



Tokyo 2020

Accessibility Guidelines

24 March 2017

TOKYO 2020

Tokyo 2020 Accessibility Guidelines

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Tokyo 2020 Accessibility Guidelines

1 Preamble

1.1 Formulating Tokyo 2020 Accessibility Guidelines

Based on the Guidelines, the Organising Committee aims to contribute to achieving an inclusive society with mutual respect for the personality and individuality among all people—regardless of whether or not they have impairments—by planning environmental improvements to ensure opportunities for access for the Tokyo 2020 Olympic and Paralympic Games.

Note) Abbreviations in the Guidelines

| Abbreviations | Official expressions |
|----------------------|--|
| Organising Committee | The Tokyo Organising Committee of the Olympic and Paralympic Games |
| Guidelines | Tokyo 2020 Accessibility Guidelines |
| The Games | The Tokyo 2020 Olympic and Paralympic Games |
| IPC | International Paralympic Committee |
| IPC Guide | The Accessibility Guide published by International Paralympic Committee |
| Venues | Competition venues and non-competition venues, including the Athletes' Village |
| Games staff, etc. | Including Organising Committee staff members, Organising Committee volunteers, and contractors |

1.1.1 Goals in formulating the Guidelines

- Meeting the needs of Games participants and officials

The Guidelines were formulated to provide guidance with respect to accessibility at the Games.

The most important goal of the Guidelines is for the Organising Committee to have all affiliated organisations, administrations, and operators understand the accessibility needs for the Games, and for this understanding to be reflected in improving accessible environmental improvements from the initial stages of preparing for the Games.

Especially for the Paralympic Games, there is a need to fully understand and respond to the scale of the teams participating and the level of the requirements in terms of their mobility and services.

For example, athletes in wheelchair will use an indoor competition venue. At competitions other than the Paralympic Games, tournament management may plan the arrangement of the elevators for two wheelchair users in the venue in case that the athletes move from the practice area to competition area. For the Paralympic Games, however, it would take time for the athletes to move in this size of elevator, which in turn could lead to delays in the competition schedule.

- Promoting accessible environment improvements with the opportunity of the Games

One of the IPC's aims is "to use the Paralympic Games as a vehicle to stimulate social development and leave a long-term sporting and social legacy with the host country".

Towards that end, the IPC assess information on accessibility throughout the world and integrates and publishes them as the IPC Guidelines. Although there is no legally binding force in the IPC Guide, the content is generalized so that it can be applied in any host city, and the Guidelines were created based on the items and content in the IPC Guide Technical Specifications in Chapter 2 and on Training in Chapter 3.

Through the preparations for the Games, it is expected that the Guidelines will be shared among stakeholders, and accessible environmental improvements will be promoted with the opportunity of the Games, based on international levels for both facilities and human-based support.

Further with the opportunity of the Games, the goal is to achieve an inclusive society as a legacy with voluntary engagement in a broad range of environmental improvements based on the Guidelines, including people who are not directly involved in the Games.

1.2 Concepts in the Guidelines

1.2.1 Scope of the Guidelines

The Organising Committee applies the Guidelines in the following two areas
*₁.

- (1) The areas at the venues of the Games, as chosen by the Organising Committee to constitute the flow lines for “stakeholders” *₂ whose accessibility needs to be taken into consideration.
- (2) The areas in the pathway to access the sporting venues of the Games (“accessible routes”) as chosen by the Organising Committee as flow lines for spectators whose accessibility needs to be taken into consideration

*₁ Individual venues, routes, and designated areas are not specified in the Guidelines. The areas selected shall be determined through separate discussions with the owners and managers of the applicable facilities.

*₂ In the Guidelines, “stakeholders” mean not only spectators, but also athletes, National Olympic Committees, National Paralympic Committees, International Sports Federations, marketing partners, Olympic and Paralympic families and VIPs, broadcasters, members of the press, staff members, and the like.

1.2.2 Development based on the Guidelines

The Organising Committee shall ask the owners and managers of the applicable facilities to build or renovate in accordance with the Guidelines, based on their respective plans, so that they can serve as permanent facilities that will constitute a legacy.

When it proves difficult to implement the permanent environmental development, however, service levels based on the Guidelines shall be ensured by setting up temporary facilities, giving human-based support (such as transportation by dedicated vehicles and aid by volunteers), and others.

1.2.3 Concepts for Setting Standards

The standards for the Guidelines are formulated based on the IPC Guide, related national laws, and relevant guidelines (hereinafter, “national laws and regulations”). National laws and regulations include the following.

* The Law for Promoting Easily Accessible Public Transportation Infrastructure for the Aged and the Disabled; Standards on construction design with consideration to usage by the elderly, physically disabled persons ,etc.; Guidelines to Improve Barrier-Free Access for Public Transport Passenger Facilities; Ministerial Ordinance of Standards for Accessible Road Design.

Every effort was made in considering the Guidelines to ensure that they reflect the many requests received from concerned organisations, taking into

account conforming with national laws and regulations.

1.2.3.1 Basic Concepts in Numerical Specifications

| Classification | Concepts for Setting Standards | Applying Policy |
|----------------|--|---|
| Recommendation | Set with overall consideration of “development levels preferred by Tokyo Metropolitan Government ordinances” and “IPC Guide best practice.” | The Organising Committee aims to meet the recommended specifications as much as possible during the Games, such as establishing new venues, building accessible routes from the main railway stations, and setting up solid temporary facilities. |
| Standard | Set with overall consideration for a relatively high level of “compliance with IPC Guide Standards”, “national recommendations”, “development standards (Standards of observance/ Standards of efforts) including Tokyo Metropolitan ordinance exceeding national compliance standards”. | The Organising Committee aims to meet the standard specifications, such as making use of existing venues and many accessible routes, and making temporary facilities, taking into consideration site conditions and uses after the Games. |

Even when the standard specifications cannot be met for structural or other unavoidable reasons, at least the current “national compliance standard” shall be met.

In addition, for venues and accessible routes outside of Tokyo, national recommendations shall apply instead of the standards based on Tokyo Metropolitan ordinance and the like.

Depending on the needs for use during and after the Games, the size and use of venues/facilities, the current physical constraints, maintenance and management requirements, these specifications may be combined as appropriate for application to each applicable target facility.

When there are differences in the numerical standards between the IPC Guide and national laws and regulations, IPC Guide Standards shall be adopted when it is clear that trouble in managing the Games would result if IPC Guide Standards were not met, as in the case of venue door width. On the other hand, the standards in national laws and regulations shall be adopted when the

standards based on the average Japanese physique are better for many of users' convenience and cause no trouble in management of the Games, as in the case of the height of handrails.

1.2.3.2 Concepts for Items other than Numerical Values

Items other than numerical values are set in consideration of conforming to national laws and regulations based on the provisions of the IPC Guide.

1.2.3.3 Supplements to the Guidelines

The IPC Guide provides guidance for the Games, and it is not legally binding.

In addition, the IPC Guide does not indicate all of the technical requirements needed for building and renovating facilities, and as they assume correspondence with national laws and regulations, the items specified in the Guidelines apply in consideration of conforming to national laws and regulations.

1.3 The Three Fundamental Principles Behind the Guidelines

The three fundamental principles of the Guidelines are the three basic principles listed in the IPC Guide: “Equity”, “Dignity”, and “Functionality.”

Equity

Ensure all people, regardless of their physical or functional capacity, receive the same level of service.

All Games participants shall share the same level of experience, the same level of protection of privacy and safety by design and renovation of the appropriate venues, development of a variety of plans relating to Games operations, and trained staff members and volunteers, and the like.

Dignity

All people who use the facilities and services during the Games shall be respected, and the Games shall be operated in a manner ensuring that the dignity of the individual shall not be damaged.

The design of venues and the various designs relating to Games operations shall be prepared so that participants can select from a variety of methods that suit them, at their own pace.

Functionality

Facilities and services in the venues during the Games shall meet the needs of all stakeholders, including people with impairments.

1.4 Beneficiaries of an accessible and inclusive environment

Accessible and inclusive environments are extremely important for people with a wide range of impairments and those who have diverse needs. Some primary examples are as follows.

People who have mobility impairments

It is likely that the number of people for whom it is either difficult or impossible to walk and who frequently or continually use wheelchairs increases with the age. Structures and facilities that neglect the needs of wheelchair users may present the largest barrier. On the other hand, environments will be made easy to use not only for wheelchair users but for everyone by installing accessible pathway, entrances and exits, and toilets, on the other hand.

In addition, for people who cannot walk without use of walking aids such as canes, those who have difficulty walking long distances, those who have internal impairments, and the like, installing rest equipment that cuts down travelling distances as much as possible or the need to stand for long periods are needed.

Support is needed for service dogs accompanying their owners.

People who have a visual impairment

People who have visual impairments (the blind, those with limited vision, etc.) require materials including: braille and audio data, tactile maps, guide displays with clear contrast, large print, alternative formats of printed information, and low-reflective materials.

Support is needed for guide dogs accompanying their owners.

People who are hard of hearing

The people with hearing impairment require: written communication, sign language interpretation, textual conversion service, communication boards, etc.

In addition, hearing aids and assistive hearing devices (induction loops, passive infra-red systems, hearing aid systems, etc.) are particularly useful for people who are hard of hearing.

Support is needed for hearing dogs accompanying their owners.

People who require consideration for conveying and understanding information

People with intellectual impairments, mental impairments, developmental disorder, and the like require simple responses in a slow pace, documents written in plain language, illustrations and pictographs that are easy to understand, and the like.

Likewise, people who have trouble saying what they would like to say due to various illnesses or accidents, people who are hard of remembering new things, people who have difficulty understanding their surroundings, and people who are likely to have a vague sense of time and space also require responses with a simple tone and in a slow pace, text written in plain language, illustrations and the like.

Further, Games staff members and volunteers need training to understand the various constraints that are assumed in relation to communication in particular, and to provide services based on this understanding.

Other Beneficiaries due to a variety of needs

People with the following needs also benefit greatly from accessible and inclusive environments.

- People with injuries such as sprains and fractures
- Older adults and seniors
- Pregnant women or people with infants
- Children
- People who speak languages other than Japanese
- People who have big, heavy luggage
- People who need to travel with a companion, service dog or the like accompany them for some reason
- First aid and emergency service personnel

Therefore a significant percentage of the population is a beneficiary of an accessible environment.

More importantly, almost everybody will become a beneficiary of an accessible environment at some stage in their lives, as a result of the natural aging process and its accompanying reduction of sensory and physical functions.

1.5 Terms and Definitions Used in the Guidelines

| Terms | Definitions |
|--------------------------|---|
| People with a disability | People who themselves declared that they have constraints on activities in their daily lives such as in moving, getting information, and talking; or people whose type or range of activities they can do has declined or changed due to their physical state, mental state, or problems with their health. |
| The disabled, etc. | Including people whose activities are constrained in some way, in addition to the above mentioned “people who have disabilities” (Examples of people whose activities are constrained: injured people, the elderly, pregnant women, people with infants, children, people carrying big, heavy luggage, etc.). |
| Accessibility | Ensuring that people from a broad range of ages can have smooth access to and use the social infrastructure, facilities, equipment, products, and services, regardless of whether or not they have disabilities. |
| Inclusive | Ensuring that all people are fairly accepted in society without discrimination or exclusion based on a variety of differences such as sociocultural differences or personal or physical factors. |
| Universal Design | Concepts or ways of thinking about design, products, environments, and services that can be used by people of a broad range of ages who have a variety of needs without the need for adjustment or special design and renovation. |
| Accessible Venues | Competition and Non-competition Venues that can be accessed by people of a broad range of ages without feeling any barrier, regardless of whether or not they have disabilities, during the Games. |
| Accessible Routes | Areas in the passageways to access the sporting venues during the Games selected by the Organising Committee as flow lines for spectators whose accessibility needs to be taken into consideration. Including train carriages and the like designated for use at the area by the Organising Committee. |
| Accessible Rooms | Guest rooms and accommodations that can be used by people with a variety of disabilities and of a broad range of ages without feeling any barrier in hotels and in the Athletes’ Village. |
| | [Reference] Guest rooms and services with features such as the following are required as well in addition to accessible rooms. (1) Wheelchair Friendly Guest Room (2) Other services and equipment within accommodation facilities considering a variety of constraints on activities. |
| Stakeholders | People involved in the Games are divided broadly into the following eight groups, which provide the appropriate Games services respectively. (1) Athletes, National Olympic Committee (NOCs) and National Paralympic Committee (NPCs) (2) International Federations officials (3) Marketing partners (4) Olympic and Paralympic families and Dignitaries (5) Olympic Broadcasting Services (OBS) and Rights Holding Broadcasters (RHBs) (6) Journalists, photographers, and non-rights holding broadcasters (7) Spectators (8) Games staff members and volunteers, and contractors involved in Games operations |

2 Technical specifications

This chapter contains the following topics:

| Topic |
|-------------------------------------|
| 2.1 Access and Circulation |
| 2.2 Amenities |
| 2.3 Hotels and Other Accommodations |
| 2.4 Publications and Communications |
| 2.5 Transportation Means |

2.1 Access and Circulation

This section contains the following topics:

| Topic |
|---|
| 2.1.1 Pathways and Circulation Areas |
| 2.1.2 Ramps |
| 2.1.3 Stairways |
| 2.1.4 Surfaces, Paving and Finishes |
| 2.1.5 Furniture, Counters and Service Areas |
| 2.1.6 Entrances and Exits |
| 2.1.7 Doors and Doorways |
| 2.1.8 Elevators and Escalators |
| 2.1.9 Emergency Provisions |

2.1.1 Pathways and Circulation Areas

2.1.1.1 Pedestrian Routes Standards

2.1.1.1.1 Pathways

It is essential to maintain a clear route of travel through a facility that provides a suitable clear width, for persons with a disability and elderly persons, persons using wheelchairs (manual or electric) or scooters, those who push strollers, those who use service or guide dogs, and those travelling in pairs. For pedestrian pathways, the effective width standard is stipulated in the key measurement reference table (the “reference table”) 1 for each installation location so that persons with a disability, elderly persons, and persons using wheelchairs can pass safely.

Reference table 1: Pathway width

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|---|--|--|
| Width At least 1,800mm (Recommendation: Tokyo Metropolitan ordinance and IPC) | Width At least 2,000mm at pathway where there are extremely many unspecified walkers (Recommendation: Tokyo Metropolitan ordinance) | Width At least 2,000mm at pathway where there are extremely many unspecified walkers (Recommendation: Tokyo Metropolitan ordinance) | Width At least 2,000mm (Standard: Japanese government’s standard) | Width At least 1,800mm (Recommendation: Japanese government’s standard, Tokyo Metropolitan ordinance, IPC) |
| At least 1,500mm (Standard: IPC) | At least 1,800mm (Standard: Japanese government’s standard, Tokyo Metropolitan ordinance, IPC) | At least 1,800mm (Standard: Japanese government’s standard, Tokyo Metropolitan ordinance, IPC) | * Where there are many walkers, at least 3,500mm (Standard: Japanese government’s standard) | At least 1,500mm (Standard: IPC) |
| *1 | *2 | *2 | *3 | *2 |

*1 At least 1,200mm (Tokyo Metropolitan ordinance)

*2 At least 1,200mm (Japanese government’s standard)

*3 At least 1,500mm (Japanese government’s standard)

* At areas where cars enter, secure at least 1,000mm flat parts (cross-grade is 1% or less. However, 2% or less is allowed when there is a special unavoidable reason). (Japanese government’s standard).

* When there are unavoidable geographical or other special reasons in the pathways where there is an elevator or escalator installed at grade separation facilities, the effective width of the pedestrian pathways may be reduced to 1,000mm. (Japanese government’s standard).

In high traffic areas, areas that include turns or are longer than 30m, consideration is needed for manoeuvrability and for enough space for crossing. When the minimum width of 1,200 mm based on the reference table 1 is applied for an unavoidable reason, ensure space for turning a wheelchair every 50m even if the traffic is not heavy.

The minimum width of 1,500 mm means the width allowing a wheelchair user and a walker to pass each other, and the minimum width of 1,800mm means the width allowing two wheelchair users to pass each other.

If gradients exist in accessible routes, ideally these need to be 1:20 (5%) or smoother. Details are stipulated in the reference table 2.

Reference table 2: Pathway gradient

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|---|--|
| (Gradient is stipulated in 10) | (Gradient is stipulated in 10) | (Gradient is stipulated in 10) | Less than 1:20 (Standard: Japanese government's standard, IPC) *1 (Gradient for grade separation facilities is stipulated in 10) | (Gradient is stipulated in 10) |

*1 Less than 1:12 (Japanese government's Standard, Tokyo Metropolitan ordinance)

In addition, level landings must be provided in regular intervals, with the distance from one to the next being dependent on the gradient (see the reference table 3).

Reference table 3: Pathway landing

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| (The standard for the landings is stipulated in 13) | (The standard for the landings is stipulated in 13) | (The standard for the landings is stipulated in 13) | Not applicable | (The standard for the landings is stipulated in 13) |

A handrail is needed, to address height differences of more than 300mm (see the reference table 4).

Reference table 4: Handrail

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|--------------------------------|--|
| (The standard for handrails in a ramp is stipulated in 14) | (The standard for handrails in a ramp is stipulated in 14) | (The standard for handrails in a ramp is stipulated in 14) | Not applicable | (The standard for handrails in a ramp is stipulated in 14) |

For additional information about gradients, landings and handrails, see section about ramps later in this chapter.

At least one accessible route complying with the above shall be provided within the boundary of the site from accessible transport load zones to the main entrance to the accessible facility they serve.

The accessible route shall, to the maximum extent feasible, be the main route for the general population, with the fewest possible detours.

There must be at least one accessible route connecting transport interfaces with buildings, facilities and spaces that belong to the same site.

Best practice is to have all routes accessible.

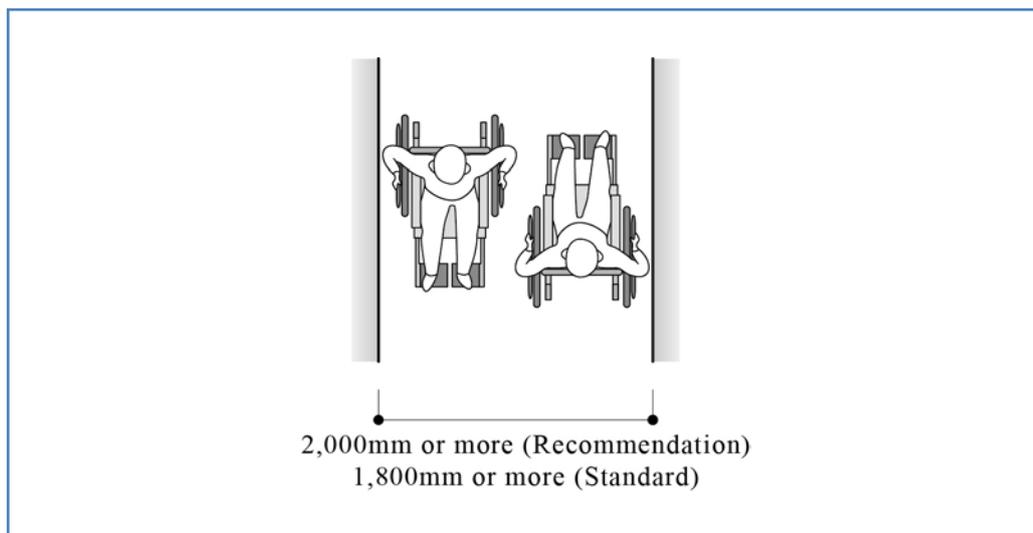


Figure 1: Pathway width (example)

2.1.1.1.2 Removing Tripping Hazards

Pathways and circulation areas free from tripping hazards, such as protruding objects, are important to all facility users. When there is a difference in level, be sure to make a ramp following the guidelines or build an elevator.

Objects that cannot be detected by a cane can be hazardous for people with a visual impairment as well as to any other individual whose attention is distracted.

Basically objects protruding into accessible routes should not be set up. If there is an inevitable reason, however, objects between 650mm and 2,100mm from the floor can be set up if they do not extend beyond 400mm into pedestrian pathways including pathway and corridors. At Olympic Village and sporting venue, it is recommended that they do not extend beyond 100mm into pedestrian pathways including pathway and corridors. If protruding objects are set up for an unavoidable reason, set up a fence or take some alternative measures so that persons with a visual impairment will not bump without being able to feel it with a white cane. In this case, consider not to create a gap between the floor and such fence so that they can feel the fence easily with their white canes.

The standard on clear headroom space is stipulated in the reference table 5.

Reference table 5: Clear headroom space for pathways

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|---|---|--|
| Headroom from the road surface/floor | Headroom from the road surface/floor | Headroom from the road surface/floor | Headroom from the road surface/floor | Headroom from the road surface/floor |
| At least 2,100mm (Standard: IPC) | When there are extremely many unspecified walkers, at least 5,000mm (Standard: Tokyo Metropolitan ordinance on public pathways) At least 2,500mm (Standard: Tokyo Metropolitan ordinance on public pathways) | *When a ceiling or an external protrusion is installed, at least 2,500mm (Standard: Japanese government's standard) | *When a ceiling or an external protrusion is installed, at least 2,500mm (Standard: Japanese government's standard) | *1 |

*1 At least 2,000mm (Japanese government's standard)

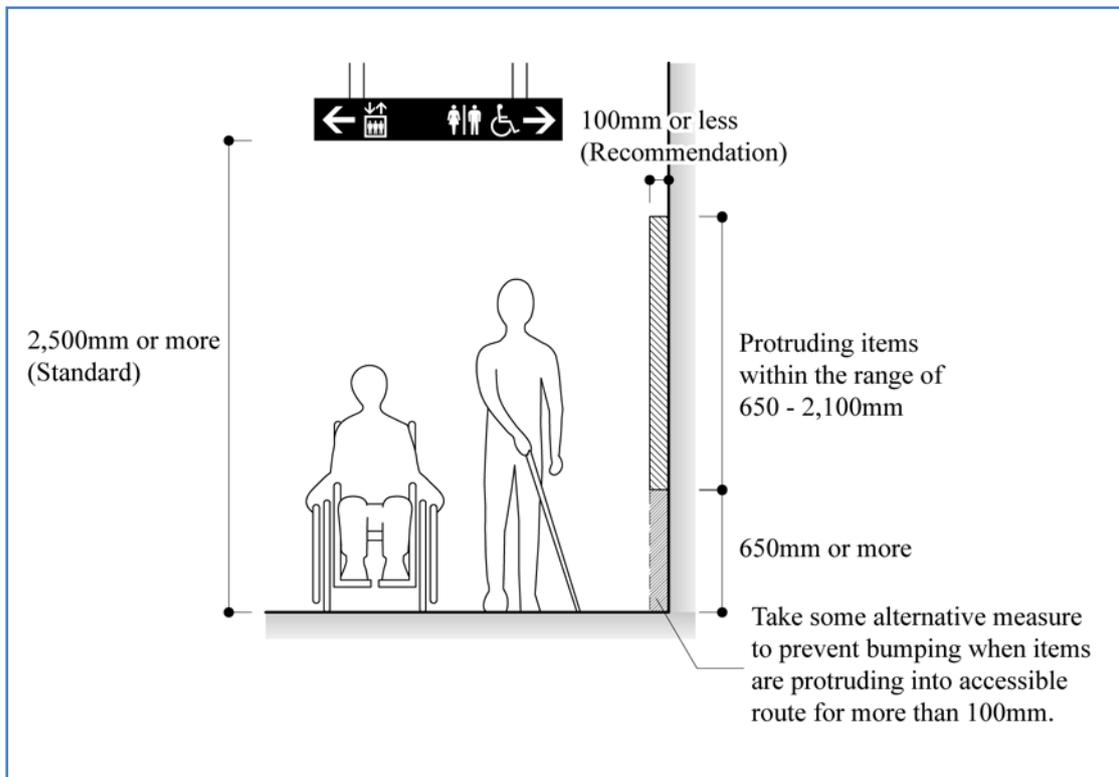


Figure 2: Protruding items on the pathway (example)

The areas along the pathway, including rest areas and commercial areas, must provide a flush transition to the pathway along its entire length. Bollards, drinking fountains, and/or other fixed items located on the pathway surface must be in a colour contrasted with surrounding floor surface or walls and be detectable with cane by providing different surface finish on the periphery distinguished from surrounding surface.

Light poles, signs, newspaper boxes, garbage containers, etc. must be kept off the path or at least, clearly marked with high contrast colour. Portable signage such as sandwich boards is not permitted on pathways.

2.1.1.1.3 Rest Areas

Place rest benches at outdoor pathway at the intervals as stipulated in the reference table 6. Seating with a backrest and side arms set off the main pathway and marked with a change in surface materials needs to be provided.

Reference table 6: Installation space for break benches along outdoor pathways

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--|--|
| Not applicable | Not applicable * However, it is recommended to place benches at appropriate intervals to the extent not obstructing smooth passage, especially at queue areas (Recommendation: IPC) | 50m or so intervals (Standard: IPC) *1 | 50m or so intervals (Standard: IPC) *1 | 50m or so intervals (Standard: IPC) *1 * Not applicable to concourse and platform |

*1 Place benches at appropriate intervals to the extent not obstructing smooth passage (Japanese government's standard).

Bench seating at rest stops should have about 400 to 450mm seat height and about 750mm backrest height. Minimum kick space equal to 1/3 of the seat depth is also required in all bench seating. A horizontal area of 1,500mm x 1,500mm should be provided next to bench seating in consideration of users accompanying wheelchair users or assistance dogs.

2.1.1.1.4 Open, Well Lit Pathways

Where possible, fixtures mounted below eye level are to be used in addition to standard lighting approaches to provide better definition of ground surfaces. Steps and stairs need to be lit by low fixtures to highlight the stair tread and riser surface. The lighting should be arranged with consideration for not having the light source shine directly in people's eyes.

2.1.1.1.5 Consistent Exterior Stair Treatments

Exterior stairs need to be treated the same as interior installations. High contrast, nosing of a non-slip finishing treatment or material; guiding blocks (truncated domes); and conforming handrails are required on all exterior stair designs.

2.1.1.1.6 Crossings

Roadway boundaries must be alerted with guiding blocks (truncated domes) at the part of sidewalks, etc. connected to pedestrian crosswalks.

Pedestrian crosswalk widths must be 4m or more as a general rule, and even in unavoidable cases, they must be at least 3m wide. However, when needed for special circumstances such as matching the width of a crosswalk to a sidewalk to ensure continuity, this standard will not apply.

In addition, escort zones with guiding blocks for visually impaired persons (guiding blocks (truncated domes) and/or guiding blocks (elongated bars)) extending continuously from those installed in surrounding sidewalks should be installed to pedestrian crosswalks so that people who have visual impairments can go straight across the road.

The cross gradient standard at crossings is stipulated in the reference table 7. When necessary, install kerb ramps on both sides of crossings to create an accessible pathway of travel. The kerb ramps shall be installed within the sidewalk. Install kerb ramps when necessary and the standard difference in level between sidewalk and roadway on the walking route shall be 20mm.

Reference table 7: Cross gradient at crossings

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|---|--|
| Not applicable | Not applicable | Cross-grade Less than 1:50 (2.0%) (Standard: IPC) | Cross-grade Less than 1:100 (1.0%) (Recommendation: Japanese government's standard) Less than 1:50 (2.0%) (Standard: IPC, Japanese government's standard) | Not applicable |

The standard on kerb ramps is stipulated in the reference table 8.

Reference table 8: Kerb ramp at crossings

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Not applicable | Written in 10 | Written in 10 | Not applicable |

Controlled crossings must include visual and audible indicators separate from vehicle signaling (including personal support).

Further, traffic signals should be high visibility LED type signals, and with respect to audio signals, the place of installation and the content should be highly audible in consideration of those who have visual impairments.

2.1.1.1.7 Transport Load Zones

Transport load zones must be wide enough to accommodate wheelchair users transferring out of the car into their wheelchairs. It is extremely difficult and dangerous for many people with mobility impairment to get on a wheelchair on a pavement. Transport load zones need to accommodate rear lift-equipped vans as well as side mounted lifts.

The standard on transport load zones is stipulated in the reference table 9.

Reference table 9: Transport load zones

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|--------------------------------|--|
| Vehicle space adjacent to the carriage porch 2,400mm in width (Standard: IPC) | Vehicle space adjacent to the carriage porch 2,400mm in width (Standard: IPC) | Vehicle space adjacent to the carriage porch 2,400mm in width (Standard: IPC) | Not applicable | Not applicable |
| Space allowing a wheelchair user to get on and off a vehicle, next to vehicle space adjacent to the carriage porch At least 8,000mm in length (Recommendation: Tokyo Metropolitan ordinance) At least 2,400mm in width x at least 7,000mm in length x at least 3,300mm in height from the road surface/floor (Standard: IPC) | Space allowing a wheelchair user to get on and off a vehicle, next to vehicle space adjacent to the carriage porch At least 8,000mm in length (Recommendation: Tokyo Metropolitan ordinance) At least 2,400mm in width x at least 7,000mm in length x at least 3,300mm in height from the road surface/floor (Standard: IPC) | Space allowing a wheelchair user to get on and off a vehicle, next to vehicle space adjacent to the carriage porch At least 8,000mm in length (Recommendation: Tokyo Metropolitan ordinance) At least 2,400mm in width x at least 7,000mm in length x at least 3,300mm in height from the road surface/floor (Standard: IPC) | | |

Lighting must be arranged in consideration of people with mobility impairment, enabling them to get in and out of vehicles safely. (Reference: IPC minimum 60 lx)

Transport load zones must be equipped with at least one kerb ramp where there are height difference between pathway and transport load zones.

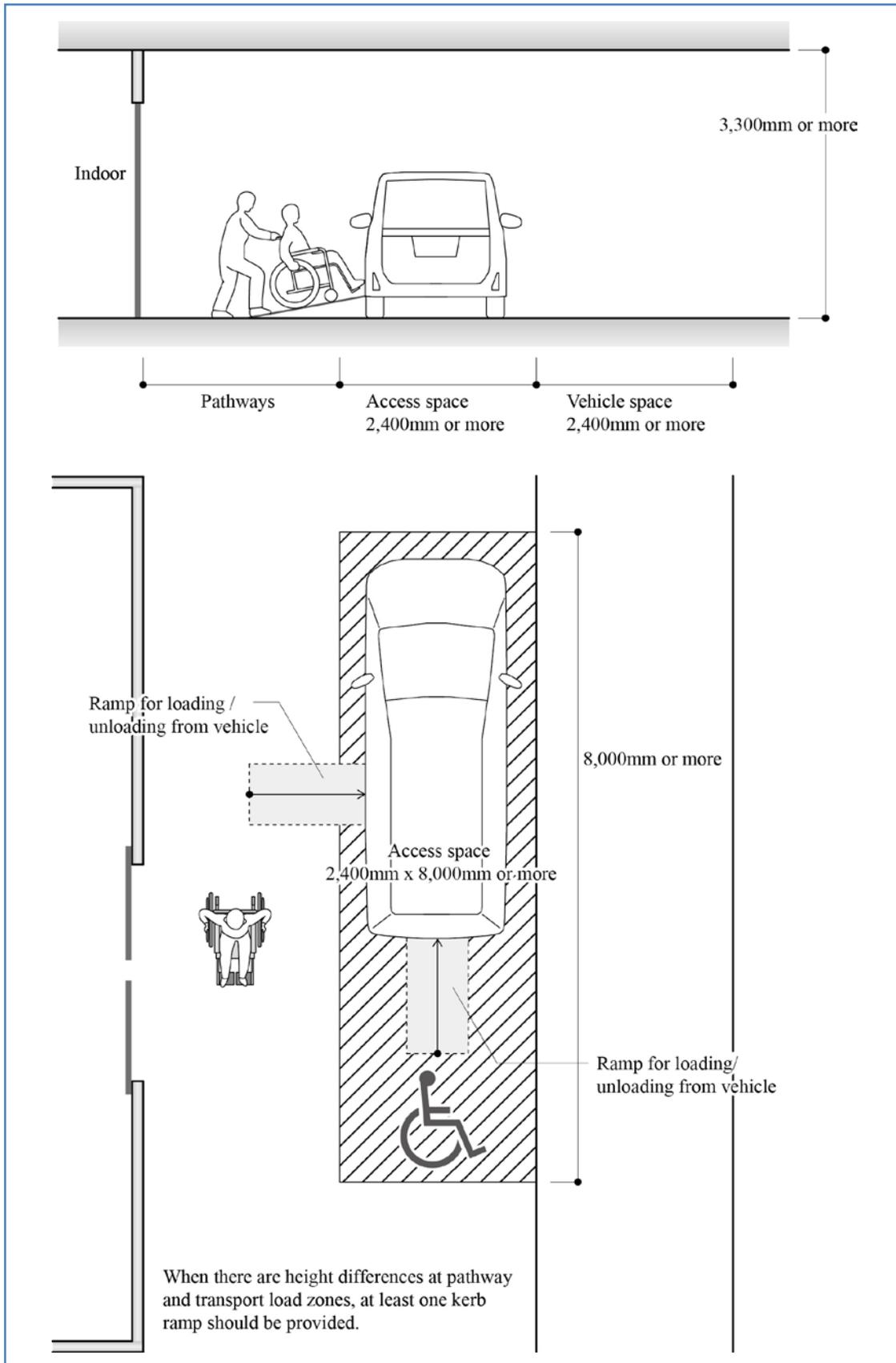


Figure 3: Transport load zones (example)

2.1.2 Ramps

2.1.2.1 Ramps

2.1.2.1.1 Definition

For the purposes of the Guidelines, a ramp is an inclined plane installed in addition to or instead of stairs to allow easy access in a building or raised area.

Ramps permit wheelchair users, as well as people pushing strollers, carts, or other wheeled objects to move.

Ramps come as permanent, semi-permanent and portable devices.

An inclined plane less than 600mm in total length and 75mm in height differences - for example in a dropped curb application - is not considered a ramp.

2.1.2.1.2 Preliminary knowledge

Where possible, seamless access without height differences is preferred.

If having a height difference is not avoidable, a ramp is the first choice to address a vertical height difference.

A ramp allows people using a wheelchair, pushing strollers and moving heavy items, etc. to move efficiently.

2.1.2.1.3 Design Requirements

The ramp gradient standard is stipulated in the reference table 10.

Reference table 10: Ramp gradient

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | | Outdoor pathways in the venues including Olympic Village | | | Sidewalks of accessible routes | | | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) | | |
|---|---|----------------------------|--|--|----------------------|---|--|------|--|----------------------|----------------------------|
| | | | | | | (When a ramp is built in grade separation facilities) | | | | | |
| Difference in rise | Std. | Rec. | Difference in rise | Std. | Rec. | Difference in rise | Std. | Rec. | Difference in rise | Std. | Rec. |
| -160 mm | Less than 1:12 (IPC) | Less than 1:14 (IPC) | 0-75 mm | Less than 1:8 (IPC) | Less than 1:12 (IPC) | 0-75 mm | Less than 1:12 (JPN gvt's standard, IPC) | --- | -160 mm | Less than 1:12 (IPC) | Less than 1:14 (Rec.: IPC) |
| 161-300 mm | | | 76-150 mm | | | 1:10 or less (IPC) | | | 76-150 mm | | |
| 301-3,000 mm | Less than 1:14 (IPC) | Less than 1:20 (Rec.: IPC) | 151-160 mm | Less than 1:20 (JPN gvt's standard, IPC) | --- | 151-300 mm | | | 301 - 3,000 mm | Less than 1:14 (IPC) | Less than 1:20 (Rec.: IPC) |
| + 3,001mm | Less than 1:20 (IPC) | --- | 161-300 mm | | | 301 - 3,000 mm | | | +3,001mm | Less than 1:20 (IPC) | --- |
| | * 1:20 is the standard at main sidewalks, all the walking space, pathway and sidewalks expected to be used by many people in athletic venues (IPC). | | 301 - 3,000 mm | | | + 3,001 mm | | | *For 301mm or more difference in rise, 1:20 is the standard at accessible routes to Paralympic venues. | | |
| *1 | *1 | | *2 | | | *3 | | | *1 | | |

*1 -160mm: Less than 1:8 (Japanese government's standard, Tokyo Metropolitan ordinance), 161mm - : Less than 1:12 (Japanese government's standard, Tokyo Metropolitan ordinance).

*2 76mm - 160mm: Less than 1:8 (Japanese government's standard, Tokyo Metropolitan ordinance), 161mm - : Less than 1:12. (Japanese government's standard, Tokyo Metropolitan ordinance)

*3 Less than 1:12 (Japanese government's standard, Tokyo Metropolitan ordinance).

The gradient of all primary entrances and facilities is stipulated in the reference table 11.

Reference table 11: Gradient of all primary entrances and facilities

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 10 | (Addition to the reference table at 10) * Gradient at main entrances/exits and main facilities is basically less than 1:20 (5.0%). When there is an unavoidable reason, the maximum gradient allowed is 1:14 (7.14%). | (Addition to the reference table at 10) * Gradient at main entrances/exits and main facilities is basically less than 1:20 (5.0%). When there is an unavoidable reason, the maximum gradient allowed is 1:14 (7.14%). | Not applicable | Not applicable |

Following the accessible pathway standard mentioned above in this chapter, set the maximum cross grade of outdoor pathway and ramps at 1:50 (2%) (see the cross grade at crossings in the reference table 7). The standard width of ramps is stipulated in the reference table 12.

Reference table 12: Ramp width

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|--|---|
| At least 1,500mm (Recommendation: Tokyo Metropolitan ordinance) | At least 1,500mm (Recommendation: Japanese government's standard, Tokyo Metropolitan ordinance, IPC) | At least 1,500mm (Recommendation: Tokyo Metropolitan ordinance) | (When a ramp is built in grade separation facilities) At least 1,500mm (Recommendation: Tokyo Metropolitan ordinance) | At least 1,800mm (Recommendation: Japanese government's standard, Tokyo Metropolitan ordinance, IPC) At least 1,200mm (Standard: Japanese government's standard) |
| * When there is a stairway At least 1,200mm (Recommendation: Tokyo Metropolitan ordinance) | * When there is a stairway At least 1,200mm (Recommendation: Japanese government's standard, Tokyo Metropolitan ordinance) | * When there is a stairway At least 1,200mm (Recommendation: Japanese government's standard, Tokyo Metropolitan ordinance) | * When there is a stairway At least 1,200mm (Recommendation: Japanese government's standard, Tokyo Metropolitan ordinance) | * When there is a stairway At least 900mm (Standard: Japanese government's standard) |
| At least 1,200mm (Standard: Tokyo Metropolitan ordinance) | At least 1,400mm (Standard: Tokyo Metropolitan ordinance) *1 | At least 1,400mm (Standard: Tokyo Metropolitan ordinance) *1 | At least 1,400mm (Standard: Tokyo Metropolitan ordinance) *1 | |
| *When there is a stairway At least 900mm (Standard: Tokyo Metropolitan ordinance) | | | | |

*1 At least 1,200mm. (Japanese government's standard)

* When there is a stairway at least 900mm (Japanese government's standard).

2.1.2.1.4 Landings

The landing standard is stipulated in the reference table 13.

In case of multiple ramps leading to a landing, the landing must be at least as wide as the widest ramp leading to it.

Reference table 13: Ramp landing

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|---|---|---|--|
| <p>Elevation difference Every 500mm or less (Recommendation: IPC) Every 750mm or less (Standard: Tokyo Metropolitan ordinance)</p> | <p>Elevation difference Every 500mm or less (Recommendation: IPC) Every 750mm or less (Standard: Japanese government's standard)</p> | <p>Elevation difference Every 500mm or less (Recommendation: IPC) Every 750mm or less (Standard: Japanese government's standard)</p> | <p>When grade separation facilities are built Elevation difference Every 500mm or less (Recommendation: IPC) Every 750mm or less (Standard: Tokyo Metropolitan ordinance)</p> | <p>Elevation difference Every 500mm or less (Recommendation: IPC) Every 750mm or less (Standard: Japanese government's standard) * In the case of outdoors Every 600mm or less (Standard: Japanese government's standard) *1</p> |
| | <p>Horizontal distance Notwithstanding the above stipulation on elevation difference, build a landing at least every 20m when the gradient is less than 1:20. (Recommendation: IPC)</p> | <p>Horizontal distance Notwithstanding the above stipulation on elevation difference, build a landing at least every 20m when the gradient is less than 1:20. (Recommendation: IPC)</p> | <p>Horizontal distance Notwithstanding the above stipulation on elevation difference, build a landing at least every 20m when the gradient is less than 1:20. (Recommendation: IPC)</p> | <p>Horizontal distance Notwithstanding the above stipulation on elevation difference, build a landing at least every 20m when the gradient is less than 1:20. (Recommendation: IPC)</p> |
| <p>Width The same as ramp width (Recommendation: IPC)</p> | <p>Width The same as the ramp width (Recommendation: IPC)</p> | <p>Width The same as the ramp width (Recommendation: IPC)</p> | <p>Width The same as the ramp width (Recommendation: IPC)</p> | <p>Width The same as the ramp width (Recommendation: IPC)</p> |
| <p>Length Landing of at least 1,500mm (Standard: Tokyo Metropolitan ordinance, IPC)</p> | <p>Length Landing of at least 1,500mm (Standard: Tokyo Metropolitan ordinance, IPC)</p> | <p>Length Landing of at least 1,500mm (Standard: Tokyo Metropolitan ordinance, IPC)</p> | <p>Length Landing of at least 1,500mm (Standard: Japanese government's standard, IPC)</p> | <p>Length Landing of at least 1,500mm (Standard: Japanese government's standard, IPC)</p> |

*1 Elevation difference for outdoor, every 750mm or less (Japanese government's standard)

2.1.2.1.5 Handrails

Handrails are required for ramps covering a vertical height of more than 300mm.

Requirements for handrails are as follows:

- Be at both sides. When installing handrails at both sides is impossible because of limitation on the structure or at a ramp of which height is not more than 160 mm, however, the above stipulation is exempted.
- Be continuous on the inside of ramps including dogleg ramps and ramps with protruded supports. It is recommended to install continuous handrails at openings as well.
- When handrails are not continuous anymore at the upper end and at the bottom end of a ramp, see the standard handrail extension lengths stipulated in the reference table 14. The handrail edge must not protrude by embedding it in the wall, floor or post. When there is fire equipment or other structural limitations, however, the above stipulation is exempted on condition that measures are taken to secure users' safety.

Reference table 14: Ramp handrail extension length

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|---|---|---|
| Vertical extension length At least 450mm (Standard: Tokyo Metropolitan ordinance) | Vertical extension length At least 450mm (Standard: Tokyo Metropolitan ordinance) | Vertical extension length At least 450mm (Standard: Tokyo Metropolitan ordinance) | Vertical extension length 300mm (Standard: IPC) | Vertical extension length At least 600mm (Recommendation: Japanese government's standard) 300mm (Standard: IPC) |

- All ramps should be sufficiently set back from the adjoining pathway to avoid the upper and lower end of the handrails installed according to the stipulation above from protruding into other crossing pathways and becoming a hazard.
- The ramp handrail standard is stipulated in the reference table 15. It is recommended to install handrails continuously except some parts such as the front of the door.

Reference table 15: Ramp handrail height

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|---|---|---|---|
| <p>Height from the road surface/floor Double handrail. Lower handrail: about 600~650mm Upper handrail: about 750~850mm (Recommendation: Tokyo Metropolitan ordinance)</p> <p>When the gradient is over 1:12 or the height is over 160mm, about 750~850mm (Standard: Tokyo Metropolitan ordinance on facilities)</p> <p>* Closer to 850mm (IPC Standard) is recommended, considering that overseas athletes will use the handrails.</p> | <p>Height from the road surface/floor Double handrail. Lower handrail: about 600~650mm Upper handrail: about 750~850mm (Recommendation: Tokyo Metropolitan ordinance)</p> <p>When the gradient is over 1:12 or the height is over 160mm, about 750~850mm (Standard: Tokyo Metropolitan ordinance)</p> | <p>Height from the road surface/floor Double handrail. Lower handrail: about 600~650mm Upper handrail: about 750~850mm (Recommendation: Tokyo Metropolitan ordinance)</p> <p>When the gradient is over 1:12 or the height is over 160mm, about 750~850mm (Standard: Tokyo Metropolitan ordinance on facilities)</p> | <p>Height from the road surface/floor Double handrail. Lower handrail about 650mm and upper handrail about 850mm (Recommendation: Japanese government's standard for public transportation)</p> <p>About 800~850mm (Standard: Japanese government's standard for public transportation)</p> | <p>Height from the road surface/floor Double handrail. Lower handrail about 650mm and upper handrail about 850mm (Recommendation: Japanese government's standard)</p> <p>About 800~850mm (Standard: Japanese government's standard)</p> |

➤ The standard distance between ramp handrails is stipulated in the reference table 16.

Reference table 16: Distance between ramp handrails

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 12 | Same as 12 | Same as 12 | Same as 12 | Same as 12 |

The gripping surface of handrails is stipulated in the reference table 17.
All handrails should be designed so that they do not form a hazard.

Reference table 17: Distance between ramp handrail gripping surface and wall surface

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|---|---|
| Diameter of the gripping face Circle or oblong of about 30~40mm in diameter (Recommendation: Tokyo Metropolitan ordinance on facilities) | Diameter of the gripping face Circle or oblong of about 30~40mm in diameter (Recommendation: Tokyo Metropolitan ordinance) | Diameter of the gripping face Circle or oblong of about 30~40mm in diameter (Recommendation: Tokyo Metropolitan ordinance on facilities) | Diameter of the gripping face Round shape of which diameter is about 30~40mm (Recommendation: Japanese government's standard for public transportation) | Diameter of the gripping face Round shape of which diameter is about 30~40mm (Recommendation: Japanese government's standard) |
| Distance from the wall surface About 40~50mm (Recommendation: Tokyo Metropolitan ordinance) | Distance from the wall surface About 40~50mm (Recommendation: Tokyo Metropolitan ordinance) | Distance from the wall surface About 50mm (Recommendation: Tokyo Metropolitan ordinance) | Distance from the wall surface About 50mm (Recommendation: Japanese government's standard for public transportation) | Distance from the wall surface About 50mm (Recommendation: Japanese government's standard) |

2.1.2.1.6 Other Requirements

In principle, a ramp should be the first type of entrance method considered to solve height difference, as it provides for universal access and emergency exit. In any case, where steps or stairs are provided, a ramp or lift shall also be provided as an accessible alternative.

Ramp floor surfaces must be slip resistant and should have a detectable warning surface that is colour and texture contrasted from adjacent surfaces.

Ramps greater than 60m in length should be replaced with a lift arrangement if possible. That means that for a vertical height difference of more than 3m, solutions other than ramps are preferred.

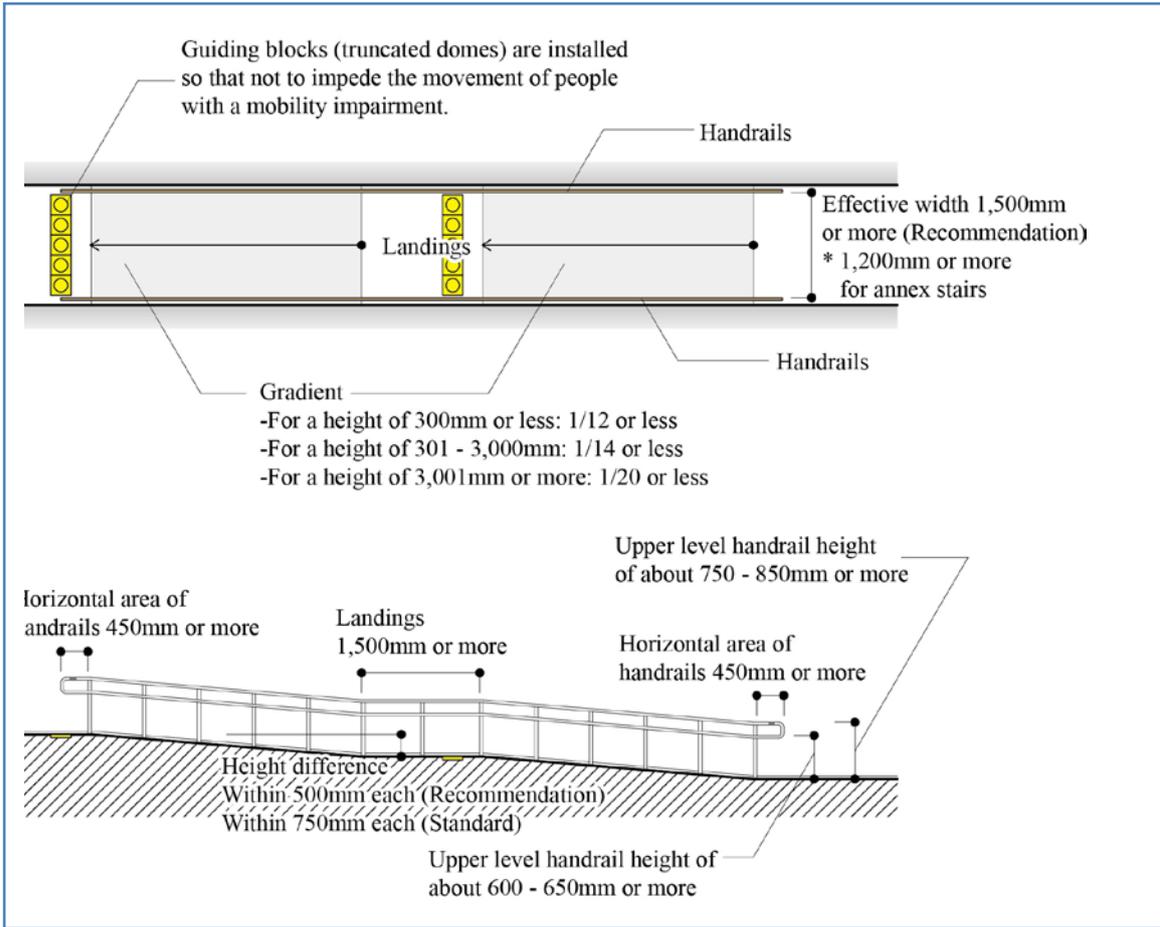


Figure 4: Ramps (example)

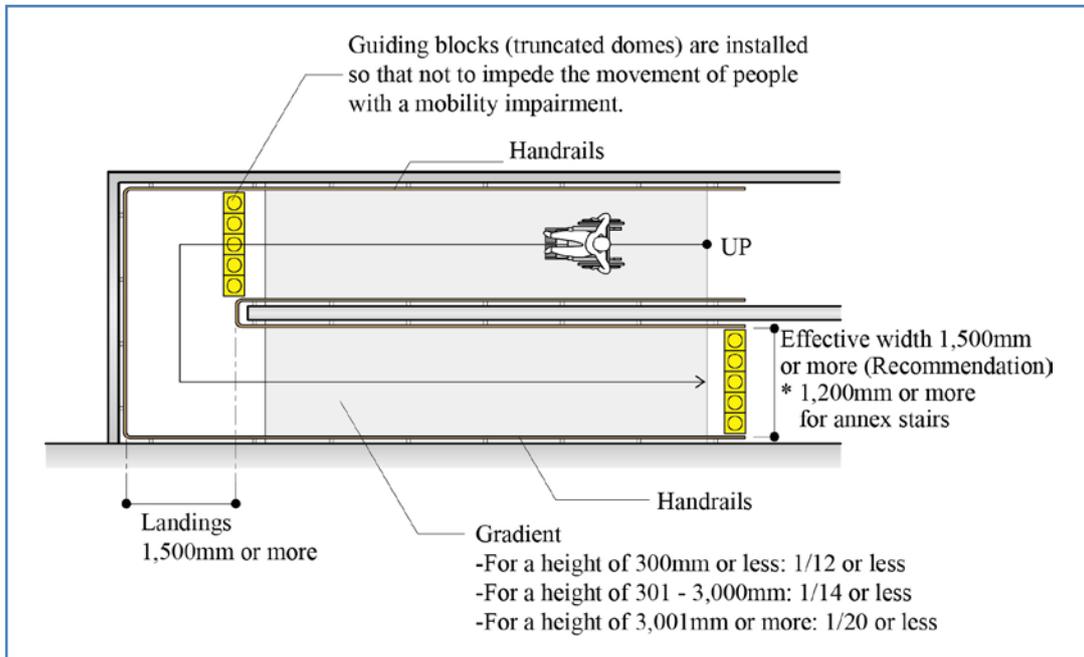


Figure 5: Ramp landings (example)

2.1.2.2 Kerb ramps

2.1.2.2.1 Definition

A kerb ramp is a means for transferring safely and efficiently from a roadway.

The design of a kerb ramp must provide for a smooth and with-no-gaps transition between the road surface and kerb ramp.

2.1.2.2.2 Design Requirements

The standard on the kerb ramp is stipulated in the reference table 18.

Reference table 18: Kerb ramp

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Not applicable | Written in 10 | Written in 10 | Not applicable |

The horizontal length of a kerb ramp shall not exceed 2,700 mm (see the reference table 19).

The maximum slope of the routes immediately adjacent to the kerb ramp shall be 1:12 (8.33%). The minimum width of a kerb ramp shall be 1,000mm (see the reference table 20).

Reference table 19: Horizontal length of kerb ramp

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--|--|
| Not applicable | Not applicable | Horizontal length of the ramp Less than 2,700mm | Horizontal length of the ramp Less than 2,700mm | Not applicable |

Reference table 20: Kerb ramp width

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Not applicable | Width At least 1,000mm | Width At least 1,000mm | Not applicable |

The surfaces of a kerb ramp must be slip-resistant with a well drained finish and have a portion whose colour and texture contrasted with the adjacent surfaces, for example by installing guiding blocks (truncated domes), clearly indicating that there is a slope.

Kerb ramps shall have flare sides, as these eliminate the hazard of pedestrians stepping off an edge.

The smooth transition and minimal slope of a kerb ramp could go unnoticed by someone with a visual impairment; therefore, textured surfaces are needed.

The maximum slope of flared sides shall be 1:10 (see the reference table 21).

Reference table 21: Kerb ramp flared sides gradient

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Not applicable | Same as 10 | Same as 10 | Not applicable |

Kerb ramps at pedestrian crosswalks shall be wholly contained within the area designated for pedestrian use.

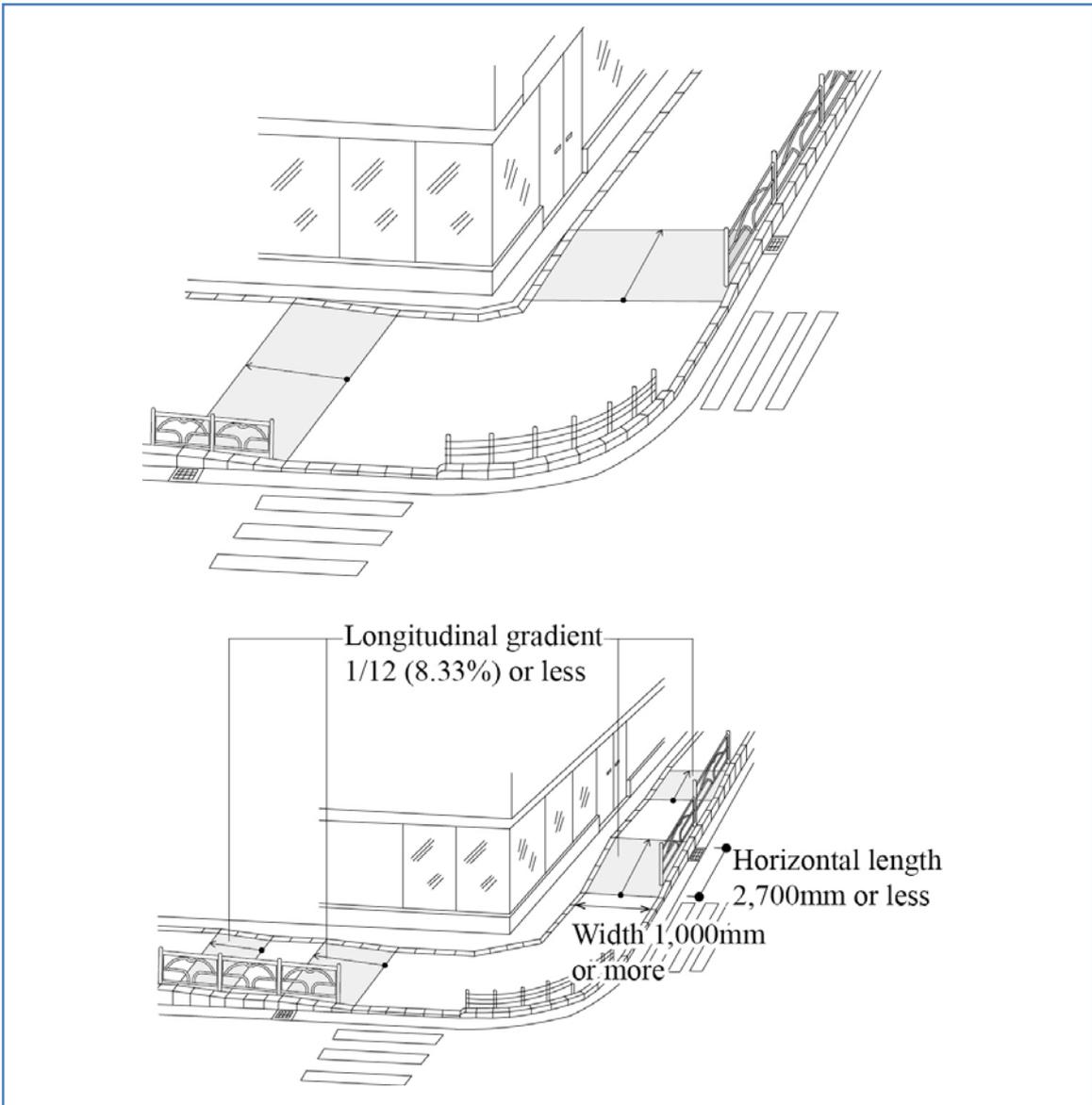


Figure 6: Kerb ramp (example)

2.1.3 Stairways

2.1.3.1 Introduction

While stairs and stairways are not considered parts of an accessible route, proper design will enable people of small stature, elderly people, children and others to use them in a safe and efficient way, thus contributing to an inclusive facility.

2.1.3.2 Design Elements

2.1.3.2.1 Treads and Risers

Stairs need to provide uniform riser heights and tread depths. Since the surface shape of pathway is not uniform, use direct stairs or dog-leg stairs, not spiral stairs.

The standard on riser heights is stipulated in the reference table 22.

Reference table 22: Stair riser height

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|---|--|
| Riser Less than 150mm (Recommendation: IPC) Less than 160mm (Standard: Japanese government's standard) | Riser Less than 150mm (Recommendation: IPC) Less than 160mm (Standard: Japanese government's standard) | Riser Less than 150mm (Recommendation: IPC) Less than 160mm (Standard: Japanese government's standard) | When a stairway is built in grade separation facilities Riser Less than 150mm (Recommendation: IPC) Less than 160mm (Standard: Japanese government's standard for public transportation) | Riser Less than 150mm (Recommendation: IPC) Less than 160mm (Standard: Japanese government's standard) |
| *1 | *1 | *1 | *2 | *2 |

*1 Less than 180mm (Tokyo Metropolitan ordinance)

*2 Less than 180mm (Tokyo Metropolitan ordinance on buildings)

The Standard on treads is stipulated in the reference table 23.

Closed risers are essential.

Open risers are not permitted.

Reference table 23: Stair tread

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|---|--|
| Step depth At least 300mm (Recommendation: Tokyo Metropolitan ordinance) At least 280mm (Standard: IPC) *1 | Step depth At least 300mm (Standard: Japanese government's standard) | Step depth At least 300mm (Standard: Japanese government's standard) | When a stairway is built in grade separation facilities Step depth At least 300mm (Standard: Japanese government's standard for public transportation) | Step depth At least 300mm (Standard: Japanese government's standard) |

*1 At least 260mm (Tokyo Metropolitan ordinance)

2.1.3.2.2 Nosings

The standard on stair nosings and risers is stipulated in the reference table 24.

Reference table 24: Stair nosings and risers

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|--|--|
| Do not install a step nose or others that could cause tripping. The treads of each steps should not overlap by 20mm or more. (Standard: Tokyo Metropolitan ordinance) | Do not install a step nose or others that could cause tripping. The treads of each steps should not overlap by 20mm or more. (Standard: Tokyo Metropolitan ordinance) | Do not install a step nose or others that could cause tripping. The treads of each steps should not overlap by 20mm or more. (Standard: Tokyo Metropolitan ordinance) | Do not install a step nose or others that could cause tripping. The treads of each steps should not overlap by 20mm or more. (Standard: Tokyo Metropolitan ordinance) | Do not install a step nose or others that could cause tripping. The treads of each steps should not overlap by 20mm or more. (Standard: Tokyo Metropolitan ordinance) |

Nosings must be high contrast to the tread so that steps are readily recognizable and of non-slip finish or material. Materials made of metal shall not be used in nosings. Nosings shall be aligned with the tread surface to prevent tripping. They need to be uniformly illuminated so that passage will not be impeded and have no abrupt undersides. (Reference: IPC minimum 100 lx)

2.1.3.2.3 Detectable Warnings

Guiding blocks (truncated domes) shall be installed at the top of each set of stairs in competition venues and accessible routes so that stairs are detectable. The guiding blocks (truncated domes) should extend to the full width of the stairs for a depth of 600mm (2 strips) and commence at one tread depth (300mm) back from the top stair. With respect to stair pathways in the spectator areas of the Games venues, the guiding blocks (truncated domes) shall be installed extending to the width of the pathways for a depth of 300mm (1 strip) or 600mm (2 strips) and commencing at one tread depth (300mm) back from the top stair, taking into account not impeding the movement of other spectators including people with mobility impairment. In the event, however, that the pathways are narrow and installation of guiding blocks (truncated domes) will impede the movement of spectators including people with mobility impairment, such warnings may not be installed, but consideration shall be given on how to ensure that people with visual impairments do not fall down at the stair pathways.

2.1.3.2.4 Handrails

Handrails must be installed on both sides of the stairway (see the reference table 25). When such installation is practically difficult at passenger facilities for structural reasons, however, the above stipulation is exempted.

Reference table 25: Staircase handrails

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|--|---|
| When the width is over 3,000mm, install handrails in the middle as well. (This rule, however, does not apply when the height of the stairway is less than 1,000mm). (Recommendation: Japanese government's standard) | When the width is over 3,000mm, install handrails in the middle as well. (This rule, however, does not apply when the height of the stairway is less than 1,000mm). (Recommendation: Japanese government's standard) | When the width is over 3,000mm, install handrails in the middle as well. (This rule, however, does not apply when the height of the stairway is less than 1,000mm). (Recommendation: Japanese government's standard) | Install double handrails at both sides. (Standard: Japanese government's standard) | When the width of the stairway is over 4,000mm, install handrails in the middle as well. (Recommendation: Japanese government's standard) * This rule, however, does not apply when passenger mobility is likely to be inconvenienced. |
| Install handrails at both sides of the stairway (Standard: IPC) | Install handrails at both sides of the stairway (Standard: IPC) | Install handrails at both sides of the stairway (Standard: IPC) | | Install handrails at both sides of the stairway (Standard: IPC, Japanese government's standard) |

Requirements for staircase handrails are as follows:

- The standard on the diameter of the handrail grip surface in the staircase is stipulated in the reference table 26.

Reference table 26: Staircase handrail gripping surface

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 17 | Same as 17 | Same as 17 | Same as 17 | Same as 17 |

- Have contrasting colour to their adjoining structure (walls, etc.).
- Have a continuous gripping surface without interruptions for posts or other construction elements. When there is fire equipment or other structural limitations, however, the above stipulation is exempted.
- The standard on the distance between a staircase handrail and the wall is stipulated in the reference table 27.

Reference table 27: Distance between staircase handrail gripping surface and wall surface

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 17 | Same as 17 | Same as 17 | Same as 17 | Same as 17 |

- The standard on the height from the pathway surface to the staircase handrail is stipulated in the reference table 28.

Reference table 28: Staircase handrail height

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 15 | Same as 15 | Same as 15 | Same as 15 | Same as 15 |

- The handrails inside the staircase shall be continuous, and they shall be installed to match the gradient of the staircase so that its gradient can be detectable. It is recommended to install a continuous handrail at a landing as well. When there is fire equipment or other structural limitations, however, the above stipulation is exempted.
- The standard on the extension lengths at upper and lower ends of a handrail when not continuous thereafter is stipulated in the reference table 29. The handrail edge must not protrude by embedding it in the wall, floor or post. Make a handrail not slippery when a person puts his/her weight on it. When there is fire equipment or other structural limitations, however, the above stipulation is exempted on condition that measures are taken to secure users' safety.

Reference table 29: Staircase handle extension length

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 14 | Same as 14 | Same as 14 | Same as 14 | Same as 14 |

- Braille displays shall be installed showing the current location and destination.

- The current location and destination shall be displayed in both braille and ordinary lettering (printed letters) at key points such as the ends of handrails in hallways, bends or turning points, and the starting and ending points of staircases.
- The braille displays for staircase and ramp handrails shall show information on the current location as well as upper and lower floors in a horizontal portion before going up or down.

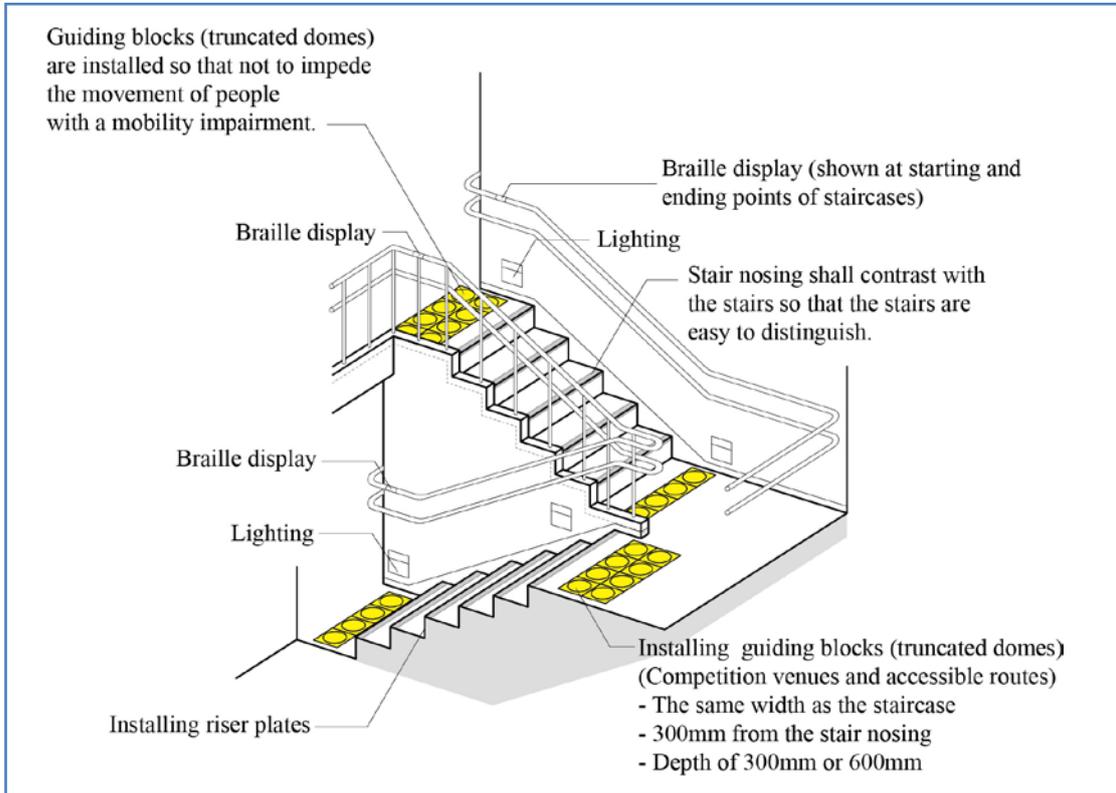


Figure 7: Staircase design elements (example)

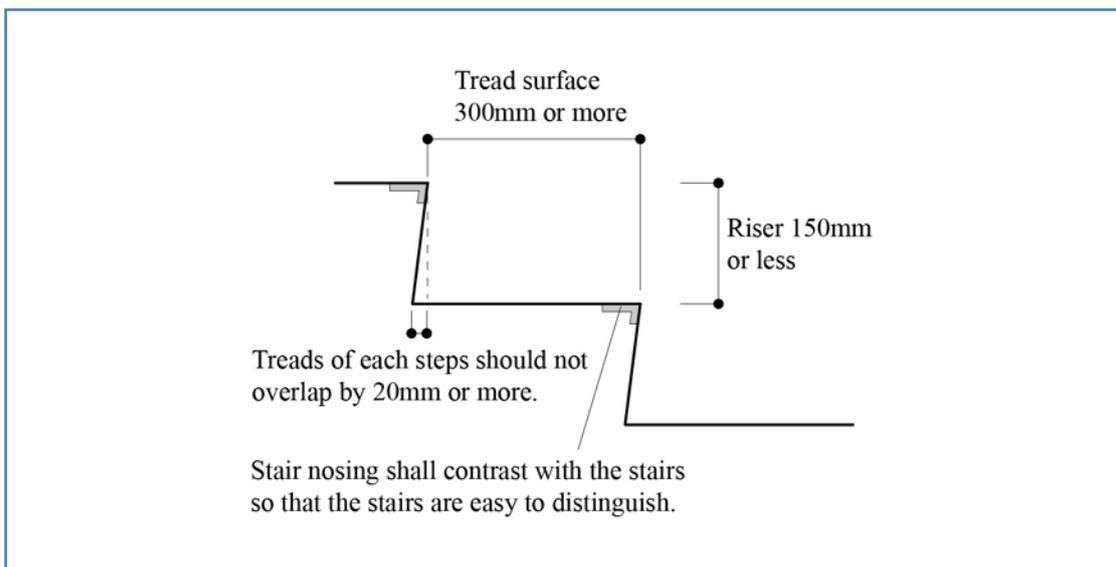


Figure 8: Staircase tread surface and riser (example)

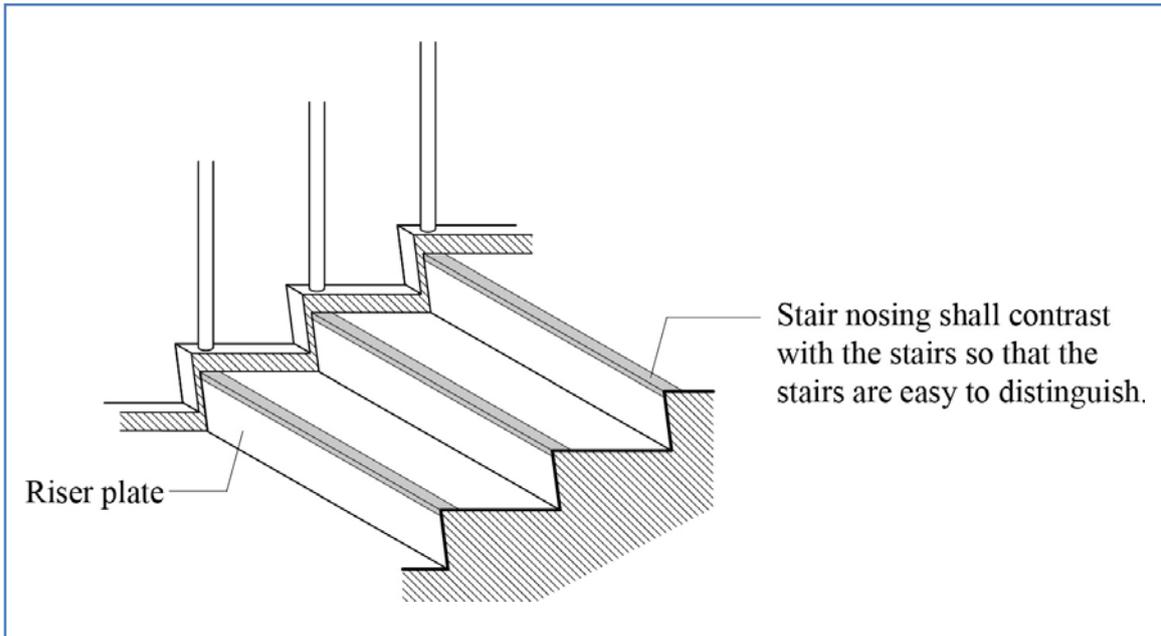


Figure 9: Staircase stair nosing and riser plate (example)

2.1.4 Surfaces, Paving and Finishes

2.1.4.1 Introduction

Surfaces and finishes of the pathways must accommodate people with a mobility or sensory impairment. This requires designers to extend considerations given as regards to the creation of accessible pathways to the detail surface, paving and finishing treatments of the pathways.

Pathway surfaces need to eliminate tripping hazards and obstacles; provide safe, intuitive wayfinding and offer reliable directional indicators that accommodate all users.

2.1.4.2 Characteristics of Accessible Surfaces, Paving and Finishes

As a general rule, drainages, etc. crossing accessible pathways shall not be installed in the accessible path surfaces. In the event that installing them is unavoidable, grates shall be devised so that canes, wheelchair casters, etc. do not get stuck in the grooves and have a non-slip finish so as not to interfere with the passage of people who use wheelchairs, canes, etc.

Tree planters and/or grates in the path of travel, including sewer/drainage covers, etc. must be a high contrast colour to the surrounding surfaces to be clearly recognizable.

Solid, continuous surfaces such as compressed aggregate, asphalt paving, concrete or stone (granite or terrazzo) are the most appropriate surface composition that avoids maintenance. And choose such materials and finishes that make the pathway surfaces

hard to slip even when they are wet with rain.

Effective drainage utilizing a 2% cross-slope is needed to prevent pooling water/mud. And finish the pavement smooth, hard to slip, and well drained.

Where an accessible surface has adjacent landscaping or other drop-off, either a flush transition needs to be created, or a kerb edge is required to prevent wheelchairs or walking aids from slipping off the pathway (see the reference table 30).

Reference table 30: Surface, pavement, and finish

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Not applicable | Applicable | Applicable | Not applicable |

The guiding blocks for visually impaired persons are important wayfinding tools for people with a visual impairment.

- In principle, the colour of the guiding blocks for visually impaired persons shall be yellow. If there is no sufficient contrast with the surrounding pavement, the colour surrounding the guiding blocks for visually impaired persons shall be changed to secure high contrast.
- The guiding blocks for visually impaired persons shall have a minimum of 50% colour/tonal contrast with the surrounding surfaces.
- Further, the road surfaces surrounding the guiding blocks for visually impaired persons shall have a flat finish reducing curvature or uneven surfaces to ensure the sense of touch is different from the guiding blocks for visually impaired persons.
- All hazards on an accessible surface must be indicated using the accepted tactile symbol indicating immediate hazards – guiding blocks (truncated domes) placed across the entire length of the hazard and a minimum of 300mm (1 column) in width.
- With respect to the routes guiding spectators with a visual impairment and others along accessible routes, the guiding blocks for visually impaired persons shall be continuously installed up to the security gates. Directional guidance will be undermined if there are multiple paths, so whenever possible, it is recommended to provide only one path (if there are multiple exits and entrances, there shall be one path from each exit). With respect to the possibility and methods of installing the guiding blocks for visually impaired persons, it is necessary in

planning to take into account the period specific circumstances of the Games, and consult with people with a visual/ mobility impairment.

- With respect to the flow of spectators in competition venue areas that are expected to be crowded, staff shall check if there are requests from people with a visual impairment for guidance in entering and exiting the venues, or transferring to restrooms, shops, etc., and, if necessary, provide support. With respect to details about staff support and locations where the guiding blocks for visually impaired persons needed to be installed based on such support, specific consideration shall be given for each venue and competition. The shape, dimensions, and sequence of the blocks shall be subject to JIS T9251 as a general rule. (Height of truncated domes: 5mm [tolerance + 1 - 0mm])
 - (1) The size of guiding blocks (truncated domes) with aligned truncated domes shall be 300mm (including joints) or more squares.
 - (2) The number of the domes on a guiding blocks (truncated domes) shall be a minimum of 25 (5 x 5), increasing according to the size of the block.
 - (3) The number of the bars on a guiding blocks (elongated bars) shall be a minimum of 4, increasing according to the size of the block.

2.1.5 Furniture, Counters and Service Areas

2.1.5.1 Reception and Service Areas

2.1.5.1.1 Reception and Information Desks

Since Reception desks, registration counters, and other common counters where people related to the Games such as spectators and athletes use the Games services must be accessible, and therefore, those for wheelchair users shall not be set up at segregated areas.

Counters for using Games services must provide a counter height of about 700 - 800mm, knee clearance under the counter at a height of about 650 - 750mm, a width of 750mm and a depth of about 500mm.

Ensure ample space for wheelchair users to turn around (1,500mm x 1,500mm or more) in front of the counters so that wheelchair users are accessible.

When installing a counter for standing users, its stand shall be fixed to support the user's body, and handrails for support shall be installed as needed.

Where possible reception and service counters should be one height that is universally accessible to all people.

2.1.5.1.2 Standby Areas and Queuing Areas

Queuing areas for any purpose should allow all people to move safely and conveniently (see the reference table 31).

Reference table 31: Queuing areas

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Applicable | Applicable | Not applicable | Not applicable |

Barriers at queuing areas need to allow a clear width of 1,500mm for each line (see the reference table 32).

Reference table 32: Clear width per line in the queuing areas

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Applicable | Applicable | Not applicable | Not applicable |

The slope of the waiting area should be level or not exceed 1:50 (2%) (see the reference table 33).

Reference table 33: Queuing areas floor surface

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Applicable | Applicable | Not applicable | Not applicable |

When the distance is anticipated to be longer than 50m or the waiting time is expected to exceed a certain limit, provision of benches is important for individuals who may have difficulty with standing for extended periods. The standard for installing rest benches is stipulated in the reference table 34.

Reference table 34: Queuing areas rest bench

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | Same as 6 | Same as 6 | Not applicable | Not applicable |

There should be prominent colour contrast between ropes, bars or barriers to clearly define the queuing areas and the surrounding environment.

2.1.5.2 Food and Beverage Outlets

2.1.5.2.1 Retail, F&B Service counters

These areas must provide:

- An integrated counter design that incorporates a lowered counter surface as the main service area that is 700-800mm from finished floor to accommodate all users and has a minimum 600mm clear space at point of sale area as a pass-through area to serve wheelchair users and people with reduced reach/arm strength;
- Knee space under cash/service counters that permits wheelchair users to face the clerk and complete transactions (standard size: 750mm wide x 500mm deep with clearance under counter of 650-750mm from the finished floor);
- Cash registers that display the amount of money visible to customers to ensure smooth exchange of money;
- Minimum aisle widths of 1,000mm and aisles kept clear of displays and products.

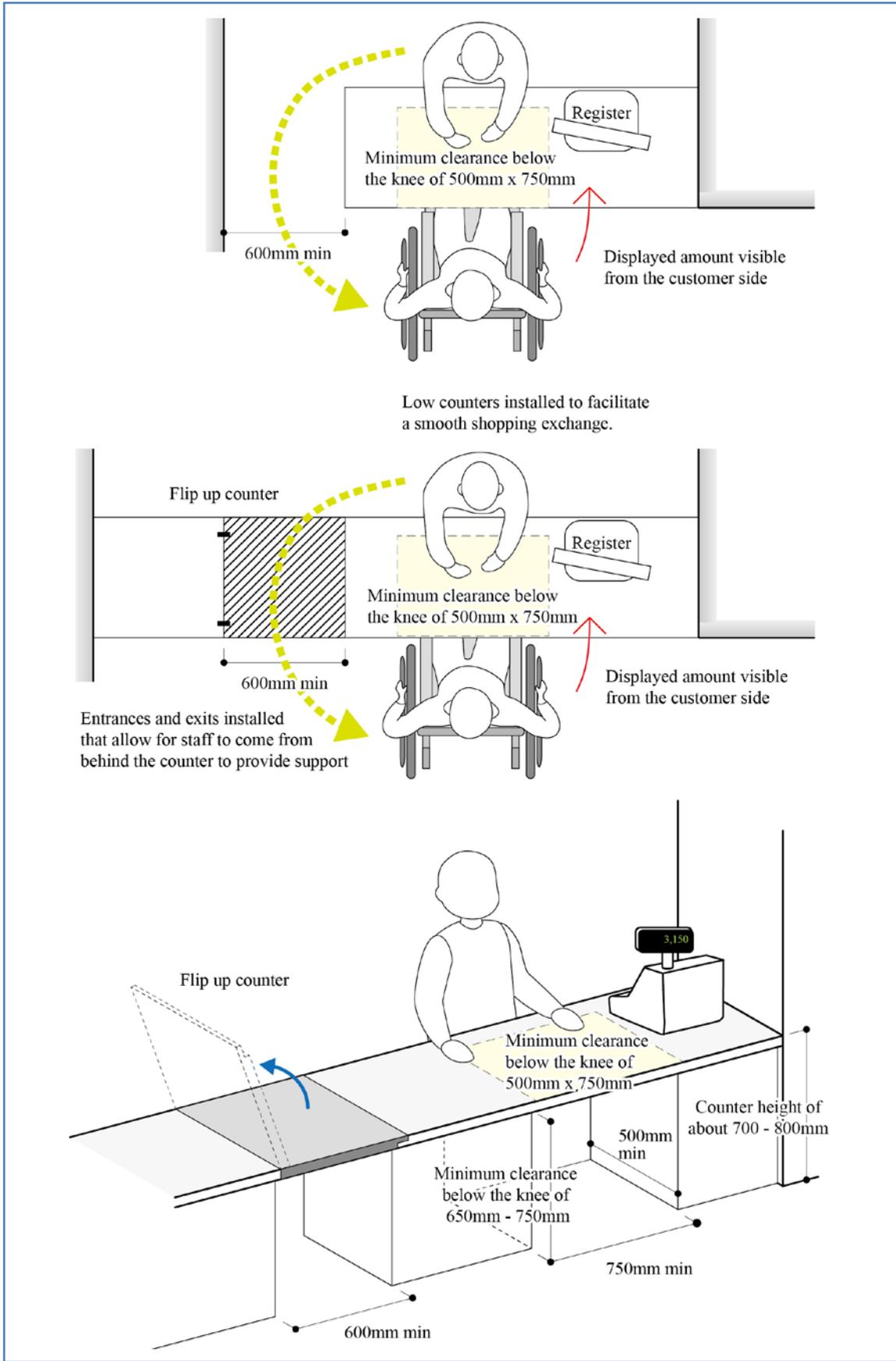


Figure 10: Registers/service counters (example)

2.1.5.2.2 Cafeteria Style Services

Requirements include:

- A tray rail that is about 700-800mm from the floor, is at least 250mm deep, provides about 650-750mm clearance under the tray rail and is continuous from tray pick up to cashier;
- Cooler and/or shelf doors must slide, rather than swing open;
- Cash areas must provide a counter whose standard height of about 700-800mm, knee clearance of 650-750mm (h) x 750mm (w) x 500mm (d) as standard;
- An integrated counter design at the cashier/POS area to accommodate all users and has a minimum 600mm clear space at the cashier/POS to provide a pass-through area to serve wheelchair users and people with reduced reach/arm strength;
- Cash registers that display the amount of money visible to customers to ensure smooth exchange of money.

2.1.5.2.3 Condiment Counters

Requirements include:

- Counter top height of 700-850mm and a maximum reach (depth) requirement of 600mm from the front edge and knee clearance of about 650-750mm (h) x 750mm (w) x 500mm (d) as standard;
- A minimum clear space of 300mm (w) x 200mm (d) to provide a work surface for food preparation. Such clear space can be created with the addition of a shelf providing a 700-800mm surface height with 650-750mm of underside clearance. The addition of a shelf must not interfere with the maximum 600mm reach requirement.
- Bulk condiment dispensers are preferred, as individual packaged condiment are difficult to use for many persons with a disability;
- Stacked, loose napkins are encouraged in addition to typical napkin dispensers.

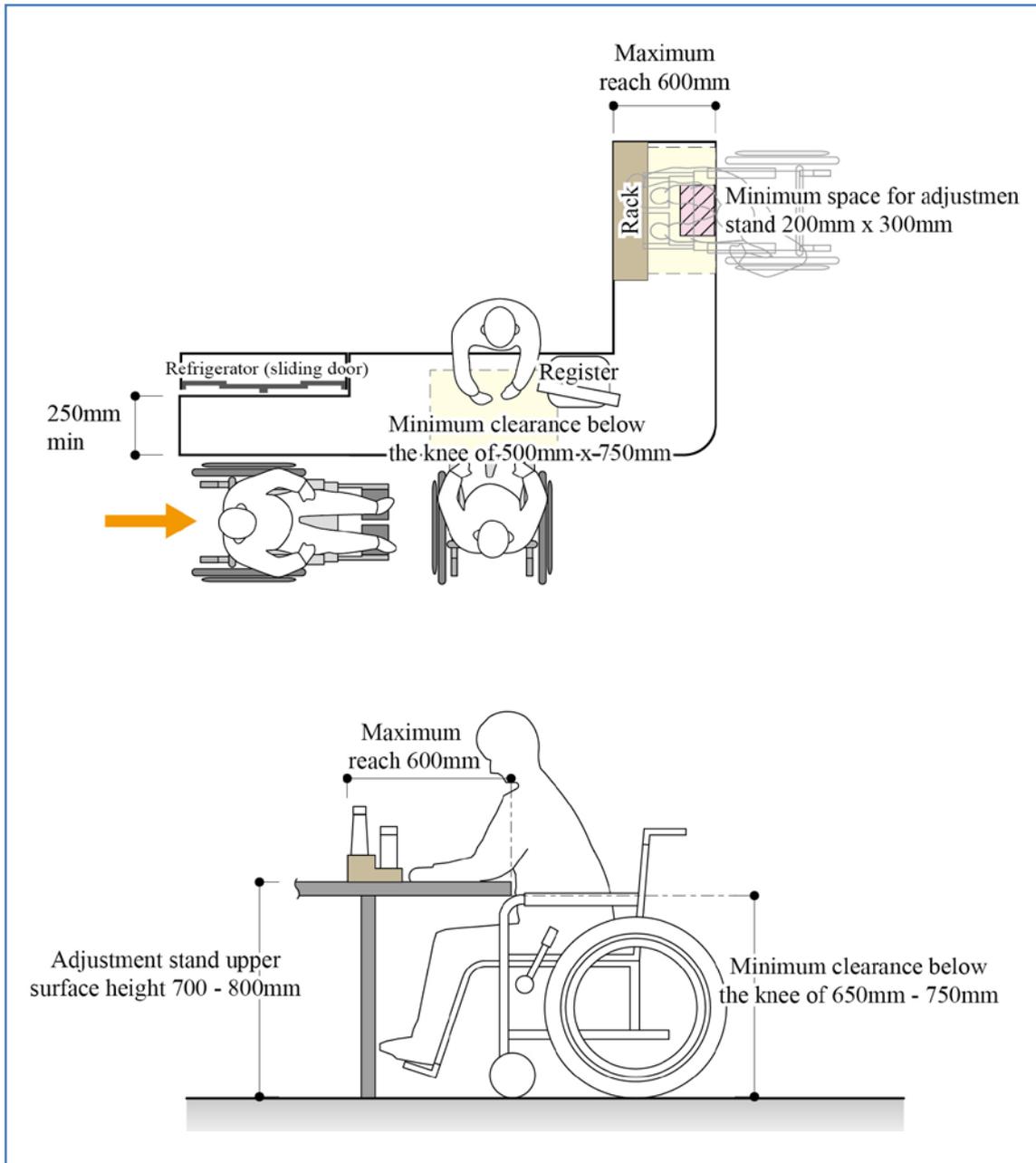


Figure 11: Condiment counters (example)

2.1.5.2.4 Waste Bins

Requirements include:

- A maximum height of 1,200mm;
- Should require minimal hand dexterity to operate considering the difficulty in manipulating lids with hand or foot;
- Easily recognizable shapes and colours

2.1.5.3 Restaurants / Lounges / Food Court Seating

2.1.5.3.1 Introduction

Specific recommendations will depend on the exact nature of the restaurant and its decor however, what follows are basic guidelines for restaurant design as it relates to accessibility requirements

2.1.5.3.2 Design Requirements

Fixed seating such as booths are generally difficult for people with a mobility impairment and older adults, as well as being inaccessible for wheelchair users. If booths are used, alternative seating at accessible, conventional tables must also be available.

Main pathways or aisles shall be of minimum 1,500mm, with aisles between tables need to provide at least 1,000mm of clear width.

Accessible seating is preferably located in a space where seats are easy to move rather than in a partitioned space such as fixed booth seating and needs to be dispersed throughout the restaurant to enable seat selection. Chairs need to be light and easy to re-position.

Corner legs on tables are preferred, however if round tables with centre posts are used for dining, the minimum required distance from the table edge to the outer edge of pedestal base is 500mm. Tables shall provide a knee clearance of about 650-750mm from the floor.

Where bar seating is provided, each bar needs to have a lowered section suitable for a minimum of two wheelchair users and/or people unable to use high stools. This requires a counter of about 700-800mm in height with about 650-750mm of knee clearance along a minimum width of 1,600mm.

A mixture of chairs with arms and chairs without arms should be available in each setting. Minimum one chair with arms per five chairs without arms (20%) to assist people with mobility impairment.

Bench seating should provide good back support and have a minimum kick space underneath that is at least one third of the seat depth.

All seating must provide kick space of at least one third of the seat depth. Supports or cross bracing of chairs must not interfere with the kick space.

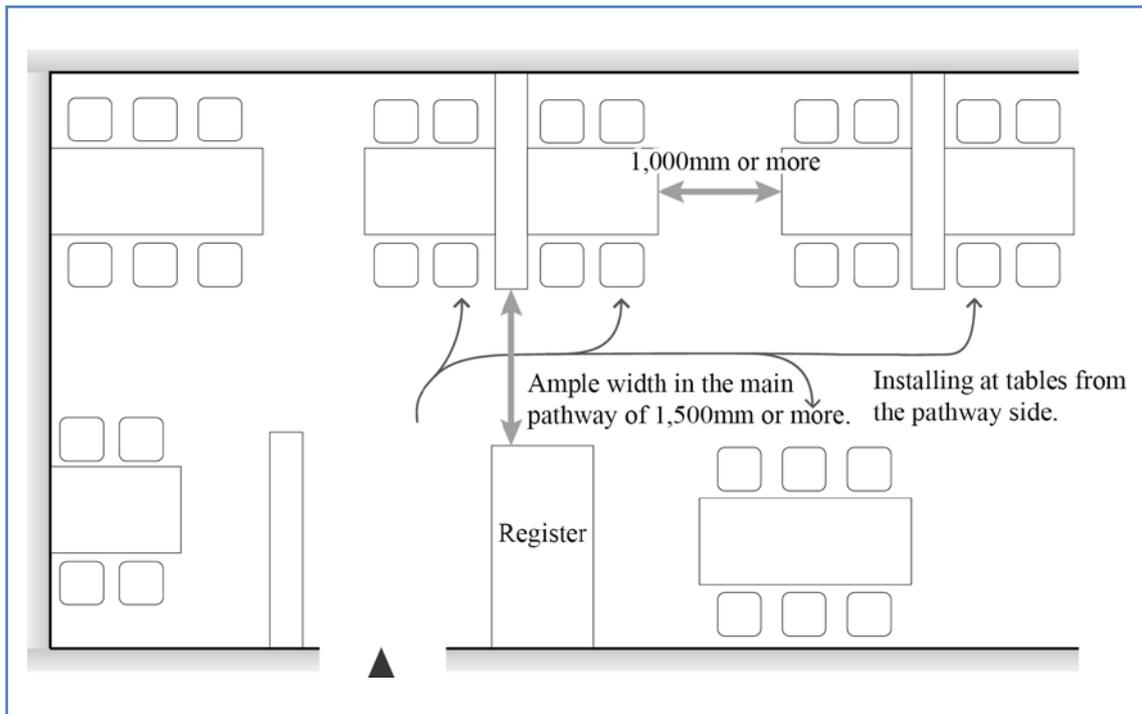


Figure 12: Restaurant seating (example)

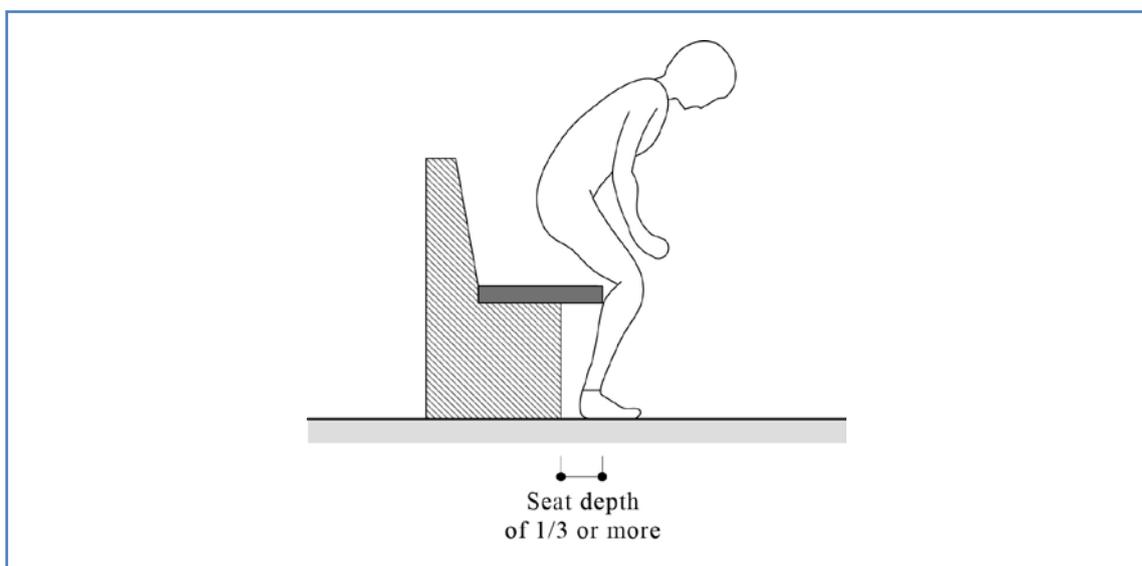


Figure 13: Seating kick space (example)

2.1.6 Entrances and Exits

2.1.6.1 Introduction

Below are the key elements of accessibility related to entrances and exits that need to be considered to ensure that everybody can safely and appropriately enter and exit a site, building or venue.

2.1.6.2 Entrance Design

All entrances should be provided with a horizontal area at the entry and exit points, allowing wheelchair users to use the entrances independently and safely. This will require the following:

- Access to shade/shelter and water (see the reference table 35);

Reference table 35: Access to shade/shelter and water

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Applicable | Applicable | Applicable | Not applicable | Not applicable |

- Make pathways connecting to a door barrier-free without threshold. The standard width of pathways is stipulated in the reference table 36.

Reference table 36: Width of pathways connecting to a door

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 1 | Same as 1 | Same as 1 | Same as 1 | Same as 1 |

- Clear signage indicating the accessible route;
- Entry mats that are recessed to limit tripping by people yet still allow minimal water or dirty transfer internally. Do not use brush doormats as they could easily impede pathways.
- Easy to operate doors with appropriate door closers (including sliding doors);
- Automated door closers that use a sensor to open/close the door;
- When constructing a new building, revolving doors shall not be installed, as a general rule. If installing revolving doors is unavoidable, they must be established in consideration of preventing collisions with people with a visual

impairment and automated swing or sliding doors must be installed alongside of revolving doors with guidance to users including wheelchair users to pass through such swing or sliding doors as a general rule.

2.1.6.3 Entrance Operations

During an event, such as the Olympics or Paralympic Games, the structural elements of the venue entrances are:

- Waiting area prior to gates being open;
- Line up or corralling where tickets or accreditation are checked;
- A ticket scanning area;
- A security area of tent where bags and bodies are security cleared;
- An informal waiting area within the venue perimeter where people re-meet after being cleared into the venue.

In each of these areas it is essential that appropriate accessible widths, designs and spaces are provided.

2.1.6.4 Considerations for Accessible Entrances

2.1.6.4.1 Spectators Entrances

During the Games, entering a venue and being seated for the start of a session may take upwards of 2-3 hours depending on the event. For people with accessibility needs this may require lining up in the same line as everyone else.

Elements to be considered include:

- Accessible transport drops should be placed as close as possible to venue entrances. When the moving distance from the drop point to the venue entrance is longer than 500m, or there is a steep ramp in the route, some transportation means needs to be provided between the drop point and the venue entrance for those who have limited walking ability.
- Pathways to the entrances should have shade and shelter provided within close proximity of the accessible entrance and rest benches at 50m intervals. The standard for installing rest benches is stipulated in the reference table 37.

Reference table 37: Entrance pathway rest bench

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 6 | Same as 6 | Same as 6 | Same as 6 | Same as 6 |

- All pathways to the venue entrance shall be suitable for any kind of weather conditions. They shall have a colour contrasting composition and be a minimum of 1,500mm width (see the reference table 38).

Reference table 38: Entrance pathway minimum width

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Applicable | Applicable | Applicable | Not applicable | Not applicable |

- Line up arrangements shall ensure that at least one line up allows a minimum of 1,500mm in width.
- Signage including the international logo for access should clearly identify the accessible entrance among others and accessible pathway/line up.
- Exit routes must allow for emergency evacuation and ensure efficient movement to evacuation points for all users.

2.1.7 Doors and Doorways

2.1.7.1 Introduction

Suitably designed doors constitute an essential part of an accessible route, allowing people using a wheelchair, pushing items like strollers or carrying stuff easy access to the pathway of an area on the opposite side of the doors.

Sometimes elements such as a raised threshold at the base of the door, an excessively heavy door or wrong opening swing prevent access through a door with suitable width or present significant challenges as both an obstacle and a personal hazard.

2.1.7.2 Design Requirements

2.1.7.2.1 Clear Width

The standard for the door width is stipulated in the reference table 39. These points shall be considered in accordance with national laws and ordinances.

Reference table 39: Clear width for doors

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|---|
| 950mm (Recommendation: IPC) | 950mm (Recommendation: IPC) *For main entrances and exits, at least 2,000mm (Recommendation: Tokyo Metropolitan ordinance) * For preparation area using athletic wheelchairs, at least 1,000mm (Recommendation: IPC) | Not applicable | Not applicable | 950mm (Recommendation: IPC) * For entrances and exits to public pathway, at least 1,800mm (Recommendation: Japanese government's standard) |
| 850mm (Standard: IPC) | 850mm (Standard: IPC) *For main entrances and exits, at least 1,000mm (Standard: Tokyo Metropolitan ordinance) | | | 900mm (Standard: Japanese government's standard) *1 |

*1 At least 800mm (Japanese government's standard)

If doorways have two independently operated door leaves, at least one active leaf shall comply with the minimum clear opening width requirements specified above.

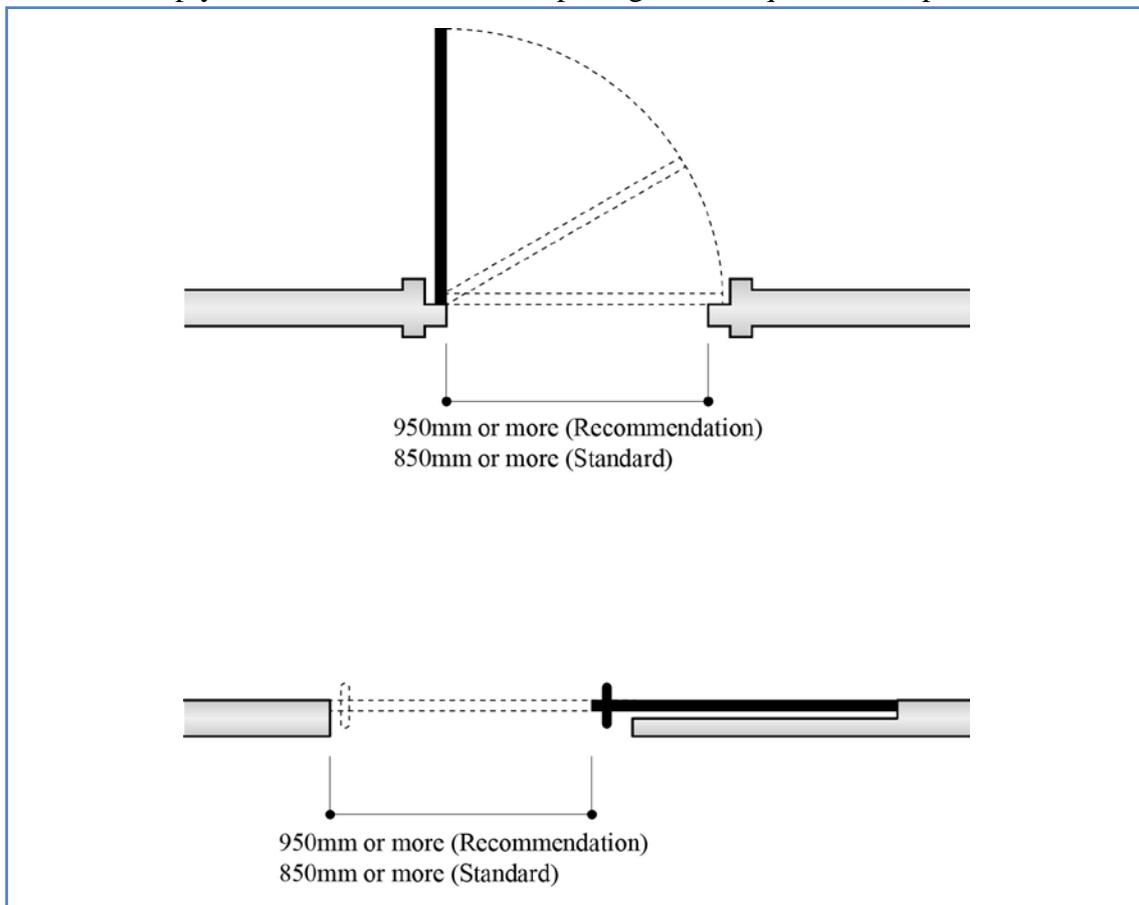


Figure 14: Clear door width (example)

2.1.7.3 Other Requirements

Main entrances need to be equipped with power-operated doors. Power operated doors require:

- The swing path of the powerdoor shall be marked on the ground considering the risk of collision with the power-operated door that suddenly opens.
- Hands-free or touch type operations.
- A light force to stop door movement. (Reference: IPC maximum 30N)
- If on a fire exit route remain operable in emergency conditions.
- Considering power-operated door opening/closing time long enough to ensure safe passage.

Non-power doors require:

- Door handles that can be operated by one hand, that do not require fine control capabilities, and that are mounted at a height easily be used by wheelchair users and children.
- Ensure that even when sliding doors are fully open the doors are not fully

- retracted to prevent fingers from being drawn into the door case.
- Low resistance delayed action door closers shall provide adequate time to get to a fully open or closed position to guarantee safety.
 - A 500mm clear space on the pull side of the door on the latch side.
 - Signage/notices should never be posted on doors such that readers would be placed in the swing path of the doors.
 - Raised thresholds are tripping hazards and should be eliminated.
 - Door leaves shall have appropriate luminance contrast with the frame or adjacent wall - this includes glass doors in glass walls. In addition, for glass doors, anti-collision stickers shall be attached at eye level (at a height of about 1,100-1,500mm) so that the glass can be recognized.
 - The clear width between a series of interconnecting doors shall be 1,500mm in addition to the width of both of the doors assuming the case when both of them open at the same time.

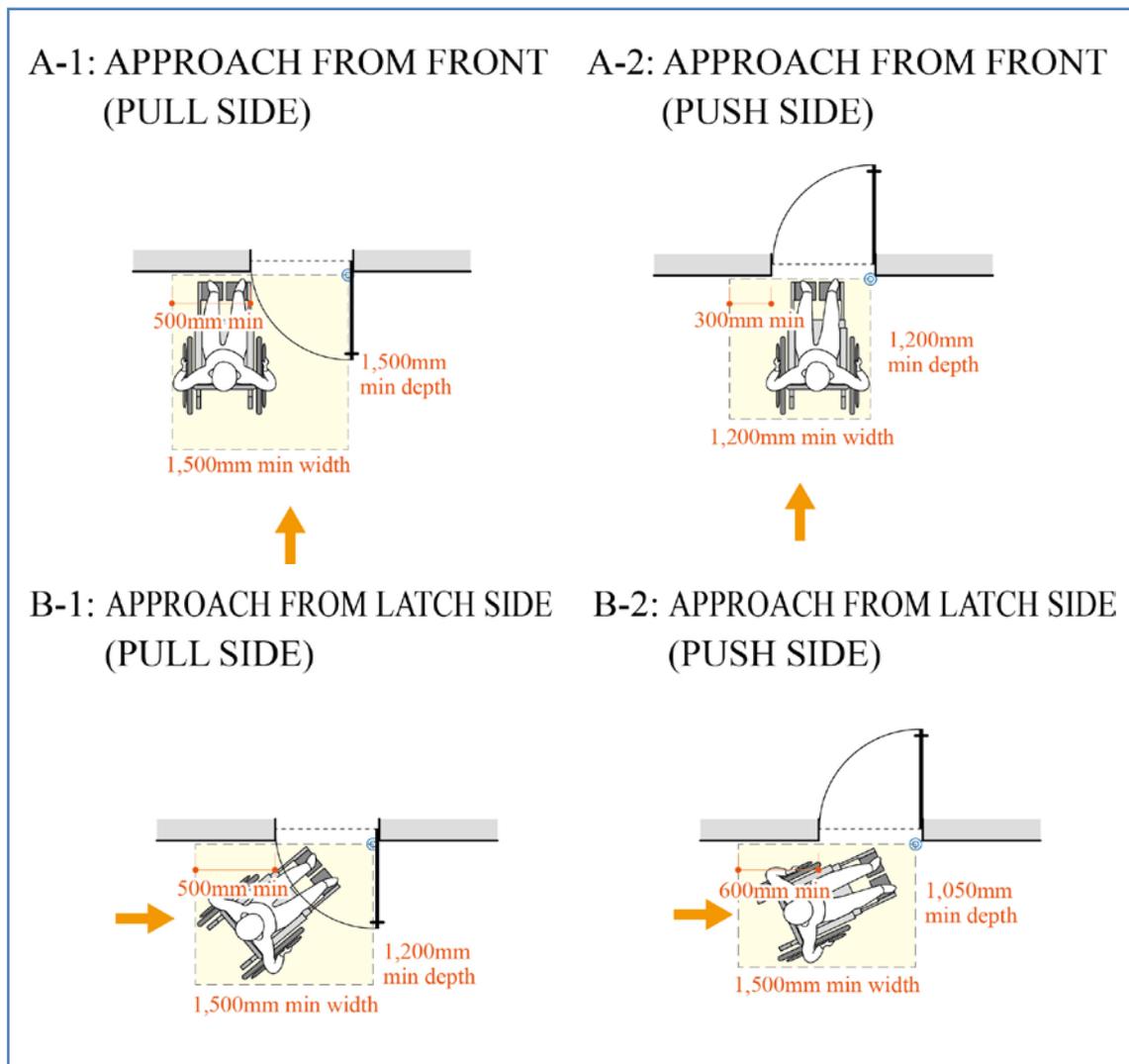
2.1.7.4 Manoeuvring Space at Doors

Doorways require manoeuvring space for opening and closing to accommodate people with mobility impairment on both sides of the door and a clear space beside the latch.

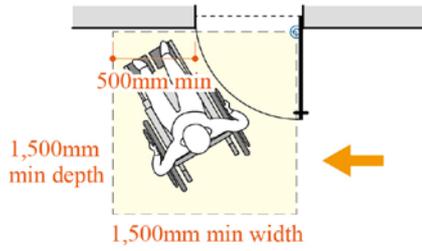
This space is presented in the table below:

Space required around the front door

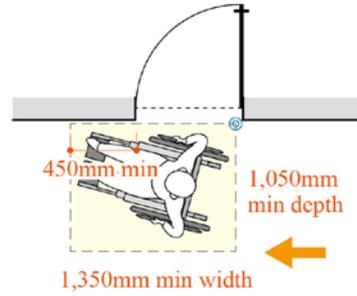
| | Context | Figure: Number | Depth (mm) | Width (mm) | Clear Space Beside Latch (mm) |
|---------------------|-----------|----------------|------------|------------|-------------------------------|
| Side-hinged door | | | | | |
| Front approach | Pull Side | A-1 | 1,500 | 1,500 | 500 |
| | Push Side | A-2 | 1,200 | 1,200 | 300 |
| Latch side approach | Pull Side | B-1 | 1,200 | 1,500 | 500 |
| | Push Side | B-2 | 1,050 | 1,500 | 600 |
| Hinge side approach | Pull Side | C-1 | 1,500 | 1,500 | 500 |
| | Push Side | C-2 | 1,050 | 1,350 | 450 |
| Sliding doors | | | | | |
| Front approach | | D-1 | 1,200 | 900 | 50 |
| Side approach | | D-2 | 1,050 | 1,350 | 540 |



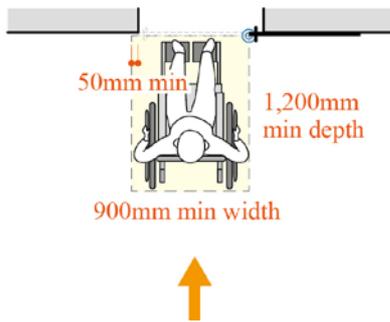
C-1: APPROACH FROM HINGE SIDE
(PULL SIDE)



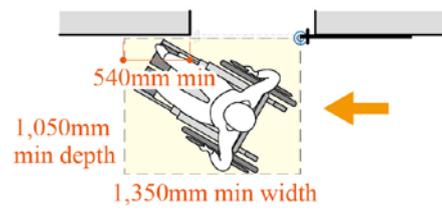
C-2: APPROACH FROM HINGE SIDE
(PUSH SIDE)



D-1: SLIDING DOOR
(FRONT APPROACH)



D-2: SLIDING DOOR
(SIDE APPROACH)



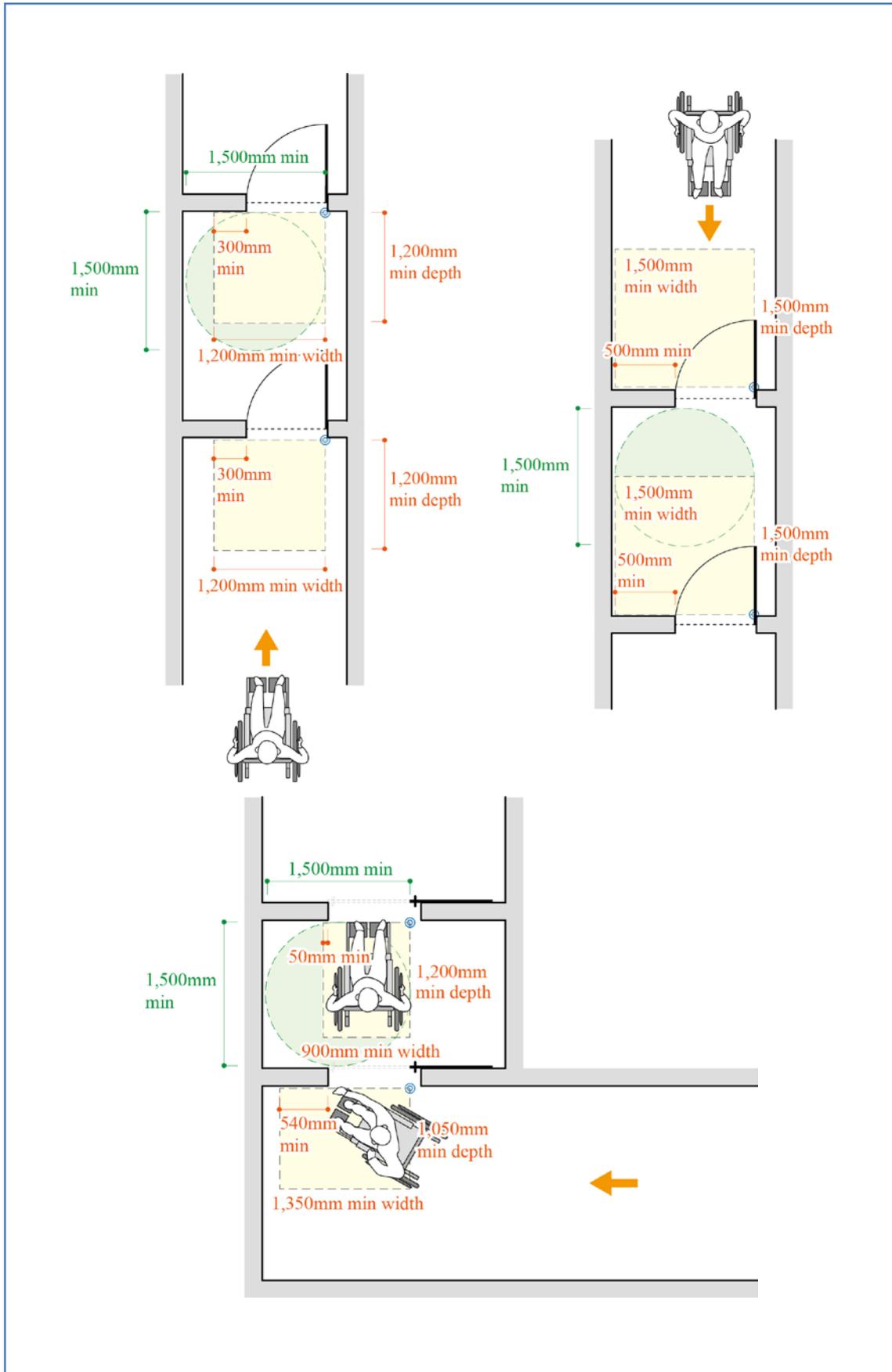


Figure 15: Manoeuvring space at doors (example)

2.1.7.4.1 Considerations for Different Types of Doors

Sliding doors are easier for some individuals to operate and can also require less wheelchair manoeuvring space. It is recommended not to use hinged doors unless using it is unavoidable for structural reasons.

In general revolving doors are not suitable for persons with a mobility or visual impairment and children. When a revolving door is provided, an adjacent power operated door of an appropriate width shall also be provided. When a power operated door cannot be installed for an unavoidable reason, a sliding door or a hinged door shall be installed.

Glazed doors need to include colour-contrast anti-collision strips or other indicators attached at eye level (at a height of about 1,100-1,500mm) to become detectable from people with a visual impairment.

2.1.7.4.2 Gates and Turnstiles (Revolving Gates)

Where a gate or an access control device (e.g., a metal detector) is provided they need to have a clear opening of no less than 850mm.

Where a gate mechanism is provided, upon operation the gate shall swing away from the user in the direction of movement.

Where turnstiles or other ticketing control devices are provided (which are typically not wheelchair accessible) then a gate or opening which is accessible by wheelchair users shall also be provided in the immediate proximity.

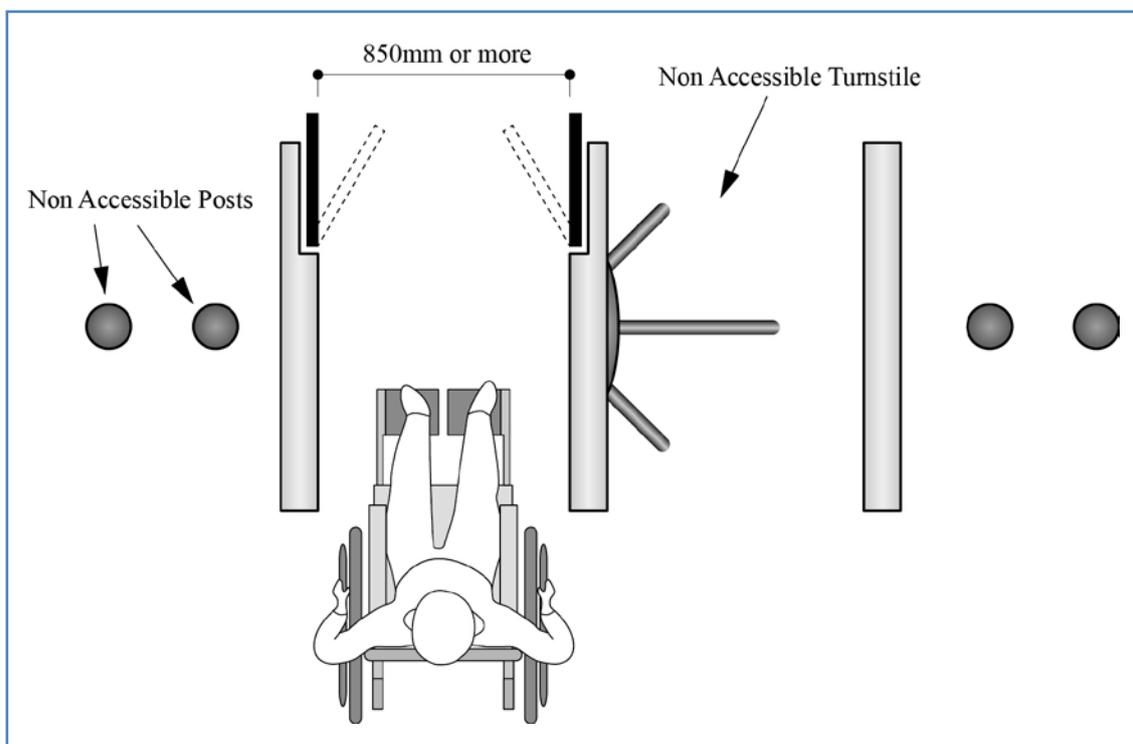


Figure 16: Gates with wheelchair access (example)

2.1.8 Elevators and Escalators

2.1.8.1 Elevators

2.1.8.1.1 Introduction

There are three types of appropriate vertical lifting devices.

- Elevators – serve multiple level and have fully automated operations with accessible control panels
- Vertical Platform Lifts – serve low risers i.e. one to two floors or heights above 500mm
- Stairway Platform Lifts – serve an existing building where space constraints remove the ability to provide an elevator or vertical platform lift.

Elevators are essential to cover vertical height differences in a building or a facility, when ramp or a gradient walkway is not possible. Design and operate all the elevators complying with technical standards for safety stipulated in Japanese laws, and operate them safely. Install a necessary number of elevators at necessary locations in Games venues and Olympic Village. Fully examine the size of elevator car, the number of elevators installed, and their locations, taking it into consideration that there are some hours when they are concentrated by wheelchair users, thereby lowering their operability.

Install an elevator adjacent to a major passageway.

Elevators that fulfill accessibility standards shall be installed with appropriate signage at the place taking into consideration the viewpoint of users. In addition, the signage should be visible from various directions. An accessible elevator shall be automatic.

2.1.8.1.2 Doors

The doors shall be power operated and sliding. They shall be provided with a door obstruction sensor device that will function to stop and reopen in case the door is obstructed while closing.

A minimum four (4) seconds is needed for doors to remain open at any call, except of when users use the door open-close buttons in the car. At Games venues and Olympic Village, it is recommended to install the function that doors remain open longer than normal by operating the landing destination button on the main/sub control panel accessible by wheelchair users. It is recommended that the door remains open for about 10 seconds.

The car shall be equipped leveling device to maintain the floor level to a height of not

Reference table 41: Elevator car

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|--|--|--|--|---|
| 2,100mm wide x 1,500mm deep, or equivalent size *1 (Recommendation: IPC) 1,700mm wide x 1,500mm deep, or equivalent size *2 (Standard: IPC) | 2,100mm wide x 1,500mm deep, or equivalent size *1 (Recommendation: IPC) 1,700mm wide x 1,500mm deep, or equivalent size *2 (Standard: IPC) *1 | Not applicable | 2,100mm wide x 1,500mm deep, or equivalent size *1 (Recommendation: IPC) 1,700mm wide x 1,500mm deep, or equivalent size *2 (Standard: IPC) *2 | 2,100mm wide x 1,500mm deep, or equivalent size *1 (Recommendation: IPC) 1,700mm wide x 1,500mm deep, or equivalent size *2 (Standard: IPC) *3 * Regarding the above recommended Standard, it is allowed to meet the Standard overall by installing an additional cage when the effective measurements of the first cage don't meet the Standard. It is desirable that the effective measurements of the 2nd cage is above the Standard. |

*1 1,400mm width x 1,350mm deep
 (Japanese government's Standard for a building of 2,000m² or larger used by the general public)

*2 1,500mm width x 1,500mm deep (Japanese government's standard)
 * In the case of through type, 1,400mm width x 1,350mm deep (Japanese government's standard)

*3 1,400mm width x 1,350mm deep (Japanese government's standard)
 When there are many users, 1,600mm wide x 1,500mm deep (Japanese government's Standard). The above exceptional standard is exempted for the through type or the right-angle two ways type where wheelchair users can get on and off smoothly, and there is a voice announcement system about the opening and closing of the cage.

At public transportation facilities, design elevators so that people in the car can see outside and they are also visible from outside by installing a glass window or something like that on the elevator door. When a glass window cannot be installed, install video equipment so that people in the car can check outside and people outside the car can check the inside. At facilities other than public transportation facilities, it is recommended that the elevator structure is designed so that people inside the car can see the outside and communicate with people outside, and people outside the car can see people inside the car and communicate with them.

Lighting levels inside the car must be maintained at ambient hallway light levels of even, flicker-free light. (Reference: IPC 100 lx)

Install handrails on sidewalls of both sides and on the front wall of the car. The installment locations and other details are stipulated in the reference table 42.

Reference table 42: Elevator car handrails

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|---|--|
| Height from the road surface/floor Same as the reference table at 15 | Height from the road surface/floor Same as the reference table at 15 | Not applicable | Height from the road surface/floor Same as the reference table at 15 | Height from the road surface/floor Same as the reference table at 15 |
| Diameter of the gripping face Same as the reference table at 17 | Diameter of the gripping face Same as the reference table at 17 | | Diameter of the gripping face Same as the reference table at 17 | Diameter of the gripping face Same as the reference table at 17 |

Floors inside elevators need to be easily recognizable, not a solid dark surface, and can be distinguished from the floors in the building for the benefit of people with visual impairments.

In elevators serving only two floors, flow through design using two doors (one front – one back) is recommended, as this eliminates the need for wheelchair users to turn around to exit. In elevators on the accessible route in passenger facilities, flow through design is recommended like those serving only two floors, if it is possible. When installing other types of elevators is difficult for structural or safety reasons, install elevators with 2 doors at the right angle.

Where flow through design is not appropriate, a mirror is required on the back wall of elevators to assist people with a mobility impairment exit the car in crowded conditions. The bottom edge of this mirror must be about 400mm to 1,500mm from the finished floor and extend across the width of the elevator. When a mirror cannot be installed across the width of the elevator for a structural reason, secure enough width for smooth use by wheelchair users. And install a mirror that shows the entire space of the car near the ceiling on the front.

Floors need to have a slip-resistant surface. An indicator showing the position of the car as it moves or stops in different floors shall be provided.

2.1.8.1.4 Controls

Controls for wheelchair users inside the elevator car are to be located on both side walls, arranging the centre of the panels at the centre of the walls. This makes it possible for wheelchair users to access the control panels without leaning forward or twisting around backwards and risking a fall. Where three control panels are installed, the optimal placement for the third panel is on the front return panel. Car control panels shall be readily accessible from a wheelchair user upon entering an elevator.

Controls for wheelchair users on the side wall of the car shall be installed above the handrail. In addition, the centre of the emergency call button and the opening and closing buttons shall be arranged at a height of about 1,000mm from the floor.

The highest floor button of the control for wheelchair users installed on the side wall of the elevator car shall be no higher than 1,100mm from the floor.

Floor buttons on control panels in elevator cars shall be an easily operable size and be raised or tactile. They should also have a cancel feature. The opening and closing buttons shall have triangle or arrow type symbols so that they are easily distinguishable. The floors called by car control buttons shall be visually recognizable, and the numbers and letters of the control buttons shall be raised as well as tactile using braille based on JIS T0921. They should also be provided with audible indicators to show when each call is registered.

Emergency communications using hands-free intercom systems are required. Monitors should also be installed enabling communication from inside and outside of the elevator car.

Synthesized voice floor callers are required in elevators serving more than two floors, announcing the direction and destination of the elevator. In addition, the push buttons should have a colour scheme and raised letters that make them easy to see for those with limited vision, with readily understood braille attached as well. These are extremely useful to all users – in particular the elderly and people with a visual impairment.

2.1.8.1.5 Other Requirements

An audio announcement provided when the elevator stops at the landing shall indicate the direction of travel up or down with audible intonation.

Voice guidance and visual displays should indicate that the elevator car is overloaded from a position in the elevator car that is easy to see, in consideration of people with a hearing impairment.

The call button for wheelchair users in the elevator hall shall be installed at a height of about 1,000mm from the floor.

Voice guidance information in the elevator shall be provided as textual information as well, in consideration of people with a hearing impairment.

Each elevator shall be equipped with a 2-way communication system, which will be linked to an emergency response system. Buttons and monitors shall be installed so that people with a hearing impairment can make contact with the outside in the event of an emergency (enabling to recognize that the person making emergency contact is a person with a hearing impairment). The equipment shall be installed so that the control buttons are centered at a height of about 1,000mm above the floor and shall be identified by raised symbol or lettering.

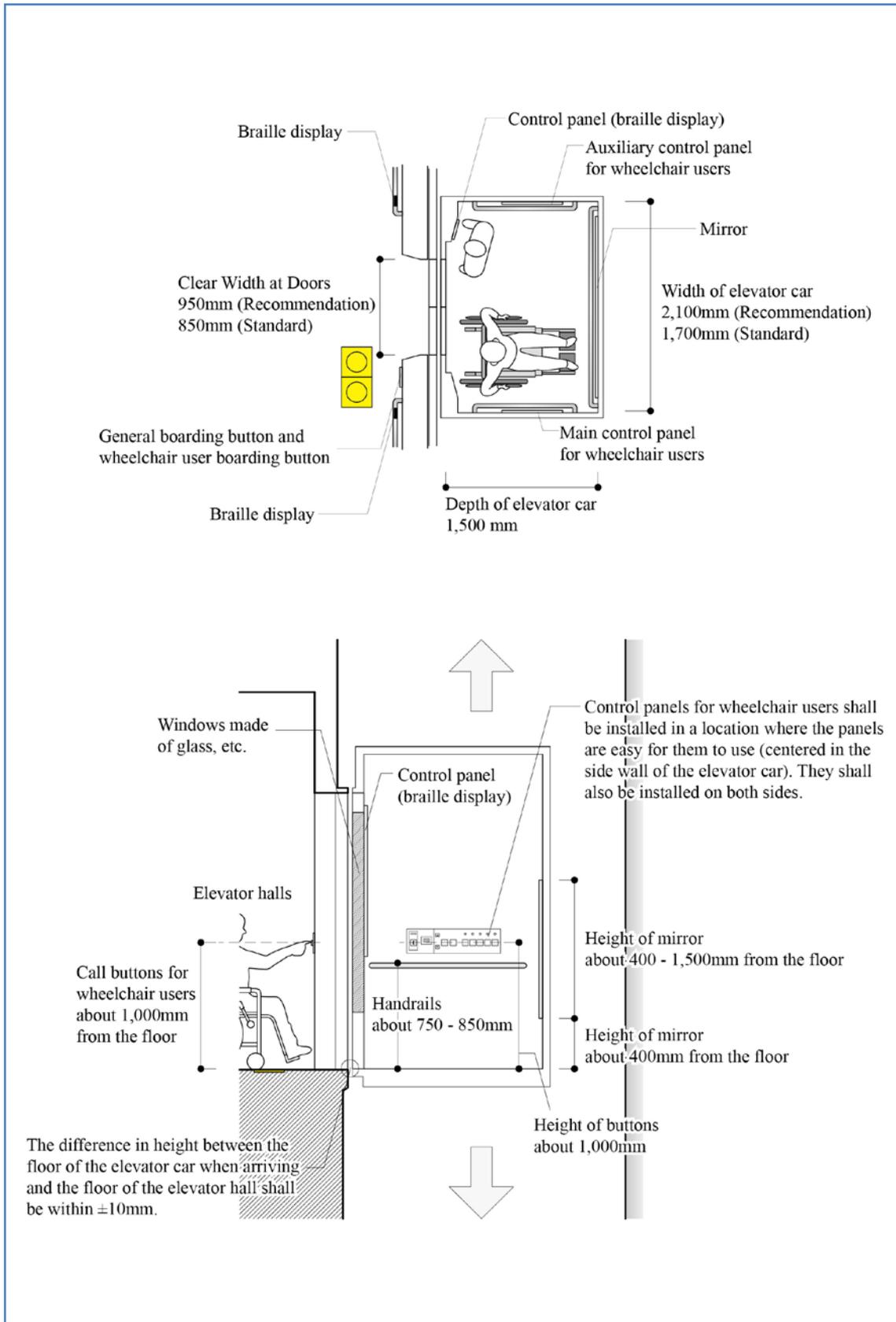


Figure 17: Elevator car (example)

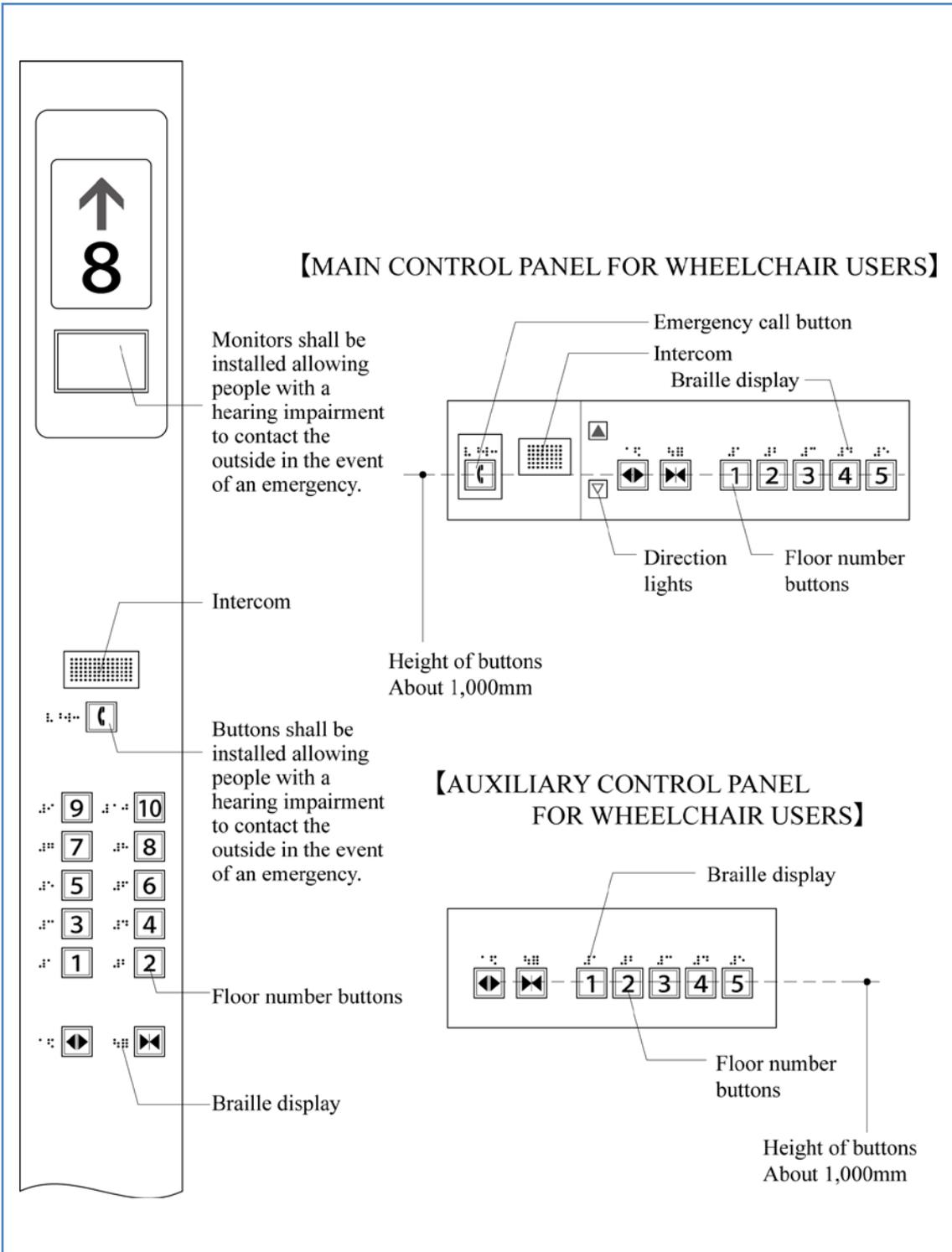


Figure 18: Elevator control panels (example)

2.1.8.2 Escalators

Escalators are not considered part of an accessible route. Therefore lift access located within close proximity is required, apart from escalators. People using assistance dogs (guide dogs, service dogs, hearing dogs) cannot normally use escalators. Similarly, some people with a mobility impairment or balance difficulty may not be comfortable using an escalator.

However, as escalators may be used by people with a mobility or sensory impairment they need to comply with basic safety needs such as:

- Include guiding blocks (truncated domes) at the top and bottom, as well as high contrast markings (preferably signal yellow) on all nosings and side edges.
- In addition, the steps of escalators shall be bordered in all four directions so that each step are recognizable.
- The direction that the escalator is going shall be indicated.
- Voice guidance equipment shall be installed to indicate the destination and direction at the point of entry for the escalator. When installing the voice guidance equipment, the volume and sound quality must be sufficiently audible in comparison with the surrounding noise, and the sound source must be installed near the entrance facing toward users. When installing display signs, belts shall be marked so that it is easy for those with limited vision to understand the direction of the escalator.
- The brightness and arrangement of the lighting over escalators shall allow users to get on and off safely. (Reference: IPC minimum 200 lx)
- The escalator speed shall be set as appropriate in consideration of the safety of users.
- The floors in the spaces where users get on and off shall have a finish that is non-slip even when wet.
- Guidance handrails shall be installed as needed at the escalator entrances.

2.1.9 Emergency provisions:

2.1.9.1 Introduction

In general emergency response plans need to particularly consider potential users who have mobility, visual, hearing, or intellectual impairments, and provide adequate solutions for them. In the event of fire when elevators cannot be used, areas of rescue assistance must be available to anyone who would have difficulty traversing sets of stairs. This requirement, however, does not apply to public transportation facilities.

2.1.9.2 Emergency Evacuation

Routes acting as “emergency evacuation routes” need to comply with accessibility standards described before in this chapter. And they need to be easy to find and the shortest distance.

Routes acting as immediate egress to an open and safe area must encompass a barrier-free path of travel to an exit.

2.1.9.3 Areas of Rescue Assistance (Temporary Standby Area)

Areas of rescue assistance shall be provided at places not impeding evacuation guidance in all cases where immediate egress to an open and safe area is not possible without using mechanical means. These areas should be located on an accessible route separately from evacuation routes and have a minimum size of 850mm x 1,300mm per anticipated potential user, with no fewer than two such spaces (see the reference table 43).

Reference table 43: Areas of rescue assistance (temporary standby area)

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| | | | | |

| | | | | |
|---|---|----------------|----------------|----------------|
| Secure 2 temporary evacuation spaces of 850mm x 1,300mm each near the emergency elevator or on the landings of the stairway (Recommendation: IPC) | Secure 2 temporary evacuation spaces of 850mm x 1,300mm each near the emergency elevator or on the landings of the stairway (Recommendation: IPC) | Not applicable | Not applicable | Not applicable |
|---|---|----------------|----------------|----------------|

In addition, considering the time it takes until rescue, emergency supplies such as portable toilets and the like shall be prepared.

The Areas for Rescue Assistance must be designated as such in the facility designs and with emergency response plans.

These shall be smoke protected and fire-resistant in facilities of more than three levels.

Other provisions that are essential:

- Develop signage for these areas as well as emergency instructions that are low mounted, and high contrast with raised and tactile lettering or marks;
- Entry doors must be of a contrasting colour to the surrounding surfaces;
- Hands free intercoms and other communications equipment shall be installed with the centre of control buttons to be at a height of about 1,000mm from the floor;
- Provide proper awareness training to staff on the appropriate use of the areas for rescue assistance and evacuation routes;
- Exit stairs must be equipped with glow in the dark, stair nosings and handrails.

2.1.9.4 Alarms

The needs of people who are deaf or hard of hearing are among the most often over-looked when installing alarm systems.

For those who cannot hear, emergency warning systems relying on an audible signal to alert is of little use.

While it is commonly thought that someone who is hearing would inform the individual of such an alarm, this assumes that the deaf individual is never alone. This would also assume that an employee with a hearing difficulty would never be working in isolation.

- A visual fire alarm/strobe warning system is required to operate in conjunction with audible signals and be generally visible in public gathering areas, in all washrooms throughout the facility and in front of elevators. Textual information shall be provided by electric bulletin board, monitors, and the like so that people with a hearing impairment can access emergency evacuation information.
- Emergency call buttons (along with proper staff training) should be considered in washrooms that provide facilities for wheelchair users. These devices allow people that may have fallen while in the toilet to call for assistance (see “2.2.3 Washrooms” for details). These emergency call systems need to be monitored whenever the facility is in use. These systems need to be monitored whenever the facility is in use. Where monitoring is not available for a structural reason, an alarm with both audible and visual signals that are noticeable in an adjacent pathway will suffice.
- Fire alarms and fire extinguishers must be installed at an accessible height to permit wheelchair users and others to signal trouble or utilize the safety equipment. These devices are to be mounted at a maximum operating height of 1,100mm and be placed on an open wall free of obstructions. The same standard applies for fire and emergency alarms in button panels.

2.1.9.5 First Aid Rooms

All first aid facilities must accommodate people with a disability as well as non-disabled clients. This requires tactile/high contrast signage and connecting pathways accessible to wheelchair users and people using walking aids.

In addition, the typical cot used in most first aid facilities must be replaced with a variable height gurney that has a stopper, or a change bench that has height adjusting function and is supported by a pole at the wall surface. An accessible unisex washroom should also be located in the immediate vicinity of the first aid room.

2.1.9.6 Building Evacuation Instructions

Easily readable emergency procedures and exit route maps are important components for everyone in the building.

These procedures should be located in proximity where the people with visual impairments and others who have difficulty recognizing information can surely recognize and approach them for critical information. In particular, the evacuation instructions for the building need to appear in large print (minimum of 18 point, and 22 point or larger preferred) and in high contrast (red on white or vice versa preferred) and include a floor plan diagram with clearly marked exit points. They also

need to be tactile. English font shall be a minimum of 14 point as well. These signs for people with visual impairments and others who have difficulty recognizing information shall be posted at a height of about 1,350mm from the finished floor to the center and also need to highlight the accessible route to the closer exit and/or rescue assistance area.

2.1.9.7 Other Requirements

Other accessibility conditions to improve emergency provisions are:

- Power operated door openers must continue to operate in an alarm condition.
- In an alarm condition, lighting must assist people to way-find out of an evacuation route from an alarm zone. Low mounted exit signage would assist all users along exit routes – particularly people who have a visual impairment.
- Video/data monitors used in the facility should also communicate emergency messages to patrons.

These procedures should be located in proximity where the people with visual impairments and others who have difficulty recognizing information can surely recognize and approach them for critical information.

2.1.9.8 Event Considerations

While all above requirements apply generically in usual sporting or social events and settings, a particular situation exists in the case of sporting events for athletes with a disability, such as the Paralympic Games.

In those cases, the scope of facility users who may have difficulty traversing sets of stairs or have limitation to anticipate emergency signals can be very high. As a consequence event planners and operators need to develop customized emergency response plans for the particular event, taking into account the existing facts.

2.2 Amenities

2.2.1 Overview

2.2.1.1 Principles

Amenities available for public use should provide equitable and dignified access to all people regardless of mobility or sensory limitations.

2.2.1.2 Contents

This section contains the following topics:

| Topic |
|--|
| 2.2.2 Venue Seating |
| 2.2.3 Washrooms |
| 2.2.4 Showers, Baths, and Changing Rooms |

2.2.2 Venue Seating

2.2.2.1 Accessible seating

For any sport event, outside the Olympic and Paralympic Games context, the minimum requirement for accessible seating is 0.50% of the total seating.

The minimum requirements for accessible seating at the Olympic and Paralympic Games are stipulated in the reference table 44. This percentage is adjusted by venue for the Paralympic Games to take into account sport-specific needs.

Reference table 44: Spectator Accessible seating

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|--|
| Not applicable | <p>Accessible seating percentage Olympic venues 0.75% (Standard: IPC) Paralympic venues 1.0~1.2% (Standard: IPC) The same percentage of seats for companions right next to the accompanied (Standard: IPC)</p> <p>* To flexibly deal with cases where many wheelchair users watch a game, or they watch the game with their companions, design the seating to allow plural choices by combining accessible seats and movable seats.</p> | Not applicable | Not applicable | Not applicable |

Accessible seating should be integrated into each of the different areas of the theatre, arena or venue for multiple options. Accessible seating should be installed at locations easily accessible from the pathway, preferably dispersedly in both horizontal and vertical directions. When installed dispersedly in vertical direction, secure evacuation routes by installing ramps indoors and outdoors so that people can evacuate from seats to the exit, safety evacuation area, and the like in case of emergency, and give careful consideration for establishing an evacuation guidance

system.

Accessible seating is to be provided in different price categories, viewing ranges and constituent areas. Complimenting each area should be: unisex accessible toilets, food and beverage outlets, merchandise stores, lounges and lifts. Further to auditoria seating, this includes retail, restaurants, suites and support facilities. Therefore, grouping all the wheelchair users into one area is not appropriate. People with mobility impairment should have a choice of sitting in different areas, as other spectators do.

The standard for the level (max. 2% slope) at the designated space for people with a mobility impairment is stipulated in the reference table 45. It is desirable to make accessible seating usable by plural wheelchair users flexibly so that those who use a reclining type wheelchair and other types of wheelchair that take more than one seat space can watch the games. An area of 500mm x 1,300mm for companion or enhanced amenity is needed.

Reference table 45: Space for wheelchair users

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|--|
| Not applicable | Sitting space: Wheelchair users 900mm x 1,300mm (Standard: a compromise between Tokyo Metropolitan ordinance and IPC) *1 | Not applicable | Not applicable | Not applicable |

*1,900mm x 1,200mm (Tokyo Metropolitan ordinance)

Circulation space behind needs to be 1,000mm minimum, therefore the overall space required for a wheelchair user and companion seat with a pathway behind is: 1,400mm x 2,300mm.

Seating should be clearly distinguishable using colour coding by area, etc. Due consideration should be given to making the seat number, line and row easy to read,

through size, contrast, and positioning.

Where sufficient accessible seating cannot be provided e.g. when the venue is a heritage structure with little access, operational solutions may be considered. For example, lack of access to concessions could be overcome by providing waiter service for the affected persons.

Assuming that wheelchair users want to use general admission seats, it is recommended to provide space for putting a wheelchair beside the seat.

2.2.2.2 Companion Seating

Companion seating must be provided at a ratio equal to wheelchair accessible seating (0.5-1.2% as per above ratios) and be to the side of - not behind - the designated space. Easily moveable chairs permit companions to sit together and can be quickly removed to allow two or more wheelchair users to sit beside one another. Even when there are two or more companions, they should be able to sit near the wheelchair user, for example, in the seats in front of the wheelchair user.

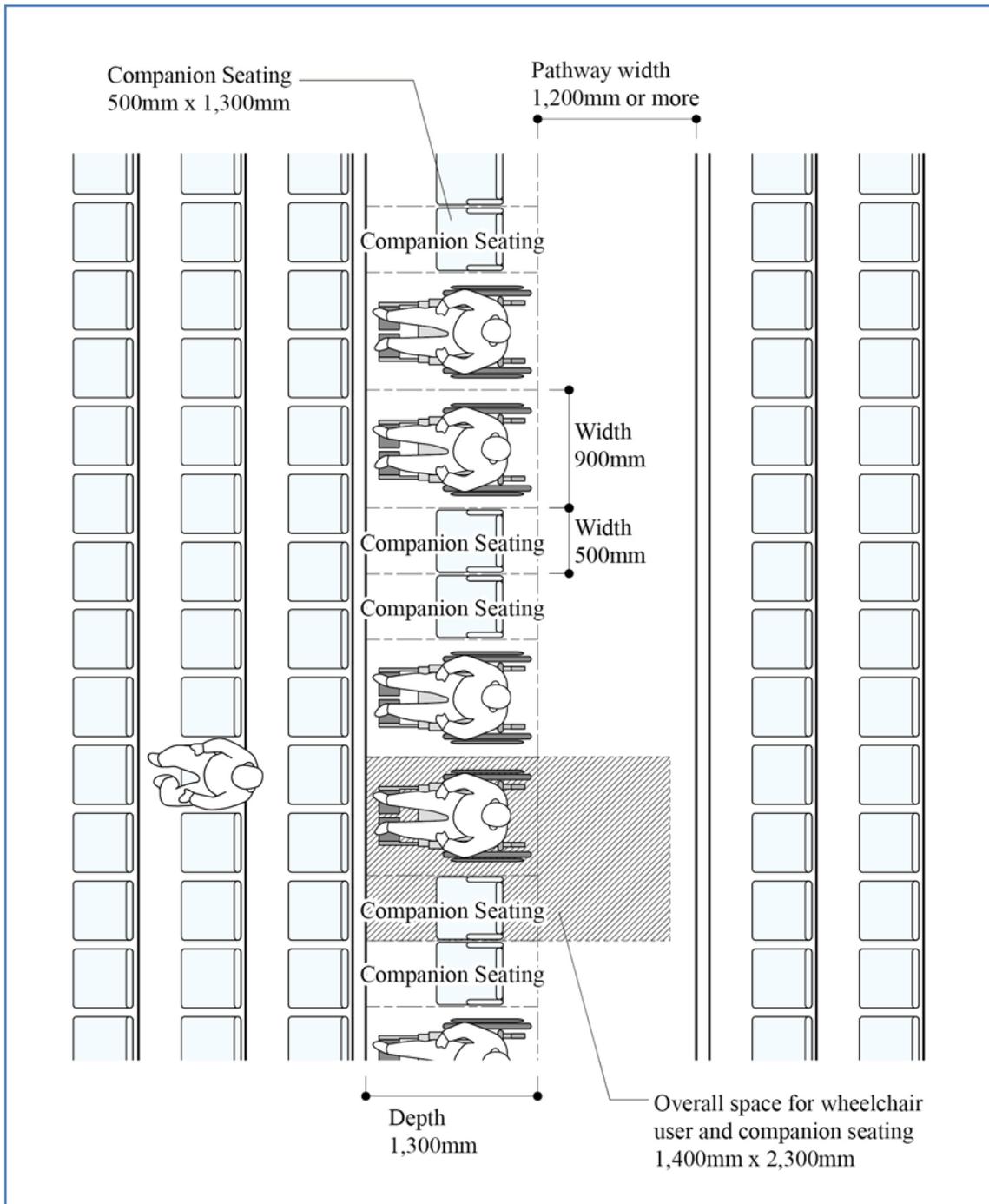


Figure 19: Accessible seating/companion seating (example)

2.2.2.3 Enhanced Amenity Seating

Enhanced Amenity Seats have additional space to provide greater room for those with assistance dogs, those who have a mobility impairment who are not in wheelchairs, or those who cannot use ordinary seating for physical constitutional reasons including physical problem, large height or width. These seats shall have more space in front and to one side.

At least 1% of venue's gross capacity of Enhanced Amenity Seats should be provided in addition to wheelchair and companion seating positions. These should be equitably distributed and located at the ends of rows and up and down as few steps as possible. A segmented room or space should be installed so that those who are with an infant or people with a disability (including those who have an intellectual or psychological impairment) can enjoy watching the games without being self-conscious.

2.2.2.4 Consideration for safety

To prevent risk, guiding blocks (truncated domes) shall be installed at the top of the stairs in the seating area. The guiding blocks (truncated domes) should be installed in alignment with width of the stairs, about 300mm from the stair nosing, with a depth of about 600mm. If there is a blockage in the pathway, a depth of 300mm or more shall be ensured.

In addition, a handrail should be installed along the stairway in order to ensure safety in going up and down the stairs.

2.2.2.5 Comparable Sightlines

Design the difference in floor height between a seat accessible by a wheelchair user and the seat ahead so that the sightlines to the stage, screen, event space, etc. are secured even when the person in the seat ahead stands up.

(See the Ministry of Land, Infrastructure and Transport “Standards on construction design with consideration to usage by the elderly, physically disabled persons, etc. [Supplement for Facilities with Audience Seating such as Theaters and Stadiums]”).

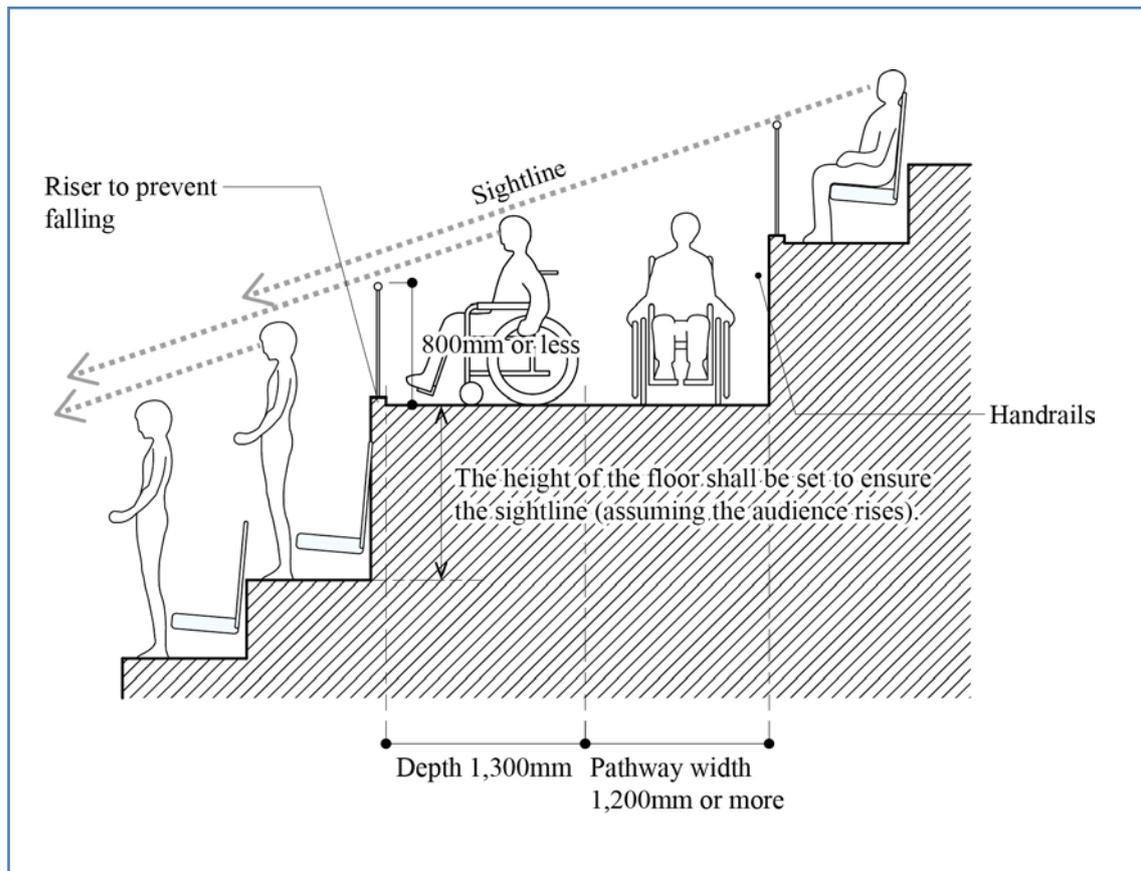


Figure 21: Sightline (example)

For the Paralympic Games the above rule applies for all accessible accredited seating and for the 1% of accessible seating (plus 1% companion seating) which is the minimum standard for the Paralympic Games. However, for the amount of accessible seating exceeding 1% and for sports where the likelihood of the audience standing up during the event is low and the impact on the remainder of the seating is high, an exemption may be considered. In this case the sightline for the wheelchair accessible position should be the same as the person in front has when seated.

Similarly, railings and other obstacles should not impair the sightlines of people using accessible seating. Design the height of railing less than 800mm so as not to impair the sightlines of people using accessible seating. At the same time, consideration should be

given so that wheelchair users will not impair the sightlines of people sitting behind them.

2.2.2.6 Hearing Augmentation

Large buildings need to ensure that their public address systems are designed to accommodate an aging population with progressive hearing loss. One of the most effective way of doing this is to increase the number of speakers in each area, then the volume can be reduced and the sound clarity increased.

Anywhere that there is a group of spectators or other audience, there is a need for assistive hearing devices. Assistive hearing devices include the following.

- Induction loop systems
- Infrared assistive hearing systems
- FM hearing systems, and the like

Hearing loss is the most common disability and because it is progressive over a long period, often the consumer is unaware of the extent that it affects them.

Details for the various Assistive Hearing Devices can be found in the “2.4 Publications and Communications” section of this chapter.

2.2.2.7 Additional Accessibility Provisions

Additional accessibility provisions to enhance the experience for spectators include:

- Real time open captioning where video screens or scoreboards are used
- Sign Language Interpretation
- Live audio description services;

Further detail on the delivery of these services can be found in the “2.4 Publications and Communications” section of this chapter.

2.2.2.8 Stage preparation

Areas for presentations and/or press conferences must be able to provide:

- Wheelchair access stage
- Accessible podium (preferably a variable height unit)
- Lapel microphone
- Area on stage or nearby for visual language interpretation
- Positioning sign language interpretation and textual display in consideration of lighting

2.2.3 Washrooms

2.2.3.1 Main Principles

Any kind of facility where people are expected to stay even for a short period of time cannot be considered accessible if there is no provision of an accessible washroom (hereinafter, multifunction washroom).

Multifunction washrooms must be unisex and not only be within a gender-specific washroom area. This will allow assistance from a person of a different gender e.g. carer as well as families and companions.

If an additional multifunction washroom is not visible from the common or public use washrooms, suitable directional signage is required to exist.

The following two types of toilets shall be installed in gender specific toilets allowing for separating functions in complementing multifunction toilets.

➤ “Simple Multifunction Toilet”

This type has some of the features of a multifunction toilet, including handrails, an area where users can move from the wheelchair to the toilet seat, a baby chair, ostomy equipment, and the like.

➤ “Washrooms Equipped with Separate Features”

These are washrooms with separate features such as handrails, baby chairs, ostomy equipment, and the like.

The appropriate specification and number of washrooms for use with assistance dogs will be installed according to the type of facilities.

2.2.3.2 Numbers and Ratios

Every bank of gender specific toilets should also have a unisex accessible facility located adjacent.

Especially for the Paralympic Games, where demand for multifunction washrooms is greater, additional multifunction washrooms or simple multifunction toilets installed within gender specific washrooms should be provided.

The number of accessible toilets installed is stipulated in the reference table 46. In addition, “simple multifunction toilets” shall be included based on “multifunction washrooms” in calculating the total number to install.

Reference table 46: Number and ratio of washrooms to install

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | <p>When necessary, toilets with specific functions can be installed for both men and women based on Japanese laws, in addition to accessible toilets. (Standard: Japanese government's Standard)</p> <p>It is appropriate to install at the rate of one toilet for 15 users who need an accessible toilet. (Standard: IPC)</p> | Not applicable | Not applicable | <p>Based on the investigation results of multipurpose toilets usage, install toilet booths with a particular function as necessary, such as those exclusive for wheelchair users or designed for persons with an infant, at least one each for men and women (Recommendation: Japanese government's Standard).</p> <p>Install toilets or toilet booths for use by people with a disability (multipurpose toilet), at least one for both men and women or at least one each for men and women (Standard: Japanese government's Standard).</p> |

In addition, in terms of the number of washrooms by floor level, at least one or more should be installed for each floor where wheelchair seating is installed.

Considering usage during competitions, multiple multifunction washrooms should be installed in the athlete area.

2.2.3.3 Signage

Standardized symbols should be used and have raised lettering or symbols within the tactile sign. Tactile maps should have not only braille, but also ordinary (printed) characters, with sharp contrast so that they are easily understood by people with limited vision. The raised lettering should be about 1mm in height.

The sign should be mounted 1,400mm to 1,500mm from the floor, on the wall - on the latch side of the door when doors are present – not on the door itself. This is intended to reduce the collision hazard for people with a visual impairment using the signage. Where there is no entry door, signs should be located on the wall to the left as the user enters the washroom, and depending on the layout, in a location that is easy to understand.

In order to further facilitate easiness of use by people with a visual impairment, colour-contrasting doorframes and door hardware may be used.

2.2.3.4 Circulation Spaces

The effective dimensions for multifunction washrooms and simple multifunction toilets are stipulated in the reference table 47.

On installing a large bed, it is recommended to take enough space taking the helper's movement into consideration.

Reference table 47: Effective dimensions for washrooms

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|---|
| Not applicable | <p><Recommendation> Wheelchair turn around space at separate toilets for men and women 1,700mm x 1,800mm (Recommendation: IPC)</p> <p><Standard> Effective measurements of unisex toilets 2,000mm x 2,000mm (Standard: Tokyo Metropolitan ordinance)</p> <p>Wheelchair turnaround space at separate toilets for men and women A circle of 1,500mm diameter is inscribed (Standard: Tokyo Metropolitan ordinance) *1</p> | Not applicable | Not applicable | <p><Recommendation> Effective measurements of toilets In the case of new installment 2,200mm x 2,200mm (Recommendation: Japanese government's Standard)</p> <p>Wheelchair turn around space at separate toilets for men and women 1,700mm x 1,800mm (Recommendation: IPC)</p> <p><Standard> Effective measurements of toilets Unisex toilets 2,000mm x 2,000mm (Standard: Japanese government's Standard)</p> <p>Wheelchair turning around space to separate toilets for men and women A circle of 1,500mm diameter is inscribed. (Standard: Tokyo Metropolitan ordinance) *2</p> |

*1 Effective measurements of toilets

In the case of going straight and entering from the side in a toilet booth for simple wheelchair users, at least 1,300mm x 2,000mm

In the case of entering from the side, at least 1,500mm x 1,800mm
(Tokyo Metropolitan ordinance)

*2 Effective measurements of toilets

When entering a toilet booth for simple wheelchair users from the front, at least 900mm x 1,900mm

When entering from the side, at least 900mm x 2,200mm

(Japanese government's Standard, Tokyo Metropolitan ordinance)

Within the multifunction washroom is a toilet pan, washbasin, grab rail adjacent to the toilet pan, mirror, soap dispenser, paper towel dispenser/hand dryer, toilet paper dispenser.

For washrooms with unspecified large numbers of users, ostomy equipment, baby chairs, baby cots, and large bed features shall be installed so that different functions will be provided, with these features displayed in and at the entrance to the respective washrooms.

The standard on the space for move beside the toilet in the washroom is stipulated in the reference table.

Reference table 48: Space for move beside the toilet in the washroom

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|---|
| Not applicable | [Moving space beside the toilet] Secure at least 800mm of moving space beside the toilet (Recommendation: IPC). Secure 750mm moving space beside the toilet (Standard: IPC) | Not applicable | Not applicable | [Moving space beside the toilet] Secure at least 800mm of moving space beside the toilet (Recommendation: IPC). Secure 750mm moving space beside the toilet (Standard: IPC) *1 |

*1 Secure 700mm (Tokyo Metropolitan ordinance).

When more than one multifunction washroom, simple multifunction toilet or washroom with separate features is installed, it is recommended to give them left-right symmetry so that the toilet is accessible from whichever way.

Do not make any step that obstructs traffic on the floors of not only multifunction washrooms but also gender specific washrooms.

2.2.3.5 Doors

The standard on multifunction washrooms, simple multifunction toilets and washrooms and bathrooms with separate features are stipulated in the reference table 49.

Reference table 49: Washroom door width

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|--|
| Not applicable | [Toilet booth door width] 1,000mm (Recommendation: the party concerned) 950mm (Recommendation: IPC) 850mm (Standard: IPC) | Not applicable | Not applicable | [Toilet booth door width] 950mm (Recommendation: IPC) 900mm (Standard: Japanese government's Standard) *1 |

*1,800mm (Japanese government's Standard)

Doors shall not swing into the clear floor space required for any fixture. It is generally recommended to use (1) an automatic sliding door, or (2) a manual sliding door in this priority order. A manual sliding door should be able to be opened and closed with a light force. When the toilet door is automatically opened and closed, it is recommended to install the control button at a distant of at least 700mm and install nothing on the wall that could obstruct entrance and exit.

Doors must be fitted with light action privacy bolts so that they can be operated by people with limited dexterity. Include a push button for opening and closing the door in the case of an automatic door.

All door-opening furniture must contrast visually with the surface of the door and wall. It must also have a large display that works in conjunction with the lock during use and is very easy to understand. The door should be held open when it is not in use so that it is readily understood that it can be used.

2.2.3.6 Fixtures in the multifunction washrooms, simple multifunction toilets and washrooms with separate features.

The design specifications are as follows for the multifunction washrooms, simple multifunction toilets and washrooms with separate features.

- For equipment such as the toilet and the wash basin, the design shall ensure the necessary space for wheelchair approach from the front and from the side, and to move from the wheelchair to the toilet.
- The center of the toilet shall be located about 350 - 375mm from the handrail on the wall, with a space of about 700 - 750mm between the handrail on the wall and the movable handrail.
- The height of the toilet seat should be at 400 - 450mm height above the finished floor.
- The toilet is fixed, and when installing a back support, it must be positioned so that it is not an obstacle for people with disabilities.
- The tank top shall be securely attached.
- The toilet shall be flushed with buttons as a basic rule, and the button shall be installed so that it can be operated while the user is on the toilet seat or while the user is in the wheelchair without transferring to the toilet seat. In addition, the button type shall be installed jointly when self-cleaning or sensor type equipment is installed.
- The operating buttons for flushing etc. should be easily recognizable, based on JIS S0026, and installed in a unified manner in the washrooms including ordinary toilets.
- Toilets shall be equipped with handrails that are easy to use on both sides of the toilet. The handrails shall be installed vertically and horizontally, and the handrail opposite the handrail on the wall shall be moveable in consideration of approaching the toilet seat from a wheelchair that is in parallel position.
- The horizontal handrail shall be installed about 200 - 250mm above the height of the toilet seat; the vertical handrail shall be installed about 200 - 250mm in front of the toilet; and the center of the toilet shall be the same distance from both handrails.
- Toilet paper dispensers must be within easy reach from the sitting position based on JIS S0026 and contrasting in colour to the wall. In addition, they should be operable with one hand.
- Toilets with a shower feature should be installed in consideration of those with mobility impairment. The toilets shall be installed in locations considering where other equipment is installed based on JIS S0026, with the operating equipment located where it is easy to use.
- Luggage hooks, luggage storage space, and sanitary disposal receptacles for pouches and the like shall be installed in multifunction washrooms, simple multifunction toilets and washrooms with separate features.

2.2.3.7 Sink Area

In the sink area, accessories (such as soap dispenser, paper towel dispenser) must be located within an operating height of about 800 - 1,000mm above finished floor and within a range of approximately 750mm from the centre of the sink.

Garbage cans or other obstacles shall be installed so that it does not interfere with the use of accessories or the opening and closing of the door.

Washroom sinks must include a counter or adjacent shelf.

The paper towel dispensers should be of a lever operated type or be a hands free design and be mounted between 800 – 1,000mm above finished floor and about 750mm of the sink, not on an opposite wall.

In the multifunction washrooms, mirrors shall be installed with the lower end as close as possible to the upper end of the wash basin, with the upper end at a height of 1,000mm or more.

The flushing equipment should be light sensitive, with automatic faucets. If a manual type is installed, it should be easily operable, such as single-lever type. The clearance below the wash basin should be about 650mm at Olympic Village and sport venues, and at least 600mm at passenger facilities.

Within a multifunction washroom the minimum distance between basin and toilet pan is 1,000mm.

2.2.3.8 Other Requirements

Where baby change facilities are provided, they should be mounted about 800 - 850mm from the floor and provide a minimum of 700 - 750mm of clearance underneath and about 500mm depth.

Equipment such as handrails, wheelchair turning space, ostomy equipment, baby chairs, and baby cots should be arranged in gender specific and multifunction washrooms so that those who need the equipment can use them respectively at the same time. The appropriate number equipment shall be installed in accordance with the facility usage.

Multifunction washrooms equipped with large beds shall be arranged so that the bed will be no obstruction even when it is spread out. It is recommended to install a toilet with a large bed even adults can use.

Multifunction washrooms should have famine napkin disposals.

The placements of the cleaning equipment, paper holders, and emergency call buttons are based on JIS S0026. In addition, emergency call buttons shall be installed in a place where they can be reached even after falling down, or where they can be operated using string.

The washrooms should be equipped with devices that can provide emergency information through sound and light (such as flashlights) in consideration of people with visual and hearing impairments. The flashlights should be installed at a location where it can be easily recognized when it flashes even when the toilet door is closed. The door should have a sign explaining that the flashing indicates emergency situation.

The washroom signs should be devised so that they clearly indicate that the washroom is gender specific or unisex multifunction washroom.

Voice guidance service should be provided and the location inside the washroom should be indicated in the washroom entrance. In addition, braille indications and tactile guide maps should be arranged in consideration of people with visual impairments.

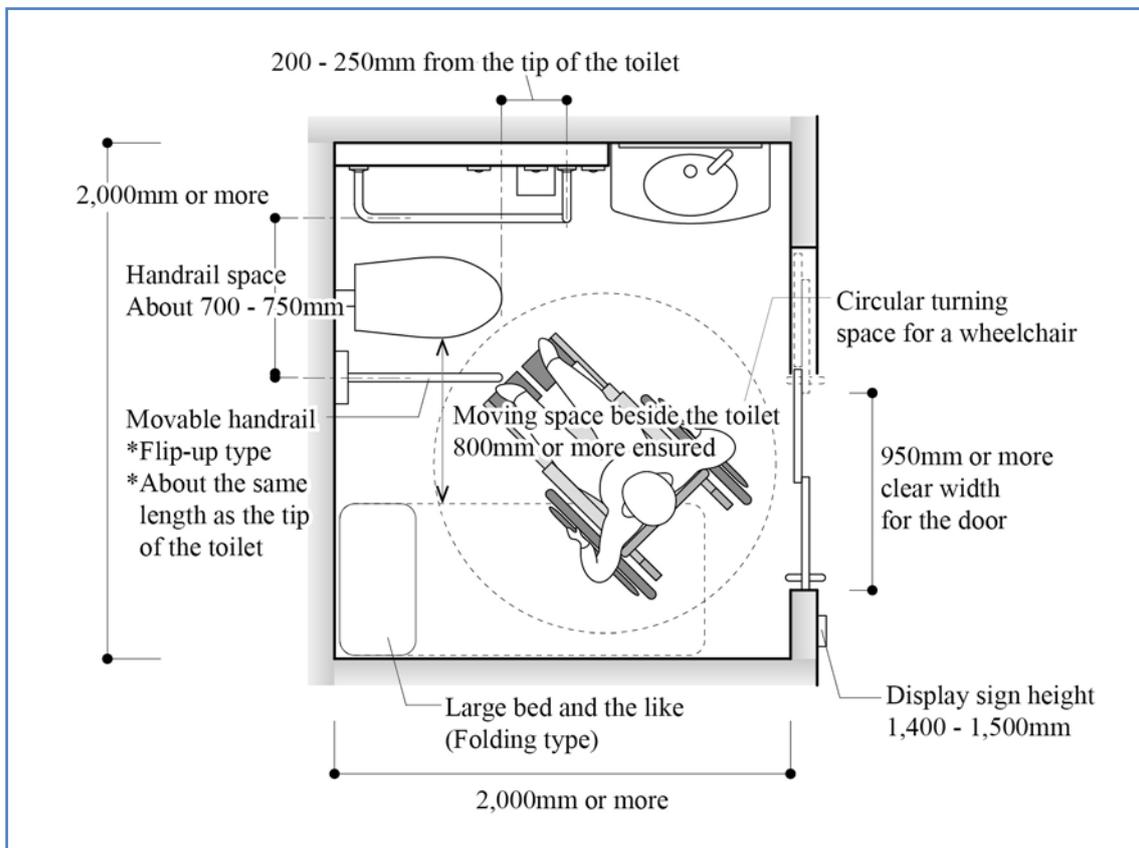


Figure 22: Multifunction washroom (example with large bed arranged)

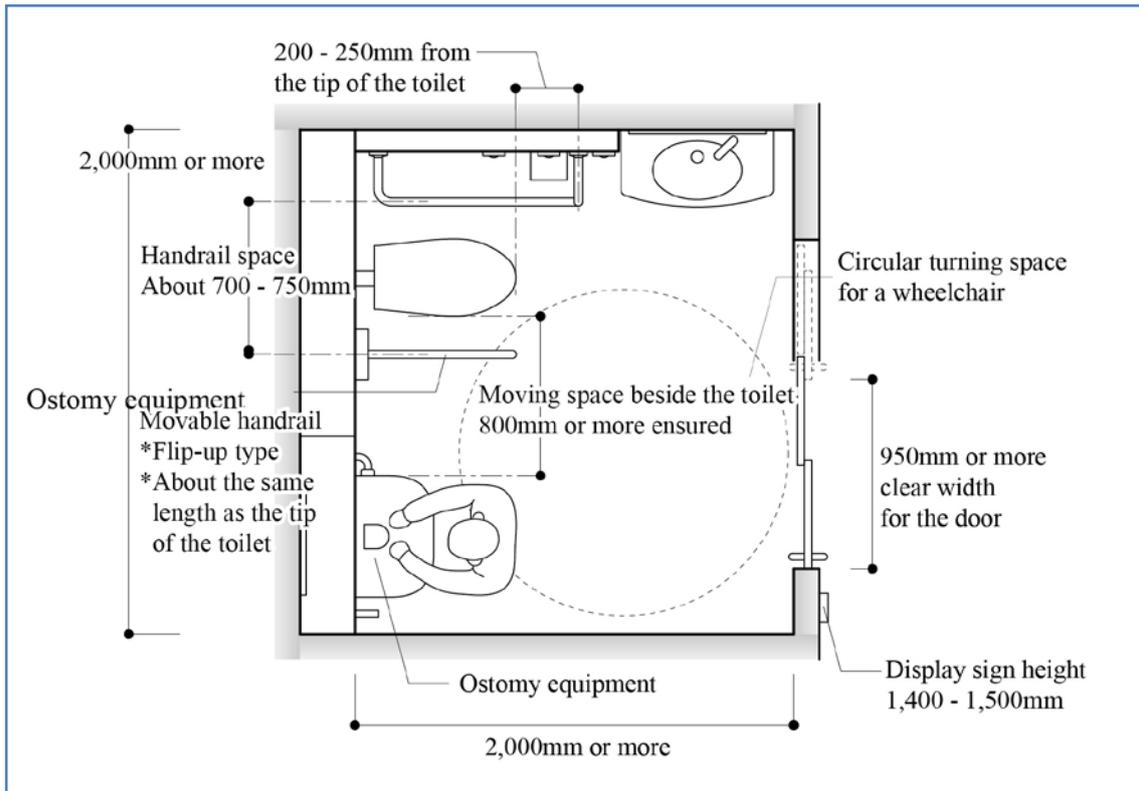


Figure 23 Multifunction washroom (example with ostomy equipment arranged)

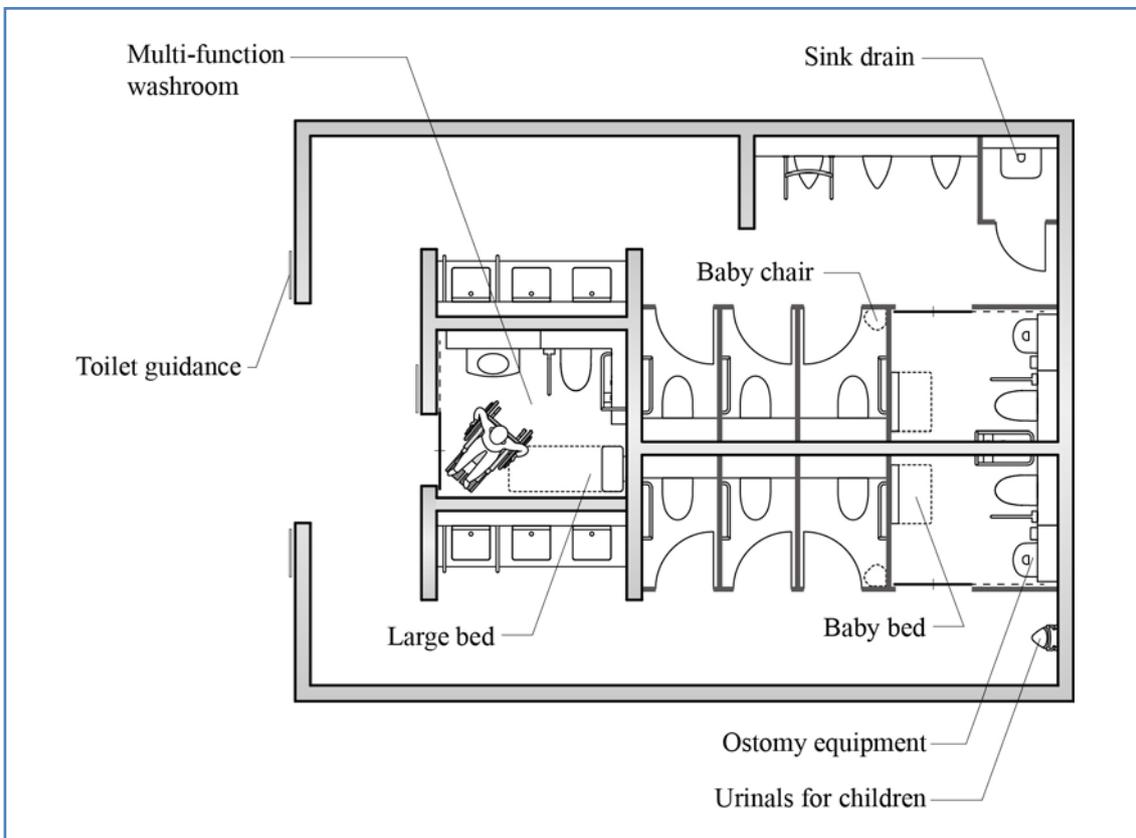


Figure 24: Washroom with different features (example)

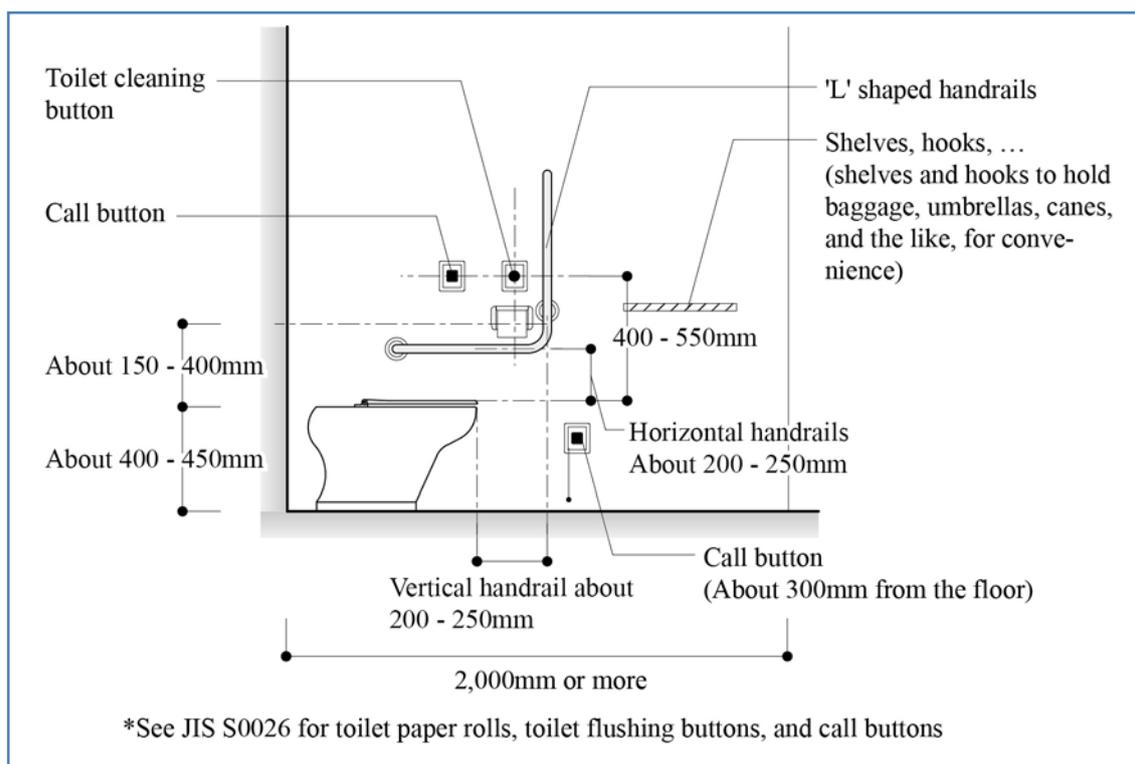


Figure 25: Toilet configuration (example)

2.2.4 Showers, Baths and Changing Rooms

2.2.4.1 Introduction

Within shower facilities at least one shower in each area must be made accessible.

2.2.4.2 Accessible Shower Features

Accessible showers must:

- Have a lever operated faucet that is operable with a closed fist, and with light force from a seated position (Reference: IPC maximum 13N).
- Have the water control lever mounted on the wall at a maximum of 750mm from the floor and 750mm from the end wall;
- Either of shower wheelchairs, portable shower chairs, or wall mounted folding chairs shall be installed, with curtains and transferring space properly arranged.
- The wall mounted folding chairs shall be installed at about 400 - 450mm from the finished shower floor, with seats that have a depth of 500mm and a width of 1,000mm (± 10 mm tolerance depending on the installation). Minimum load bearing of 135kg, and waterproof, padded, and easily cleaned.
- Have a hand-held shower with mounting points located so that it is within easy reach of the seated position. The hose on this shower head needs to be at least 1,500mm in length;

- Soap holders or shelves shall be embedded in the walls, with easy access from the seated position.
- Handrails shall be properly installed in the side wall to support the body while using the shower, with the center of the handrails about 750 - 800mm from the floor. Vertical handrails should also be installed about 200 - 250mm in front of the tip of the seat surface.
- Have a scald guard or other thermostatically controlled valve to protect users.
- In order to avoid interfering with the movement of wheelchairs, the floor surface shall be well drained with as gentle a slope as possible and no step installed.

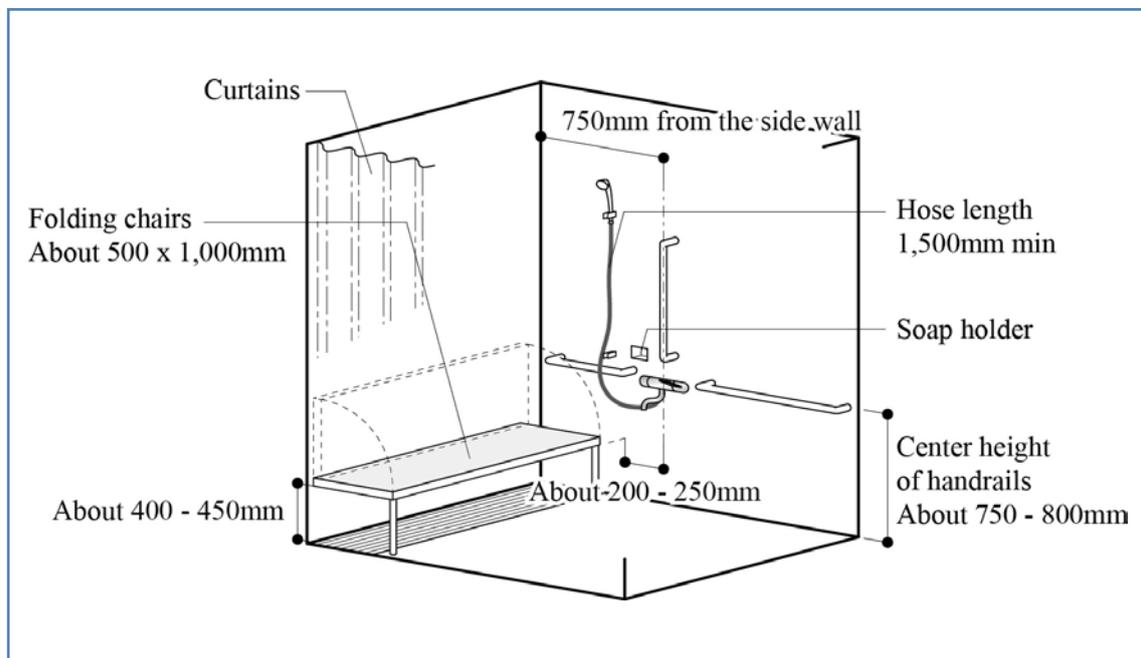


Figure 26: Accessible showers (example)

2.2.4.3 Changing Rooms

There are many configurations of changing rooms. Regardless of the type of changing room, there are a number of key considerations of accessible changing rooms which include:

- Shared changing rooms in which assistance is available from the opposite sex shall be installed in addition to gender specific changing rooms.
- Accessible benches and beds shall be provided.
- Provision for easy to reach locker and storage areas;
- Provision of multifunction washroom within each gender specific changing room; If it is difficult to install due to the structure and the like, a simple

multifunction toilet shall be installed.

- Provision of accessible shower adjacent to the gender specific showers;
- Consider provision of accessible changing rooms also for treatment/first aid, coaches, referees, officials rooms. For these areas a combined unisex accessible changing room with toilet can be provided rather than providing one unit for each area.
- The door shall provide a minimum clear width of 850mm, while best practice is 950mm and should be equipped with ‘U’ shaped levered handsets (see the reference table 50).

Reference table 50: Changing room doors

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Same as 39 | Not applicable | Not applicable | Not applicable | Not applicable |

For team sports such as Wheelchair Basketball accessible showers and toilets should be installed in the changing rooms for each team.

2.2.4.4 Example of a Medical Institution's Adult Changing Facility

This is a unisex accessible toilet for assisted use and changing facilities. It is used by people who require assistance to reach a changing bed. The room should be about 3,000mm x 4,700mm and requires a ceiling mounted hoist and a changing bed.

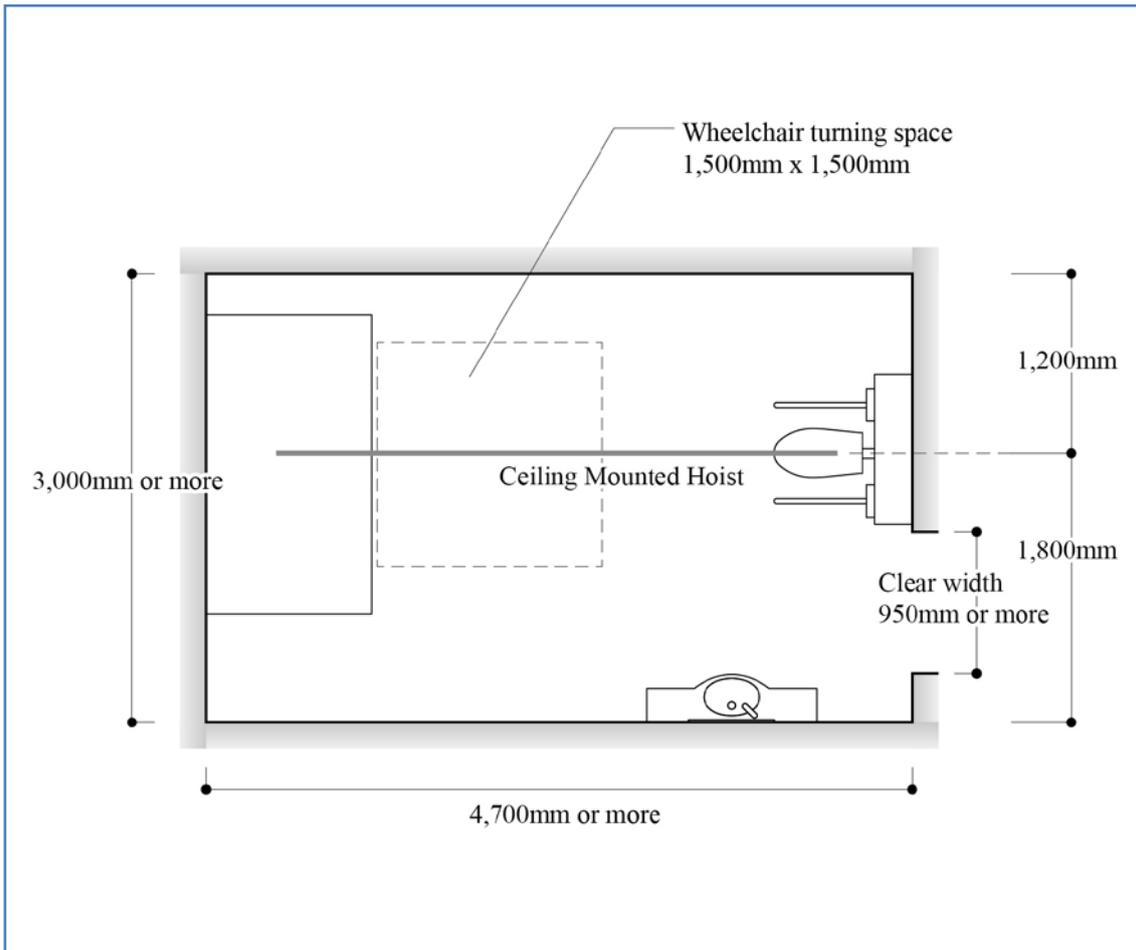


Figure 27: Medical institution's adult changing facility (example)

2.3 Hotel & Other Accommodations

2.3.1 Overview

2.3.1.1 Principles

Providing accessible accommodations means more than eliminating discriminatory treatment against people with a disability. Today, in every big city of the world tourist accommodation facilities compete with each other on quality, price and the provision of services and attractions. However, the beneficiaries of an accessible and inclusive environment and their friends and families, are currently excluded by the majority of tourist accommodation facilities due to existing variations in access levels and not adequate information provision.

Accessibility in hotels, not only responds to the needs of an expanding market share, as the average age of the population increases but also other potential clients, for example parents with pushchairs, people with injuries, and tourists with heavy luggage.

2.3.1.2 Contents

This section contains the following topics:

| Topic |
|---|
| 2.3.2 Accessible Rooms |
| 2.3.3 Wheelchair “Friendly” Guest Room |
| 2.3.4 Other Services within Accommodation Sites |

2.3.2 Accessible Rooms

2.3.2.1 Introduction

Instead of designating accessible guest rooms, taking a universal design approach to guest rooms’ design and layout in all rooms means that the standard rooms and suites will be able to accommodate guests of a broader range of impairments. These efforts will have the effect of reducing demand for accessible rooms.

It is therefore recommended new facilities to apply the same basic access based on a universal design to standard room features.

Consideration should also be made during reception for accompanying assistance dogs (guide dogs, service dogs, and hearing dogs).

2.3.2.2 Responding to Individual Guest's Needs

2.3.2.2.1 Description & Considerations

Ensuring that there is no step on the threshold, and that there is ample door width as well as turning space are the most important factors for wheelchair users. Equipment, such as cupboards and switches, should be within reach from a wheelchair.

The requirements of customers with hearing impairments should be explained to staff members before their arrival and staff members should be informed of any procedures that may impact on their privacy/safety e.g. housekeeping, room service, fire drills, etc.

When installing a TV in a room, closed captioning for the hearing impaired shall be prepared whenever possible. The TV remote control should have a closed captioning button. In addition, closed captioning broadcasts should always be available to guests. Lending portable magnetic induction systems for people who use hearing aids will be a help in receiving TV audio.

If a person with a visual impairment is occupying a room alone, staff should offer to orientate the guest on the position of furniture and facilities in the accommodation.

When a person with a hearing impairment uses a hotel, the hotel should lend them devices such as FAX machines, mobile telephone terminals to ensure that they receive necessary information including knocking and messages from the front desk, since contact from outside would not reach them once they enter the room. Devices with vibration alarm features during sleep should be provided as well.

When assistance dog users such as visually impaired people use the hotel, explanation of excretion areas, the scope and areas where the dogs are allowed, and other information must be given to the users after checking the type of assistance dogs. In addition, the hotel staff shall prepare in advance to provide support for questions and complaints on assistance dogs from other users, and on evacuation routes for users and their assistance dogs in the event of an emergency.

2.3.2.3 Entry Door

The door width is as follows.

- Recommendation: 950mm (IPC), Standard: 900mm (Tokyo Metropolitan ordinance, Japanese government's standard)
- If the standard cannot be met: 850mm (Tokyo Metropolitan ordinance)

The door widths for accommodations in the Athletes' Village are stipulated in Reference Table 39.

Doors should also be equipped with 'U' shaped levered or other easily operated handsets such as push-pull type, and the like.

Automatic door closers should have adjustable opening and closing speed and it should be possible to interrupt the movement with light force. Where possible, conventional closers should be replaced with low resistance closers that have varying speeds to close slowly just before the door stops.

Safety chains, locks and other hardware must be operable by one hand, not require good dexterity to operate and be mounted a maximum of about 1,200mm, and whenever possible 1,100mm or less, above finished floor.

The door scope should be about 1,000 - 1,200mm above the finished floor. A monitor should also be installed to check the outside of the door.

In order to facilitate visual language/sign language, and lip reading considering user friendliness for people with visual and hearing impairment, the outside of the door must have a level of brightness that is visible for the subjects.

The door must have low mounted, large format/high contrast evacuation information/route signage.

The guest room entrance and exit doors shall have room numbers and room names that are easy for the elderly and people with a disability to understand. Further, braille and raised character displays as well as voice guidance should be incorporated.

2.3.2.4 Circulation & Transfer Space

The room needs to provide at least one space for circulation and change of direction.

Space for circulation and change of direction shall be as follows.

- Recommendation: 1,500mm x 1,500mm (or 1,500mm diameter) (IPC, Tokyo Metropolitan ordinance, Japanese government's standard)
- Standard: 1,200mm x 1,200mm (or 1,200mm diameter) (IPC)

Circulation should also be possible in the toilet, washroom, and bathroom.

The following minimum space must be provided in all areas where the guest who uses a wheelchair is expected to move from it for example toilets, beds, desk seating, etc.

- Recommendation: 915mm (IPC), Standard: 800mm (IPC)

Accommodation facilities paths and pathway width shall be as follows.

- Recommendation: 1,500mm (IPC), Standard: 1,200mm (Japanese government's standard)

2.3.2.5 Switches and Controls

Controls, switches including those for heating/air conditioning should be installed about 850 - 1,200mm from the floor, and installed in as low a position as possible. Further, switches installed near the bed shall be arranged with the center about 850 - 1,200mm from the floor, in as low a position as possible.

Electrical outlets and data connections are to be located about 400mm above finished floor. These limits do not apply, however, to guest room desktop electrical outlets and data connections. In addition, electrical outlets for wheelchair battery charging should be installed in a space that can be used as a pathway beside the bed.

Desk lamp/standing lamp switches need to be easy to locate and operate by people whose dexterity is impaired, and the operations for turning them on and off shall be easy to understand. The switches shall also be operable by remote control.

Wall switches for general light and touch switches on bedside lamps are recommended. Emergency lights shall be installed within reach from the bedside.

2.3.2.6 Beds

Bed top height shall be as follows.

- Standard: about 400 - 500mm above the floor (Tokyo Metropolitan ordinance, Japanese government's standard)

The height should be adjustable, however, according to the user.

Minimum aisle width along at least one side of the bed shall be as follows.

- Recommendation: 1,200mm or more (Tokyo Metropolitan ordinance),
Standard: 800mm (IPC)

In the bed frame needs to permit a minimum space of 100mm height x 100mm deep between the floor and the bottom edge of the bed to prevent collision with wheelchair foot supports and the like. In addition, more space should be provided to prevent collision with electric wheelchair foot supports and the like.

Beds that are on fixed pedestals prevent users from utilizing common lift equipment and therefore are not recommended in accessible rooms.

2.3.2.7 Closets

A manoeuvring space of 1,500mm should be provided in front of closets. Closets without baseplates are preferred to provide easy access for wheelchair users.

Closets should have a low mounted hanger rod at 1,200mm above finished floor.

Recommended cases for hangar rods

- (1) Partition type with a height difference in the installation position
- (2) Adjustable height type
- (3) Assistance provided in hangers hung at 1,200mm or more

Closets must be equipped with hangers that can be easily removed and re-hung. Closet interiors need to be well lit.

Hangers attached to hanger rod rings are very difficult for many people with mobility impairment to use and are not appropriate in an accessible room.

Preferably, doors should be equipped with 'U' shaped levered or other accessible handle.

2.3.2.8 Furniture and Finishes

Furniture needs to be easy to use and operate. Hardware should be capable of being 'hooked' with a finger rather than grasped to operate.

If the access aisle to the bed is less than 1,200mm, then the bedside tables need to provide a minimum space of 225mm height x 300mm deep should be provided in the bedside table to prevent the tips of wheelchair foot supports and the like from colliding. Other tables should provide a minimum space of 700mm underneath to a depth of 450mm to prevent the part of the wheelchair below the knee from colliding.

Carpeting needs to be low-pile, high density closed loop glued directly to the floor. Thresholds should be totally avoided or be flush. If unavoidable, then they should not be higher than 25mm, and the shape shall be easy to get over.

2.3.2.9 Window and Patio Doors

Patio doors (if existing) need to meet requirements for Doorways (above) for clear width, threshold, and hardware.

Furniture arrangement must allow wheelchair users access to window/curtains, the window handles and operating strings for curtains must be installed at a height of about 1,200mm above finished floor, and they must be operable. Preferably 1,100mm or less.

2.3.2.10 Other Equipment

At least one telephone needs to be located within easy reach of the bed. Telephones need to be compatible with hearing aids (contain a flux coil) and have a message-flash light.

A telephone in the bathroom with a 600mm cord is recommended as a safety measure.

TVs must have Televisions need to be equipped with remote controls and with closed caption decoders.

Clock radio should have large, high contrast displays.

2.3.2.11 Bathroom Elements

Overall, the provisions about washrooms described in the previous section apply for individual bathrooms at hotel accommodations.

Sinks must be equipped with levered or automatic faucets and scald guard technology as well as with offset piping or have insulated drains

A space of about 650mm above the floor with a depth of about 450mm shall be provided to prevent wheelchair users from hitting their knees under the counter. The top height of the counter shall be about 700mm.

Mirrors are to be mounted with the bottom edge mounted a maximum of about 1,000mm.

A telephone or other communication device, alarm, or call button needs to be located within easy reach of the toilet in case assistance is required after a fall or other emergency.

2.3.2.12 Shower/Tubs Elements

While a shower is considered to be easier to use, some people of mobility and sensory impairments prefer bathtubs as well. Among the accessible rooms, however, some guest rooms are only equipped with shower rooms for use in the wheelchair, with no bathtub. Further, when installing showers in accessible rooms, showers that are easy for wheelchair users must be installed, regardless of whether or not there is a bathtub.

All tubs and showers need to be equipped with an offset piping, single lever-mixing valve, and a hand-held shower held on a minimum 1,500mm hose.

Shampoo, rinse, and body soap that can be taken up and distinguished by visually impaired people should be provided in the bathroom.

Curtains should be installed as partitions in the shower booths.

Overall lighting in the bathroom as well as the lighting at the counters and around the wash basin should be bright enough to clearly see what is at hand.

In the following diagram, the main features of an accessible guest room are displayed:

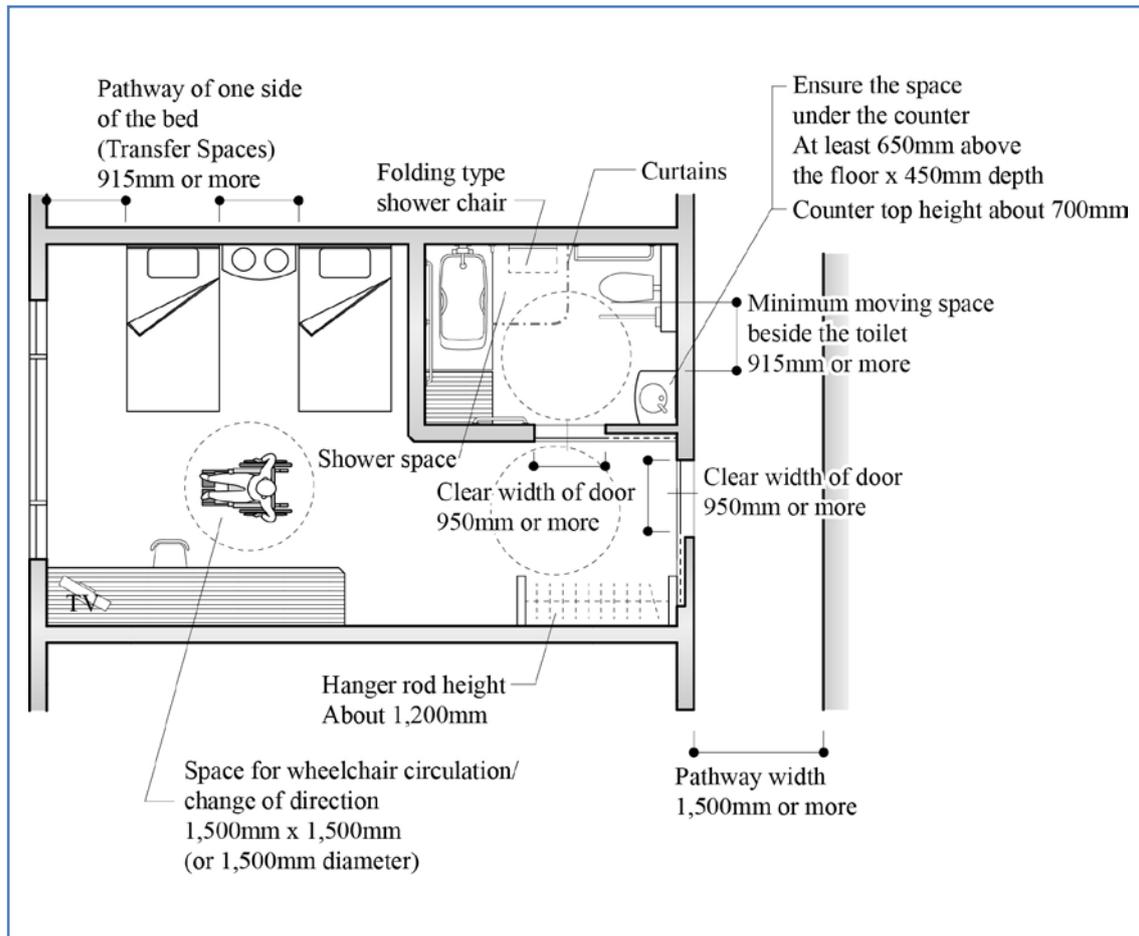


Figure 28: Accessible rooms (example)

2.3.3 Wheelchair “Friendly” Guest Rooms

2.3.3.1 Rational

In the previous sections, the conditions for creating accessible guest rooms and bathrooms were specified.

However, limitations especially in older establishments may have as a result several of those provisions not to be technically feasible.

On the other hand, many times easy-to-make provisions can make a guest room usable by a person with certain mobility limitations, even if not accessible according to the standards.

In order to provide guidance to hotel owners and other accommodation providers, the IPC Guide has introduced the notion of “wheelchair friendly” rooms, that may allow providers to serve more customers or allocate limited available accessible rooms in the most appropriate way, especially when accommodating groups.

2.3.3.2 Definition

For a Hotel Room to be considered wheelchair friendly, the following most essential provision of a “fully accessible” need to apply, in combination with the existence of simple features and amenities that will allow the guest to use the room.

- Door widths minimum of about 800mm, for both entry to room and entry to bathroom;
- At least one spot within the room with a diameter of 1,200mm (or 1,200mm x 1,200mm) (to allow for a change of direction);
- Transfer space of min. 800mm in at least one of the sides of the bed;
- Toilet seat of about 400 - 450mm height with transfer space in one side. When the height is insufficient, a raised toilet seat can be used.
- A handrail should exist or other suitable solid item for a person to lean on;
- Height of controls lower than 1,400mm or provision of a suitable “handling stick” or remote control for those above this height;
- Provision of a long stick, with suitable edge, to allow mounting and demounting of hangers in cupboards; Hangers attached to fixed rings are not appropriate in an accessible room;
- Portable bath amenities; (shampoo, shower gel, etc.)
- Shower chair with back. Handrails shall be installed in the bathtub to allow entry and exit, as well as a bath chair.
- Thresholds should be totally avoided or be flush. If unavoidable, then they should not be higher than 25mm, and the shape shall be easy to get over.

2.3.4 Other Services within Accommodation Sites

2.3.4.1 Rational

Providing functional and dignified access to all other services available to other guests is a condition for an inclusive accommodation site.

2.3.4.2 Parking

Accessible car parking spaces need to be larger than other parking spaces, so that people have enough space to allow transfer between a wheelchair and the car. These larger parking spaces should be indicated by an internationally recognized symbol.

The width of designated parking spot should be, Recommendation: 3,600mm (IPC), Standard: 3,500mm (Japanese government’s standard). In addition, there must be no step in the parking stalls.

Accessible parking shall be as close to the building entrance as possible. Further detail can be found in Parking Area Requirements.

2.3.4.3 Reception

An accessible pathway should exist between parking, site entry and the reception, according to the previous sections of this Guideline.

If the facility has more than one entrance, information about other entrance should be given on the most accessible entrance, which should be easy to find. Staff members will handle it if such information is not provided. Pathways should be wide enough to let people pass easily and should be kept free of obstacles.

The reception counter must be accessible, or some part of it must be accessible according to the standard of the “furniture, counter, and service areas.”

Main information about the hotel should be provided in alternative forms (braille, audiotape, large print, etc.) for guests with sensory limitations.

2.3.4.4 Restaurants, Cafés and Bars

In restaurants, cafés and bars, the aisles should be wide enough to allow visitors to move around easily when the tables and chairs are in use, according to the standards described in 2.1.5 Furniture, Counters and Service Areas.

Assistance dogs (guide dogs, service dogs, hearing dogs) can accompany guests in restaurants and shops in accordance with national laws and regulations.

Menus should be available in alternative formats (Braille, large print, etc.).

2.3.4.5 Shops

The ability of visitors with mobility impairment (such as limited reach) to access goods on shelves and display racks should be considered. Distributing goods vertically instead of horizontally is better for visitors with mobility impairment.

The width of the aisles should abide to the provisions about circulation areas and be no less than 1,200mm.

2.3.4.6 Toilets

At least one unisex accessible toilet should be installed in the hotel.

2.3.4.7 Emergency Planning

Specific equipment and planning to evacuate people with a disability is an important part of serving guests with disabilities. Appropriate disability awareness training for staff will help facilitate safe exiting of people with a disability.

Refer to the Emergency Provisions section for further detail on the following:

- Areas of rescue assistance
- Alarms
- Building evacuation instructions

2.3.4.8 Temporary Solutions

Several temporary solutions may be employed in order to provide a better service to guests of any level of mobility, sensory or mental capacity.

- Hanger rods shall be installed in a low position or adjustable height hanger rods shall be used.
- Reversing swing of bathroom door to increase useable space inside;
- Removing bathroom door (with guest permission);
- Lift bed or install a pedestal to accommodate bed lifts;
- Provide cordless telephone in rooms where telephones are not beside the bed;
- Provide valet parking service for over height vehicles.

2.3.4.9 Support Services and Equipment

Several support services and/or equipment can be used to further enhance the experience of all guests of an accommodation site.

Visual and hearing services and facilities

- Braille, large print, and audio versions of restaurant menus;
- Braille, large print, and audio versions of hotel services information;
- Communications equipment such as FAX and the like for guests with hearing impairments;
- Establishing a Wi-Fi environment
- Telephones with volume controls and/or oversized buttons;
- Equipment to convey incoming calls in various ways including sound, vibration, text, and light.
- Air conditioning remote controls and panels should be easy to operate for people with visual impairment.

Services and facilities for wheelchair users

- Shower chairs and raised toilet seats, upon request;
- Provide or be able to access a portable personal lift to assist guests transfer to bed.

2.4 Publications and Communications

2.4.1 Overview

2.4.1.1 Principles

Accessible publications and communications allow for sufficient and unobstructed participation in social and professional life.

2.4.1.2 Contents

This section contains the following topics:

| Topic |
|---------------------------------|
| 2.4.2 Publications |
| 2.4.3 Web Sites Standards |
| 2.4.4 Telecommunications |
| 2.4.5 Signage |
| 2.4.6 Assistive Hearing Devices |

2.4.2 Publications

2.4.2.1 Introduction

When creating a publication, it is important to consider first of all whether or not everyone can read it, considering a variety of impairments. Readability should be the first step in making an event, service, location or information accessible to everyone.

All documents intended for public use should be provided in braille, text data, large print, or audio formats. In addition, expert advice should be obtained in providing these formats.

2.4.2.2 Clear Print Guidelines

In order to reach a wider audience, publishers of any kind of documents should consider the “Clear Print Guidelines” as they design their publications.

2.4.2.3 Contrast

Use high contrast colours for text and background. Good examples are black or dark blue text on a white or yellow background, or white/yellow text on a black/dark blue background.

2.4.2.4 Type Colour

Printed material is most readable in black and white. If using coloured text, restrict it to things like titles, headlines or highlighted material.

2.4.2.5 Point Size

Bigger is better. Keep your text large, preferably between 12 and 18 points, depending on the font (point size varies between fonts). Consider your audience when choosing point size. Where 12 point fonts and smaller are used, alternate enlarged versions of the document using 18 - 26 point sizes must be made available. Further, for alternate enlarged versions in English, 14 point size or larger must be used.

2.4.2.6 Leading

Leading is the space between lines of text and should be at least 25-30% of the point size. This lets readers move more easily to the next line of text. Heavier typefaces will require slightly more leading.

2.4.2.7 Font Type

Avoid complex or decorative fonts. Use universal design specification Gothic type. Choose standard, sans-serif fonts with easily recognizable upper and lower-case characters. Arial and Verdana are good choices.

2.4.2.8 Font Heaviness

Select fonts with medium heaviness and avoid light type with thin strokes. When emphasizing a word or passage, use a bold or heavy font. Italics or upper-case letters are not recommended.

2.4.2.9 Letter Spacing

Do not crowd your text: keep a wide space between letters. Choose a mono-spaced font rather than one that is proportionally spaced.

2.4.2.10 Margins & Columns

Separate text into columns to make it easier to read, as it requires less eye movement and less peripheral vision. Use wide binding margins or spiral bindings if possible. Flat pages work best for vision aids such as magnifiers.

2.4.2.11 Paper Finish

Use a matte or non-glossy finish to cut down on glare. Reduce distractions by not using watermarks or complicated background designs.

2.4.2.12 Clean Design & Simplicity

Use distinctive colours, sizes and shapes on the covers of materials to make them easier to tell apart.

2.4.2.13 Braille

Braille materials should be made available for the visually impaired. Audio and large print versions should be made available as well for people who do not read Braille. However, since some people with a visual impairment do not read Braille, it should not be the only format targeting people with vision loss. Both audio and large format documents are good alternatives. English Braille should be produced at Level 2 or higher.

In the case of events where a lot of people who are blind or have a visual impairment are expected to attend (such as the Paralympic Games), informative material could be printed in a limited number of copies and/or be available for printing using a computer that can convert and print a document in braille format.

2.4.2.14 Audio Recording Media

Audio versions of publications should be created at facilities that specialize in creating audio media for the visually impaired. This content can be released via W3C compatible websites, Podcasts or distributed as MP3 files. The content should be created using other media, in addition to this data distribution.

2.4.2.15 Electronic Documents

Documents released in PDF formats are NOT readable by most computer screen reader software used by people with a visual impairment. Electronic documents need to be text, rich text or Word documents with a minimum of formatting and graphics. The documents should also be prepared for the visually impaired and for those who have difficulty reading printed material using digital recording format that conforms to international standards.

2.4.2.16 Video/DVD/CD Releases

All of these formats need to contain captioning for people who are hard of hearing. Where possible, Descriptive Video Service (DVS) should also be supplied.

2.4.3 Web Sites Standards

2.4.3.1 Introduction

Internet forms a fundamental element of search and dissemination of information as well as an effective means for daily life transactions and services acquisition.

Internet is a privileged means of communication and works for people with sensory or mobility limitations. However, in order to be usable, internet needs to comply with web content accessibility guidelines that enable all potential users to benefit.

In the Games context, for many athletes, visitors and family, the internet plays a key role in ensuring people are able to communicate about their training, competition results, safety, family happiness/sadness or to simply just keep in touch. The role of internet communication environments within venues and athletes' villages is crucial to the planning of any Games.

2.4.3.2 Guidelines

All web sites must be developed to include all users and therefore all web sites must meet W3C Accessibility Guidelines. The Web Content Accessibility Guidelines (WCAG) are posted at: <http://www.w3.org/TR/>.

The content should be checked from time to time, as the guidelines are updated.

2.4.4 Telecommunications

2.4.4.1 Public Telephones

In every bank of public telephones at least one telephone should be wheelchair accessible, clearly identified by the international symbol.

To allow a person using a wheelchair to be located side on to the accessible telephone, this shall be no closer than 300mm to an obstruction at the sides.

Accessible public telephones shall have coin slots within reach of wheelchair users, they shall be operable from a comfortable position, and the receiver and center of the push buttons shall be at a height of about 900 - 1,000mm. The phones need be equipped with a volume control and have at least 600mm cord on the handset.

2.4.4.2 Internet Environments

The internet is vital in terms of communications via networks. Accordingly, good internet communication environments must be provided. In preparing terminals to connect to the internet, they must be physically accessible, and must be equipped with the appropriate features that can be used by all the people.

Finally, there will be more technological solutions in the future market which are

strongly recommended.

Internet access environments should be provided in the venues and accessible routes.

2.4.5 Signage

2.4.5.1 Introduction

The use of wayfinding, descriptive and task specific signage that uses pictograms, directional arrows and written terms, allows people of any nationality and of any level of physical capacity to move with freedom, predictability and most importantly safely.

For many people with a disability, seeing the international logo for access on signage boards and directional boards provides confidence that they are heading in the right direction to facilities that are accessible.

Accessible signage becomes more critical when the accessible pathway is different from that which the majority of spectators or visitors are using.

2.4.5.2 Main Elements

The key principles of signage include:

The use of international symbols is encouraged in all signage. As regards to people with a disability, the respective international symbol, a directional arrow and a written explanation as to the feature it highlights are required.

Signage highlighting specific areas e.g. toilets (male/female/accessible unisex) shall be installed on the entry door at a height of 2,500mm to alleviate visual sight lines above a crowd of people.

Directory and information boards shall include identification of accessible features highlighted by the international logo for access.

Use only Arabic numerals and sans-serif lettering. Serif lettering styles are difficult to read because the thin portion of the letter often disappears to people with a visual impairment.

Have a glare free surface. Signs mounted on reflective backgrounds or Plexiglas are ineffective for people with a visual impairment.

Overhead signage is also ineffective for most people who have a visual impairment. Signs need to be mounted so that a person using a wheelchair as well as people with a visual impairment can see them more easily.

Signs have characters and symbols in colours that highly contrast with the background of the sign. Single colour backgrounds are preferred.

A character width-to-height ratio must be 3:5 to 1:1.

Wayfinding markers along pathways should combine colour, texture and common mounting/location along the route to direct users.

Networked or digitized signage is highly desirable because they offer complete control of the sign's font, point size, colour and contrast, as well as easily controlling sign content as required.

Character guidance in braille should be prepared after hearing the opinions of the visually impaired.

2.4.5.3 Locations of Accessible Signage

Appropriate external locations for accessible signage include:

- Transportation facilities such as train stations and bus stops on accessible routes
- Accessible car parking (if provided)
- Main intersection areas on accessible routes
- Accessible pathways to accessible venue entries
- Pathways to accessible seating in venues
- Pathways to accessible toilets in venues

2.4.5.4 Symbol Sizes

Symbol size shall be the following according to viewing distance:

| Distance | Symbol Size (mm) |
|-----------|------------------|
| < 7m | 60 x 60 |
| > 7 < 18m | 110 x 110 |
| > 18m | 200 x 200 |

2.4.5.5 Letter Sizes

Letter size shall be the following according to viewing distance:

| Viewing distance | Japanese character height | English character height |
|------------------|---------------------------|--------------------------|
| 30m | 120mm or more | 90mm or more |
| 20m | 80mm or more | 60mm or more |
| 10m | 40mm or more | 30mm or more |
| 4 - 5m | 20mm or more | 15mm or more |
| 1 - 2m | 9mm or more | 7mm or more |

2.4.5.6 Other Requirements

Signage at train stations shall be posted at a height that is easy to read. Guide boards shall use large bold characters that are as concise as possible in consideration for the elderly and people with a disability.

Guide board maps and letters shall use colours that are easy to understand for the elderly and people with a disability.

Signage on transportation vehicles shall use characters that are easy to read.

Broadcasts on delays and service interruptions on the vehicles shall be displayed visually with characters.

In conjunction with the signage, voice guidance (conveying content describing the situation and facilities in words) and sound guidance (conveying locations and directions using electronic sounds and chirping sounds) shall be installed. Voice interference shall be prevented as much as possible, and content that can lead people to locations staffed by facilities staff members shall be included.

Visual information (textual information) using large monitors and the like should be provided at the venues.

Tools should be provided through which textual information can be provided for the hearing impaired.

2.4.6 Assistive Hearing Devices

2.4.6.1 Introduction

Hearing loss is by far the largest single disability group and the one often overlooked when designing facilities to accommodate people with a disability. Organizers staging major events need to provide hearing aids for people who are hard of hearing in addition to sign language interpreters for people who are deaf.

Providing appropriate service to people who are hard of hearing is simple if organizers remember that like deafness, this is just a language barrier that can be overcome using similar approaches to overcoming any language barrier, such as translating in a foreign language. Assistive hearing aids are required at all major ceremonies, awards presentations, community activities and/or other official events.

Assistive hearing aids are as follows:

2.4.6.2 Induction loop system

A device that transmits clear sound to a hearing aid or cochlear implant. Voice signal is transmitted through a magnetic guide amplifier to a loop antenna or wire placed around the floor. The signal can be heard as a voice signal with compatible hearing aids or cochlear implants.

2.4.6.3 FM Loops

Used in both large venues and in one on one service counter applications. Literally a low output FM radio signal broadcast through a specific area. The voice/signal is picked up through a conventional microphone and transmitted through the FM loops. Users can access the signal via a special receiver, FM radio or via the 'T' switch available on most modern hearing aids. Since these are RF units, line of sight to the FM transmitter is not required by the user.

Note: FM loops are radio frequency signals and therefore are affected by other RF and atmospheric conditions. In addition, since these signals are available through the public FM radio band, they do not provide a secure communication to people who are hard of hearing.

2.4.6.4 Passive Infrared Emitters

Best used indoors since they can be affected by direct sunlight. These are placed strategically around the room to provide line of sight service to the user. Any line level signal can be distributed via this system. Users typically need to pick up a receiver for this device at an event service counter to access the signal.

Note: These units are commonly used in the delivery of simultaneous interpretation in other spoken languages. For the purposes of people who are hard of hearing, providing a receiver in the appropriate language is all that is required to accommodate users with hearing loss.

2.4.6.5 Captioning

Text versions of all spoken word/audible content displayed on the main video displays or via dedicated screens located throughout the audience seats.

Note: Closed captioning refers to a captioned signal that requires a decoder to view e.g. a television or video screen. Open captioning is simply text displayed on screen for all to see. Open captioning is recommended for most IPC event requirements.

Textual information should be provided in soundproof spectator rooms.

2.4.6.6 Sign Language Interpretation

Sign language interpretation benefits people who are deaf and hard of hearing, and should be considered for major ceremonies, community activities, and/or other official events. In such cases, information should be provided through international sign language as well.

Interpreters should stand on stage, or video should be shot backstage and broadcast on video screens (preferably standing in front of a plain bright background). If interpreters are backstage a large monitor should be provided so that interpreters can accurately portray what is happening onstage.

In the case of meetings, seminars, and other kinds of activities for small audiences, when it is known that a specific person is deaf or hard of hearing, sign language interpretation for the individual concerned should either be allowed (if brought in by the individual who has applied to attend) or arranged for the individual (in case he/she was invited by the organizers).

2.4.6.7 Live Audio Description Services

Live audio description is a service where narrators verbally describe the event for participants who are blind or visually impaired. The user hears the audio description through earphones connected to a receiver. The same receivers can be used as those for assistive hearing devices, provided they have multiple channels.

2.4.6.8 Other Requirements

Voice guidance requires consideration of the noise environment, clarity, rate of speech, and accurate content. The voice should be delivered so that communication is clear out into the distance.

2.5 Transportation Means

2.5.1 Overview

2.5.1.1 Contents

This section contains the following topics:

| Topic |
|-------------------------------------|
| 2.5.2 Road Transportation Means |
| 2.5.3 Rail Transportation Means |
| 2.5.4 Air Transportation Means |
| 2.5.5 Maritime Transportation Means |

2.5.2 Road Transportation Means

2.5.2.1 Cars & Taxis

In order to be accessible, a car/ minivan or taxi needs to fulfill certain conditions to allow easy access and use by people with mobility impairment. These are:

- Have side or rear access to allow a wheelchair user to remain in their wheelchair while being transported;
- Have a front passenger seat which should swing out towards the user to ease entering the vehicle;
- Have enough height clearance to allow a tall person seated in own wheelchair to be safely and conveniently transferred;
- Have a balance between space available for wheelchair users and standard seating, so that carers and escorts can sit together.

Infrastructure required:

- A kerb linking to an accessible pathway
- Adjacent kerb ramp access when unloading onto the roadway
- Clear lighting
- Rest seating

Types of loading mechanisms

- An external hydraulic hoist
- A rear-loading ramp - it allows direct access for a wheelchair (sometimes two) into the rear of the vehicle. Due to the ramp gradient, driver, or carer, must often assist a person who uses a wheelchair into the vehicle.
- A side-loading ramp - it allows direct access for a wheelchair into the side of the vehicle.

Note: Some wheelchair users prefer to transfer from their wheelchair into the passenger seat. Vehicles with low seats are preferable in such cases.

Vehicle approaching notification equipment shall be installed in electric hybrid, electric, and fuel cell vehicles to alert passengers when vehicles are approaching.

2.5.2.2 Coaches (airport bus)

In order to be accessible, airport buses need to have a loading ramp that allows entry of a person in the vehicle without having to move out of their wheelchairs.

The internal hydraulic hoist stored in the luggage compartment space is most often used for motor coaches. They are often positioned in the mid-section of the bus and they rise up to the height of the floor of the bus. Due to the size and shape these types of mechanisms do necessitate a loss of seating in the bus.

Two or more wheelchair spaces should be installed in positions that are easy to board.

2.5.2.3 Public Buses

In order to be accessible, public buses need to fulfill certain conditions. These are:

- Have a low floor chassis with an entrance step height of 270mm or less when getting on and off and lowering mechanism that allows them reach close to the sidewalk, and using a ramp, passengers are able to move from the vehicle to the sidewalk without a step;
- Have suspension lower on one or both sides to allow the bus to lower to the same height as the kerb;
- Have at least one door accessible. Two accessible doors are best practice, provided that the internal corridor linking the two doors has a minimum width of 800mm;
- Have a reversing or folding type ramp automatically or manually set from the bus. This type of mechanisms allows direct access through the center door of the bus.
- Accessible buses shall have two or more wheelchair spaces installed.

Infrastructure required:

- A set down area with a kerb linking to an accessible pathway
- Adjacent kerb ramp access when unloading onto the roadway
- Accessible pathway to the loading/unloading area
- Clear lighting
- Rest seating

2.5.2.4 Accessible Vehicles Technical Specifications

The main technical specifications of any accessible vehicle are as follows:

- Door clearance height shall be at minimum 1,400mm;
- Internal clearance height shall be at minimum 1,500mm;
- Doorway width shall be at minimum 800mm;
- Loading platform shall be at minimum length of 1,300mm. When unavoidable, 1,200mm is possible.
- Loading platform shall be at minimum width of 800mm. When unavoidable, 750mm is possible.
- The passenger lift load capacity shall be 200kg, and it should be able to support up to 300kg.
- Loading time is recommended to be less than one minute;

2.5.2.5 Load Zones and Public Bus Stations

- All accessible public transport stops should provide lighting, shade/shelter and rest seating with side arms and backrests. The shade/shelter should be installed to cover not only the front part, but the middle part of the bus as well.
- All loading and unloading zones shall have a kerb height that appropriately interfaces with an Ultra-Low Floor Bus - typically 150mm in height.
- The minimum width at a loading and unloading zone is 1,800mm. This will allow two wheelchairs to pass.
- All island type loading and unloading areas (loading and unloading areas that cannot be reached without crossing the roadway) have kerb ramp access to the adjacent pathway from the roadway to allow direct access by people use wheelchairs.
- Rubbish bins, rest seating, lighting, timetables and similar should be placed away from the pathway so as to not cause an obstruction to pedestrians.
- Place guiding blocks (truncated domes) in a vertical direction in the loading and unloading area 300mm from the edge of the kerb, with an overall width of 300mm or more. (600mm preferred)
- Care shall be taken to ensure that buses can stop properly at bus stops so that users can get on and off smoothly while using the ramps.
- Service information including destinations shall be introduced in voice and text format at bus stops in consideration of those with limited vision (including guidance provided by human support)
- In addition, when public taxi loading and unloading zones will be installed near the venue, designated loading and unloading zones for “Universal Design Taxis” - taxis certified in accordance with the Universal Design Taxi Certifications Guidelines of the Ministry of Land, Infrastructure and Transport – should be installed.

2.5.2.6 Requirements for Parking Lot Areas (Parking Areas Requirements)

There will be no public parking available during the Games, and parking areas for people with a disability (designated parking spaces established outside of the road) will not necessarily be located at all venues. When such designated parking will be installed, they must meet the following requirements. In addition, in the event that public parking is to be installed, a minimum of 2% (best practice is 3%) of car spaces should be provided for people with a disability.

These spaces shall be located at the most convenient point for the users taking into account proximity to:

- Pedestrian entries and exits;
- Lifts and ramps;
- Accessible toilets; and
- Pay stations.

As a general principle, the parking space for an accessible vehicle corresponds to 1.5 times the size of a parking space for a standard vehicle (i.e. three standard parking spaces provide for two accessible parking spaces).

The standard on parking spaces width is stipulated in the reference table 51.

Reference table 51: Parking space width

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|--|
| (Reference) [Width] At least 1,400mm on either side of the vehicle (Recommendation: Japanese government's Standard) 3,600mm (Recommendation: IPC) At least 3,500mm (Standard : Japanese government's Standard) | (Reference) [Width] At least 1,400mm on either side of the vehicle (Recommendation: Japanese government's Standard) 3,600mm (Recommendation: IPC) At least 3,500mm (Standard : Japanese government's Standard) | Not applicable | Not applicable | Not applicable |

One out of every eight parking spaces for use by people with a disability shall be big enough for a van equipped with a lift installed on the side.

A total width of 4,600mm shall be required for the van parking. (The transfer zone widens by 700mm for the lift portion.)

Considering the opening and closing of the rear door, a space with a depth of 8,000mm or more should be secured.

Other requirements include:

- Parking bays to be of a gradient not greater than 1:50 (2%).

(see the reference table 52)

Reference table 52: Parking space gradient

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|--|--|--------------------------------|--|
| Not applicable | (Reference) [Gradient of the parking lot] Less than 1:50 (2%) | Not applicable | Not applicable | Not applicable |

- The standard for the ceiling height in underground parking station is stipulated in the reference table 53.

Reference table 53: Ceiling clearance at the underground car park

| Accommodations in Olympic Village (indoors) | Facilities in the venues other than accommodations (indoors) | Outdoor pathways in the venues including Olympic Village | Sidewalks of accessible routes | Public transportation facilities used as accessible routes (Premises of railway stations, port facilities, etc.) |
|---|---|--|--------------------------------|--|
| Not applicable *The use of underground car park is not assumed during the Games. | (Reference) [Ceiling clearance at the underground car park] 2,500mm (Recommendation: IPC) 2,300mm (Standard: IPC) * When the parking of a motor coach is assumed, ensure a necessary clearance. | Not applicable | Not applicable | Not applicable |

The exit routes shall have little crossing with the flow of automobile traffic, enabling safe and smooth use. The exit routes should have colours on the floor to make it easily recognizable. Where designated parking for people with a disability is not directly connected to the sidewalk, it is important to minimize the need for people with mobility impairment to travel in the flow of automobile traffic. Where crossing with the flow of automobile traffic is unavoidable, a marked pedestrian route must be provided to the closest exit or accessible sidewalk.

Shade should be installed so that passengers do not get wet in the rain when they are getting on and off.

2.5.2.7 Signage for Accessible Parking

Clear arrival, exit, and directional signage legible in all lighting conditions should be provided.

Signage shall be provided so that drivers can soon recognize which lane they should be in for accessible parking.

Signage shall be provided at every internal change in direction.

All ground/floor surfaces, including painted signs, shall be slip resistant.

An international symbol of access shall be provided on both the ground/floor (best

practice is 750mm²) and vertically in front of each parking space, no lower than 1,500mm so that it can be seen over a car.

Access provisions for the car park exit shall be similar to, and consistent with, those for the car park entry.

2.5.3 Rail Transportation Means

2.5.3.1 Introduction

Standard transportation routes, such as metro lines and trains are vital for effective transport in a Host City.

In order to provide high level services to all passengers who need support, the organizing committee needs to work with transport operators to create the widest possible number of journey opportunities for all people visiting the Games, by enhancing and improving access to information, infrastructure, carriages and staff training.

Especially for the Games, transport planning and design must examine the question of the impact on access for all people.

The key objective is to develop an Accessible Transport Strategy, which will encompass spectators and stakeholders travel from home all the way to venue and return.

2.5.3.2 Accessible Stations

The rail transport operators that are subject to the guidelines shall make carriages of both commuter train and limited express train accessible to all wheelchair (including scooter) users including Games' officials and spectators.

A simple approach shall be taken when checking that the conditions for compliance are met in terms of safe operation, including dimensions of the wheelchair.

Railway stations must include infrastructures and services that are accessible to the widest range of potential users. Main elements are:

- Step free access to platforms from surrounding roads, etc.;
- Low counters with note paper and white boards for written communication, communication boards, magnetic induction loops, sign language support, etc., and alternative formats of printed information;
- Accessible toilets;
- The surfaces of platform shall be slip-resistant. Textured paving on platform edges shall be slip-resistant and the material shall exhibit a high contrast effect with the platform edge warning strips taking into consideration the

elderly and people with a disability.

- On platforms where positions for passengers doorway are fixed for every train arriving and departing and where trains automatically stop at the fixed position (except those related to the funicular railway), platform doors or movable platform fences shall be installed (and when there is a risk that might impede the smooth flow of passengers, guiding blocks (truncated domes) and other equipment shall be installed to prevent people with a visual impairment from falling). Platform doors, movable platform fences, guiding blocks (truncated domes), and other equipment to prevent people with a visual impairment from falling shall be installed on platforms other than those mentioned above as well.
- When installing guiding blocks (truncated domes) to the edge of the platform, a protruding line shall be added to indicate the inside of the platform.
- Equipment such as ramps with ample length, width, and strength so that wheelchair users can get in and out of trains smoothly shall be located where it can be readily available.
- With respect to steps or gaps between the platform and the train carriage, the step should be made as flat as possible, and the gap should be as small as possible. Especially when railway operators are installing platform doors or replacing train carriages, they shall make efforts to eliminate height difference while ensuring passenger safety and safety in train carriage operations. Even if equipment such as a ramp is not used, measures should be taken so that wheelchair users can get on and off the train by themselves.
- Ensure sufficient human support be provided at ticket gates, based on the expected number of customers using them during the Games.
- At least one widened ticket gate with an effective width of 800mm or more shall be installed. The effective width should be 900mm or more considering the mobility of wheelchair users. In addition, when one widened ticket gate is installed as a manned ticket gate, one or more additional widened ticket gates shall be installed in the gate where there are automatic ticket gates. This shall not apply, however, in cases where such installment is structurally difficult.
- Ticket gates where people with a visual impairment are guided by guiding blocks for visually impaired persons shall take not only IC cards, but also tickets by way of manned ticket gates, etc.
- When installing platform doors, movable platform fences, and fixed platform fences, the train carriage number and entrance position (door

number) shall be displayed in text and braille (with tactile guidance) on the left side of the opening. Further, with respect to the positions that are displayed, for the platform door it shall be on the moving door side or the fixed side (at a height of about 1,400 – 1,600mm); for the movable platform fence it shall be on the upper side of the fixed part (at a height of about 1,200 – 1,300mm); for the fixed platform fence it shall be on the upper side of the fixed part (at a height of about 1,200 – 1,300mm). The information in braille (with tactile guidance) on loading/unloading position should be displayed on the left and right sides of the opening.

- The train carriage number and entrance position (door number) shall be displayed in text and braille (with tactile guidance) at or near the entrance door of each train carriage. This shall not apply, however, if there are unavoidable reasons such as inconsistent formation of the train carriages.
- The guidance display shall be installed at a height of about 1,400 - 1,600mm from the floor so that it is easy for people with a visual impairment to check with their fingers.
- It shall be displayed on the front side of the door, and on the left side door with double doors.
- Limited express train seat numbers shall be displayed with the largest characters possible, and in sharp contrast with the surroundings, so that they are clearly and easily recognized. Text displays as well as braille displays of the seat numbers should be located in the appropriate positions on the shoulder of the seats facing the aisle. The shape and form of the braille shall conform to JIS T0921.
- Guidance shall be conducted in the station to ensure that all passengers can move smoothly.

2.5.3.3 Accessible train carriages

Train carriages must include features that make them accessible to the widest range of potential users who need care. Main elements are:

- The effective width must be 900mm or more at the passenger entrance door nearest the wheelchair space so that wheelchair users can get on and off the train smoothly.
- Provide at least one wheelchair space per carriage or at least two wheelchair spaces per train (1,300mm x 800mm);
- Wheelchair spaces shall be arranged so that there is no impediment in the aisle or to passage on the train carriage.

- The wheelchair space shall be easily identifiable, and an international symbol mark shall be displayed in a position in the area that is easy to see in order to easily obtain the cooperation of the other passengers. If structural issues make it unavoidable, the multi-purpose room described above will be regarded as the wheelchair space.
- One or more of the aisles from the passenger entrance to the wheelchair space and from the wheelchair space to the toilets with wheelchair access (only when such toilets are installed) shall have an effective width of 800mm or more.
- Have wheelchair spaces that are located in or have access to food and beverage areas;
- Clearly audible voice guidance and text format operational information shall be provided, including information on the next station, journey information (including accidents or delays), and the like.
- Train operators shall provide assistance for passengers getting on and off the train even in the congestion during the Games;
- Accessible toilets shall be installed at positions close to wheelchair seating on limited express trains;
- The toilet flushing button, emergency communication equipment, and shape, colour, as well as placement of the toilet paper shall conform with JIS S0026 for people with a visual impairment and physical disability, and along with the emergency button in the ordinary toilets, they will be installed in a manner preventing them from being pressed by mistake;
- Tactile panels should be installed so that people with a visual impairment can understand the arrangement of the equipment in the toilet. In addition, toilets equipped with a shower feature should be installed;
- Seating should be arranged train so that companions can sit near the wheelchair users on limited express as well;
- Have contrasting colours on all handrails;
- Have automated doors.

2.5.3.4 Light Rail and Tram

Provisions for the new transportation system, etc. including stations and carriages are in general the same as for the trains.

The exceptions are the toilets (typically not provided for passengers in such means), and access to food and beverage.

2.5.3.5 Other Provisions

Availability of a sophisticated web-based solution for transport information, on line booking etc., will help a lot of passengers of any kind of ability, but it is critical for a passenger who needs to ensure accessible chain of transport. With respect to wheelchair seating on limited express trains, for example, an easy reservation environment (using the Internet and the like) should be established for passengers coming to Japan from overseas.

In addition, railway operators should clearly specify contact information for advance inquiries from people with a disability using web pages.

Existence of well-trained staff is fundamental.

2.5.4 Air Transportation Means

2.5.4.1 Introduction

Ability to travel by air is a key parameter for equal opportunities and inclusion in professional and social activities.

People with a disability and other individuals with accessibility needs often experience challenges when they try to travel by air.

For an airport to be accessible, it needs that all passengers going through the departure and arrivals procedures receive an equivalent level of service, and people with a disability and other individuals with accessibility needs as well as their assistance dogs (guide dogs, service dogs, and hearing dogs) are able to proceed to the aircraft door or leave the airport in an independent way.

For this to be realized a number of provisions need to apply as regards to the pathway of a passenger in and around the airport.

Other to physical barriers, frequently existing, passengers who declare their special needs may have to address extra costs, availability of seats, etc. from some airlines. In addition, there is the problem of people with a disability being asked to explain about their own impairments and about their assistance dogs many times at the airport before they arrive at the counter. Therefore, parties concerned shall share information and avoid repeatedly confirming it. It is important for the airlines and airport operators to understand that conventional methods for using airplanes are problematic for many users.

As the population continues to age and people with mobility impairment are increasing, this will become an even greater challenge that they need to address.

2.5.4.2 Accessible airports

2.5.4.2.1 Parking Areas

- The width of designated parking spaces is as follows.
- At least 1,400mm on each side of the car (Recommendation: Japanese government's standard)
- 3,600mm (Recommendation: IPC)
- 3,500mm (Standard: Japanese government's standard)

Two spaces can share the transfer zone to help minimize the space requirements for designated parking for people with a disability.

Such parking spaces shall be level - have a maximum cross-slope of 2% in any direction, have a durable, slip resistant surface, and be located as close as possible

to an accessible entrance.

The ceiling height of parking spaces for people with a disability in multistory car parks should be at least 2,300mm.

1 in 8 designated spaces need to accommodate side lift vans.

Van parking requires a total width of 4,600mm (expanding the transfer area by 700mm to accommodate the lift).

Considering the opening and closing of the rear door, a space with a length of 8,000mm or more should be secured for the van parking space.

Wheelchair users are at risk in parking lots because they travel in the seated position, making them more difficult to see when wheeling behind vehicles. Also, people with reduced agility are unable to react quickly to danger and get out of the way of traffic. The exit passage shall therefore be installed with little crossing with the flow of automobile traffic, enabling safe and smooth use. The exit passage should have colours and the like on the floor to make it easily recognizable.

Where designated parking is not directly connected to the sidewalk, it is important to minimize the need for people with mobility impairment to travel in the flow of automobile traffic.

Where crossing with the flow of automobile traffic is unavoidable, a marked pedestrian route with painted signs on the ground must be provided to the closest exit or accessible sidewalk.

Exit doors serving designated parking areas must be accessible to people with mobility impairment.

Specific requirements for the doors are stipulated in “2.1.7 Doors and Doorways”.

Designated parking spaces for people with a disability must be clearly marked with the international symbol in a high contrast colour on the pavement either signal yellow or white against a blue background in order to be distinguishable from the driver’s seat as well. A vertical sign shall also be mounted at the front of the designated parking space, at a height of no lower than 1,500mm.

This also helps to discourage unauthorized use.

2.5.4.2.2 Parking Ticket Vending Machines

All ticket machines shall be installed on a firm, flat surface that is directly

connected to the vehicle path of travel without a level change (e.g. kerbs).

Machines must require only a minimum amount of dexterity to operate.

Parking ticket vending machines should have textual displays as well as voice guidance in consideration of people with a hearing impairment.

2.5.4.2.3 Drop Off Zones

The provisions described before about road transportation means load zones apply.

Lighting with sufficient brightness shall be ensured for safe passage of vehicles for people with mobility impairment. (Reference: IPC 60 lx)

When train/metro stations serving the airport has their own load zones, they must comply with the accessibility standards mentioned above on load zones.

2.5.4.2.4 Ticket/Check-in Counters

Service counters need to provide universal access to all users. (see “2.1.5 Furniture, Counters and Service Areas”)

Where automatic ticket machines are used to generate tickets or boarding cards, these units must provide basic access in terms of an operating height of 1,100mm or less and be on an accessible route. This does not apply, however, if there is a ticket window where a person selling the boarding passes regularly serves.

Special check-in and boarding assistance needs to be provided upon request for all people with a disability and their assistance dogs.

2.5.4.2.5 Terminal Amenities

Terminal facilities including washrooms, retail stores, service counters, kiosks, restaurants, lounges, etc. must meet the same requirements for similar facilities and services as described earlier in this document.

Hold rooms require clear space to allow wheelchair users an area to park out of the flow of traffic and designated seating reserved for use by people with a disability.

2.5.4.2.6 Information/Communications

Ensure Flight and Gate Information Displays and Baggage Information Displays are mounted at heights accessible to wheelchair users and seniors with sharp contrast. These displays should also be recognizable to people with limited vision and those who are colour blind.

Flight schedules and route information shall be provided in large print, audio, and electronic data formats.

Provide TDD telephone service for the benefit of people who are hard of hearing or deaf .

Ensure websites are compliant with W3C accessibility standards.

Airlines shall post information that is easy for people with a disability to read on web site.

2.5.4.2.7 Security Screening

For persons using a wheelchair common practice is the use of portable magnetometer device, exactly as it happens when any other passenger goes through the magnetometer and it “beeps.”

Touching the person is OK.

Overall, security screening should be performed in a way that maintains a person’s dignity at all times.

The screening shall be performed by a person of same gender.

The screening shall be performed in a way that preserves dignity of persons with a disability including wheelchair users (as for every other person).

With respect to people with a visual impairment with white canes, after confirming their request, necessary security checks shall be conducted making every effort not to give any unfavourable impression to them and handling their white canes with care.

2.5.4.3 Accessible Aircraft

For an aircraft to be accessible – and for an airline to provide good services – the following conditions must apply:

2.5.4.3.1 Embarkation/Disembarkation

Best practice is that persons with a disability embark the aircraft first, before the other passengers, and disembark last, after all other passengers have left the aircraft.

2.5.4.3.2 Aircraft Gates

Gate ramp gradient should not exceed 1/12.

Further, landing standards are stipulated in the reference table 12.

The pathway from the boarding bridge to the aircraft should not have the difference, but when the difference is unavoidable, a ramp shall be installed.

The brightness of lighting at the boarding gate, and colour of the walls, should be arranged so that it is easy for passengers with limited vision to understand the direction of travel as well.

Even in the event that that boarding bridge cannot be used, boarding and disembarking methods shall be incorporated using alternative equipment so that wheelchair users can pass through the entrance to the aircraft while they are seated in their wheelchairs.

If the passengers request, they should be able to move to the entrance of the aircraft while (sitting) in their wheelchair that they always use.

2.5.4.3.3 Aisle Chairs

An aisle chair needs to be available on board in every aircraft, able to move passengers up and down the corridor(s) as needed. This does not apply in small aircraft with fewer than 60 seats where aisle chairs are unable to use for unavoidable structural reasons. These chairs should have well-padded seats with armrests and seat belts supporting both the upper and lower body. They should also be designed in consideration of ease of use for a broad range of users.

Further, reclining wheelchairs should be available at each airport for who are difficult to remain seated.

2.5.4.3.4 Staff Awareness

All crew members need to have the disability awareness training provided by the airline to understand the characteristics of people with a disability, as well as the experience and willingness to assist passengers who require assistance.

This includes helping people move into aisle chairs and airline seats and providing support for assistance dogs.

2.5.4.3.5 Storage of Walking Aids

Appropriate storage of wheelchairs and walking aids is an important part of aircraft access.

Whenever possible, assistive devices such as these should be stored in the cabin.

Where space is not available inside, wheelchairs and walking aids shall be

stored in other locations, taking due care so that they are not damaged during transport, loading them last and unloading them first.

Wheelchairs and walking aids must never be sent through as stowed baggage items, and special precautions must be taken so that they are not damaged.

Wheelchairs and walking aids must meet their owner at the aircraft gate, in order to allow for independent travel through the airport. If doing so is difficult for structural reasons, however, or if it would take a long time to bring the walking aids to the aircraft exit, upon confirming with the passenger, an alternative wheelchair may be used to reach the delivery location.

2.5.4.3.6 Seating

It needs to be recognized that people with mobility impairment have difficulty in seating with cramped legroom.

Even more importantly, there is a need to reduce the potential for blood clots and cramping (unlike other individuals who can stand, stretch or even go for a walk).

From this point of view, in considering support during an emergency escape, passengers with or without disabilities shall be able to select their seats in the same way, and their seating requests shall be met whenever possible.

2.5.4.3.7 Access of Assistance Dogs

Airlines must take the necessary measures to ensure that passengers with a disability can smoothly accompany their assistance dogs (guide dogs, hearing dogs, and service dogs) on the flight.

The staff shall provide the necessary support after confirming with the passengers using assistance dogs. Even if there are no requests, ensure that both the passengers using assistance dogs as well as the other passengers are comfortable.

The relevant government agencies for animal quarantines and assistance dogs as well as the airlines shall disseminate in advance information on Japan's quarantine rules and laws pertaining to assistance dogs for people with a physical disability for assistance dog users visiting Japan from overseas.

2.5.4.4 Safety and Other Provisions

2.5.4.4.1 Alternate Formats for Printed On Board Safety Material

Operators need to offer alternate formats of materials generated for passenger use on-board the aircraft.

Alternate formats may include:

- Large print (minimum 18point universal design Gothic with dark characters on a light background), non-formatted text and electronic versions of all materials intended for public consumption. A minimum 14point sans serif shall be used for English text.
- Audio recording of material and its electronic data;
- When braille is created for all published informational materials, it is in Japanese as a general rule, but when English braille is created, it should be made using the abbreviated “Grade Two Braille.”

2.5.4.4.2 Passenger Briefing Cards

A disability specific passenger-briefing card intended to inform passengers to self-identify important safety features, procedures and aircraft announcements affecting them shall be provided.

The card shall include a recommendation that passengers make sure they receive a personal briefing from a flight crew member covering procedures and aircraft layout as they affect the three main disability groups (from an operators point of view): Mobility; Vision Loss and Hearing Loss.

Cards should carry the accepted international symbol of the disability group, set in contrasting colour.

Consistent colour coding of these user groups on all ticketing and dashboard displays could support operations, evacuation and loading efforts later.

An additional passenger-briefing card addressing for seniors is also advised.

2.5.4.5 Other

With respect to carrying on batteries for electric wheelchairs, respirators, etc., the airline shall provide support in accordance with the Japanese government’s standards, inform the passenger in advance of the battery safety standards, and check to ensure that these standards are met.

Because it is difficult for people with a visual impairment to recognize direction in spacious facilities such as airports, necessary human support shall be provided. In addition, routes should be simplified with contrasting colours on the floor for passengers with visual limitation.

2.5.5 Maritime Transportation Means

2.5.5.1 Introduction

In order to be considered accessible, ports and terminals as well as the vessels and ferries need to provide a seamless series of amenities and services that enable every individual regardless of disability to embark, disembark, and use the services provided to the public.

Main elements of such series are the following:

2.5.5.2 Port Services

2.5.5.2.1 Parking

Provisions for accessible parking specified before in the Guide also apply for parking at ports and terminals.

2.5.5.2.2 Ticket Sales

Ticket booths need to provide universal access to all users (see “2.1.5 Furniture, Counters and Service Areas”).

Even in cases where this is difficult, human support for operations and staffed counters shall be provided.

Drive through sales booths should not require a side reach in excess of 450mm for service.

2.5.5.2.3 Terminal Amenities

Terminal/Port facilities including washrooms, retail stores, service counters, kiosks, etc. must meet the same requirements for similar facilities and services as described earlier in this document.

2.5.5.2.4 Information/Communications

Provide schedule and route information in large print and audio versions, or in electronic data formats.

FAX transmissions shall be provided for people who are hard of hearing or deaf.

Ensure web sites are W3C compliant for accessibility.

2.5.5.2.5 Infrastructure Required

Provide a wharf or pier that allows the vessel to directly link to it without the need to negotiate steps, and secure routes from the wharf to their seats where wheelchair users are able to pass without a step and can embark and disembark

without having the wheelchair lifted. “A structure enabling passengers to embark and disembark without having to be lifted” means a structure enabling them to embark and disembark without lifting the wheels of their wheelchairs off the ground, and the height difference from the ramp thickness shall be 20mm or less.

In the event that height difference in embarking and disembarking is unavoidable due to structural problem, the difference shall be minimized by installing ramps.

Have a permanent or temporary ramp that links directly to the floor (and additional ramp to bridge the gap between the wharf or pier and the vessel) of the vessel.

When embarking using a floating pier (pontoons), the ramp bridging between the wharf and the floating pier should not have a steep slope even in the height change of the tide.

The gangways for embarking and disembarking from the ships shall have an effective width of at least 900mm, or more and they shall have sufficient width for the elderly to reach the handrails on both sides in order to move safely.

Handrails shall be installed on both sides of the gangway.

In order to provide support of non-standard large electric wheelchair users as well, support system should be prepared to help with embarking, and disembarking.

Gangways and ramps should not be transparent so as not to (worry frighten) assistance dogs.

Guiding blocks for visually impaired persons shall be installed on all paths leading to the boarding facilities including gangways, after leaving the terminal. However for connecting bridges, and floating bridges where there is a risk of passengers falling over due to the impact of the waves and portions, and the path which is not consistent in ships docking at the wharf, it is appropriate to provide human support instead of installing guiding blocks.

2.5.5.3 Vessel Services

2.5.5.3.1 Access to Vessel

Conventional ingress and egress on and off vessels can be problematic for many users. As the population continues to age and people with mobility impairment are increasingly common, this problem will become an even greater challenge that needs to be addressed.

Caution is required for independent embarking and disembarking from a vessel in cases where trouble is likely, such as in bad weather. There is a particular need

for caution in case of small vessels where passengers enter and exit off car decks.

The crew and maritime companies need to minimize tripping hazards, reduce vertical and crossing gradients, and provide better marked pedestrian routes on and off vessels.

If it is unavoidable to create a height difference or gradient between the pier and edge of the vessel, the difference shall be made readily distinguishable through the large difference in colour lightness, hue, and saturation with those in the connecting paths.

Sufficient lighting and brightness shall be secured to facilitate smooth movement for the elderly and people with a visual impairment.

One or more of the entrances for passenger embarking and disembarking (gangway or deck entrances) shall have ramps or other equipment installed so that wheelchair users can pass smoothly, and the ramps shall have a gradient of 1/12 or less.

All crew members working in these areas of a vessel need to have the disability awareness training provided by each company to understand the characteristics of people with a disability as well as welcoming and awareness training, and training on how to accommodate assistance dogs. They also need to have experience and willingness to assist passengers who requests assistance on and off the vessel.

2.5.5.3.2 Alternate Formats for Printed Material

Operators need to offer alternate formats of materials generated for passenger use on-board the vessels.

Alternate formats may include:

- Large print, audio recording, and electronic data versions for all informational materials that are commonly available for passengers. (When braille is created for all published informational materials, it is in Japanese as a general rule, but when English braille is created, it should be made using the abbreviated “Grade Two Braille”.)

2.5.5.3.3 Vessel Amenities

All on-board facilities including common and unisex washrooms, retail service counters, kiosks, restaurants, lounges, etc. must meet the same requirements for similar facilities and services as described earlier in this document.

2.5.5.3.4 Passenger Seating

Universal design principles need to apply to the fullest extent possible.

All seating on board needs to accommodate a broad range of individuals.

Vessels should not only offer high stools with no back; or bench seating with no armrests or kick space, etc.

At least one accessible seat shall be installed for every 25 passenger seating.

Accessible seats must have a space between the seats in front of them that enables wheelchair users to transfer (at least 850mm), and the floor surface shall have a slip resistant finish.

Among accessible seats, chair seats shall have flip up armrests on the aisle side.

With respect to accessible seats that have a bed, the height of the top of the bed shall be about 400 - 450mm, the width at least 1,400mm, and the depth at least 1,350mm. Alternatively, a circular space of at least 1,500mm in diameter shall be kept so that wheelchair users can freely move from the entrance to the room to the bed and around this space, and the space in the aisle in front of the bed shall allow for wheelchair turning.

Accessible seating needs to be integrated into different areas of the vessel on the condition that evacuation routes are secured so that passengers with a disability can smoothly evacuate in the event of an emergency and evacuation guidance shall be implemented.

Further, at least one route should be secured for accessible seating so that passengers can access washrooms and kiosks, and enjoy different scenes, on paths to the areas where wheelchairs can turn.

Grouping all the wheelchair users into one area is not appropriate.

People with mobility impairment should have a choice of seating in different areas, as do other passengers.

Seating areas therefore need to integrate open spaces that can be used by wheelchair and scooter users.

Wheelchair spaces with a depth of at least 1,350mm and a width of at least 800mm shall be installed at locations that wheelchair users can use conveniently, at a ratio of one for every 100 passengers. Wheelchair spaces should have a depth of at least 1,400mm and a width of at least 900mm.

Handrails and (equipment that can firmly fix wheelchairs) must be installed at locations where wheelchair users can freely use them in the wheelchair space.

In addition, folding chairs and removable chairs should be set up in the wheelchair space to the extent not affecting the safety so that companions can sit together with wheelchair users.

Further, five percent of total designated accessible seating (at least one

location) must accommodate assistance dogs - extra floor space of 500mm x 1,300mm per seat will need to be allotted. Assistance dogs can accompany their owners on board, and after confirming with the owners, they shall be guided to the space where they can be together with their owners.

Where there are passenger lounges, at least 5% of the seating in each lounge must have a design and an adjacent clear floor space that permit easy transfer of a person to and from a wheelchair. An open space is not required, however, next to the seats arranged at tables defined below, that are suitable for the smooth use of wheelchair users.

In addition, tables shall be arranged with a structure that wheelchair users can use while they are seated in their wheelchairs at a ratio of at least 1% of seating accommodations. Tables with a structure that wheelchair users can use while they are seated in their wheelchairs have wheelchair arm support and foot support under the table, with a structure that allows wheelchair users to have meals while they are seated in their wheelchairs, and with a height of at least 650mm at the bottom of the table, a depth of at least 450mm, and a table surface of about 700mm.

Wheelchair spaces installed in the lounge should be large enough for assistance dogs to lie down.

Passenger seat signage shall be installed at locations near the seats that are easy to understand, and they shall be easily recognizable, regardless of disabilities, and for visitors from overseas as well.

Seat height shall be a maximum of 480mm from floor, approximately 420mm deep, and 420mm wide.

2.5.5.3.5 Safety Provisions on Board

A specific passenger-briefing card intended to inform passengers with a disability about important safety features, procedures, and vessel accessories affecting them should be provided.

The card shall include provisions for people with mobility, vision and hearing impairments;

They shall also recommend that passengers may receive a personal briefing from a crew member covering procedures and vessel layout.

Cards should carry the accepted international symbol of the disability group, set in a broad field of colour.

Consistent colour coding of these user groups on all ticketing and dashboard displays could support operations, evacuation, and loading efforts later.

An additional passenger-briefing card addressing seniors is also advised.

In the event of an emergency, carers and staff members must provide support and assistance to the elderly and people with a disability in consideration of their respective characteristics.

Equipment must be installed to assist people with a physical disability to move in the event of an emergency, assisting them with a smooth escape using chutes, while implementing smooth transfers on board.

Equipment providing textual displays as well as audio device must be installed to convey information on destination port name and other information regarding operations of the vessel.

The relevant government agencies for animal quarantines and assistance dogs shall disseminate in advance information on Japan's quarantine rules and laws pertaining to assistance dogs for assistance dog users visiting Japan from overseas.

2.5.6 Other requirements for public transportation facilities

At least one ticket vending machine in public transportation facilities shall be user-friendly to the elderly and people with a disability. When installing touch panel ticket vending machines, they must be user-friendly to people with a visual impairment by providing numeric keypads and voice guidance, for example. This does not apply, however, if there is a ticket window where a person selling the boarding passes regularly serves.

Signage in public transportation facilities (train station ticket gates and airport boarding gates) shall be installed at a height and position that is easy to see. Guide boards shall use large bold characters that are as concise as possible and for the elderly and people with a disability. Guide board maps and letters shall use colours that are easy to understand for the elderly and people with a disability.

Signage on transportation vehicles shall use characters that are easy to read. Broadcasts on delays, service interruptions and the like on the vehicles shall be displayed visually with characters.

In conjunction with the signage, voice guidance (conveying content describing the situation and facilities in words) and sound guidance (conveying locations and directions using electronic sounds and chirping sounds) shall be installed in locations required for people with a visual impairment. In addition, voice guidance and the like should be installed near facilities that are regularly staffed. Voice interference shall be prevented as much as possible in public transportation facilities.

Internet access environments should be created in the venues and accessible

routes.

Note paper for written communication, white boards, communication boards, and equipment such as magnetic induction loops, sign language support shall be installed or prepared for people with a hearing impairment at counters in airports and train stations on the accessible routes. In addition, when there are staff members available to facilitate communication through sign language or there are magnetic induction loops, signage shall clearly indicate them. The public transportation facilities should be equipped with devices that can provide emergency information by providing audio and textual displays in consideration of people with a visual or hearing impairment.

Training is required for staff members who deal with passengers that need support in terms of accessibility in public transportation facilities and train carriages, so that the staff members can understand their psychological and physical characteristics, specific ways to deal with and support them, as well as specific ways to accommodate assistance dogs. Further, the training should be designed to promote deeper understanding with persons with a disability participating as lecturers. Staff members other than those directly dealing with passengers should also receive the necessary training using the content of the training above as a reference.

3 Training for Accessibility

3.1 Overview

3.1.1 Introduction

This chapter describes the character, content and delivery process of Disability Etiquette/Awareness Training, Games/Job-specific Training on Accessibility, and Venue-specific Training on Accessibility. Such training constitutes a fundamental factor for successful service provision, as it is recognized that attitudinal and communication barriers, as well as misconceptions and stereotypes may form barriers and obstacles even more difficult than architectural ones.

The main recipients of such training are OCOG's staff members and Games volunteers. The delivery of the training involves the following three phases:

1. Disability Etiquette/Awareness Training
2. Games/Job-specific Accessibility Training
3. Venue-specific Accessibility Training

In this chapter, there is a description of the content items, the organization of the training programme, and the delivery process/procedures for each of these phases.

3.1.2 Aim of Training

The aim of Disability Etiquette/Awareness Training and Accessibility Training is to enhance the understanding of service at the Games among all Games staff and volunteers, to clarify issues related to disabilities for the service staff, and to eliminate prejudice.

Training should be set within the context of other mainstream customer care training and must furnish participants with the tools and confidence to reflect basic Disability Etiquette/Awareness knowledge to their roles.

Training must be effective, culturally appropriate, and focus on practical improvements, which can ensure a high quality Games experience for all persons with a disability.

This chapter contains the following topics:

| Topic |
|--|
| 3.2 Disability Etiquette/Awareness Training |
| 3.3 Games/Job-specific Training on Accessibility |
| 3.4 Venue-specific Training on Accessibility |

3.2 Disability Etiquette / Awareness Training

3.2.1 Presentation

The OCOG needs to deliver high quality, well delivered training to all Games workforce which ensures that stereotypes and misconceptions do not create attitudinal and communication obstacles which in turn form barriers to access and inclusion.

3.2.2 Scope of the Training

All staff and volunteers have an opportunity to contact with local residents, colleagues, and elite athletes who have disabilities. It is advisable, therefore, that all of the Games workforce, regardless of their post, should have some Disability Etiquette Training, to deepen their understanding of disabilities.

If staff members have previous experience with similar training, they should still attend as a refresher course.

3.2.3 Content of the Training

People with a disability require the same customer services as people without a disability. Therefore, people with a disability need to be provided service in the appropriate manner respectively. Disability etiquette training deals with what satisfactory service at the Games is, and how to meet the needs of people with a disability. Understanding exactly what the participants in the Games want requires you to concentrate on the person rather than their impairment.

3.2.4 Training Themes

The main themes of the training are:

- ✧ **Concentrate on the person rather than his or her disability.**

People who have a disability are people, first and foremost. The emphasis should always be about the person rather than their disability.

✧ **See the person first and foremost.**

Be aware of the many opportunities to interact with a variety of persons with a disability in the Games, among athletes, spectators, staff, volunteers, or members of the public. Their needs may be different, but your approach should not!

✧ **Do not feel sorry for people with a disability.**

The people with a disability you meet are either colleague here to work, spectators here to have a great time or athletes here to compete. They are not people worried about their disability who require your pity.

✧ **Remember that not all people with a disability are wheelchair users.**

People with a disability could have any one of a range of impairments. For example, there will be people with a visual impairment, people with mobility impairment who may use a walking frame or crutches, people using an assistant dog, or people with a learning disability. In addition, there are many more people with an “invisible” impairment, such as arthritis or a hearing impairment.

✧ **Communicating**

Good communication with sufficient time and proper manners is important when assisting any customer. This is particularly important for some people with a disability, such as those with a visual or a hearing impairment.

✧ **When you meet a person with a disability**

Always address the person directly.

Do not speak to somebody accompanying a person with a disability about an issue concerning the person with a disability. Ensure that the manner in which you address a people with a disability is respectful.

✧ **When you are listening:**

If the person with a disability has a learning disability or speech

impairment, be aware that it may be necessary to wait longer than you are used to for them to get their point across.

Never finish someone's sentences for them, even if they have a speech impairment or learning disability.

Take a step back, so that a person in a wheelchair does not strain their neck when they are looking up at you.

Always listen carefully and patiently to what the person is saying.

If you have not understood them the first time, do not be afraid to ask them to repeat themselves for you. Alternatively, repeat back to them what you think they have said to make sure that you've heard them correctly.

✧ **When you are talking:**

People with a hearing impairment may need to lip-read. If so, face the person directly and do not conceal your face when you speak (i.e., keep your hand away from your mouth).

Be aware that bright sunlight or shadows can obscure your expressions, making lip-reading difficult.

Speak clearly at your normal speed and in normal tone of voice, unless the person specifically asks you to speak louder or slower. Move to a quieter location or shut the doors if necessary.

Use straight forward, short sentences. If you think that the person has not understood you, repeat the same thing to convey the meaning. Try re-phrasing and check if the person understands you.

It particularly helps some hearing impaired people, and people with learning difficulties, to use hand gestures to clarify your message. Using a map to show directions also helps.

If you have not been understood, offer to communicate with a pen and paper instead..

Use positive sentence construction, such as "Are you looking for the seating area?" rather than "You're not looking for the seating area, are you?"

✧ **Assisting a person with a disability**

If someone requests assistance, it is vital to understand what to do and what not to do.

Do not assume that a person with a disability needs assistance because they have a disability.

What looks like a struggle to you may simply be someone managing perfectly adequately at their own pace, and in their own way. Always ask first, and if help is not required then simply accept the response. Do not force support on them.

Never touch a person with a disability, their assistance dog, or their mobility aid, without their permission. It is impolite and may affect their balance.

Be proactive and offer any assistance that you think is required.

Under the “Act on Assistance Dogs for Physically Disabled Persons”, public facilities are required to accept assistance dogs. If you see an assistance dog, check the labels on its harness or mantle to identify the type (guide dog, hearing dog or service dog) and take due care in its acceptance and in providing the required support.

If someone needs assistance to the seating area or other facilities in the venue and you are unable to leave your position, you can call on your Team Leader for assistance.

✧ **Assisting wheelchair users**

If a wheelchair user requests assistance, ask where the person wants to go, then inform the person that you are about to push them.

✧ **Assisting people with a visual impairment**

When escorting somebody with a visual impairment, allow them to grip your elbow or shoulder and walk beside you. (If they have a guide dog, they may prefer to walk free from contact.)

Always describe where you are walking, for example, “Another few feet and we will be walking down a ramp”, “We are approaching some stairs”.

When you arrive at your destination, let the person know where they are. You may need to ask another staff member to take over.

3.2.5 Terminology

It is important to give clear guidance regarding the terminology used in the training. The aim should be to provide consistent service to all participants in the Games while all staff uses the same terminology that is modern and respectful.

In conjunction with experienced equality trainers, develop a Games wide

approach to this subject.

3.2.6 Training Delivery Method

It may be difficult to train tens of thousands of people with seminars and lectures.

A “train the trainers” programme must be arranged to train trainers by their job and venue to deliver training to all Games workforce.

In addition to a “train the trainers” programme, remote individual training packages must be devised. In this way, training can be accessed by individuals on their own time through web-based training or DVDs, which can be watched at home.

Such initiatives should be supplemented with printed handouts or other material for all staff. Accessibility should also be considered in devising these individual training packages.

3.3 Games/Job-specific Training on Accessibility

3.3.1 Presentation

This session should be for all staff that has direct and frequent contact with either members of the public who have a disability, disabled colleagues, or elite athletes with a disability.

If staff has previous experience with similar training, they should still attend as a refresher course.

3.3.2 Content of the Training

This programme should continue the themes found in the general disability etiquette training. However, this session should encourage interaction with people with a disability and people with specialized knowledge on assistance dog, and question sessions on key themes.

This interaction could take the form of role-play, quizzes, or question and answer sessions, which address key themes related to the Games. Encourage managers and Team Leaders in particular to ask questions relating to implementing service during the Games.

3.3.3 Organization of Training Programme

Attendance in organized sessions with physical presentations and demos is an optimal method.

For this experienced “equality trainers” should devise a “train the trainers” programme for FA managers or a group of “purpose-made” educators for this task. In addition, the “train the trainers” programme should be cascaded down to staff via team leaders and managers, using remote individual training packages.

This way the training will get a consistent and reliable message across to all Games staff and volunteers.

3.4 Venue-specific Training on Accessibility

3.4.1 Presentation

This session should be for all venue-based staff regardless of whether they have direct contact with either members of the public who have a disability, disabled colleagues, or elite athletes with a disability.

If staff has previous experience of similar training, they should still attend as a refresher course.

3.4.2 Content of the Training

This session should continue the themes found in the general disability etiquette training. However, this session should cover in detail accessibility to mainstream facilities and also the additional venue facilities and services for people with a disability and other persons with reduced mobility.

This session should incorporate a tour of accessible features and services; advice on protocols for using services; evacuation of people with a disability in emergency situations; and likely venue specific scenarios, so that the more specific assistance can be learned based on the simulation of each venue.

3.4.3 Organization of Training Programme

FA managers should work alongside experienced access auditors to assess venue services and facilities. Then a short session regarding accessible facilities and services should be provided by FA managers to all relevant staff.