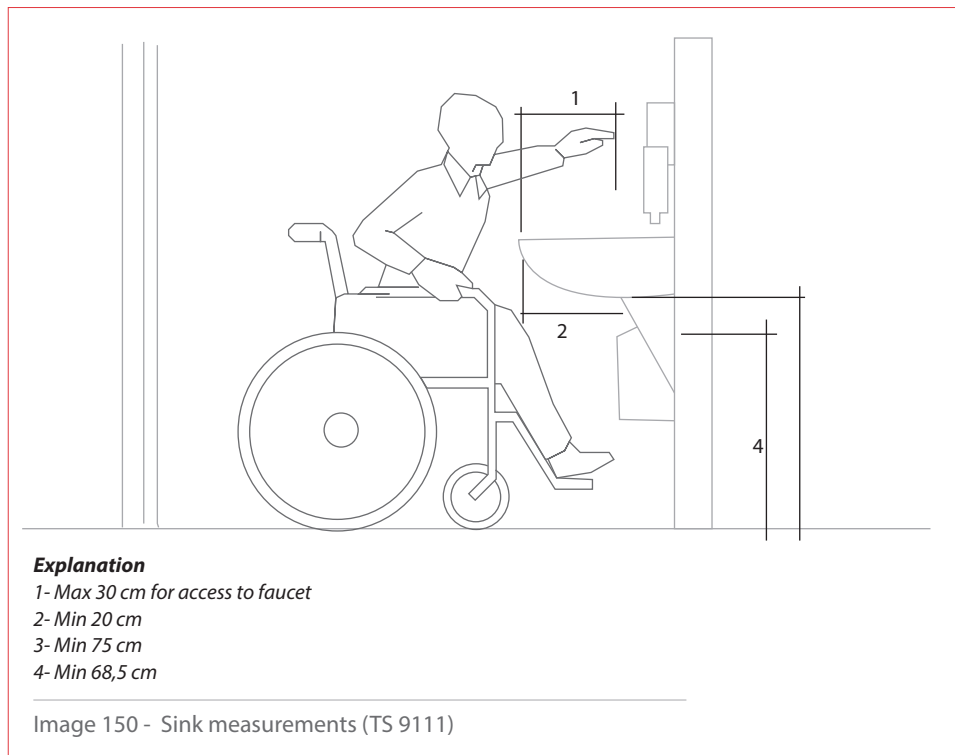
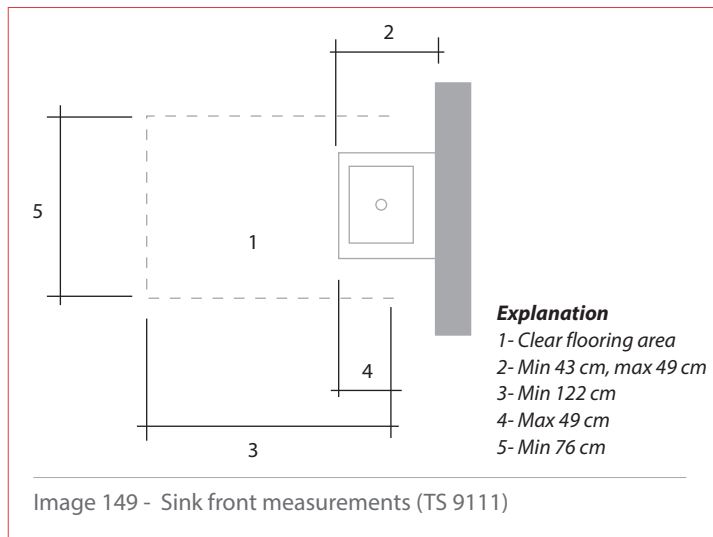




For the sink use, an empty floor surface in front of the sink and a knee opening under the sink should be provided (Image 149). Sink depth (distance of the front end to the wall) should be min 43 cm and max 49 cm.

On the frontal approach, there should be a 76 cm x 122 cm clear flooring gap in front of the sink. Max 49 cm left of this clear flooring surface can be extended under the sink (Image 149). Height from the flooring till the pipe section of the sink should be at least 68,5 cm for the knee space. This minimum height should also have 20,5 cm depth from the front end of the sink inward.

Clear height of sink should be min 75 cm till the sink's lower end and max 86 cm till the sink's front upper end (Image 150).

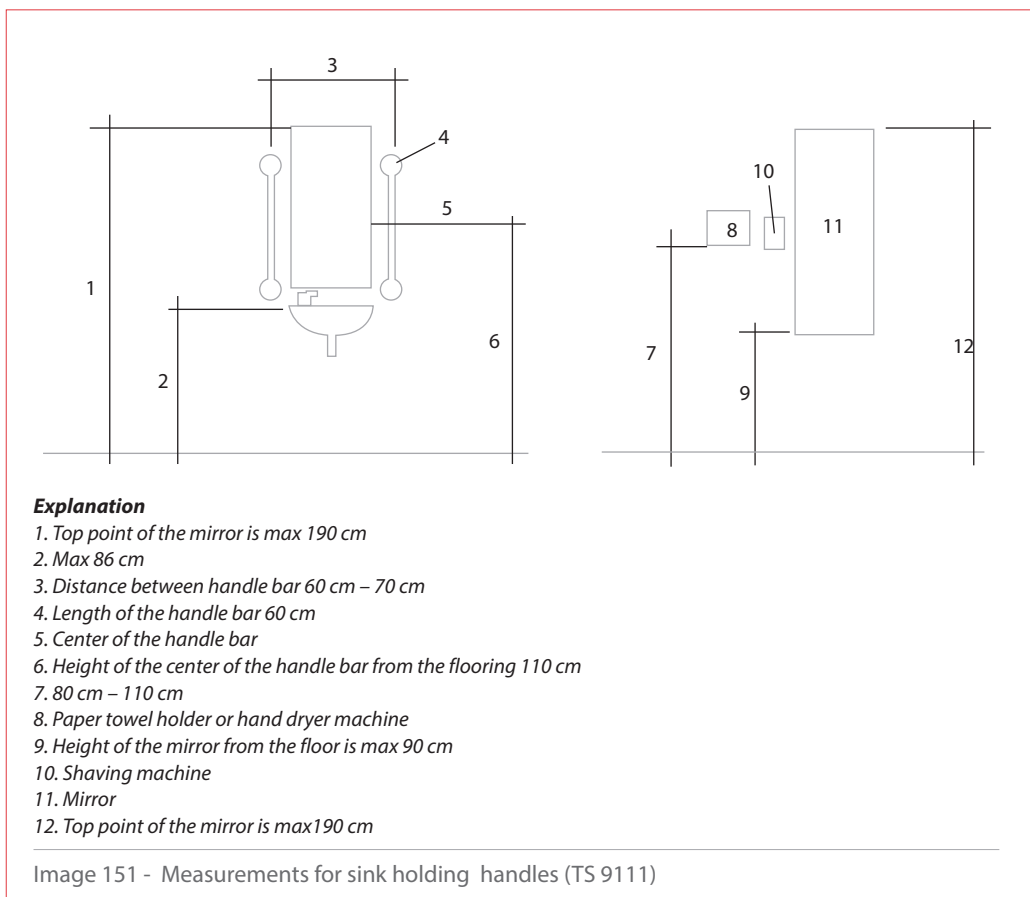




Armatures (faucet, taps) should be with handle, pushing type or with a electronic control mechanism. Faucets and other control devices should be used with one hand easily and should not require more power than 22,2 N to work. If faucets with photocell feature are being used, they should stay open for min 10 seconds. When choosing armatures, it is important to consider the distance between hand and sink during the hand washing easy.

Hot water and drainage pipes under the sink should be isolated or protected against touch. There shouldn't be any rough and disturbing surfaces under the sink.

On either sides of the sink, handle bar should be located for individuals having problem with standing up (Image 151).



13.7.27. Mirrors (TS 9111)

Lower end of the mirrors should be max 90 cm from the floor and the upper end should be min 190 cm height. Adaptable mirrors for wheel chair users that can come up and down should be preferred, when the mirror is stable, mirror with 10 degrees to 15 degrees slope to the front should be preferred.

13.27.28. Bathrooms (TS 9111)

Bathrooms should be located on accessible routes and they should be designed to enter and move around comfortably with a wheel chair. Shower tank instead of bathtub should be preferred.

Plan of clear usage area (TS 9111)

Clear flooring area is designed taking into account the approach to bathroom entrance and the bathing unit (bathtub, shower) with the wheel chair (Image 152, 153, 154 ve 155).

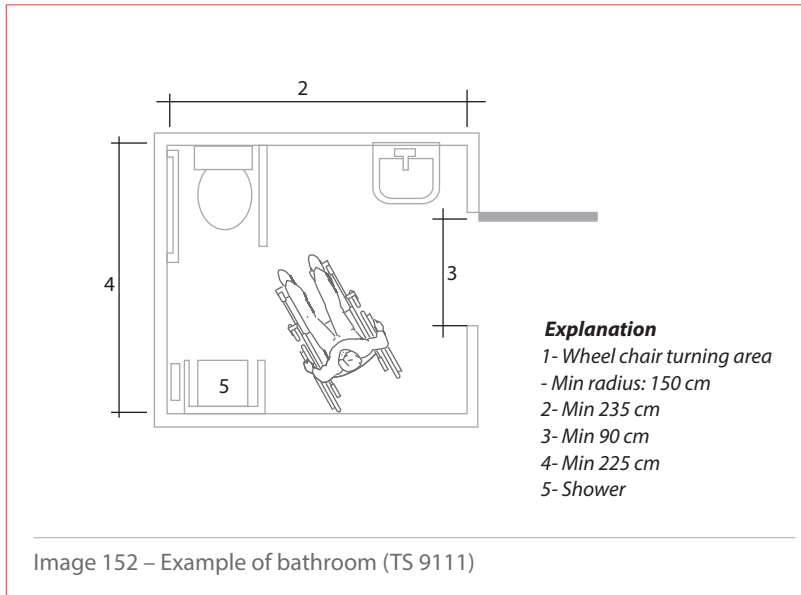


Image 152 – Example of bathroom (TS 9111)

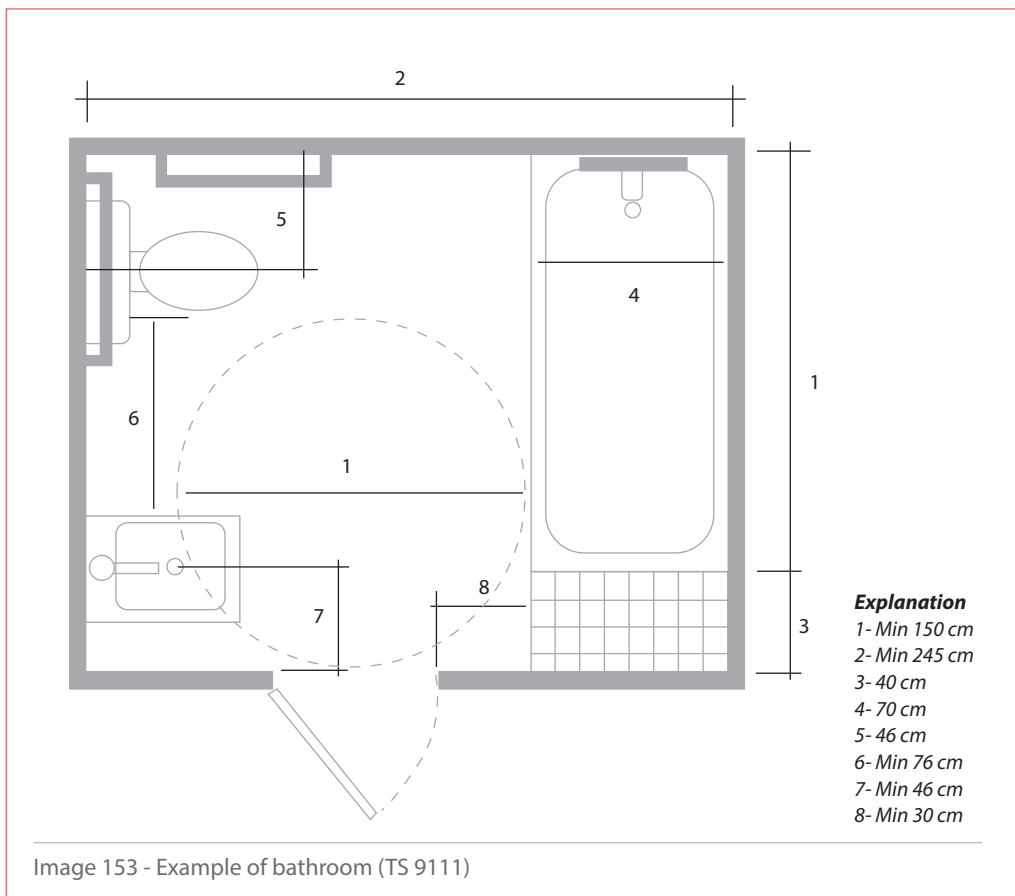
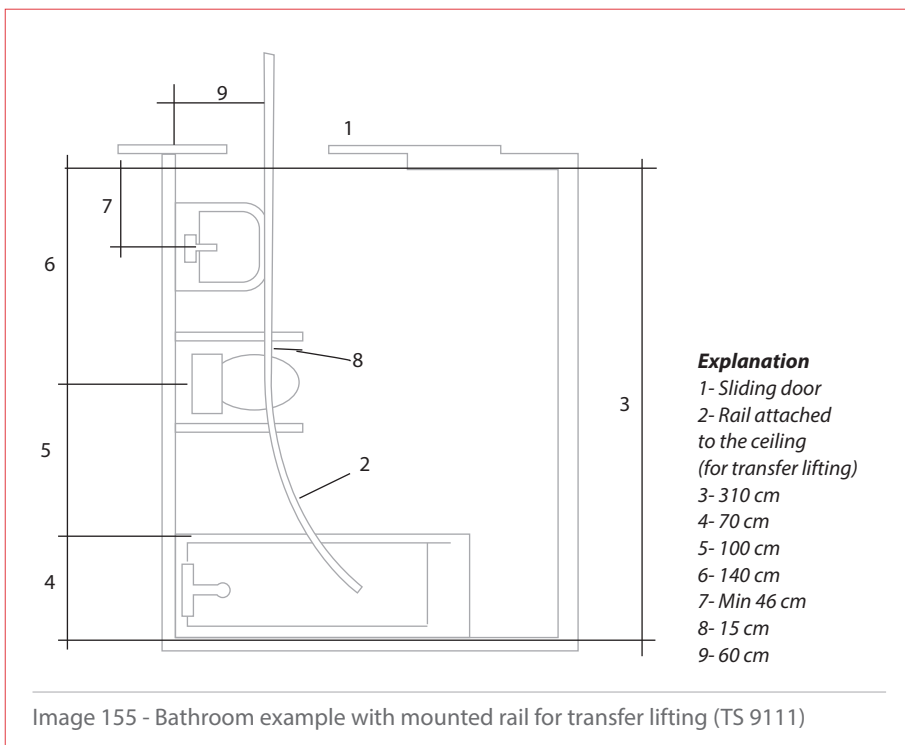
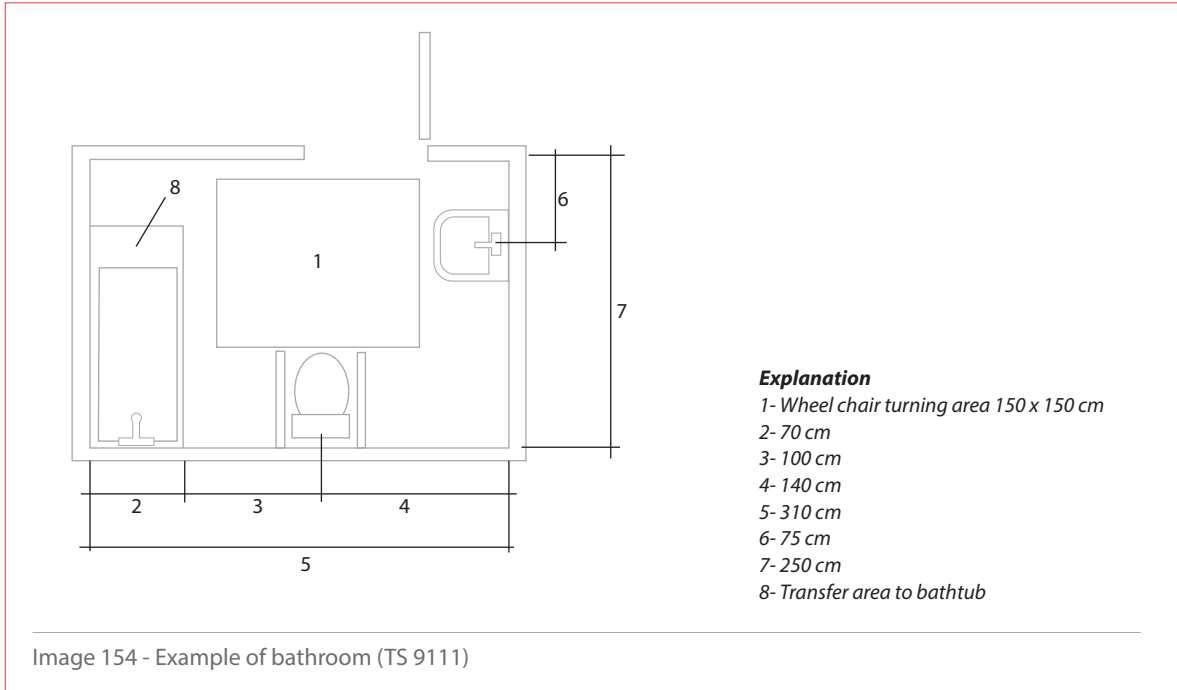


Image 153 - Example of bathroom (TS 9111)





Doors (TS 9111)

Hinged doors should open min 90 degrees. Clear opening at the doors should be min 90 cm.

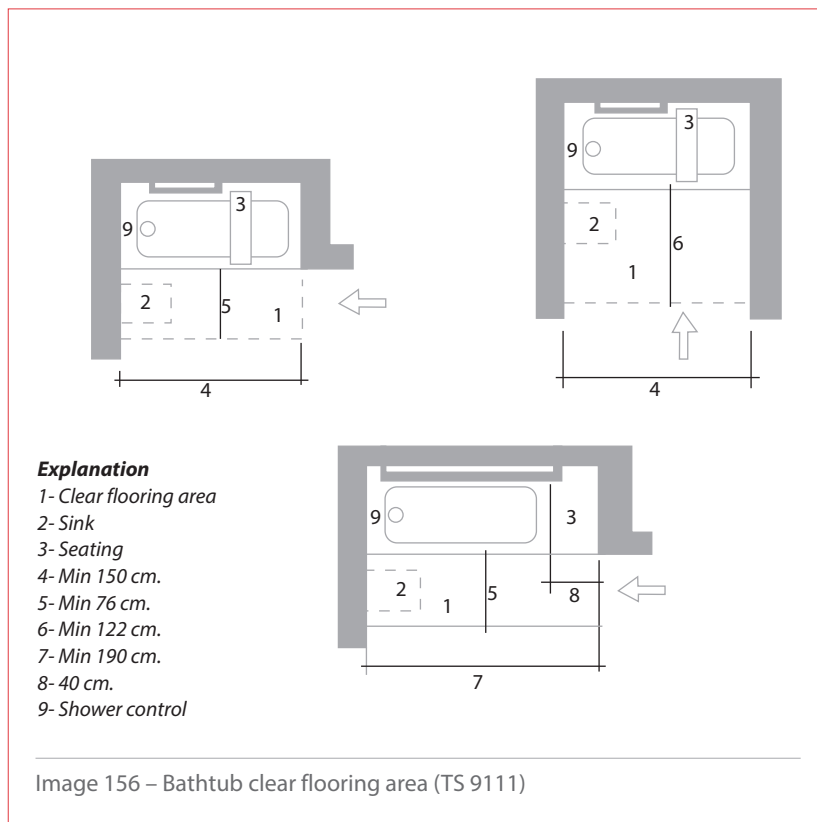
Bathtub (TS 9111)

Usage area in front of the bathtub should be proper with “Image 153,154 and 155” depending on the different hardware and plans in the bathroom.

If there is an approach from side to the bathtub, there should be clear opening as min 76 cm width and min 150 cm length. If there is a vertical approach to the bathtub, a clear open space is needed min 122 cm width and min 150 length.

If there is seating on the head side of the bathtub, there should be opening on the parallel approach as min 76 cm width and min 190 cm length (Image 156).

Clear height of the bathtub from the floor should be max 45 cm – 50 cm. Special bathtubs that the side of the bathtub can be opened and closed, can be preferred. Bathtub base shouldn't be gradual.



**If there is a seating place in the bathtub (TS 9111):**

There should be a handle bar of min 60 cm length from the outer edge on the feet part. There should be two handle bar on the back wall. Handle bar mounted on the back of the bathtub (long side) should be min 61 cm length and they should be max 61 cm away from the head side of the bathtub and max 30 cm away from the foot side.

A handle bar should be located over 23 cm of the bathtub edge. Others should be over 84 cm and 91 cm of the bathroom floor. Handle bar on the head side of the bathtub should be min 30 cm from the bathtub's outer edge.

If there is a seating on the head side of the bathtub (TS 9111):

There should be min 60 cm length handle bar at the foot side of the tub. Two handle bars are necessary on the back wall.

Handle bars mounted on the back side of the bathtub (longer side) should be min 122 cm length and they should be located max 38 cm from the head side of the bathtub and max 30 cm from the foot side of the bathtub. Heights of the handle bars are as defined on up.

Place and height from the floor of the handle bar should be designed according to Image 157 and Image 158.

