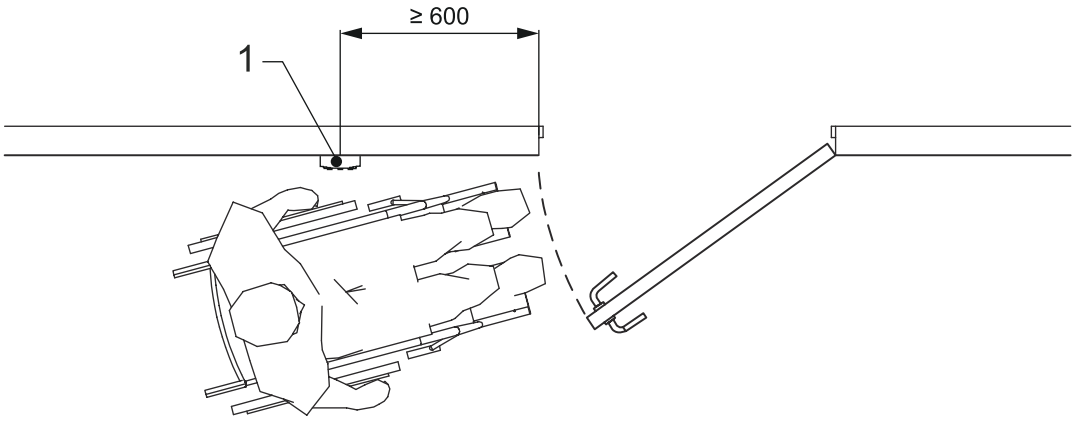
Dimensions in millimetres

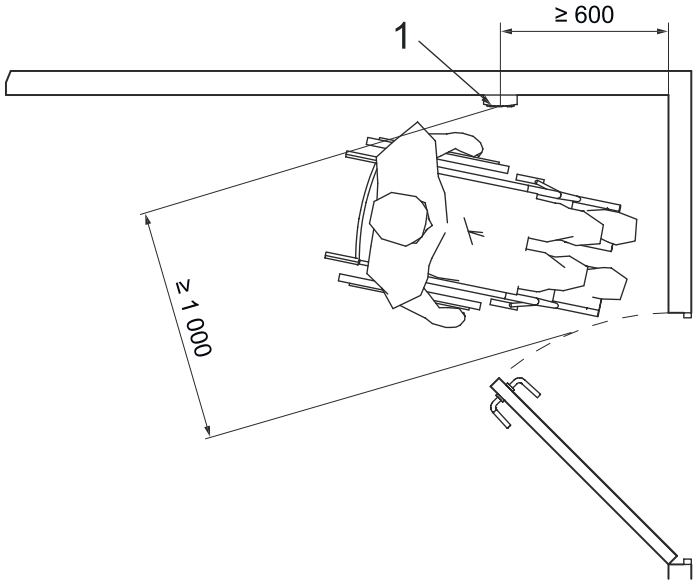


Key

1 door control, access control

Figure 50 — Positioning of door opening controls

Dimensions in millimetres



Key

1 door control, access control

Figure 51 — Distance of controls for powered door openers

9.1.2 Fire-resisting doorsets

9.1.2.1 General

During a fire, a fire-resisting doorset protects building users from the ingress of heat, smoke and flame while waiting in its near vicinity, for example in an area of rescue assistance.

Buildings, especially those used by the general public, should preferably be fitted with automatic self-closing fire-resisting doorsets linked to the building's fire emergency warning system. Whenever a fire is detected in a building, consideration shall be given to the unimpeded evacuation of persons with disabilities. For this reason, the closing of fire-resisting doorsets should be phased in different stages where practicable.

The door leaf shall be easy, intuitive and obvious for everyone to open, whatever its configuration, dimensions or door furniture.

9.1.2.2 Opening force of fire-resisting doorsets

The maximum force required to open a door leaf in a fire-resisting doorset shall be 25 N; it is recommended not to exceed 15 N. When the force needed to open a door is greater than 25 N, a door that opens automatically shall be used.

9.1.3 Windows and window furniture

9.1.3.1 Restriction on opening

Opened windows shall not project into pedestrian areas below a height of 2 100 mm.

9.1.3.2 Usability of window furniture and shutters

Windows should be easy to open and close with only one hand.

Windows easy to open shall be equipped with safety devices that prevent children from falling out.

Hardware, shutters and switches for remote control should be placed between 800 mm and 1 100 mm above floor level.

Window handles should be at least 80 mm long.

9.1.3.3 Lower edge of the glazing of the window

To enable persons using a wheelchair to see through a window, the lower edge of the glazing should be no higher than 1 100 mm from the floor.

Guards and opening restrictions should be considered for lower windows to prevent potential falling.

9.1.3.4 Visual indication of glazed areas

The requirements on glazed doorsets and glazed areas as in 9.1.1.4 and on visual contrast as in 5.3 apply accordingly.

9.2 Equipment, controls and switches

9.2.1 General

The design, construction and installation of operating controls and devices shall facilitate safe and independent operation by all building users.

NOTE Touch-screen devices are not usable for persons with vision impairments.

Operating controls and devices include, but are not limited to:

— lever, mixer or crosshead taps;

— activation devices;

— electric outlets and switches;

— door and window locks.

Controls shall be easy to use, e.g. by hands-free operation or by using the elbow, arm or clenched fist. Switches should be large rocker type throughout.

All switches and controls shall be easy to understand without requiring specialist knowledge.

Sufficient lighting shall be provided on control devices and their relevant information. Sufficient contrast shall also be provided to detect operating elements and to read signs and symbols (see 5.3 to 5.5).

9.2.2 Location, heights and distances

Devices and controls shall be positioned, installed and designed consistently throughout the building to facilitate identification. If necessary, TWSI should be installed for detection.

Control devices shall be located between 800 mm and 1 100 mm above floor level and a minimum of 600 mm from any internal corner.

As an exception, electrical wall socket outlets, including telephone points and TV sockets should be located at a minimum 400 mm and maximum 1 000 mm above floor level.

Control devices combined with text or figures should be positioned with the text and figures or the whole control device placed at the angle of approximately 45° to the wall so that they are easy to read and operate.

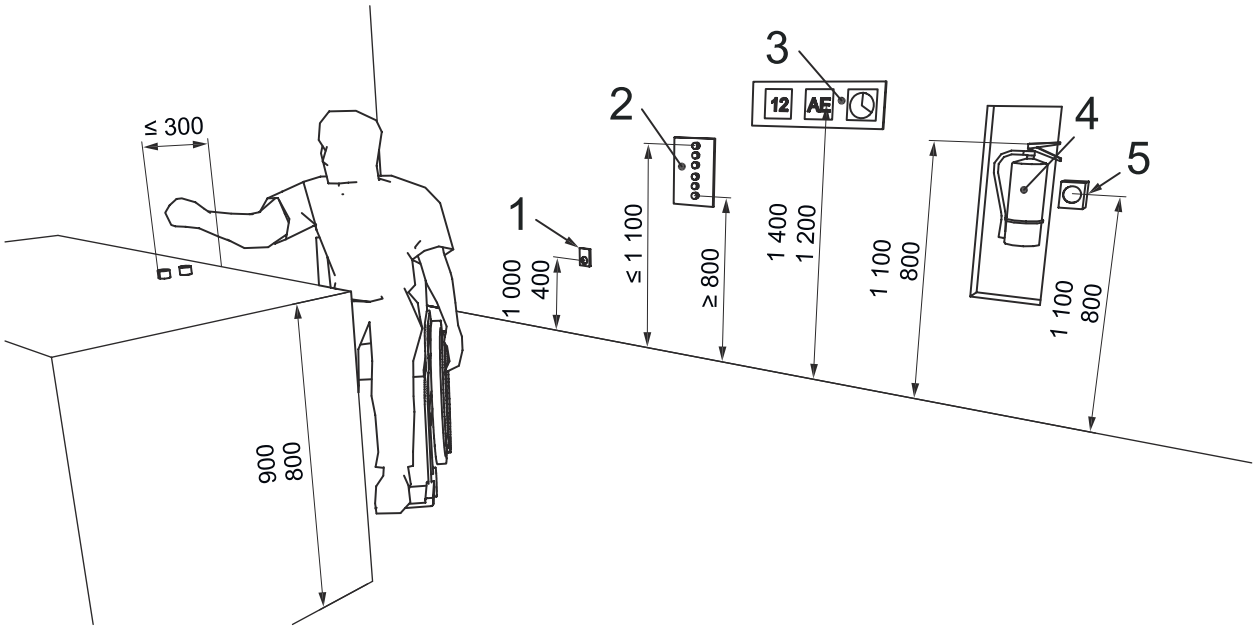
Control devices placed on a horizontal surface should be placed at a height between 800 mm and 900 mm and within 300 mm from the edge of the surface.

Reading meters should be located between 1 200 mm and 1 400 mm from the floor.

Heights of switches, socket outlets, reading controls and controls on a horizontal surface are illustrated in Figure 52.

Fire alarm activators shall be accessible and intuitive to operate; they shall be located between 800 mm and 1 100 mm above floor level.

Dimensions in millimetres



Key

1 socket outlets
2 control devices
3 meter indicators
4 maximum height of recessed portable fire extinguisher handle
5 fire alarm activator

Figure 52 — Heights of switches, socket outlets, reading controls, fire safety fittings and controls on a horizontal surface

9.2.3 Operation

To help people with reduced dexterity or impaired vision, electrical switches should have large push plates. Suitable clearance should be provided between adjacent fixtures and fittings to prevent accidental operation.

Operating force of control buttons and push plates should be 2,5 N to 5 N.

9.2.4 Identification

Operating controls and devices shall be identifiable by the principle of multiple senses according to 5.1.3.

Essential information on operating controls and devices shall be provided in visually contrasting raised tactile and in Braille.

9.2.5 Usability and consistency in design

Control devices for similar functions should have a similar design and activation mechanism and should be consistent within the building. Control devices for different functions should be different.

9.2.6 Intercoms and telephones

Telephones shall be on a clear accessible route with approach from the front or the side (see G.6.1). Side protection shall comply with the requirements of 6.3.8.

Public telephones should be located beside the access route and should be easily detectable by people with vision impairments. At least one telephone in any group should be equipped with a magnetic field and text display.

All information should be provided according to the principle of multiple senses (see 5.1.3). The telephone keypad shall have a raised dot on the number five.

Control devices shall be at a maximum height of 1 100 mm. A clear space underneath shall be provided for the knees of a person using a wheelchair. The depth of the clear space should be ≥ 600 mm but shall be at least the depth of the device (see Figure 53).

Dimensions in millimetres

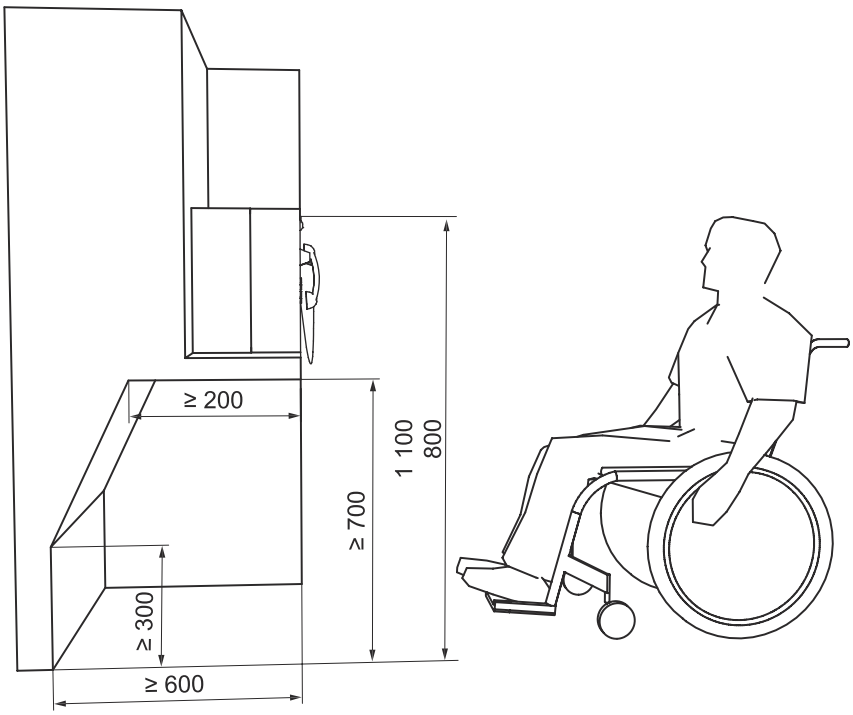


Figure 53 — Example of a wall-mounted intercom system usable for persons using a wheelchair

9.2.7 Card and vending machines

Where machines for dispensing money, tickets or small goods are provided, at least one shall be accessible according to the following requirements:

— be located on an accessible path of travel;

— have a clear area immediately in front of the machine of at least 1 500 mm × 1 500 mm to allow a person using a wheelchair approach the controls sideways and to turn around after use as well as to provide some privacy;

— have a clear and unobstructed approach, at least 900 mm wide;

— have a knee space with a minimum of 700 mm in height and a minimum 600 mm in depth and 900 mm in width for easy access for persons using a wheelchair (see Figure 54).

Touch screen ticket dispensers at train and bus stations, etc. shall not be the only service available, because they are inaccessible to people with impaired vision.

The operation of the machine shall be easy to understand.

Glare on the screen from the sun, artificial lighting and street lighting should be avoided.

Card access shall:

a) have a slot

   — located at a height between 800 mm and 1 100 mm above the finished floor level, preferably between 800 mm and 900 mm;

   — with its edge bevelled;

   — with a luminance contrast to the surrounding surface;

b) include tactile graphic symbols on the surrounding surface that

   — represent the card;

   — identify the orientation of the card insertion;

c) have both audible (beep) and visual (light) signals to indicate that access has been granted.

The keypad shall:

1) be located at a height between 800 mm to 1 100 mm from the floor;

2) have a luminance contrast to the surrounding surface;

3) if numeric, be of a type whose buttons have a raised dot on the number five, which:

   — is (0,7 ± 0,1) mm high;

   — has a base 1,5 mm in diameter;

4) have both audible (beep) and visual (light) signals to indicate that access has been granted.

The keys should be readable from both standing and seated positions.

All functions shall be available through a keypad. The corresponding key shall be shown on the screen (for persons using a wheelchair) and communicated by an audible guidance (for persons with vision impairments).

Dimensions in millimetres

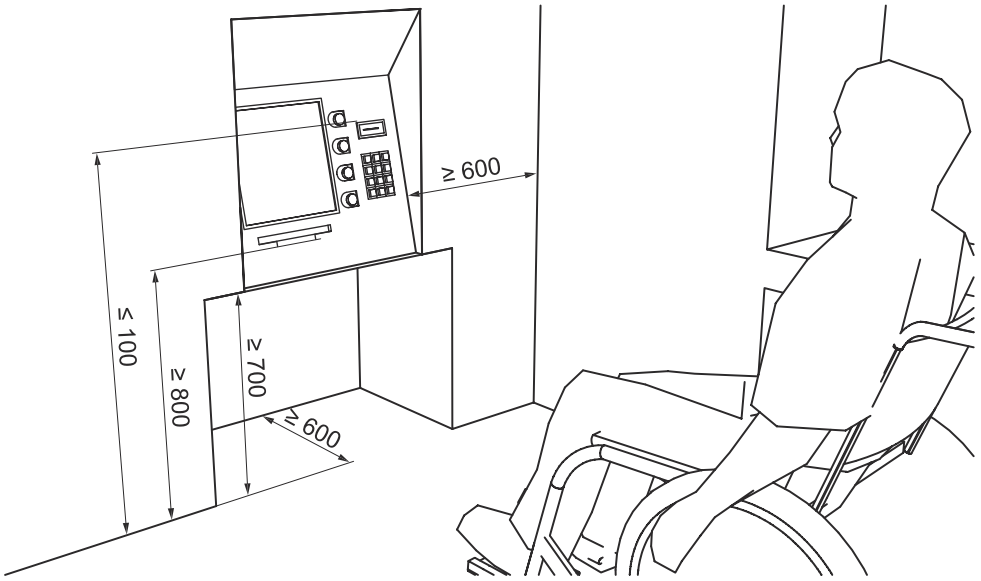


Figure 54 — Example of an accessible ATM

9.2.8 Security access systems

Security access systems shall be designed in accordance with G.6 to meet the needs of everyone. This includes the requirements for manoeuvring space and for controls that can be reached comfortably.

Accessible security systems should be available and utilized. Biometric systems (e.g. retinal or palm scanners) cannot accommodate all users.

9.2.9 Drinking fountains

Drinking fountains suitable for both standing and seated users should be provided. Where only one drinking fountain is provided, it shall be accessible for persons using a wheelchair.

Spout outlets of drinking fountains for standing persons shall be at a height between 950 mm and 1 050 mm. For persons using a wheelchair and for children, the spout shall be at a height between 750 mm and 800 mm and have a distance of not more than 90 mm from the front edge of the fountain.

Controls shall be centrally positioned at the front of the unit or, if at the side, on both sides, not more than 180 mm from the front. Controls shall be operable with one hand with an operating force of not more than 19,5 N.

For persons using a wheelchair, a side approach to the fountain shall be possible and drinking fountain units shall have a manoeuvring space of 1 500 mm in diameter in front of the unit. Knee and toe clearance complying with Figure 53 shall be provided.

Drinking fountains shall be in accordance with 6.3.8 and should be recessed where possible.

9.2.10 Waste disposals and containers

Waste disposals and containers shall be fully accessible and easy to use according to the following requirements:

— be positioned along an accessible path of travel;

— be in accordance with 6.3.8;

— to be operable not only by a foot pedal;

— have an insertion height of lower than 1 100 mm.

9.3 Furnishing

9.3.1 General

A variety of seating facilities should be provided in public buildings to offer people with a place to wait and rest.

The seats (including reserved areas for persons using a wheelchair) should be placed outside the general circulation.

Seats should be designed with armrests to facilitate sitting down and standing up. The seats should also have back rests (see Figure 55).

9.3.2 Seating in waiting areas

A range of different types of seating should be provided complying with the following (see Figure 55):

— seat height 400 mm to 480 mm;

— back support height 750 mm to 790 mm;

— seat depth 400 mm to 450 mm;

— angle of seat to backrest 100° to 105°;

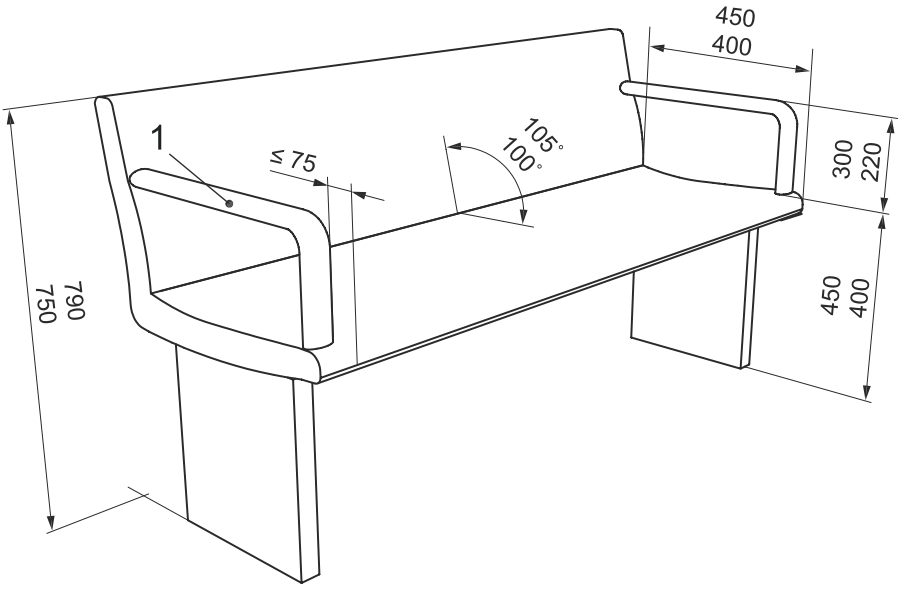
— armrest height 220 mm to 300 mm above seat;

— armrest set back from front of seat ≤ 75 mm;

— a minimum 150 mm set back under the seat for feet to assist in standing up;

— omittance of the armrests on some benches to allow lateral transfer from wheelchairs.

Dimensions in millimetres



Key

1 armrests to be omitted on some benches to allow lateral transfer from wheelchairs

Figure 55 — Example of a bench with armrests and back support

9.3.3 Seating at desks or tables

To allow frontal approach for a person using a wheelchair to a table, desk, counter, telephone, etc., an unobstructed space shall be provided with a minimum free height of 700 mm, minimum free depth of 600 mm and minimum width of 900 mm to accommodate their knees. For the feet, a minimum clearance of 300 mm in height is required (see Figure 56).

If tables with fixed seats are used, there shall be a place with no fixed seating for at least one person in a wheelchair at the table.

Dimensions in millimetres

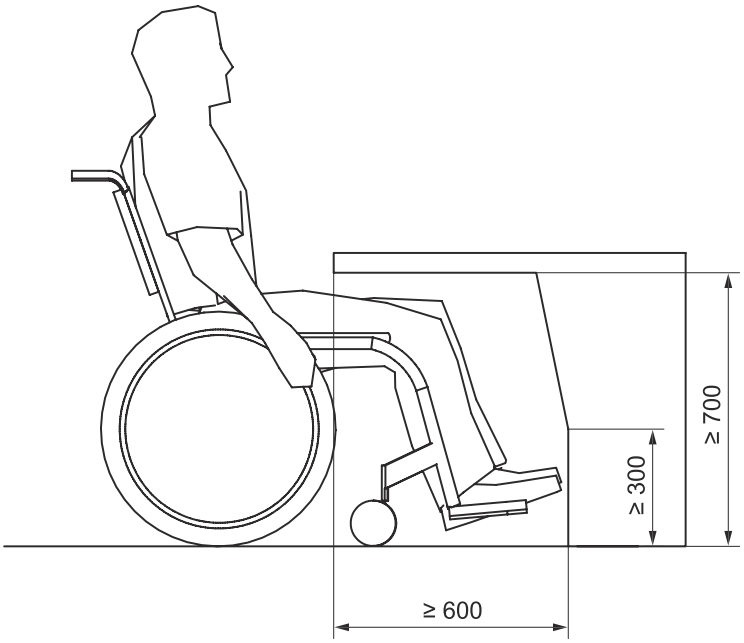


Figure 56 — Table and desk height for persons using a wheelchair

10 Rooms and spaces within non-domestic buildings

NOTE For information regarding domestic buildings, see Annex A.

10.1 Reception areas, counters, desks and ticket offices

10.1.1 General

Counters and reception desks should be located and clearly identified to be easily recognisable from a building entrance. Information/reception areas should be positioned near the main entrance. Wayfinding specified in 6.3.2 and orientation specified in 5.1 should also be considered.

Carpets or entrance flooring systems or tactile walking surface indicators from the main entrance can help in locating reception counters for people with vision impairments. They should be designed to minimize trip and slip hazards.

Some seats should be provided and accordingly located so that a guide or assistance dog can accompany its owner and rest in front of, or under, the seat.

General design requirements for colour and visual contrast as specified in 5.3 should be considered.

10.1.2 Space to manoeuvre

Counters, desks and ticket offices should be accessible to persons using a wheelchair. A clear manoeuvring space at least 1 500 mm in diameter shall be provided with 1 800 mm square preferred on both sides, i.e. for customer and staff.

10.1.3 Height

Reception desks where writing is done (e.g. at hotel receptions) should allow frontal approach by persons in a wheelchair with space to provide clearance for the knees. The counter level shall be between 740 mm to 800 mm from the floor. Clear knee space underneath shall be minimum 700 mm

from the floor. At least a part of the desk should be suitable as a writing place for standing people at a height between 950 mm and 1 100 mm (see also Figure 57).

Dimensions in millimetres

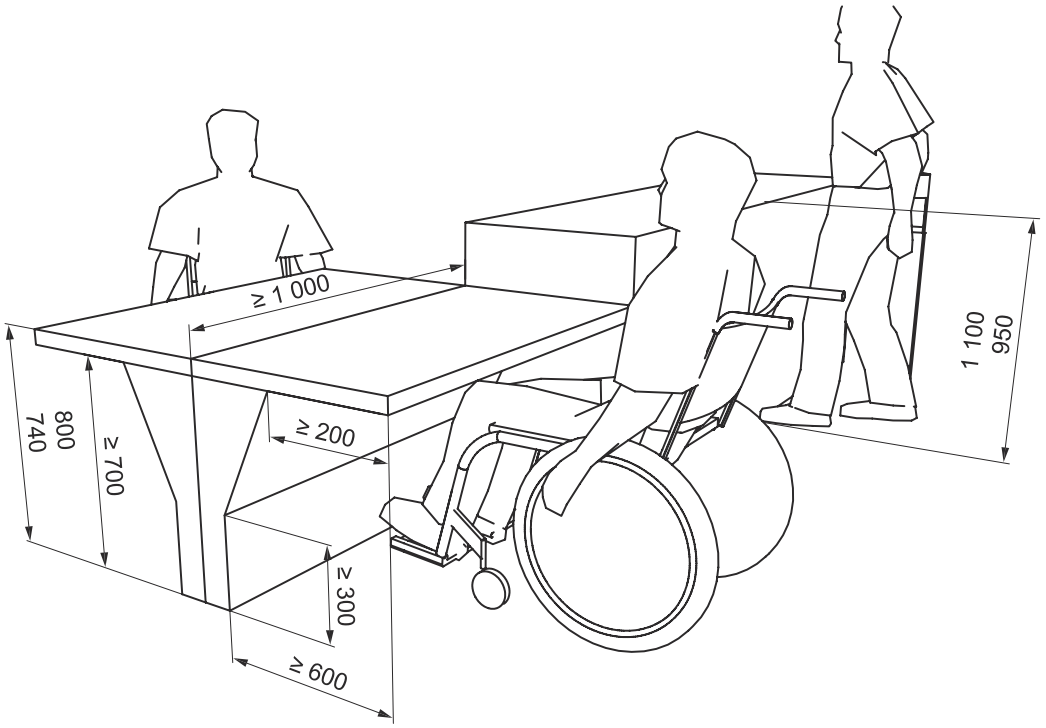


Figure 57 — Heights of counters suitable for persons using a wheelchair and persons standing

10.1.4 Lighting

To facilitate lipreading, lighting should provide even illumination.

The reading and writing surfaces at counters, desks and ticket offices shall be illuminated with a minimum of 350 lx, preferably 500 lx or more. In the room, a level of at least 200 lx shall be provided.

10.1.5 Hearing and lipreading

Reception areas, counters and ticket offices, shall have at least one position for the same service fitted with a hearing enhancement system (e.g. induction loop system as described in 5.7) to assist persons with hearing impairment and be clearly marked with the appropriate symbol as specified in 5.6. This is essential especially in noisy environments and places equipped with a separating security screen.

Counters equipped with a service screen or service counters in front of windows where bright sunshine causes the user's face to be in shadow shall be avoided as these situations make it difficult to lipread. Counters equipped with a service screen are particularly difficult. Reflections and glare should be avoided.

10.1.6 Ticket systems

If a queue number ticket system is used, it shall be suitably designed to be accessible. All control devices shall be located according to 9.2 (see also G.6.3 and G.6.4). All necessary information shall be given in simple wording with sufficient visual contrast and based on the principle of multiple senses (see 5.1.3, 5.3, 5.7 and 9.2). The ticket machine and the calling system shall provide visual and audible output.

10.2 Cloakroom

A mirror should be usable from a standing and a sitting position.

Armrests are required for any chair provided to assist people to sit down and stand up (see also 9.3).

Coat hooks should be set at different heights: some at 850 mm, some at 1 100 mm and others at 1 800 mm.

10.3 Conference rooms and meeting rooms

All equipment in conference rooms shall be usable by people chairing or participating in the meeting and any devices or controls shall be at a height between 800 mm to 1 100 mm. See also 9.2.2 on location, heights and distances of equipment, controls and switches and 10.4 regarding auditoriums.

See requirements in 5.7 for acoustic provisions. A hearing enhancement system shall be provided.

NOTE Reverberation time for speech, music, etc. can be found in applicable legislation, e.g. national building regulations.

10.4 Auditoriums, concert halls, sports arenas, viewing spaces in assembly areas and similar

10.4.1 General

Some seats should be wider in order to allow people of larger size to sit properly.

See 10.12.1 for specification on space needs for persons using a guide or assistance dog.

10.4.2 Hearing enhancement systems

In auditoriums, concert halls and sports arenas, a hearing enhancement system in accordance with 5.7.3 shall be provided for the audience and on the stage/platform.

10.4.3 Lighting for sign language interpretation

Adequate provision should be made to facilitate sign language and lipreading. Lighting on the faces and hands of presenters and people signing should be provided at an angle of 45° to 50° from horizontal at ceiling level. This enables people with hearing impairment to read the presenter's lips and the signer's lips and hands. To assist in reading the presenter's lips and hands, a suitable contrasting backdrop should be provided.

10.4.4 Designated seating spaces for persons using a wheelchair

For seating areas up to 200 persons, at least 2 seating spaces shall be designated for persons using a wheelchair. For seating areas of more than 200 persons, one additional designated seating space for every further two hundred seats or part thereof shall be provided.

However, it is recommended to provide designated seating spaces for persons using a wheelchair as follows:

— up to total 50 seats, a minimum of two;

— total seats 51 to 100, a minimum of three;

— total seats 101 to 200, a minimum of four;

— total seats more than 200, one additional designated seating space for every further two hundred seats or part thereof.