International Horticultural Expo 2027, Yokohama, Japan
Accessibility Guidelines

March 2025

EXPO 2027
YOKOHAMA JAPAN

With the theme “Scenery of the Future for Happiness,” the International Horticultural Expo 2027, Yokohama, Japan (GREEN×EXPO 2027) (hereinafter referred to as the “EXPO”) aspires to contribute to the realization of a sustainable future for nature, people and society and the creation of an inclusive society where no one is left behind, leading to a future landscape of happiness for each and every person.

In order to achieve this, care has been taken to formulate guidelines for the development and operation of the Expo so that all visitors to the Expo can spend their time there safely and comfortably regardless of their background such as nationality, culture, race, gender, generation, and physical or other disability.

The Accessibility Guidelines for International Horticultural Expo 2027, Yokohama, Japan (hereinafter referred to as the “Guidelines”) have been formulated with the aim of achieving an accessible environment that meets the international standards while taking into consideration the Accessibility Guidelines adopted for the Tokyo 2020 Olympic and Paralympic Games and the 2025 World Exposition, and the standards for smooth transportation, etc. based on laws and regulations such as the Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.

Furthermore, in formulating the Guidelines, the “International Horticultural Expo 2027 Accessibility Guidelines Study Group” was established, and a variety of opinions from the participants, including persons with disabilities and persons of learning and experience, have been reflected in the Guidelines.

We hope that the organisers and participants of the Expo will implement and operate it in accordance with the Guidelines, and that the Expo will be an opportunity for everyone to understand the purpose of the Guidelines and make broad efforts to improve the environment and to create opportunities for participation by the persons with disabilities, which will lead to the realization of an inclusive society where no one is left behind as a legacy of the Expo.

International Horticultural Expo 2027, Yokohama, Japan

Accessibility Guidelines

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1 Introduction

1.1 Purpose of the Guidelines

The Expo aspires to contribute to the realization of a sustainable future for nature, people and society and the creation of an inclusive society where no one is left behind, which will lead to a future landscape of happiness for each and every person.

In order to achieve this, the purpose of these Guidelines is to set accessibility standards for facility implementation, services and transport access so that all visitors to the Expo can visit safely and comfortably, and enjoy and participate in the exhibitions and events, regardless of their background such as nationality, culture, race, gender, generation, and physical or otherwise disability.

1.2 Basic principles behind the Guidelines

(Basic principles of accessibility and inclusion based on the IPC Accessibility Guide)

The International Paralympic Committee (hereinafter referred to as “IPC”) created the IPC Accessibility Guide in order to meet the needs of Olympic and Paralympic Games host cities which require comprehensive standards for designing venues and services and to create a benchmark for accessibility for audiences around the world (created in 2009, and revised in 2013 and 2015). In this Guide, three basic principles of “equity,” “dignity” and “ensuring functionality” are presented as “basic principles of accessibility and inclusion.”

These principles are carried over to the Tokyo 2020 Accessibility Guidelines and the various Universal Design Guidelines for the 2025 World Exposition, and these three basic principles are also carried over to the Guidelines.

① Equity: We will ensure that all people can receive the same experience and level of service, regardless of their individual physical and functional capacity.
For this, the design and operation plans should be able to provide the same experience of use for all visitors. Segregation of any visitor or visitor group must be avoided. Provisions for privacy, security and safety should be equally available to all.

② Dignity: We will ensure that the way in which a facility is operated, or a service is provided, respects the diverse people who use it and does not compromise their dignity as individuals.
For this, the design and operation plans should be able to accommodate a wide range of individual preferences and abilities. Each person must be able to choose their preferred method of use, and at their own pace. The use of a service that is publicly provided needs to be easy to understand, regardless of the visitor’s experience, knowledge, language skills, current concentration level or physical condition. Accessible design should eliminate unnecessary complexity and allow for intuitive and simple use.

③ Ensuring functionality: We will ensure that the functions of services and facilities are appropriate for the purpose, meeting the specific needs of every relevant group including persons with disabilities.
For this, the design and operation plans need to:

- Communicate necessary information effectively to the visitor, regardless of the level of any visitor’s sensory abilities. A variety of different modes for the presentation of essential information should be used.
- Minimise hazards and the adverse consequences of accidental or unintended actions. Consequences of misuse should be minimal. Environments that are frequently used should be more accessible. Elements that are potentially hazardous should be eliminated or isolated.
- Allow efficient and comfortable use with a minimum of fatigue and/or with using reasonable operating force.

・ Provide appropriate size and space to make approach, reach, manipulation and use comfortable to all visitors, regardless of body size, posture or mobility.

Furthermore, the above three basic principles are believed to lead to the realization of accessibility and inclusion* of the Expo through reflection of opinions and education and training.

Reflection of opinions: Taking measures necessary to reflect opinions of the stakeholders including persons with disabilities at the various planning stages related to design and operation.

Education and training: Providing necessary education and training to staff and volunteers at the implementation stage of operation.

*Inclusion is a noun that refers to the idea of being inclusive, or of not allowing anyone to be excluded or uncovered. (This is a translation of the translator's note in the Japanese version of the IPC Accessibility Guide)

1.3 Basic approach to Expo operation

With reference to the principles underlying the Convention on the Rights of Persons with Disabilities (ratified in 2014), it is important for all people to thoroughly ensure that they never discriminate persons with disabilities (including unjustifiable discriminatory treatment and lack of reasonable considerations), and to understand that "disabilities" are created through an interaction between physical/psychological impairments and social barriers and also understand the "social model of disability," which holds society responsible for removing social barriers.

The Universal Design 2020 Action Plan (Cabinet Office) lists the following three points as the key points for embodying a "barrier-free mind." These points are also presented as matters that all persons involved in the operation of this Expo should consciously work on in order to promote understanding of disabilities.

① Understanding the "social model of disability," which holds society to be responsible for removing social barriers.
② Thoroughly ensuring that all people never discriminate persons with disabilities (and their families) (including unjustifiable discriminatory treatment and lack of reasonable considerations)
③ Developing the ability to communicate with diverse others who have different conditions from one's own, and cultivating the ability to imagine and empathise with difficulties and pain that all people have.

1.4 Visitor needs that require special attention

To create a site with care given to accessibility, it is important to plan/design based on precise understanding of the attributes of visitors, as well as various laws, regulations, and guidelines, to ascertain that a diversity of needs will be catered for. Some of the attributes are as follows:

1) Elderly people

(Attributes)

As people age, their legs and lower backs become weaker, their movements become slower, and they find it difficult to walk long distances or use a staircase. There may also be a decline in their sensory functions such as eyesight and hearing. As a result, it becomes difficult for them to understand information accurately, and to react quickly to avoid danger, etc. and adapt to new equipment.

(Points of attention)

- Pay attention to installation of handrails in places where elderly people can rest, on staircases, etc., and their safety.
- Information providing equipment must be able to be operated simply and have a structure with an audio and visual guidance system.
- Make sure that there is not even a slight step. Furthermore, use non-slip materials, but consider that materials that are overly non-slip may cause people to stumble.

2) Elderly people with dementia

(Attributes)

Dementia is a brain disease that anyone can develop. Dementia refers to a condition in which brain cells die or do not function well due to various reasons, resulting in various disabilities and difficulties in living. The incidence of dementia increases with age, but people under the age of 65 may develop it.

(Points of attention)

- To help the elderly people with dementia recognise and understand buildings, etc., the circulation and the layout of buildings must be easy to understand.
- In addition to making efforts such as eliminating unnecessary information and reducing the amount of information, it is necessary to take intangible measures such as human support.
- It is necessary to use simple words, display signs, such as pictograms and arrows, and color coding for building guides and displays.
- Creating a safe environment (with tempered glass and shatter-proof films, locking and soundproofing devices, etc.) is required.
- Creating a relaxing environment is required. Also, places where elderly people with dementia can rest must be provided.

3) Persons with a cane

(Attributes)

There are people who walk with an unsteady gait and have difficulty going up and down a staircase. A cane is a welfare tools to help those who have difficulty walking. It is intended to adjust balance when walking, correct walking patterns, and improve speed and endurance.

(Points of attention)

- Since a cane has a swing width, pay attention to effective widths of doorways.
- Since the bottom of a cane is small, pay attention to structures of drain covers.

- Since it is difficult for cane users to get over slight steps and they are more likely to stumble, make sure that there are no unnecessary steps.
- Since cane users are more likely to stumble even on flat road surfaces, pay attention to the surface finish.
- Places where cane users can rest must be provided.
- A space under the seat to retract the legs, and armrests must be provided to help cane users stand up from a chair.
- Keep in mind that cane users may be accompanied by service dogs (balance assistance dogs).

4) Wheelchair users

(Attributes)

Wheelchair users may use their wheelchair due to paraplegia or quadriplegia. They may not be able to go up or down steps or steep slopes by themselves. They may have difficulty taking out or operating objects that are at a high or low place.

Wheelchairs are roughly divided into hand-operated and electric wheelchairs. Hand-operated wheelchairs are divided into two types: self-propelled wheelchairs, which are driven and operated by the user, and attendant propelled wheelchairs, which are operated by a helper. Electric wheelchairs are also divided into self-propelled and attendant propelled wheelchairs. This section assumes that both hand-operated and electric wheelchairs are driven and operated by the users.

(Points of attention)

- If there are steps on floor surfaces, wheelchair users are not able to get over them.
- Floor surfaces must be finished flat to reduce vibration when moving around.
- To assist wheelchair users who transfer from one place to another, for example, from a wheelchair to a toilet seat, attention must be paid to the handrails which support their bodies and the height of the equipment on the side to which they transfer.
- When installing shelves, etc. attention must be paid to the heights and locations so that they are easy for wheelchair users to reach.
- In the case of an electric wheelchair, in addition to the above, pay particular attention to the height and space required for the electric wheelchair. Furthermore, since the electric wheelchair has an operation box with levers and buttons to control it, attention must be paid so that it does not bump into protruding objects such as door handles.
- The dimensions required for manoeuvring a handle-type electric wheelchair and the widths required for doorways, pathways, etc. are larger than those required for an electric wheelchair (standard type for self-operation).
- Keep in mind that a wheelchair user may be accompanied by a service dog.

5) People with upper limb disabilities

(Attributes)

The upper limbs, such as arms, hands and fingers, of people with upper limb disabilities are not fully functional, making actions that require strength, such as opening and closing doors and taps, more difficult.

(Points of attention)

- Pay attention to the difficulty of opening and closing. For example, use light doors that can be opened and closed with a little force.
- Pay attention to the shapes of tap parts and doorknobs so that people with upper limb disabilities do not need to grip them. For example, use automatic, lever-type or bar-shaped handles.
- When installing shelves, etc. attention must be paid to the heights and locations so that they

are easy for people with upper limb disabilities to reach.
- Pay attention to the sizes and shapes of switches so that they are each for people with upper limb disabilities to press.

6) People with visual impairment

(Attributes)

When we think of people with visual impairment, we tend to think of totally blind persons, but there are many people who have residual vision (persons with weak eyesight (low vision), visual field disorders, etc.). When making building plans for people with visual impairment, due consideration should be given not only to totally blind persons but also to people with residual vision.

(Points of attention)

- Totally blind persons use information obtained from sources other than eyesight. The most effective means of providing information is human guidance. As guides to information points, etc. of facilities, guiding equipment utilising the sense of hearing and touch, such as voice information systems and tactile floor tile, must be secured.
- In cases where there is no information point with staff, or in order for people with visual impairment to be able to move around by themselves when, for example, revisiting, it is necessary to provide information at doorways, corridors, staircases, passenger lifts, washrooms, entrances to rooms, etc. by means such as voice information systems, braille and embossed lettering.
- Since people with visual impairment rely on the sense of touch through their white canes and shoe soles to move around, they can perceive the conditions of floors but have difficulty perceiving protruding objects from walls, etc. Therefore, attention must be paid to the possibility of their getting into spaces behind staircases and the heights and structures of protruding signs, etc.
- For people who have residual vision, consideration must be given to the size of letters, the distinction from surrounding base colours, lighting, etc. For colour combinations, etc., consideration must also be given to people with colour-vision impairment.
- Display signs etc. must be placed not only at high positions but also at eye-level or other positions that are easy for persons with weak eyesight (low vision) to see.
- Lighting should not cause backlighting or reflected glare*.
  *Glare is a phenomenon that makes it difficult to see due to the luminance ratio to the surroundings even if the required illuminance is maintained.
- As a means of providing information in advance, it is also important to create a facility's website in conformity with JIS X8341-3 to ensure accessibility so that it is easy for the elderly people and persons with disabilities to use it.
- Providing facility information in audio and braille formats also leads to the ease of use of the facility.
- Keep in mind that a person with visual impairment may be accompanied by a guide dog.

7) People with hearing difficulties

(Attributes)

Hearing difficulties are a disability that makes it difficult or impossible for individuals to hear. Since it is difficult for them to communicate with others using spoken language, they have difficulty sending and receiving information and there is a tendency for them to lack information. This tendency to lack information is a particularly major problem in emergency situations.

People with Hearing difficulties use different communication methods, such as sign language or communication by writing, depending on the degree of hearing loss, the timing of hearing loss, or their educational environment.

(Points of attention)

- Since it is difficult to tell from the appearance of the people with hearing difficulties where their physical disability is, it is difficult for people around them to notice that they are in need.
- The layout, etc. of visual information communication must be arranged such that visual information is conveyed to individuals no matter their movements or behavior
- In the case of an emergency, etc. information must be able to be communicated to the people with hearing difficulties involved not only by sight but also by vibration, etc.
- In addition to visual equipment, communication means by writing and UD Talk app must be prepared to ensure more accurate information communication.
- People with hearing difficulties may collide with someone as they meet because they cannot hear footsteps. For this reason, mirrors must be installed in places where there are blind spots, such as staircase landings.
- Keep in mind that a person with hearing difficulties may be accompanied by a hearing assistance dog.

(Examples of visual information equipment)

- Text information
  - ✓ Electronic bulletin boards (installed at paging counters, etc.)
  - ✓ Intangible support (provision of human support, equipment for communication by writing, etc.)
- Notices using light
  - ✓ Flashing of lighting equipment (when sensors detect vibrations from knocking on entrance doors or sounds from two-way communication systems, they notify people with hearing difficulties of it by means such as flashing of lighting equipment)
- Notices using vibration
  - ✓ Installation and carrying of vibration devices (when audio information is received at the centre, vibration devices are activated.
- Measures for preparing better visual information equipment
  - ✓ There are two ways to convert audio information into visual information, light or vibration: one is to use building equipment built into buildings, and the other is to use equipment, etc. Depending on how the facility is used, sufficient consideration is required.

8) People with invisible impairment

(Attributes)

People with invisible impairment are those whose daily activities are restricted due to a disease or other causes that impair the functions of their heart, kidneys, respiratory organs, bladder, rectum, small intestine, etc.

Typical examples of people with invisible impairment include those with a cardiac pacemaker, artificial anus, or artificial respirator.

(Points of attention)

- Many of people with invisible impairment look the same as healthy people in appearance, so it is difficult to gain understanding about them from people without invisible impairment.
- Toilet stalls with equipment for ostomates are necessary.
- Since many of people with invisible impairment get tired easily, attention must be paid to places where they can rest, installation of handrails on staircases, and their safety.

9) People with higher brain dysfunction

(Attributes)

Higher brain dysfunction is one of the aftereffects of brain damage caused by diseases such as cerebral hemorrhage and cerebral infarction or head injury due to an accident. The main symptoms are disturbance of attention, disturbance of memory, reduced information processing speed, reduced self-awareness, executive function disorder, easy fatigability, and social behaviour disorder, and some of these symptoms may affect each other.

10) People with intellectual disabilities

(Attributes)

People with intellectual disabilities are those who have delays in intellectual development and difficulties in adapting to social life due to various causes, such as factors before birth, some kind of disability occurring during the developmental period after birth, hereditary causes, and unknown causes.

11) People with mental disabilities

(Attributes)

People with mental disabilities have difficulty in their daily and social lives due to various mental disorders such as schizophrenia, bipolar disorder, and depression. Social misunderstanding and prejudice about the symptoms of the disorders further plunge the people with mental disabilities into stress situations, which delays recovery.

12) People with developmental disabilities

(Attributes)

Developmental disabilities are related to the development of brain functions, and include autism spectrum disorder (ASD), learning disabilities (LD), and attention-deficit/hyperactivity disorder (ADHD). All of these have in common that people with developmental disabilities are born with impairments in some brain functions, but there are also cases where multiple disabilities occur together. The symptoms differ depending on the severity of the disability, age (developmental stage), living environment, etc.

Points of attention common to 9) through 12)

- In order to help those people described in 9) to 12) recognise and understand buildings, etc., the circulation and the layout of buildings must be made easy to understand.
- In addition to making efforts such as eliminating unnecessary information and reducing the amount of information, it is necessary to take intangible measures such as human support.
- In some cases, visual methods are easier to understand than words. Therefore, it is necessary to use displays, such as pictograms and arrows, and color coding for building guides and displays.
- Creating a safe environment (with tempered glass and shatter-proof films, locking and soundproofing devices, etc.) is required.
- Creating a relaxing environment is required. Also, places where rest can be taken must be provided.
- If there is a structure that suddenly produces loud sounds, information must be provided in advance, for example, by posting a notice to that effect.

13) Babies/infants, and pregnant women

(Attributes)

For babies/infants, consideration must be given to their height and other human body dimensions, as well as the heights of their lines of sight, the ranges of their reach, and the sizes of equipment

they use. Furthermore, sufficient consideration must be given to ensure that no protruding objects are placed as it is difficult for babies/infants to immediately respond to changes in the environment. In addition, since they are unable to make judgment about dangerous objects, it is necessary to devise ways to avoid them.

Parents accompanying babies/infants face many difficulties as they move around while carrying their child on their back or in their arms or pushing a pram. They also need cots for changing diapers and clothes, nursing rooms, etc. Furthermore, as consideration for people in pregnancy, measures to avoid objects that may cause a collision, rest areas, etc. are required.

(Points of attention)

- Floor surfaces must be finished flat, taking into consideration prams, etc.
- Babies/infants move around without being aware of safety. Therefore, unexpected protruding objects, steps, etc. must not be present.

14) Others

An accessible and inclusive environment is also helpful for individuals who have the following needs:

- Persons suffering from an intractable or temporary disease
- Persons with injuries, such as sprained ankles, fractured bones, etc.
- Children
- Non-Japanese speakers
- LGBTQ people: individuals who identify themselves with a sexual minority group, such as lesbian (homosexual women), gay (homosexual men), bisexual, trans-gender (whose gender identity differs from the sex that they were assigned at birth), questioning (individuals who are unsure or indeterminate of their sexual orientation, identity, or gender), etc.
- People carrying large and heavy luggage
- Person requiring a company of carers for certain reasons
- First aid workers and other personnel on emergency calls
- People who have never been to the Expo site
- People who do not possess a smartphone or other mobile devices

2 Use of the Guidelines

2.1 Scope of applicability of the Guidelines

The Guidelines shall be applicable to all visitors' circulation and activity areas within the venue of the Expo. It is desirable to give consideration to the accessibility for the areas used for the management purposes (back offices) using the Guidelines as reference.

In terms of transport access, the Guidelines shall be applicable to relevant facilities (stations, station squares, terminals, car parks, etc.) of major public transport systems that access the venue, transport means (vehicles, etc.), pavements, etc.

In addition to the organiser, that is the Japan Association for the International Horticultural Expo 2027, Yokohama (hereinafter referred to as the "Association"), the Guidelines shall be applicable to the exhibitors from Japan and overseas, and participants in exhibitions, events, eating and drinking facilities, etc. as the entities that perform facility implementation and provide services with reference to the Guidelines. When establishing new transport-related facilities or improving existing facilities, public transport companies involved in the transport access are required to refer to the concepts and standards in the Guidelines.

2.2 Basis for setting standards

The Guidelines provide guides to the design and operation of the Expo in two categories of standards: Recommendation (an item that is desirable to do) and Standard (a standard that must be observed).

In order to realise an "accessible and inclusive exposition," it is required to proactively adopt the Recommendation category standards in these Guidelines. Where the adoption of Recommendation category standards is realistically impossible, the Standard category standards must at least be met.

Note that the standards in the Recommendation and Standard categories are indicated by the symbols ☆ and ■, respectively, as shown below.

☆ **Recommendation** indicates a "desirable" item and is defined as a standard that is particularly recommended for this Expo in order to realise safe and smooth mobility for visitors as well as enhance convenience and provide comfort in the use of facility.

[Basis of these standards]

These standards are formulated based on comprehensive consideration of the "Guides" stated in the *Universal Design Guidelines for the 2025 World Exposition [Revised version]*, the *Universal Service Guidelines for the 2025 World Exposition* and the *Universal Design Guidelines for Transport Accessibility for the 2025 World Exposition*, the "Recommendations" stated in the *Tokyo 2020 Accessibility Guidelines*, the standards for "desirable implementation" stated in the *Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual*, and the design standards (preferred) stated in the *Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)*, and opinions of participating people with disabilities.

■ **Standard** indicates an item that must or should be ensured and is defined as a standard that should be at least complied with regardless of legal obligations.

[Basis of these standards]

These standards are formulated based on comprehensive consideration of the "Controls" stated in the *Universal Design Guidelines for the 2025 World Exposition [Revised version]*, the *Universal Service Guidelines for the 2025 World Exposition* and the *Universal Design Guidelines for Transport Accessibility for the 2025 World Exposition*, the "Standards" stated in the *Tokyo 2020 Accessibility Guidelines*, the "designated facility implementation standards" stated in the *Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual*, and the design standards stated in the *Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)*, and opinions of

participating persons with disabilities.

(Points of attention)

With regard to facility implementation, even if it is not possible to partly meet the Standard category standards for unavoidable reasons, it is required to provide visitors with services equivalent to those provided when facility implementation is ensured in accordance with the Standard category standards by meeting the main relevant laws and regulations, etc. listed in 2.4 Compliance with Laws and Regulations and by providing alternative measures such as human support and other intangible measures.

With regard to services, in order to ensure that visitors with various circumstances can enjoy the Expo as other visitors do, these Guidelines provide the standards for services and measures (examples) to be taken in various situations. The measures (examples) are intended to provide a direction, but are not limited to those listed herein. Rather, each entity is required to understand these Guidelines and exert its originality and ingenuity, aiming at providing better services than the measures (examples).

With regard to transport access, facilities such as car parks and pickup and drop-off areas for shuttle buses, etc. that are to be developed or improved for the Expo must be planned and developed in accordance with the standards of these Guidelines. Furthermore, with regard to existing transport facilities such as railways and roads, the standards for smooth public transportation, etc. and the Barrier-free Development Guidelines (Passenger Facilities, Vehicles, and Services) based on the Accessibility Improvement Act shall be used as a basis with consideration given to the characteristics of the Expo, and if new facilities are constructed or existing facilities are improved, efforts shall be made to improve the level of implementation using these Guidelines as reference so that all visitors can reach the venue without any inconvenience.

2.3 Basic dimensions, etc.

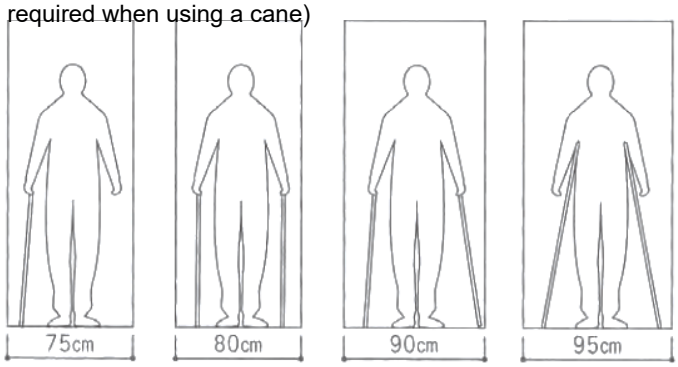
The basic dimensions used in the Guidelines are explained as follows:

Table: Major dimensions and definitions

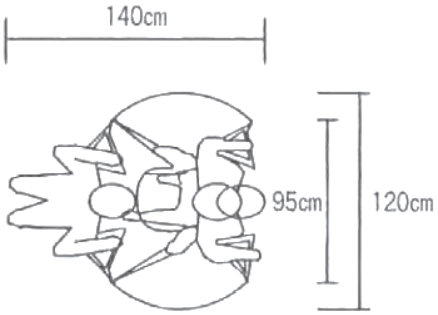
Dimensions	Definition
800 mm	The width of a doorway, etc. that allows a wheelchair user to pass through
900 mm	The width of a doorway, etc. that allows a wheelchair user to pass through easily
1,200 mm	The width of a pathway, etc. that allows a wheelchair user to pass through easily The width that allows a wheelchair user to pass by a person standing sideways The width that allows with a person with crutches or a white cane can pass smoothly
1,400 mm	The width that allows a wheelchair user to turn around (180 degrees) The width that allows a person with crutches to pass by an ambulant person
1,500 mm	The width that allows a hand-operated wheelchair user to turn around
1,800 mm	The width that allows an electric wheelchair user to turn around The width that allows two wheelchair users to pass by one another
2,000 mm	The width that allows two wheelchair users to pass by one another, with room to spare

2.3.1 Persons with a cane

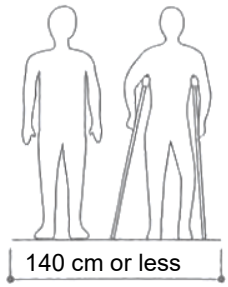
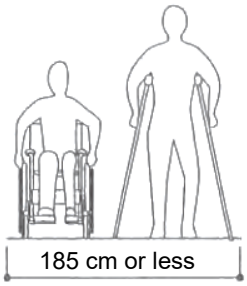
Guidelines for pathway width for a person with a cane (width required when using a cane)



One cane on one side | One cane on each side | Lofstrand crutches | Crutches



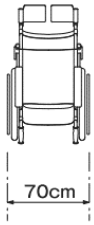
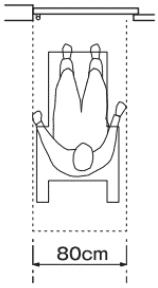
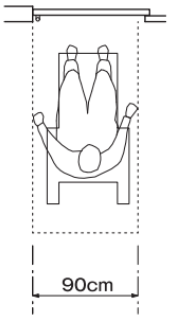
Dimensions required for a person with crutches

Dimensions required for a person with a cane and another person side by side		Dimensions required for movement	Approach to dimensions and points of attention
①		Spatial measurements required for a person with crutches and an ambulant person side by side: 140 cm	- The width required for a person using crutches (95 cm) plus the width required for a person to walk (45 cm)
②		Spatial measurements required for a person with crutches and a wheelchair user side by side: 185 cm	- The width required for a person using crutches (95 cm) plus the width of a doorway, etc. that allows a wheelchair user to pass through easily (90 cm)

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

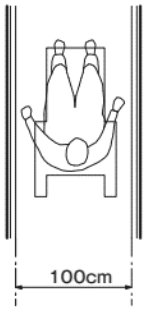
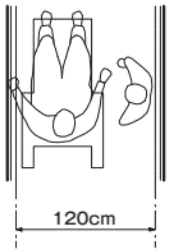
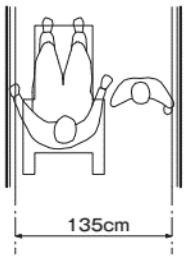
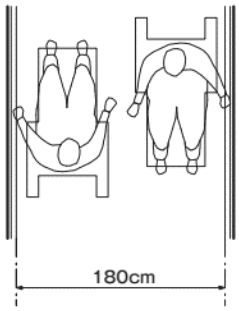
2.3.2 Wheelchair users

Doorway, etc.

		Dimensions required for movement	Approach to dimensions and points of attention
①		The overall width of a wheelchair: 70 cm	- The maximum overall width of a hand-operated wheelchair is 70 cm according to JIS standards (JIS T 9201). - The maximum overall width of an electric wheelchair, including a handle-type ones, is 70 cm according to JIS standards (JIS T 9203). - The maximum overall width of a handle-type electric wheelchair is 70 cm according to JIS standards (JIS T 9203).
②		The minimum width that allows a wheelchair user to pass through: 80 cm	- The overall width of a hand-operated wheelchair plus the width required to rotate the handrims attached to the outer sides of the wheels of the hand-operated wheelchair by hand (= 10 cm, which is the width of both elbows). - Pay attention to the overall width of a hand-operated wheelchair and the width required to manoeuvre the handrims. - Electric wheelchairs also need the overall width (70 cm) plus the extra width (10 cm).
③		The width of a doorway, etc. that allows a wheelchair user to pass through easily: 90 cm	- The minimum width that allows a wheelchair user to pass through a doorway, etc. (80 cm) plus the extra width (10 cm) for movement. - Pay attention to the overall width of a hand-operated wheelchair and the width required to manoeuvre the handrims.

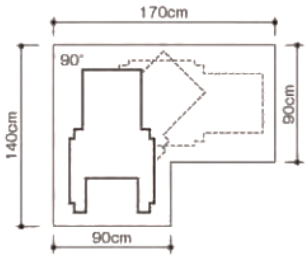
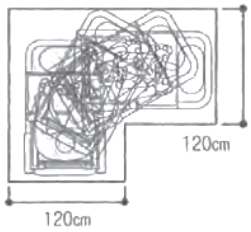
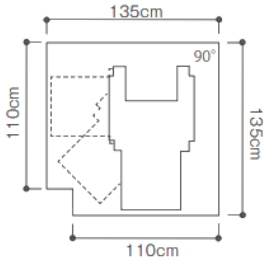
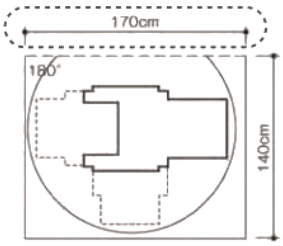
(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

Pathway, etc.

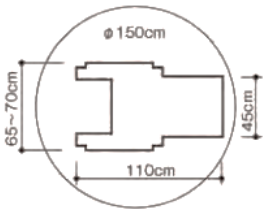
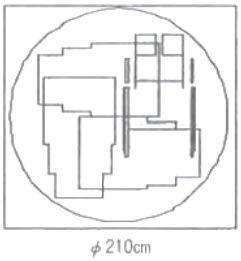
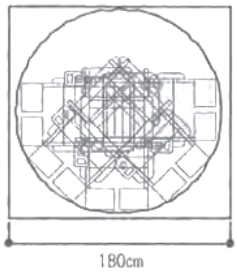
		Dimensions required for movement	Approach to dimensions and points of attention
①		The width that allows a wheelchair user to pass on ramps: 100 cm	- On ramps, a larger extra width is required to adjust the speed of a wheelchair, so this is the width of a doorway, etc. that allows a wheelchair user to pass through easily (90 cm) plus that extra width (10 cm). - Pay attention to the overall width of a hand-operated wheelchair and the width required to manoeuvre the handrims. - In the case of a hand-operated wheelchair, steep or long ramps cause heavy burdens.
②		The width of a pathway, etc. that allows a wheelchair user to pass through easily (the width that allows a wheelchair user to pass by a person standing sideways): 120 cm	- The width of a doorway, etc. that allows a wheelchair user to pass through easily (90 cm) plus the width that allows a person walking sideways to pass through. - Pay attention to the overall width of a hand-operated wheelchair and the width required to manoeuvre the handrims.
③		The width that at least allows a wheelchair user and an ambulant person to pass each other face-to-face: 135 cm	- The width of a doorway, etc. that allows a wheelchair user to pass through easily (90 cm) plus the width required for a person to walk (45 cm). - Pay attention to the overall width of a hand-operated wheelchair and the width required to manoeuvre the handrims.
④		The width that allows two wheelchair users to pass each other face-to-face: 180 cm	- This is double the width of a doorway, etc. that allows a wheelchair user to pass through easily (90 cm). - Pay attention to the overall width of a hand-operated wheelchair and the width required to manoeuvre the handrims.

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

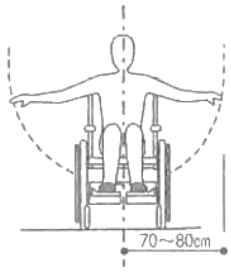
Change of direction (turnaround)

		Dimensions required for movement	Approach to dimensions and points of attention
①		The minimum dimensions that allow a hand-operated or electric wheelchair user to make a right-angle turn in a pathway, etc.: 90 cm	- The minimum space required for a wheelchair user to make a right-angle turn. - As a wheelchair uses its wheels and casters to support it on the surface of the floor, a certain amount of space is required to change direction.
②		The minimum dimensions that allow a handle-type electric wheelchair user to make a right-angle turn in a pathway, etc.: 120 cm	- The minimum space required for a handle-type electric wheelchair user to make a right-angle turn. - As a wheelchair uses its wheels and casters to support it on a floor surface, a certain amount of space is required to change direction.
③		The minimum dimensions that allow a hand-operated wheelchair user to turn 90 degrees, being pivoted on the centre of the wheelchair axle: 135 cm	- The minimum space required for a wheelchair user to turn 90 degrees. - As a wheelchair uses its wheels and casters to support it on a floor surface, a certain amount of space is required to change direction.
④		The minimum dimensions that allow a hand-operated wheelchair user to turn 180 degrees, being pivoted on the centre of the wheelchair axle: 140 cm	- The minimum space required for a wheelchair user to turn 180 degrees. - As a wheelchair uses its wheels and casters to support it on the surface of the floor, a certain amount of space is required to change direction.

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

⑤		The minimum dimensions that allow a hand-operated wheelchair user to turn 360 degrees: 150 cm	- The minimum space required for a hand-operated wheelchair user to turn 360 degrees. - As a wheelchair uses its wheels and casters to support it on a floor surface, a certain amount of space is required to change direction.
⑥		The minimum dimensions that allow a hand-operated wheelchair user to turn 360 degrees around a wheel on one side: 210 cm	- The minimum space required for a wheelchair user who manoeuvres it with one hand and one leg due to hemiplegia to turn 360 degrees.
⑦		The minimum dimensions that allow an electric wheelchair user to turn 360 degrees: 180 cm	- The minimum space required for an electric wheelchair user to turn 360 degrees. - As a wheelchair uses its wheels and casters to support it on a floor surface, a certain amount of space is required to change direction.
⑧		The minimum dimensions that allow a handle-type electric wheelchair user to turn 360 degrees: Not specified	- The width of a space required for a commercially-available general handle-type electric wheelchair differs depending on the model.

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

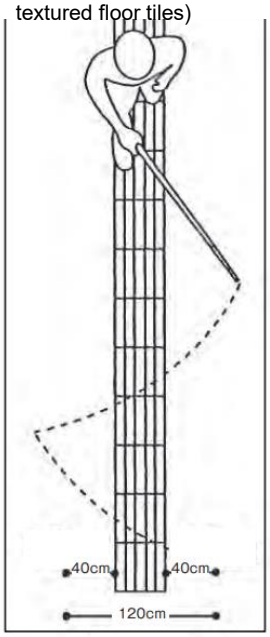
Reach of wheelchair user		Dimensions required for movement	Approach to dimensions and points of attention
①		The range of forward reach while seated in a wheelchair: 60-65 cm The range of upward reach while seated in a wheelchair: Approximately 140 cm	- In the case where a person in a wheelchair reaches out his/her hand to grasp an object, the reach of his/her hand is even shorter. - As wheelchair users move while seated, their line of sight is low and the reach of their hands is limited. Therefore, attention must be paid to the height of equipment and signages. - Wheelchair users have difficulty pushing or pulling doors.
②		The range of lateral reach while seated in a wheelchair: 70-80 cm	- In the case where a person in a wheelchair reaches out his/her hand to grasp an object, the reach of his/her hand is even shorter. - As wheelchair users move while seated, their line of sight is low and the reach of their hands is limited. Therefore, attention must be paid to the height of equipment and signages. - Wheelchair users have difficulty pushing or pulling doors.

* The dimensions required for movement varies depending on the age, the location of the disability, etc.

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

2.3.3 Persons with a white cane

Spatial measurements required for a white cane user (with line-type textured floor tiles)



*White cane users may also walk along the side of tactile floor tile.
*Striped tactile direction guiding tiles should be laid along walls, 50-60 cm away from them.

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings Volume]

2.4 Compliance with laws and regulations

In pursuing the operation of the Expo, planning, designing, construction and maintenance of facilities of the Expo, relevant Japanese laws and regulations and municipal ordinances of Yokohama shall be complied with. The main related laws and regulations are listed below:

(Main laws and regulations)

1) Building Standards Act and Order for Enforcement of the Act
   [Building Standards Act]
   https://elaws.e-gov.go.jp/document?lawid=325AC0000000201
   [Order for Enforcement of the Act]
   https://elaws.e-gov.go.jp/document?lawid=325CO0000000338
2) Basic Act for Persons with Disabilities
   https://elaws.e-gov.go.jp/document?lawid=345AC1000000084
3) Act for Eliminating Discrimination against Persons with Disabilities
   https://elaws.e-gov.go.jp/document?lawid=425AC0000000065
4) Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc. (Accessibility Improvement Act) and Order for Enforcement of the Act
   [Accessibility Improvement Act]
   https://elaws.e-gov.go.jp/document?lawid=418AC0000000091
   [Order for Enforcement of the Act]
   https://elaws.e-gov.go.jp/document?lawid=418CO0000000379
5) Yokohama City Ordinance on Welfare Communities and Enforcement Rules, etc. for the Ordinance
   [Ordinance on Welfare Communities]
   https://cgi.city.yokohama.lg.jp/somu/reiki/reiki_honbun/g202RG00001790.html
   [Enforcement Rules for the Ordinance]
   https://cgi.city.yokohama.lg.jp/somu/reiki/reiki_honbun/g202RG00000698.html
6) Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)
   [Ministry of Land, Infrastructure, Transport and Tourism official website]
   https://www.mlit.go.jp/jutakukentiku/jutakukentiku_house_fr_000049.html
7) Guidelines for Smooth Transportation, etc. in Urban Parks [Revised Second Edition] (March 2022)
   [Ministry of Land, Infrastructure, Transport and Tourism official website]
   https://www.mlit.go.jp/toshi/park/parkun.html
8) Guidelines for Smooth Transportation, etc. on Roads (January 2024)
   [Ministry of Land, Infrastructure, Transport and Tourism official website]
   https://www.mlit.go.jp/road/road/traffic/bf/kijun/kijun.html
9) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual
   [Yokohama City official website]
   https://www.city.yokohama.lg.jp/kenko-iryo-fukushi/fukushi-kaigo/fuku-machi/seibikijun/shisetsu-sebi/fukumachimanual.html

Basic plans, sustainability strategies and other procurement codes that take sustainability into consideration, guidelines including these Guidelines, and documents designated by the organizer, as well as other plans and standards relevant to specific plans, must also be consulted and complied with.

1) Master Plan of the International Horticultural Expo 2027, Yokohama
   [Japan Association for the International Horticultural Expo 2027, Yokohama official website]
   https://expo2027yokohama.or.jp/wp-content/uploads/2024/01/kihonkeikaku_2-2.pdf
2) Sustainability Initiatives
   [Japan Association for the International Horticultural Expo 2027, Yokohama official website]
   https://expo2027yokohama.or.jp/about/sustainability/

3 Facility Implementation

Table of Contents

3 Facility Implementation

This chapter provides standards of Recommendation and Standard categories for specific guidelines related to accessibility for facility design at the Expo site.

Recommendation: Marked with “☆” at the beginning of a line

Recommendation indicates a “desirable” item and is defined as a standard that is particularly recommended for this Expo in order to realise safe and smooth mobility for visitors as well as enhance convenience and provide comfort in the use of facility.

Standard: Marked with “■” at the beginning of a line

Standard indicates an item that must or should be ensured and is defined as a standard that should be at least complied with, regardless of legal obligations.

Common spaces

3.1 Garden paths within the Expo site

Garden paths within the Expo site refer to garden paths that connect the entrance gate of the Expo site to the doorways to gardens and buildings. Efforts must be made to ensure continuity in the layout so that all visitors to the Expo, including elderly people and persons with disabilities (particularly the elderly and wheelchair users), can move around the Expo site and use all facilities safely and smoothly. Furthermore, sufficient consideration should be given by, for example, reducing the gradient as much as possible, or securing effective widths that take into consideration cases where wheelchair users pass by others.

3.1.1 General guidelines

(Flow plan)

- ■ As a general rule, the flow plan must be prepared with no staircases or steps for garden paths within the Expo site so that all users, including wheelchair and stroller users, can move along the same flow line.

(Effective widths)

- ■ The garden paths must ensure appropriate effective widths based on the anticipated visitor volumes.
- ☆ It is desirable that the effective widths of garden paths be at least 2,000 mm so that two wheelchair users can pass by one another.
- ■ The effective widths of garden paths must be at least 1,800 mm.
- ■ If the garden paths are also used for viewing exhibitions and events, their effective widths must account for these uses apart from the widths required for passage. In addition, attention must be paid to setting passage positions and securing appropriate effective widths so that exhibitions can be viewed from the eye level of wheelchair users and children without difficulty even during busy times. (Refer to 3.28 for areas for waiting/queueing)

(Steps)

- ■ There must be no steps that obstruct wheelchair users in passing.
- ■ If steps are unavoidable, a ramp must be provided alongside them.
- ☆ If steps are unavoidable, it is desirable that the steps be demarcated for easy distinction between the edges of the steps and the surrounding areas by colours of different brightness, hue, or colour saturation.

(Gradient)

- ☆ It is desirable that longitudinal gradient be as gentle as possible. It is also desirable that ramps not be inclined in lateral directions other than the direction of travel to prevent obstruction to the passage of wheelchairs.
- ■ As a general rule, longitudinal gradient must be 5% or less. Even in unavoidable cases due to terrain conditions or other special reasons, they must be 8% or less.
- ■ With regard to cross gradients, garden paths must be flat and horizontal, except where drainage gradient is required.
- ■ Where cross gradients are required to ensure drainage gradients, permeable paving materials must be used to ensure smooth drainage, and the cross ramps must be 1% or less. Even in unavoidable cases due to terrain conditions or other special reasons, they must be 2% or less.

(Path surface)

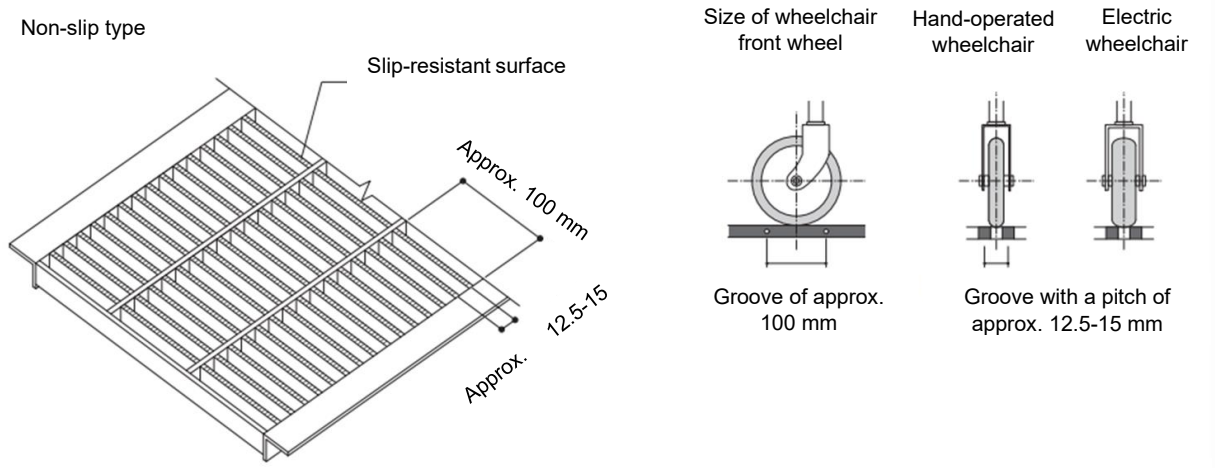
- The path surface must be slip-resistant in both dry and wet conditions and must have a finish without unevenness that could hinder passage.
- Gravel or cobbled garden paths, which make it difficult for wheelchair users to move around, must be avoided. When using flat plates, interlocking pavers, ceramic tiles, etc., ensure that no step is created in the joints.
- In cases of gravel or cobbled pavements, which make it difficult for wheelchair or stroller users to pass through, areas paved with other materials must be provided alongside such pavements to ensure smooth passage of wheelchair or stroller users.

(Drains)

- Drain covers and similar items must be designed so that wheels of wheelchairs or strollers, canes, shoe heels, etc. cannot be caught in such covers, and must have a slip-resistant surface, so as not to obstruct the passage of the elderly, persons with disabilities, etc.
- In the case of a grid type cover, the pitch must be about 12.5-15 mm x 100 mm, and in the case of a circular type, the diameter must be 20 mm or less.

Drain cover that prevents wheelchair front wheels from falling

Dimensions with consideration to prevent wheelchair front wheels from falling



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

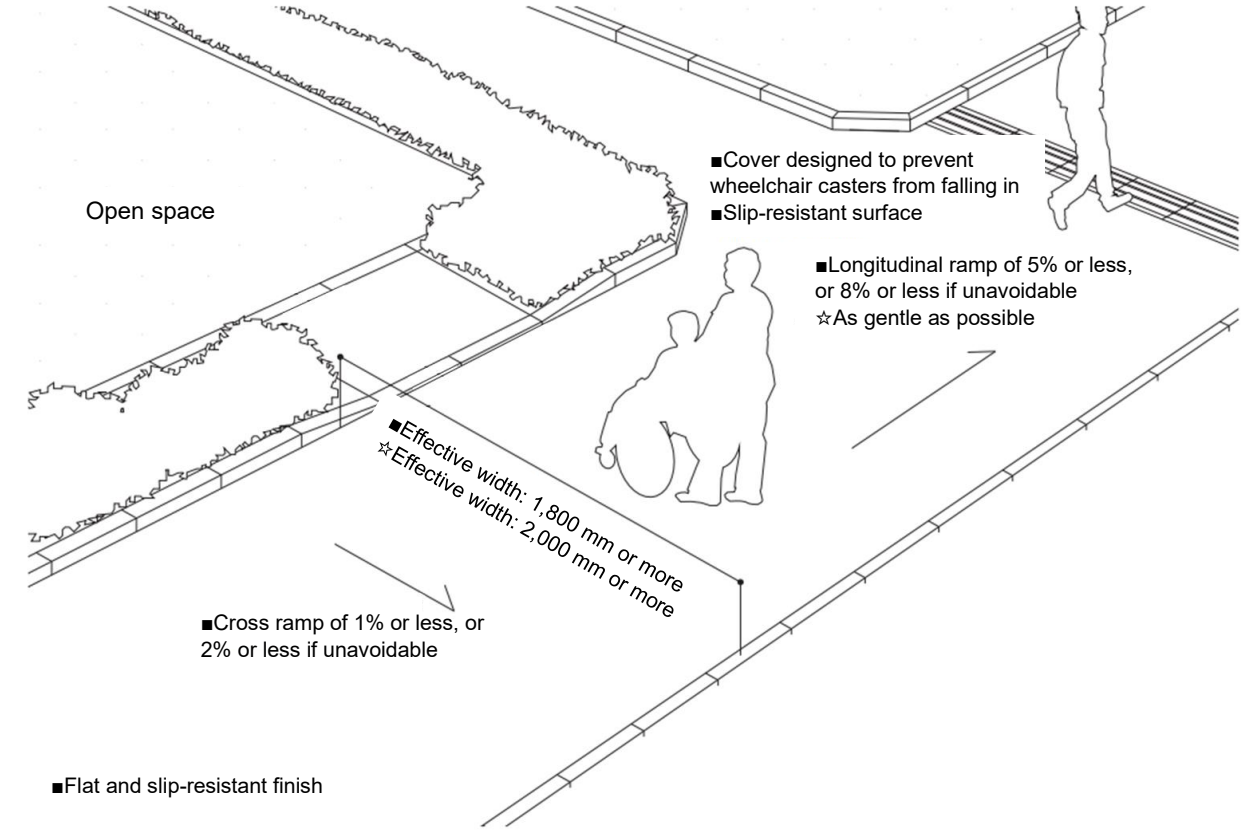
Figure: Example of drain implementation

(Lighting)

- Lighting equipment must be installed to ensure sufficient luminance for safe passage during dark hours.
- ☆ In order to enhance the visibility of the path surfaces, it is desirable that the garden paths should be installed with lighting equipment below the eye level, in addition to standard lighting.
- Arrangements must be made so that light sources are hidden from the eyes.

(Protrusions)

- As a general rule, objects protruding from ceilings, walls or signs must not be mounted in a space up to 2,000 mm from the path surface. If it is unavoidable to mount a protruding object, a barrier at least 1,100 mm high must be installed, or alternative entry prevention measures must be taken to prevent persons with visual impairment from colliding with the protruding object without being able to detect it with a white cane.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Figure: Example of garden path implementation

3.1.2 Tactile floor tiles

Refer to 3.26 Tactile floor tiles for the general guidelines concerning these facilities.

☆ Where it is necessary to select a guiding method other than the installation of tactile floor tiles and other assistance for persons with visual impairment, it is desirable that other means of guiding assistance be provided, such as voice information guide and personal escort by staff members, etc.

3.1.3 Equipment for resting

■ Benches and other equipment for resting must be provided at appropriate intervals as long as they do not obstruct the garden paths.

☆ It is desirable to ensure a horizontal space of 1,500 mm x 1,500 mm or larger around a bench or other equipment for resting so that a wheelchair can approach and stay adjacent to it.

☆ In areas where user needs are particularly high and there is a possibility that usage will become concentrated, it is desirable to provide priority seats so that the elderly and persons with disabilities can sit there preferentially.

3.2 Staircases

Staircases are areas that require all visitors to the Expo including the elderly and persons with disabilities (in particular, the elderly, people who use a cane or crutches, and persons with visual impairment) to exert significant strengths to pass through. Therefore, measures, such as installing handrails, should be taken to ensure smooth use. In addition, safety measures, such as ensuring appropriate riser and tread structure and effective width, and installing non-slip devices, must also be taken into consideration.

If staircases or steps are provided, a ramp is required.

3.2.1 General guidelines

(Styles)

- ■ When installing staircases, winder staircases or spiral staircases with treads that are not of uniform width must not be installed.
- ■ The dimensions of treads and risers must be consistent in a single flight of staircases.

(Risers)

- ☆ It is desirable that the riser is no more than 150 mm.
- ■ The riser must be no more than160 mm.

(Tread)

- ■ The tread must be at least 300 mm. Note that the tread must be proportionate to the riser for easy and comfortable passage.

(Stair nosing)

- ■ Steps must avoid projected nosing or similar structures that may be tripping hazards.

(Nosing depth)

- ■ The nosing depth must be 20 mm maximum.

(Effective staircase widths)

- ■ The staircase must ensure appropriate effective widths based on the anticipated number of visitors likely to use them.
- ☆ It is desirable that the effective widths of all staircases be at least 1,400 mm with the consideration for people who use a cane or crutches.
- ☆ Where the main route involves not ramps but staircases, it is desirable that the effective widths of these staircases be at least 2,000 mm.
- ■ Where the main route involves not ramps but staircases, the effective widths of these staircases, whether they are installed outdoor or indoor, must be at least 1,800 mm.

(Treads)

- ■ The treads must have a rough surface and be finished using slip-resistant materials.
- ☆ It is desirable that the tread surfaces are finished using shock-absorbing materials in case of fall accidents.

■ The treads must be demarcated for easy distinction between their edges (stair nosing) and surrounding areas (tread surface, etc.) by colours of different brightness, hue, or colour saturation.

☆ To enhance the distinction of steps, it is desirable that the tread edges are demarcated in different luminance from the surrounding areas along the entire length.

(Installation of raised rails)

■ Each side of a staircase must be provided with a raised section at least 50 mm high to prevent persons with visual impairment, etc. from missing their steps. This does not apply if the sides are wall surfaces, as there is no risk of missing their steps.

(Lighting)

■ Lighting equipment must be installed to ensure sufficient and even luminance for safe passage.

☆ In order to enhance the visibility of the floor surfaces, it is desirable that the staircases be installed with lighting equipment below the eye level, in addition to standard lighting.

(Collision prevention on landings)

☆ It is desirable that staircases with turns be equipped with mirrors on the landings to prevent people from colliding.

3.2.2 **Tactile floor tiles**

Refer to 3.26 Tactile floor tiles for the general guidelines concerning these facilities.

3.2.3 **Handrails**

Refer to 3.22 Fixtures and equipment (handrails, counters, vending machines, etc.) for the general guidelines concerning the handrails.

（Installation of handrails）

■ For staircases, install continuous handrails that go to the landing as well. However, this does not apply if it is impossible for unavoidable garden path circulation or other reasons.

☆ It is desirable that double handrails be installed on both sides of a staircase (upper rail: 800-850 mm, lower rail: 650 mm) in consideration of the elderly and children.

■ Handrails must be installed on both sides of staircases. If a single handrail is installed, its inclined portion must be installed at the height of at least 750 mm but no more than 850 mm from the tip of the tread. The horizontal portion must be installed at the height of at least 750 mm but no more than 850 mm from the surface of the path or floor.

■ Each end of the handrails on staircases must have a horizontal section of at least 450 mm in length in order to support the pedestrian’s body when taking the first step or guide persons with visual impairment, and handrails must return to the wall or turn downward at their ends.

(Shapes)

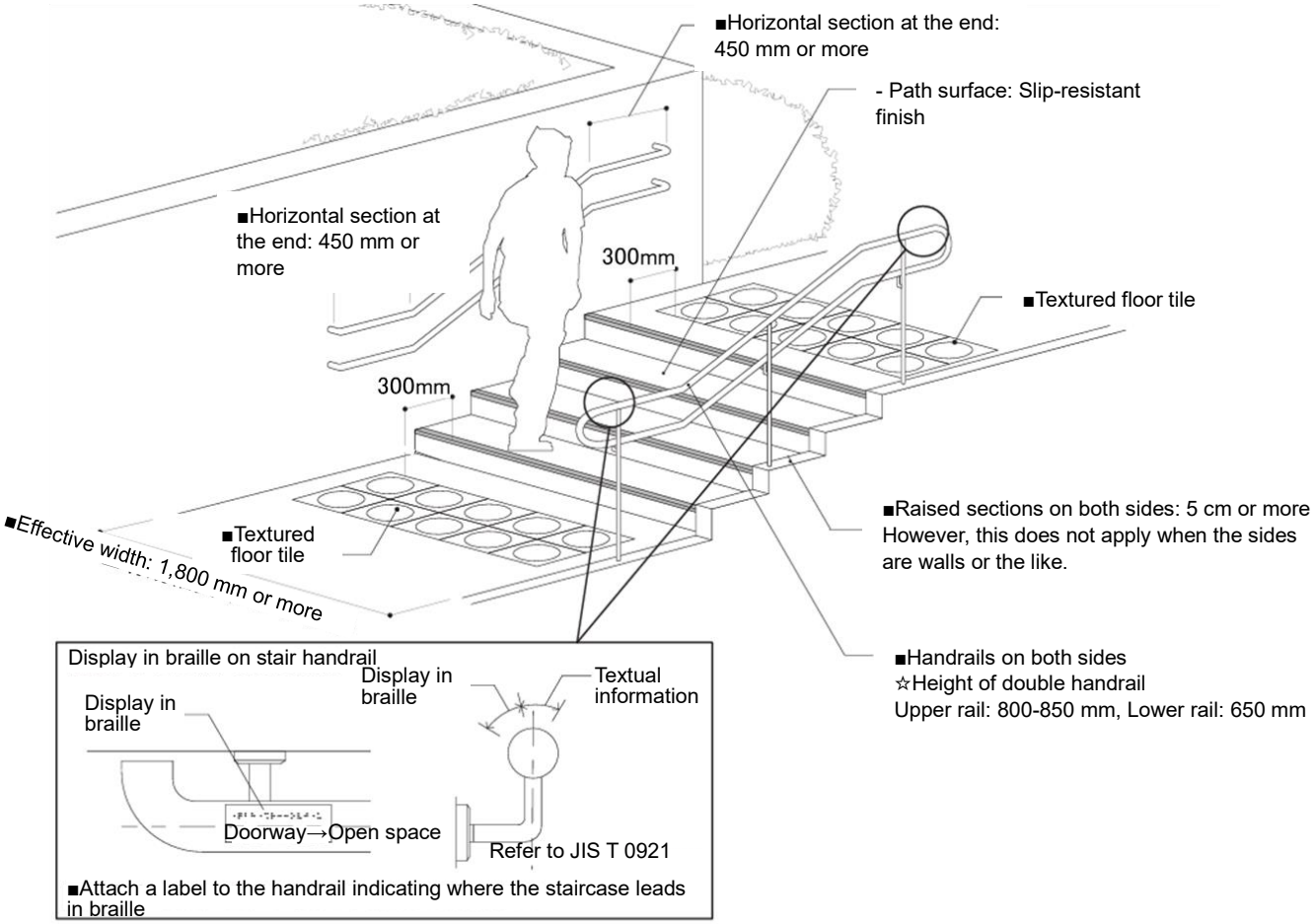
☆ It is desirable that the shape of handrails be circular to allow for a firm grip to support the body safely. In the case of a circular handrail, as a general rule, it is desirable that the diameter of the cross-section be 30-40 mm, and the clearance between the wall and the handrail be 30-50 mm. It is desirable that handrail support brackets be attached to the underside of the handrails to make it easy for users to grip them.

■ Handrails must be straight in shape. However, this does not apply if it is impossible for

unavoidable structural reasons.

(Display in braille)

■ At starting and ending points of handrails on staircases, guidance in braille must be provided as necessary.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Figure: Example of staircase implementation

3.3 Ramps

Ramps are effective for ensuring mobility not only for wheelchair users but also for the elderly and stroller users. For safe and smooth ascending and descending, it is necessary to ensure appropriate gradients and effective widths, and to consider the installation of landings and handrails. Note that ramps are limited to those that replace staircases or steps, or are installed alongside them.

3.3.1 General guidelines

(Effective widths)

- ☆ It is desirable that effective widths of the ramps on the main routes be at least 2,000 mm. Where it is essential to install a ramp outside the main routes (e.g., an additional ramp to a staircase), it desirably has a minimum width of 1,400 mm.
- ■ The effective widths of the ramps on the main routes must be at least 1,800 mm. Where it is essential to install a ramp outside the main routes (e.g., an additional ramp to a staircase), it must be at least 1,200 mm wide.

(Gradient)

- ☆ It is desirable that longitudinal gradient be 5% or less.
- ■ Longitudinal gradient must be no more than 8%.
- ■ Cross gradients must not be provided.

(Raised section)

- ■ Each side of a ramp must be provided with a raised section at least 50 mm high to prevent persons with visual impairment, etc. from missing their steps. This does not apply if the sides are wall surfaces, as there is no risk of missing their steps.

(Path surface)

- ■ The path surface must be finished to be slip-resistant.
- ■ The ramps must be demarcated for easy distinction from their connecting paths such as garden paths, etc. by colours of different brightness, hue, or colour saturation.

(Lighting)

- ■ Lighting equipment must be installed to ensure sufficient and even luminance for safe passage.
- ☆ In order to enhance the visibility of the floor surfaces, it is desirable that the ramps be installed with lighting equipment below the eye level, in addition to standard lighting.

3.3.2 Landings

(Installation intervals)

- ☆ It is desirable that landings are provided within every 500 mm height difference.
- ■ Where the height difference is more than 750 mm, the landings must be provided at a maximum interval of 750 mm height difference.

(Landing lengths)

■ Landings must be at least 1,500 mm long. Note that, in the turnings and corners along the run, the landings must have the length no smaller than the effective widths of the adjoining ramps.

(Horizontal plane)

☆ It is desirable that horizontal planes of approximately 1,500 mm be provided at the entry and exit points of ramps in consideration of safety.

3.3.3 **Handrails**

Refer to 3.22 Fixtures and equipment (handrails, counters, vending machines, etc.) for the general guidelines concerning the handrails.

（Installation of handrails）

■ Ramps must be installed with continuous handrails, including the landings. However, this does not apply if it is impossible for unavoidable garden path circulation or other reasons.

☆ It is desirable that double handrails be installed on both sides of a staircase (upper rail: 800-850 mm, lower rail: 650 mm) in consideration of the elderly people and children.

■ Handrails must be installed on both sides of staircases. If a single handrail is installed, it should be installed at the height of at least 750 mm but no more than 850 mm.

■ Each end of the handrails on ramps must have a horizontal section of at least 450 mm in length in order to support the pedestrian's body when taking the first step or guide persons with visual impairment, and handrails must return to the wall or turn downward at their ends.

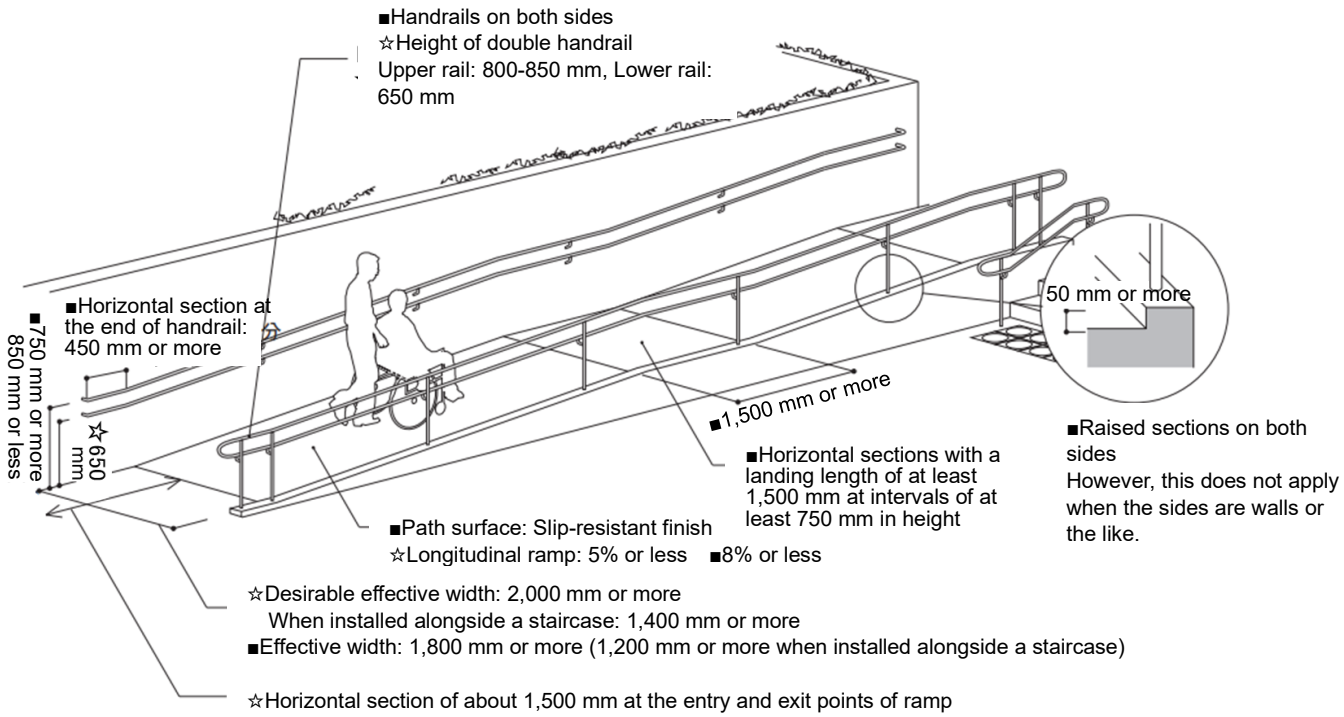
(Shapes)

☆ It is desirable that the shape of handrails be circular to allow for a firm grip to support the body safely. In the case of a circular handrail, as a general rule, it is desirable that the diameter of the cross-section be 30-40 mm, and the clearance between the wall and the handrail be 30-50 mm. It is desirable that handrail support brackets be attached to the underside of the handrails to make it easy for users to grip them.

■ Handrails must be straight in shape. However, this does not apply if it is impossible for unavoidable structural reasons.

(Display in braille)

■ At starting and ending points of handrails on ramps, guidance in braille must be provided as necessary.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Figure: Example of ramp implementation

3.4 Venue entrance space

3.4.1 Components of venue entrance

The entrances to venues, such as the Expo site, consist of the following structural components:

- Waiting area before the gates open
- Queuing or gathering area for ticket sales or bag and body check
- Ticket scanning area
- Security check area inside a tent for bag and body check
- Simple waiting area near the security check area where visitors can gather again after the check

■ All of the above areas must be accessible and have appropriate widths and spaces, and be appropriately designed.

For various facilities installed at the venue entrances (entrance/exit gates, counters, ticket vending machines, lockers, stroller parking areas, etc.), refer to 3.22 Fixtures and Equipment (Handrails, Counters, Vending Machines, Etc.) and 3.23 Interior Design (Interior Decorations, Equipment, and Other Arrangements).

3.4.2 Considerations for venue entrance

When entering a venue, visitors need to wait near the venue entrance until the gates open. Those who have mobility restrictions also need to queue with other visitors. The following matters should be considered.

☆ It is desirable to locate accessible drop-off zones as close to the venue entrance as possible.

☆ It is desirable to install benches for resting at intervals of 50 meters in the pathways leading to the entrance, and shades and shelters very near to the accessible entrance.

☆ It is desirable to ensure a horizontal space of 1,500 mm x 1,500 mm or larger around a bench or other equipment for resting so that a wheelchair can approach and stay adjacent to it.

☆ In areas where user needs are particularly high and there is a possibility that usage will become concentrated, it is desirable to provide priority seats so that the elderly people and persons with disabilities can sit there preferentially.

3.5 Information points

The information points, which provide information on services within the venue to all visitors to the Expo must be accessible to them. Therefore, information points for wheelchair users must not be installed separately in different locations.

- ■ The counter of the information point must be 700-750 mm in height, 750 mm in width and 450 mm in depth, with knee-high clearance of 650-700 mm below the counter, as standard.
- ■ In order for wheelchair users to approach, sufficient space (1,500 mm x 1,500 mm or larger) must be ensured in front of the counter, etc. to allow wheelchair users to turn around.
- ☆ When installing a standing-height counter or the like, it is desirable to fix the counter so that it can support the body, and to install a handrail for support as necessary.

Gardens

3.6 Garden paths

Garden paths within the gardens refer to garden paths leading from the garden paths within the Expo site, etc. to the doorways to the exhibition facilities, all garden paths within the gardens, or walk-through garden paths. Efforts must be made to ensure continuity in the layout so that all visitors to the Expo, including the elderly and persons with disabilities (particularly the elderly and wheelchair users), can move around and use the gardens safely and smoothly. Furthermore, sufficient consideration should be given by, for example, reducing the gradient as much as possible, or securing effective widths that take into consideration cases where wheelchair users pass by others.

3.6.1 General guidelines

(Flow plan)

- ■ As a general rule, the flow plan must be prepared with no staircases or steps for garden paths within the gardens so that all users, including wheelchair and stroller users, can move along the same flow line.

(Effective widths)

- ■ The garden paths must ensure appropriate effective widths based on the anticipated visitor volumes.
- ☆ It is desirable that the effective widths of garden paths be at least 2,000 mm so that two wheelchair users can pass by one another.
- ■ The effective widths of garden paths must be at least 1,800 mm.
- ■ If the garden paths are also used for viewing exhibitions and events, their effective widths must account for these uses apart from the widths required for passage. In addition, attention must be paid to setting passage positions and securing appropriate effective widths so that exhibitions can be viewed from the eye level of wheelchair users and children without difficulty even during busy times. (Refer to 3.28 for areas for waiting/queueing)

(Steps)

- ■ There must be no steps that obstruct wheelchair users in passing.
- ■ If steps are unavoidable, a ramp must be provided alongside them.
- ☆ If steps are unavoidable, it is desirable that the steps be demarcated for easy distinction between the edges of the steps and the surrounding areas by colours of different brightness, hue, or colour saturation.

(Gradient)

- ☆ It is desirable that longitudinal gradient be as gentle as possible. It is also desirable that ramps not be inclined in lateral directions other than the direction of travel to prevent obstruction to the passage of wheelchairs.
- ■ As a general rule, longitudinal gradients must be 5% or less. Even in unavoidable cases due to terrain conditions or other special reasons, they must be 8% or less.
- ■ With regard to cross gradients, garden paths must be flat and horizontal, except where drainage gradient is required.
- ■ Where cross gradients are required to ensure drainage gradients, permeable paving materials must be used to ensure smooth drainage, and the cross ramps must be 1% or less. Even in

unavoidable cases due to terrain conditions or other special reasons, they must be 2% or less.

(Path surface)

- ■ The path surface must be slip-resistant in both dry and wet conditions and must have a finish without unevenness that could hinder passage.
- ■ Gravel or cobbled garden paths, which make it difficult for wheelchair users to move around, must be avoided. When using flat plates, interlocking pavers, ceramic tiles, etc., ensure that no step is created in the joints.
- ■ In cases of gravel or cobbled pavements, which make it difficult for wheelchair or stroller users to pass through, areas paved with other materials must be provided alongside such pavements to ensure smooth passage of wheelchair or stroller users.

(Drains)

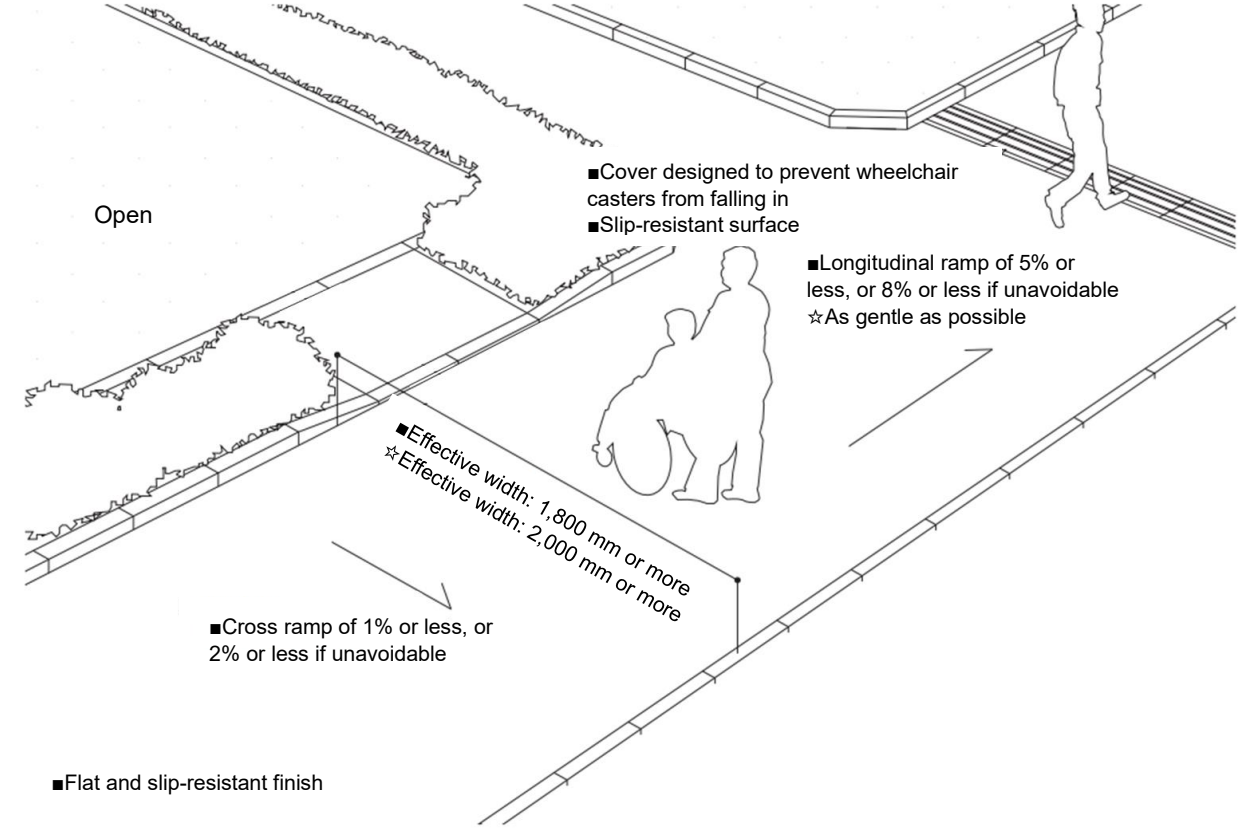
- ■ Drain covers and similar items must be designed so that wheels of wheelchairs or strollers, canes, shoe heels, etc. cannot be caught in such covers, and must have a slip-resistant surface, so as not to obstruct the passage of elderly people, persons with disabilities, etc.
- ■ In the case of a grid type cover, the pitch must be about 12.5-15 mm x 100 mm, and in the case of a circular type, the diameter must be 20 mm or less.

(Lighting)

- ■ Lighting equipment must be installed to ensure sufficient luminance for safe passage during dark hours. However, this does not apply to exhibition spaces. For details on exhibitions, refer to Chapter 4 Services.
- ☆ In order to enhance the visibility of the path surfaces, it is desirable that the garden paths should be installed with lighting equipment below the eye level, in addition to standard lighting.
- ■ Arrangements must be made so that light sources are hidden from the eyes.

(Protrusions)

- ■ As a general rule, objects protruding from ceilings, walls or signs must not be mounted in a space up to 2,000 mm from the path surface. If it is unavoidable to mount a protruding object, a barrier at least 1,100 mm high must be installed, or alternative entry prevention measures must be taken to prevent persons with visual impairment from colliding with the protruding object without being able to detect it with a white cane.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Figure: Example of garden path implementation

3.6.2 **Tactile floor tiles**

Refer to 3.26. Tactile floor tiles for the general guidelines concerning these facilities.

☆ It is desirable that continuous lines of tactile floor tiles be installed on garden paths, etc. as necessary depending on the purpose of use of the facility.

3.7 Staircases

As a general rule, staircases must not be installed on garden paths in the gardens. However, if it is unavoidable to install them due to terrain conditions or facility structures, refer to 3.2 Staircases.

If staircases or steps are provided, a ramp is required.

3.8 Ramps

Ramps are effective for ensuring mobility not only for wheelchair users but also for elderly people and stroller users. For safe and smooth ascending and descending, it is necessary to ensure appropriate gradients and effective widths, and to consider the installation of landings and handrails. Note that ramps are limited to those that replace staircases or steps, or are installed alongside them.

3.8.1 General guidelines

(Effective widths)

- ☆ It is desirable that the effective widths of the ramps on the main routes be at least 2,000 mm and no narrower than the pathways on plot, corridors, etc. Where it is essential to install a ramp outside the main routes (e.g., an additional ramp to a staircase), it desirably has a minimum width of 1,400 mm.
- ■ The effective widths of ramps must be at least 1,200 mm to allow a wheelchair user to pass by a person standing sideways.

(Gradients)

- ☆ It is desirable that longitudinal gradients be 5% or less.
- ■ Longitudinal gradients must be at no more than 8%.
- ■ Cross gradients must not be provided.

(Raised section)

- ■ Each side of a ramp must be provided with a raised section at least 50 mm high to prevent persons with visual impairment, etc. from missing their steps. This does not apply if the sides are wall surfaces, as there is no risk of missing their steps.

(Path surface)

- ■ The path surface must be finished to be slip-resistant.
- ■ The ramps must be demarcated for easy distinction from their connecting paths such as garden paths, etc. by colours of different brightness, hue, or colour saturation.

(Lighting)

- ■ Lighting equipment must be installed to ensure sufficient and even luminance for safe passage. However, this does not apply to exhibition spaces. For details on exhibitions, refer to Chapter 4 Services.
- ☆ In order to enhance the visibility of the floor surfaces, it is desirable that the ramps be installed with lighting equipment below the eye level, in addition to standard lighting.

3.8.2 Landings

(Installation intervals)

- ☆ It is desirable that landings are provided within every 500 mm height difference.
- ■ Where the height difference is more than 750 mm, the landings must be provided at a maximum interval of 750 mm height difference.

(Landing/tread widths)

■ Landings must be at least 1,500 mm long. Note that, in the turnings and corners along the run, the landings must have the length no smaller than the effective widths of the adjoining ramps.

(Horizontal plane)

☆ It is desirable that horizontal planes of approximately 1,500 mm be provided at the entry and exit points of ramps in consideration of safety.

3.8.3 **Handrails**

（Installation of handrails）

■ Ramps must be installed with continuous handrails, including the landings. However, this does not apply if it is impossible for unavoidable garden path circulation or other reasons.

☆ It is desirable that double handrails be installed on both sides of a staircase (upper rail: 800-850 mm, lower rail: 650 mm) in consideration of elderly people and children.

■ Handrails must be installed on both sides of staircase. If a single handrail is installed, it should be installed at the height of at least 750 mm but no more than 850 mm.

■ Each end of the handrails on ramps must have a horizontal section of at least 450 mm in length in order to support the pedestrian’s body when taking the first step or guide persons with visual impairment, and handrails must return to the wall or turn down

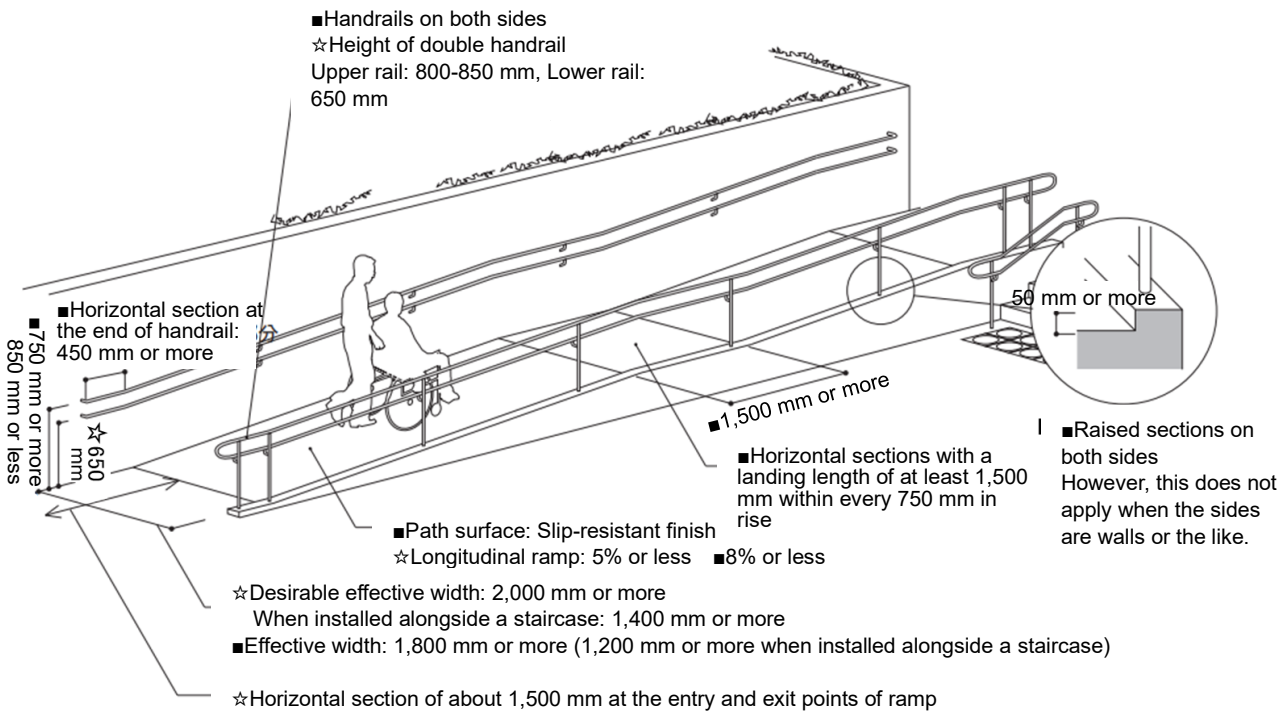
(Shapes)

☆ It is desirable that the shape of handrails be circular to allow for a firm grip to support the body safely. In the case of a circular handrail, as a general rule, it is desirable that the diameter of the cross-section be 30-40 mm, and the clearance between the wall and the handrail be 30-50 mm. It is desirable that handrail support brackets be attached to the underside of the handrails to make it easy for users to grip them.

■ Handrails must be straight in shape. However, this does not apply if it is impossible for unavoidable structural reasons.

(Display in braille)

■ At starting and ending points of handrails on ramps, guidance in braille must be provided as necessary.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Buildings

3.9 Pathways on plot (outdoor)

Pathways on plot refer to pathways leading from the garden paths within the Expo site, etc. to the doorways to the exhibition facilities (buildings), or walk-through pathways. Efforts must be made to ensure continuity in the layout so that all visitors to the Expo, including elderly people and persons with disabilities (particularly elderly people and wheelchair users), can move safely and smoothly to the buildings. Furthermore, sufficient consideration should be given by, for example, reducing the gradient as much as possible, or securing effective widths that take into consideration cases where wheelchair users pass by others.

3.9.1 General guidelines

(Flow plan)

- ■ As a general rule, the flow plan must be prepared with no staircases or steps for pathways on the plot so that all users, including wheelchair and stroller users, can move along the same flow line.
- ■ Where steps/height differences are unavoidable, a ramp, lift, or alternative means of vertical mobility must be provided along the path (refer to 3.12 for staircases, 3.13 for ramps, and 3.14 for lifts).
- ☆ It is desirable that no steps be provided at the junctions between the pathways on plot and the plot borders or doorways.

(Effective widths)

- ■ The pathways must ensure appropriate effective widths based on the anticipated visitor volumes.
- ☆ It is desirable that the effective widths of pathways be at least 2,000 mm so that two wheelchair users can pass by one another.
- ■ The effective widths of pathways must be at least 1,800 mm.
- ■ If the pathways are also used for viewing exhibitions and events, their effective widths must account for these uses apart from the widths required for passage. In addition, attention must be paid to setting passage positions and securing appropriate effective widths so that exhibitions can be viewed from the eye level of wheelchair users and children without difficulty even during busy times. (Refer to 3.28 for areas for waiting/queueing)

(Path surface)

- ■ The path surface must be slip-resistant in both dry and wet conditions and must have a finish without unevenness that could hinder passage.
- ■ Gravel or cobbled garden paths, which make it difficult for wheelchair users to move around, must be avoided. When using flat plates, interlocking pavers, ceramic tiles, etc., ensure that no step is created in the joints.
- ■ In cases of gravel or cobbled pavements, which make it difficult for wheelchair or stroller users to pass through, areas paved with other materials must be provided alongside such pavements to ensure smooth passage of wheelchair or stroller users.

(Removal of trip hazards)

■ The pathways must be devoid of protrusions that cause trip hazards.

(Lighting)

■ Lighting equipment must be installed to ensure sufficient luminance for safe passage during dark hours.

☆ In order to enhance the visibility of the path surfaces, it is desirable that the garden paths should be installed with lighting equipment below the eye level, in addition to standard lighting.

■ Arrangements must be made so that light sources are hidden from the eyes.

3.9.2 Equipment for resting

■ Benches and other equipment for resting must be provided at appropriate intervals as long as they do not obstruct the garden paths.

☆ It is desirable to ensure a horizontal space of 1,500 mm x 1,500 mm or larger around a bench or other equipment for resting so that a wheelchair can approach and stay adjacent to it.

☆ In areas where user needs are particularly high and there is a possibility that usage will become concentrated, it is desirable to provide priority seats so that elderly people and persons with disabilities can sit there preferentially.

3.9.3 Tactile floor tiles

Refer to 3.26. Tactile floor tiles for the general guidelines concerning these facilities.

☆ Where it is necessary to select a guiding method other than the installation of tactile floor tiles and other assistance for persons with visual impairment as, for example, the pathway between the plot border and the building doorway being too short, it is desirable that other means of guiding assistance be provided, such as voice information guide and personal escort by staff members, etc.

3.9.4 Others

(Cross gradient)

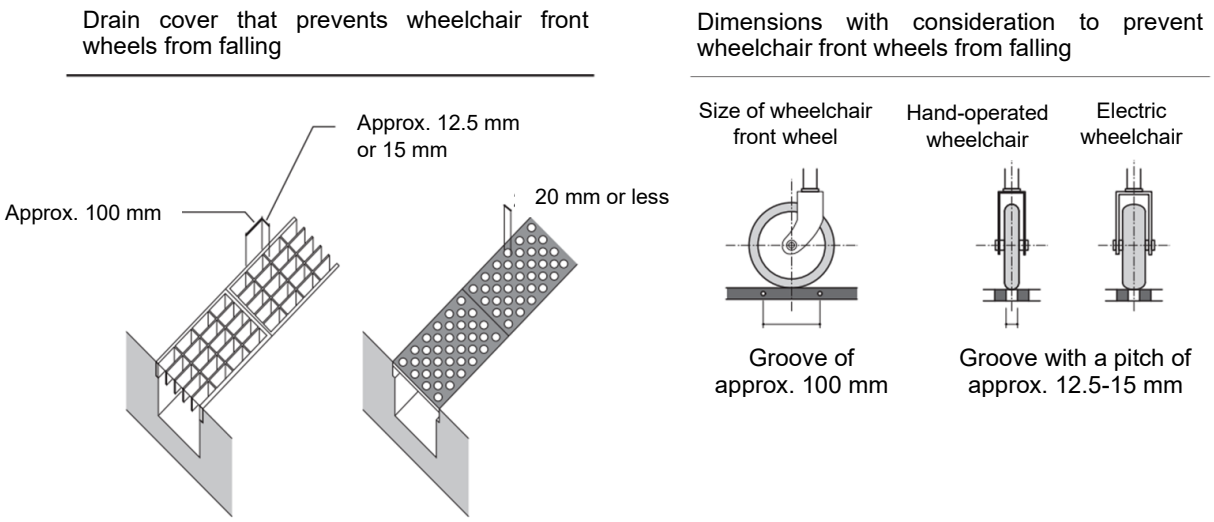
■ The pathways must be flat and horizontal, except where drainage gradient is required.

■ Where cross gradients are required to ensure drainage gradients, permeable paving materials must be used to ensure smooth drainage, and the cross ramps must be 1% or less. Even in unavoidable cases due to terrain conditions or other special reasons, they must be no more than 2%.

(Drains)

■ Drain covers and similar items must be designed so that wheels of wheelchairs or strollers, canes, shoe heels, etc. cannot be caught in such covers, and must have a slip-resistant surface, so as not to obstruct the passage of elderly people, persons with disabilities, etc.

■ In the case of a grid type cover, the pitch must be about 12.5-15 mm x 100 mm, and in the case of a circular type, the diameter must be 20 mm or less.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of drain construction

(Information equipment)

☆ If a two-way communication system is used as information equipment, it is desirable that a two-way communication system with a monitor be used in consideration of persons with hearing difficulties.

(Doors)

■ If a door is installed, it must have a structure that automatically opens or closes or otherwise have a structure that allows wheelchair users to easily open and close it to pass through, and there must be no height difference on either side of the door.

3.10 Doorways

Doorways include external entrances and exits, those to rooms for use, and those to washroom for wheelchair users. In order for elderly people, persons with disabilities, etc. to smoothly pass through, a sufficient width must be ensured for a doorway to make it easy to operate the door, and a sufficient space to open and close the door must be ensured around the doorway.

Doorways must be free of height differences and other steps and installed with sliding or automatic doors, etc. for easy door operation to ensure accessibility to wheelchair users, etc. Furthermore, the doorways must also be equipped with areas on both sides where a wheelchair user can wait.

3.10.1 General guidelines

(Ensuring flat and horizontal surfaces)

- ■ The floors of the doorways into/out of buildings and on major routes must be flat and horizontal, free of staircases and steps (except where a ramp, lift, or other means of vertical mobility is provided).
- ■ No height differences on either sides of the doors.
- ☆ Where steps are provided for a reason of waterproofing, it is desirable that the height difference be approximately 10 mm and their edges be rounded off or made smooth.

(Floor)

- ■ The floor must have a rough surface and be finished using slip-resistant materials.
- ☆ It is desirable that floors are finished using shock-absorbing materials in case of fall accidents.
- ☆ It is desirable not to use thick carpets as these pose a considerable burden on driving wheelchairs.

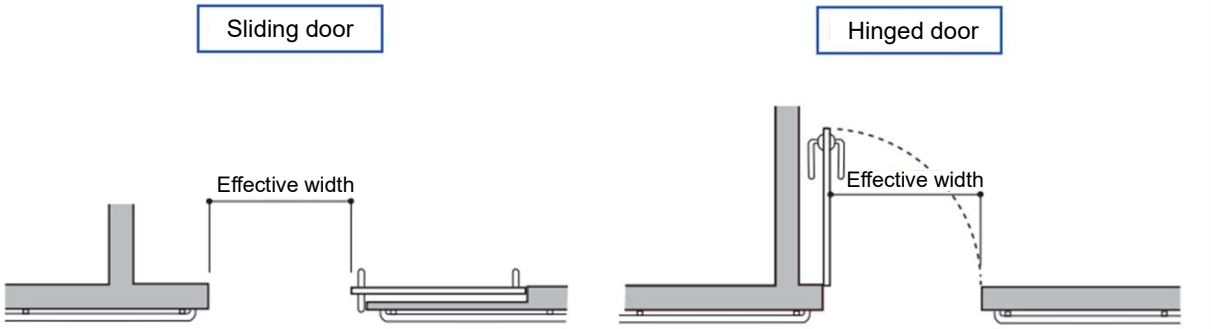
(Installation of eaves)

- ■ A shade or eave must be installed over an exterior doorway in order to create a shelter from the sun and rain.

(Effective widths)

- ☆ It is desirable to have at least 950 mm of effective width for doorways.
- ■ The doorways must have at least 850 mm of effective width. Considerations are required to account for the door panel thickness, the door width that does not clear the doorway opening, etc. in order to ensure an appropriate effective width.
- ☆ It is desirable that the effective width of main doorways be at least 2,000 mm so that two wheelchair users can pass by one another. If an entrance and an exit for a main doorway are separated, it is desirable that each of them has an effective width of at least 1,000 mm.
- ■ The main doorways must have at least 1,000 mm of effective width.
- ■ If an entrance and an exit for a main doorway are separated, each of them must have an effective width of at least 850 mm.

When measuring an effective width of the doorway, measure the narrowest part between the door surface and the frame with the door open.



(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: How to measure effective width

(Lighting)

- ■ Lighting equipment must be installed to ensure sufficient and even luminance for safe passage. However, this does not apply to exhibition spaces. For details on exhibitions, refer to Chapter 4 Services.
- ☆ In order to enhance the visibility of the floor surfaces, it is desirable that the doorways be installed with lighting equipment below the eye level.

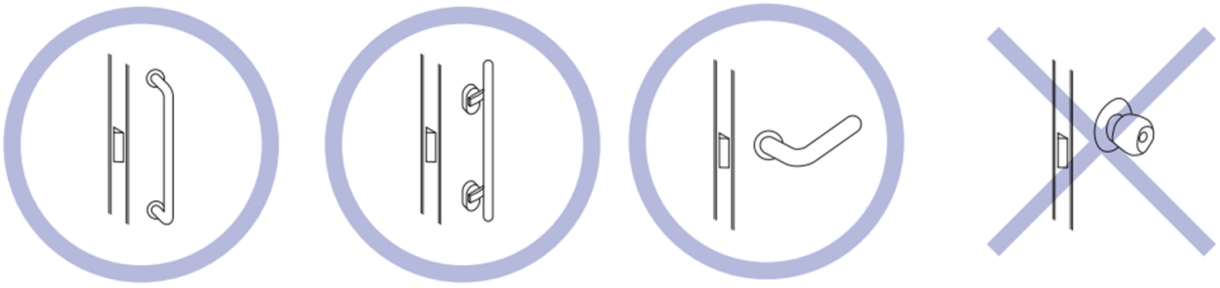
3.10.2 **Doors**

(Styles)

- ■ If a door is installed, it must have a structure that automatically opens or closes or otherwise have a structure that allows wheelchair users to easily open and close it to pass through, and there must be no height difference on either sides of the door. If doors are always open during the opening hours or they are opened or closed by staff, hinged or similar doors are acceptable.
- ☆ If a hand-operated sliding door is used, it is desirable that it can be opened and closed easily by, for example, adopting a top-hung sliding door, and that it can be held and operated with little force (30 N max.).
- ■ Revolving doors must not be installed.

(Handles)

- ☆ It is desirable to avoid round handles (doorknobs) as some people have difficulty operating them, and to use lever handles, push/pull handles or bar handles. It is desirable to install handles that can be operated with one hand and without requiring delicate handling skills by hand at a height that is easy for wheelchair users and children to use.
- ☆ It is desirable that handles be installed at a height of approximately 900 mm from the floor so that elderly people and persons with disabilities can easily use them.



☆Bar handle ☆Push/pull handle ☆Lever handle ☆Doorknob

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Easy-to-use handless

(Room name display signs)

☆ It is desirable that room names etc. be indicated on the door or the wall on the door handle side, in embossed lettering and with a label in braille as necessary.

(Effective distance between doors in series)

■ If two or more doors are connected to each other, the effective distance between two doors in series must be the widths of both doors plus 1,500 mm, assuming that the two doors are open at the same time.

(Materials)

☆ In the case of glass doors, it is desirable that kick plates be installed up to 35 cm above the floor.

(Glass pane doors and windows on doors)

☆ If doors are transparent, it is desirable that horizontal lines or patterns be used to make them identifiable in order to prevent collisions.

■ In the case of hinged doors, glass windows using safety glass (laminated or tempered glass) must be installed at the height or in the position where the presence of wheelchair users or children can be recognised so that the opposite side of the door can be seen, in order to prevent collisions and other hazards. However, this guideline does not apply where privacy is concerned or such an arrangement may spoil the appreciation of the exhibition.

(Door closer performance)

☆ If a hand-operated door is used as a hinged door, it is desirable to install a door check to adjust the opening/closing speed.

☆ Where door closers with a delayed action feature are used, it is desirable to ensure sufficient time for opening/closing of the door for safety.

(Safety measures)

■ Doors must be clearly identifiable to reduce the collision risks.

(Installation of door-side walls)

- ■ Door-side walls with a width of 300 mm or more must be installed next to doors. However, this does not apply if the door is designed to open and close automatically and has a structure that allow wheelchair users to easily open and close the door to pass through.
- ☆ For outward-opening doors facing corridors, it is desirable to provide alcoves or other measures to prevent the doors from obstructing passage. It is desirable to ensure door-side walls with a width of 450 mm or more for hinged doors so that wheelchair users can easily open and close the doors.

3.10.3 **Automatic doors**

(Structures)

- ■ The automatic operating system must be sensor-operated or other system without push buttons, to remove the necessity of manual operation.
- ■ For automatic sliding doors, the opening and closing speed and detection range of the doors must be set so that elderly people and persons with disabilities can easily use them.
- ☆ It is desirable that safety systems (such as photoelectric beam sensors) be installed on both sides of the door frame at an appropriate height to avoid door strike injury risks.

(Emergency safety measures)

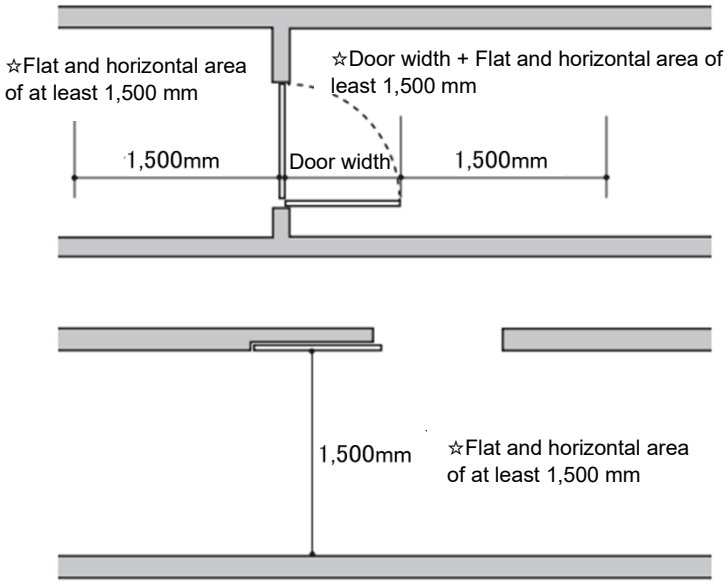
- ■ The doors must be able to be manually operated in an emergency. Alternatively, an additional manually operated door must be installed.

3.10.4 **Tactile floor tiles**

Refer to 3.26 Tactile floor tiles for the general guidelines concerning these facilities.

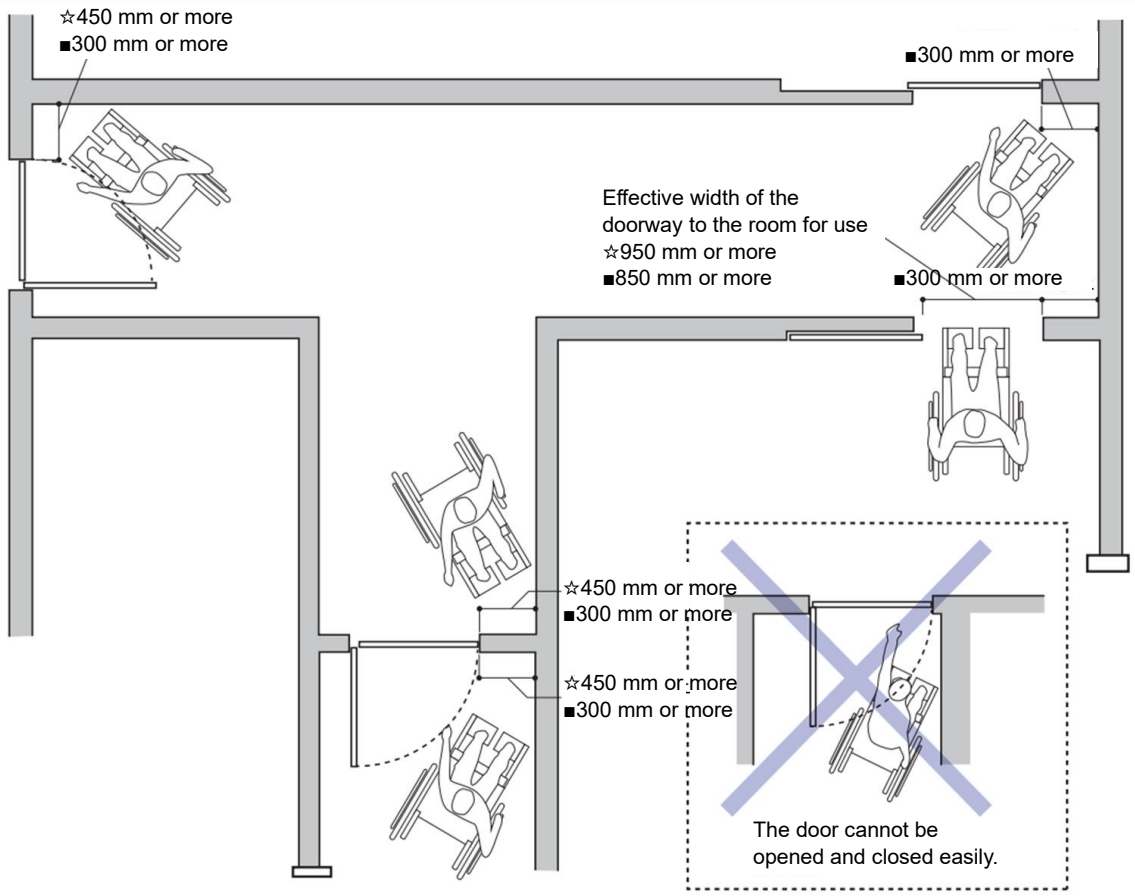
3.10.5 **Spaces around doors**

- ■ Doors must have flat and horizontal areas on both sides for wheelchair users to wait.
- ☆ It is desirable that the flat and horizontal space on both sides of doors be at least 1,500 mm for sliding doors and at least the door width plus 1,500 mm for hinged doors.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Spaces around doors



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

3.11 Corridors etc. (indoor)

Corridors, etc. (including entrances, halls, etc.) are important areas that serve as access routes from external entrances/exits to intended rooms for use, washrooms, etc. Corridors, etc. must be designed to have sufficient widths to allow a wheelchair user and a pedestrian to smoothly pass by each other and to allow a wheelchair to turn 180 degrees, and appropriate effective widths must be ensured when installing corridors, etc. based on the anticipated visitor volumes with considerations for emergency evacuation, etc. Consideration must also be given to the installation of equipment to prevent it from obstructing passage, and protrusions on walls must be avoided as much as possible so as not to obstruct passage.

3.11.1 General guidelines

(Effective widths)

- ■ The corridors, etc. must ensure appropriate effective widths based on the anticipated visitor volumes.
- ☆ It is desirable that the effective widths of corridors, etc. be at least 2,000 mm so that two wheelchair users can pass by one another.
- ■ The effective widths of corridors, etc. must be at least 1,800 mm, and measures must be taken to ensure smooth passage for wheelchair users, etc., such as devising ways for improving flow lines and providing spaces where two wheelchair users can pass by one another.
- ■ If the corridors, etc. are also used for viewing exhibitions and events, their effective widths must account for uses other than passage apart from the widths required for passage. In addition, attention must be paid to setting passage positions and securing appropriate effective widths so that exhibitions can be viewed from the eye level of wheelchair users and children without difficulty even during busy times.

(Steps)

- ■ There must be no steps that obstruct wheelchair users in passing.
- ■ If steps are unavoidable, a ramp must be provided alongside them.
- ☆ If steps are unavoidable, it is desirable that the steps be demarcated for easy distinction between the edges of the steps and the surrounding areas by colours of different brightness, hue, or colour saturation.

(Protrusions)

- ☆ As a general rule, it is desirable that no protruding objects be mounted in the pathways.
- ■ If it is unavoidable to mount a protruding object and its upper and lower ends are within a range of 650 to 2,000 mm from the path surface, it must not protrude toward the pathways by 100 mm or more. If it is unavoidable to mount a protruding object, collision prevention measures must be taken to prevent persons with visual impairment from colliding with the protruding object without being able to detect it with a white cane. In such cases, consideration must be given to ensure that the raised section from the floor has no gaps so that barriers, etc. can be easily detected with a white cane.

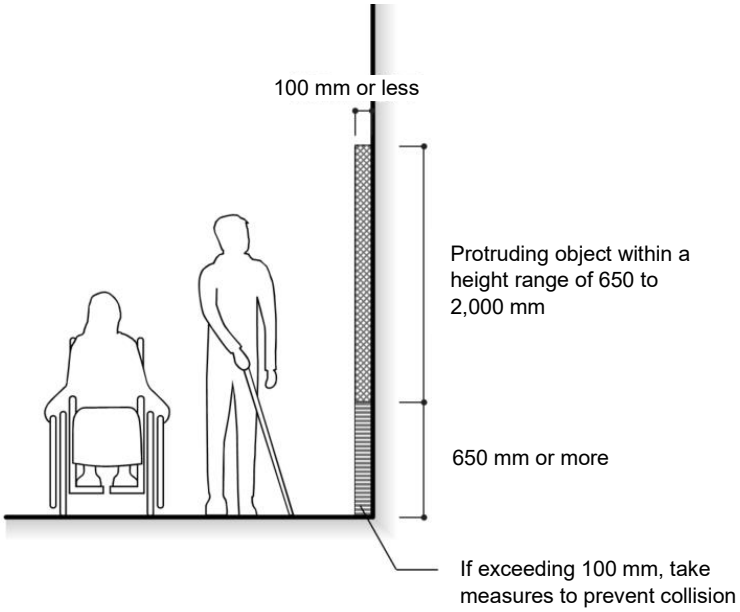


Figure: Protruding object in a pathway (example)

(Angled walls in corners)

☆ It is desirable that angled walls in corners of corridors, etc. be cut off for hazard prevention.

(Floor surface)

■ The floor must have a rough surface and be finished using slip-resistant materials.

☆ It is desirable that floors are finished using shock-absorbing materials in case of fall accidents.

☆ It is desirable not to use thick carpets as these pose a considerable burden on driving wheelchairs.

☆ It is desirable not to use floor materials that define the direction of travel because they make it difficult to change directions in wheelchairs.

(Wall surface)

☆ It is desirable that walls be installed with kick plates, which protect wheelchairs, walls, etc., up to approximately 350 mm above the floor level, where wheelchair footrests can bump on easily.

(Ensuring identifiable arrangements for floors and walls)

☆ It is desirable that finishing materials for floors and walls assist easy distinction between the wall and floor by using colours of different brightness, hue, or colour saturation.

■ With regard to floor patterns and colour arrangements, confusing designs that may be mistaken for steps, holes or other similar elements must be avoided.

(Lighting)

■ Lighting equipment must be installed to ensure sufficient and even luminance for safe passage. However, this does not apply to exhibition spaces. For details on exhibitions, refer to Chapter 4 Services.

☆ In order to enhance the visibility of the path surfaces, it is desirable that the corridors, etc. be installed with lighting equipment below the eye level, in addition to standard lighting.

■ Arrangements must be made so that light sources are hidden from the eyes.

3.11.2 Equipment for resting

☆ It is desirable that equipment for resting is installed in appropriate arrangements so long as they do not obstruct people's movements. When installing benches, etc., it is desirable to ensure an effective width that takes into consideration the required leg space of a seated person.

☆ It is desirable to ensure a horizontal space of 1,500 mm x 1,500 mm or larger around a bench or other equipment for resting so that a wheelchair can approach and stay adjacent to it.

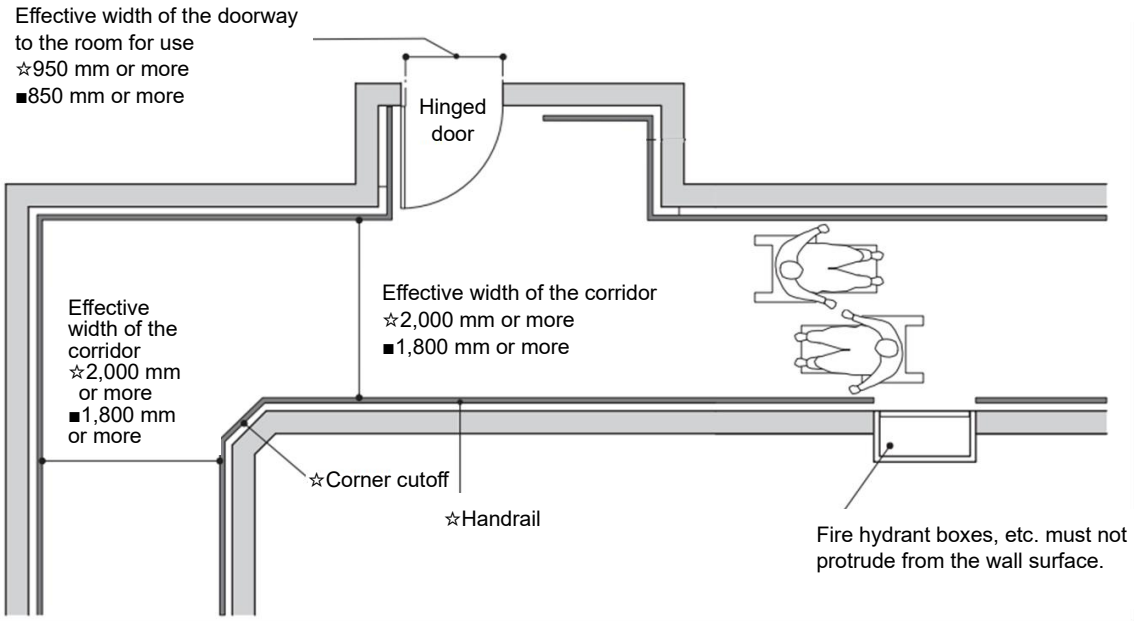
☆ In areas where user needs are particularly high and there is a possibility that usage will become concentrated, it is desirable to provide priority seats so that elderly people and persons with disabilities can sit there preferentially.

3.11.3 Tactile floor tiles

Refer to 3.26 Tactile floor tiles for the guidelines concerning these facilities.

3.11.4 Handrails

☆ It is desirable to provide handrails as necessary in consideration of the passage of elderly people and persons with disabilities.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of implementation of corridors, etc.

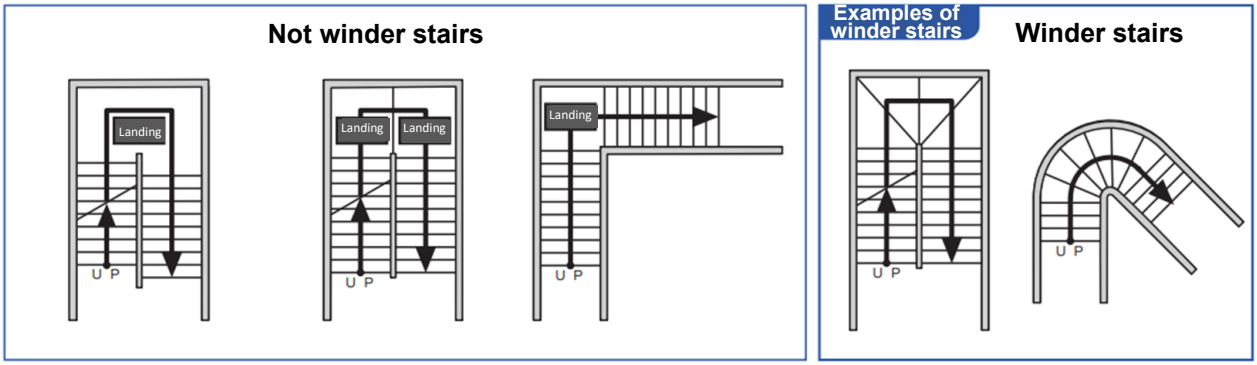
3.12 Staircases

Staircases are areas that require all visitors to the Expo including elderly people and persons with disabilities (in particular, elderly people, people who use a cane or crutches, and persons with visual impairment) to exert significant strengths to pass through. Therefore, measures, such as installing handrails, should be taken to ensure smooth use. In addition, safety measures, such as ensuring appropriate riser and tread structure and effective width, and installing non-slip devices, must also be taken into consideration.

3.12.1 General guidelines

(Styles)

- ■ The dimensions of treads and risers must be consistent in a single flight of staircases.
- ☆ It is desirable that the main staircases not be winder staircases. Winder staircases are not desirable because they pose a risk of missing steps and make it easy for persons with visual impairment to lose their sense of direction.



(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Winder staircases

(Risers)

- ☆ It is desirable that the riser is no more than 150 mm.
- ■ The riser must be at no more than 160 mm.

(Treads)

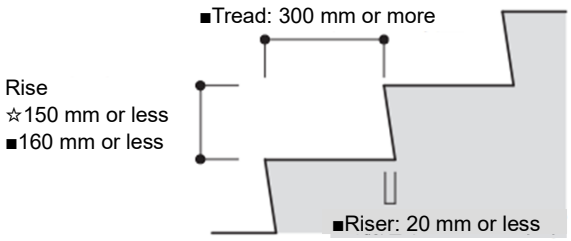
- ■ The tread must be at least 300 mm. Note that the tread must be proportionate to the riser for easy and comfortable passage.

(Stair nosing)

- ■ Stair nosing must be provided with a non-slip device. Metal non-slip devices must be avoided as they cause canes to slip.
- ■ Steps must avoid projected stair nosing or similar structures that may be tripping hazards.

（Nosing depth）

- ■ Risers must be provided. The nosing depth must be 20 mm maximum.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Structure of steps

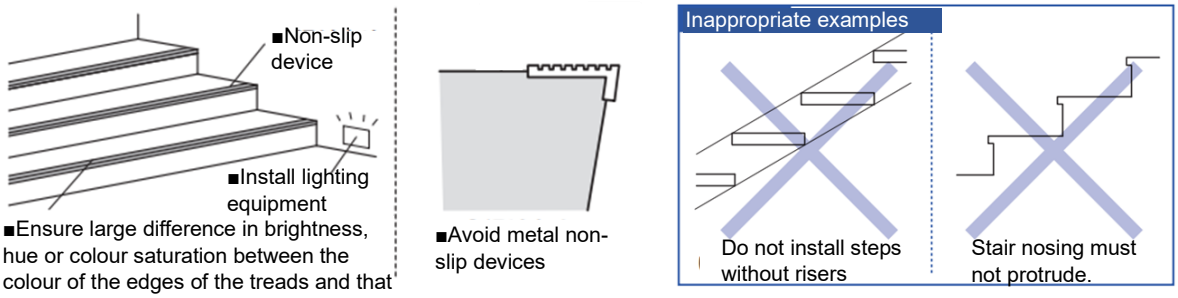


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Figure: Structure of stair nosing and risers

(Effective staircase widths)

- ■ The staircase must ensure appropriate effective widths based on the anticipated number of visitors likely to use them.
- ☆ It is desirable that the effective widths of staircases be at least 1,300 mm.
- ■ The effective widths of staircases must be at least 1,200 mm.

(Treads)

- ■ The treads must have a rough surface and be finished using slip-resistant materials.
- ■ The treads must be demarcated for easy distinction between their edges (stair nosing) and surrounding areas (tread surface etc.) by colours of different brightness, hue, or colour saturation.
- ☆ To enhance the distinction of steps, it is desirable that the tread edges are demarcated in different luminance from the surrounding areas.

(Safety measures under staircases)

- ■ Where a headroom is small, safety measures must be implemented to prevent head collisions.

(Installation of raised rails)

- ☆ It is desirable that both sides of a staircases have walls. If there are no walls, it is desirable that raised sections at least 50 mm high be provided to prevent the tip of a cane from falling.

(Lighting)

- ■ Lighting equipment must be installed to ensure sufficient luminance for safe passage during dark hours.
- ☆ In order to enhance the visibility of the path surfaces, it is desirable that the garden paths should be installed with lighting equipment below the eye level, in addition to standard lighting.
- ■ Arrangements must be made so that light sources are hidden from the eyes.

3.12.2 **Turnings**

(Collision prevention on landings)

- ☆ It is desirable that measures to prevent collisions with walls of landings be taken, such as installing mirrors on the walls.

3.12.3 **Tactile floor tiles**

Refer to 3.26 Tactile floor tiles for the general guidelines concerning these facilities.

3.12.4 **Handrails**

(Locations)

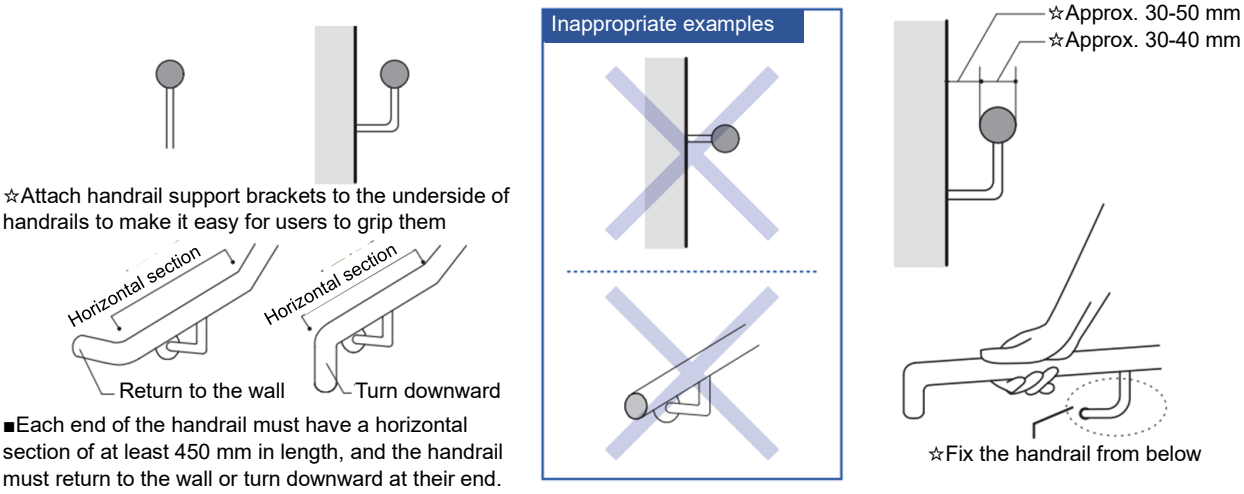
- ■ Handrails for landings must be provided continuously with those along stepped staircases sections. However, this does not apply if it is impossible for unavoidable garden path circulation or other reasons.
- ■ Handrails along stepped staircase sections must be straight in shape. However, this does not apply if it is impossible due to the structure of the building.
- ☆ It is desirable that double handrails be installed on both sides of a staircase (upper rail: 800-850 mm, lower rail: 650 mm) in consideration of elderly people and children.
- ■ Handrails must be installed on both sides of staircases. If a single handrail is installed, its inclined portion must be installed at the height of at least 750 mm but no more than 850 mm from the tip of the tread. The horizontal portion must be installed at the height of at least 750 mm but no more than 850 mm from the surface of the path or floor.
- ■ Each end of the handrails on staircases must have a horizontal section of at least 450 mm in length in order to support the pedestrian's body when taking the first step or guide persons with visual impairment, and handrails must return to the wall or turn downward at their ends.

(Shapes)

- ☆ It is desirable that the shape of handrails be circular to allow for a firm grip to support the body safely. In the case of a circular handrail, as a general rule, it is desirable that the diameter of the cross-section be 30-40 mm, and the clearance between the wall and the handrail be 30-50 mm. It is desirable that handrail support brackets be attached to the underside of the handrails to make it easy for users to grip them.
- ■ Handrails must be straight in shape. However, this does not apply if it is impossible due to the structure of the building.

(Display in braille)

- ■ At each beginning and end of handrails on staircases, guidance in braille must be provided as necessary.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Handrail shapes, fixing methods, and termination details

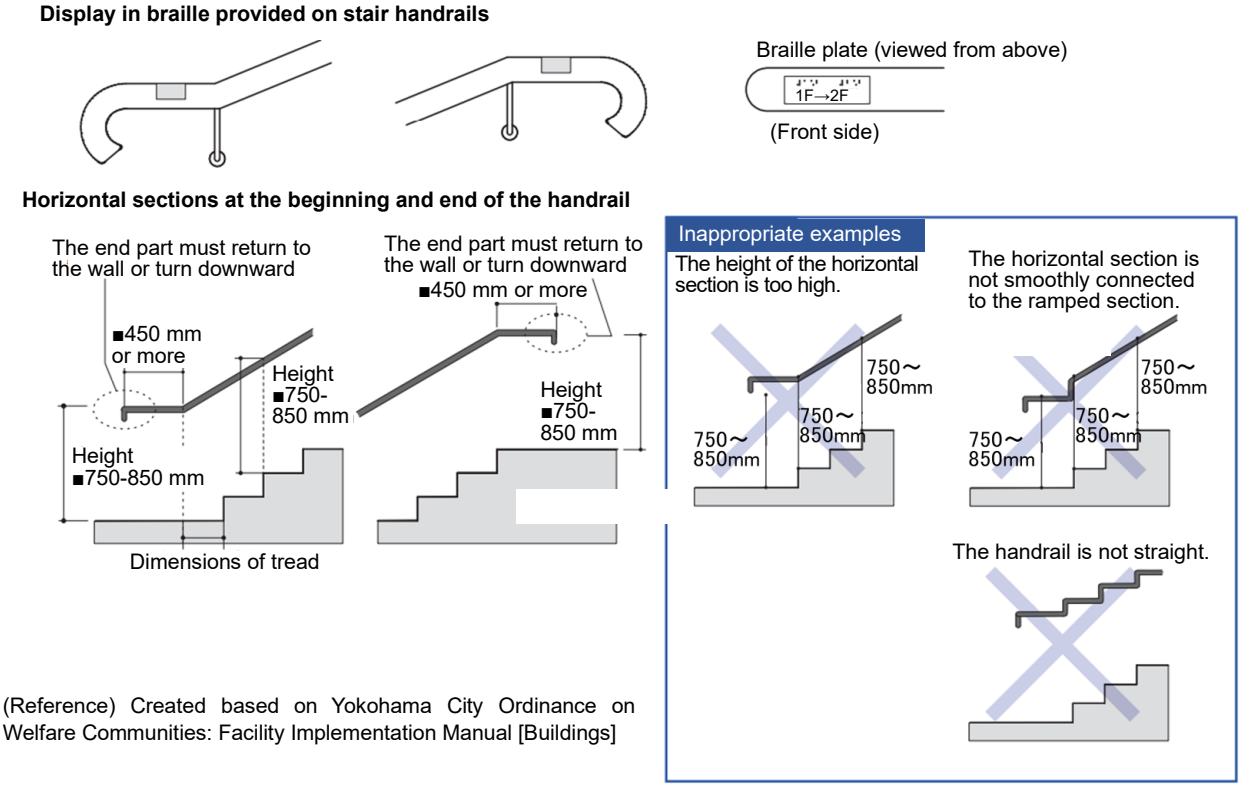


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Figure: Handrail structure (structure of starting and ending points, etc.)

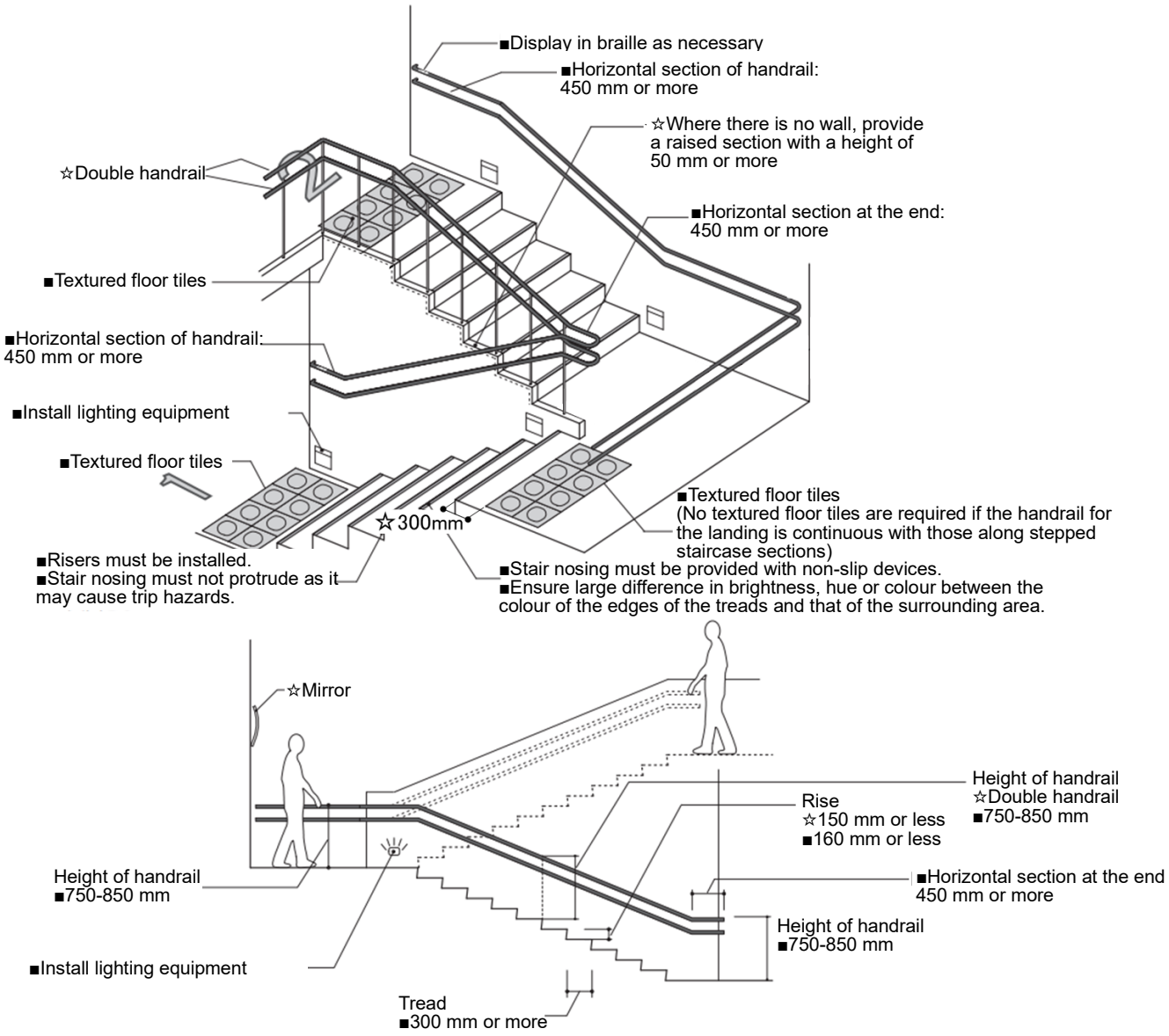

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Figure: Staircase structure

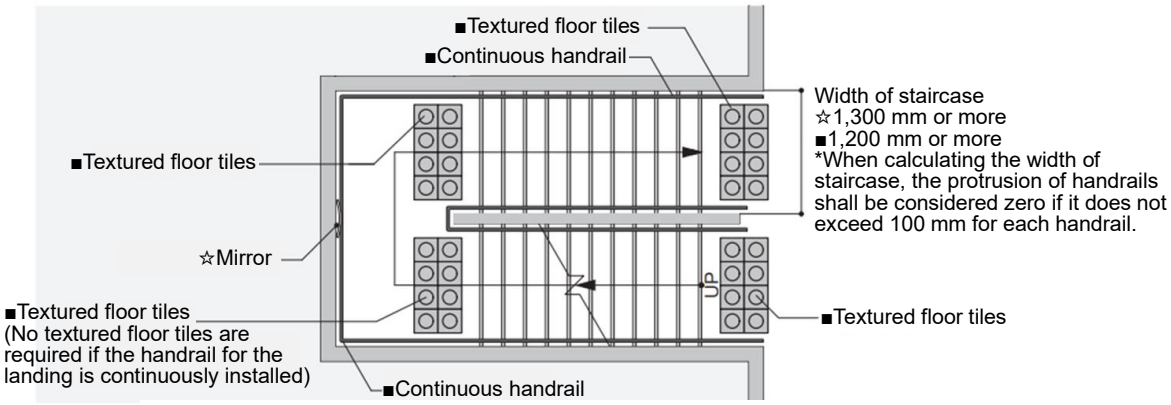

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Figure: Landing structure

3.13 **Ramps**

Ramps are effective for ensuring mobility not only for wheelchair users but also for elderly people and stroller users. For safe and smooth ascending and descending, it is necessary to ensure appropriate gradients and effective widths, and to consider the installation of landings and handrails.

3.13.1 **General guidelines**

(Effective widths)

- ☆ It is desirable that effective widths of the ramps on the main routes, whether outdoor or indoor, be at least 2,000 mm, and not be narrower than the pathways on plot, corridors, etc. Where it is essential to install a ramp outside the main routes (e.g., an additional ramp to a staircase), it desirably has a minimum width of 1,400 mm.
- ■ The effective widths of the ramps on the main routes, whether outdoor or indoor, must be at least 1,800 mm, and not be narrower than the pathways on plot, corridors, etc. Where it is essential to install a ramp outside the main routes (e.g., an additional ramp to a staircase), it must be at least 1,200 mm wide.

(Gradient)

- ☆ It is desirable that ramps not be inclined in lateral directions other than the direction of travel so as not to obstruct the passage of wheelchairs.
- ☆ It is desirable that the gradient be 1:20 maximum.
- ■ The gradient must not exceed 1:12.

(Raised sections on sides)

- ■ Each side of a ramp must be provided with a side wall, or a raised section at least 50 mm high.

(Path surface)

- ■ The garden paths must have a rough surface and be finished using slip-resistant materials.
- ■ The ramps must be demarcated for easy distinction from their connecting paths such as corridors, etc. by colours of different brightness, hue, or colour saturation.

3.13.2 Landings

(Installation intervals)

- ☆ It is desirable that landings are provided within every 500 mm in height difference.
- ■ Where the height difference is more than 750 mm, the landings must be provided at a maximum interval of 750 mm in height difference.

(Landing lengths)

- ■ Landings must be at least 1,500 mm long. Note that, in the turnings and corners along the run, the landings must have the length no smaller than the effective widths of the adjoining ramps.

(Lighting)

- ■ Lighting equipment must be installed to ensure sufficient luminance for safe passage during dark hours.
- ☆ In order to enhance the visibility of the path surfaces, it is desirable that the garden paths should be installed with lighting equipment below the eye level, in addition to standard lighting.
- ■ Arrangements must be made so that light sources are hidden from the eyes.

3.13.3 **Tactile floor tiles**

Refer to 3.26 Tactile floor tiles for the general guidelines concerning these facilities.

- ■ The landings must have dotted tactile warning tiles on the approach to the upper end of a ramp so that persons with visual impairment can recognise the existence of the ramp. However, this does not apply to the case where the gradient does not exceed 1:20, where the ramp has a height not exceeding 160 mm and a gradient not exceeding 1:12, or where the handrail at the landing is installed continuously with a handrail on a rampd section.

3.13.4 **Handrails**

（Installation of handrails）

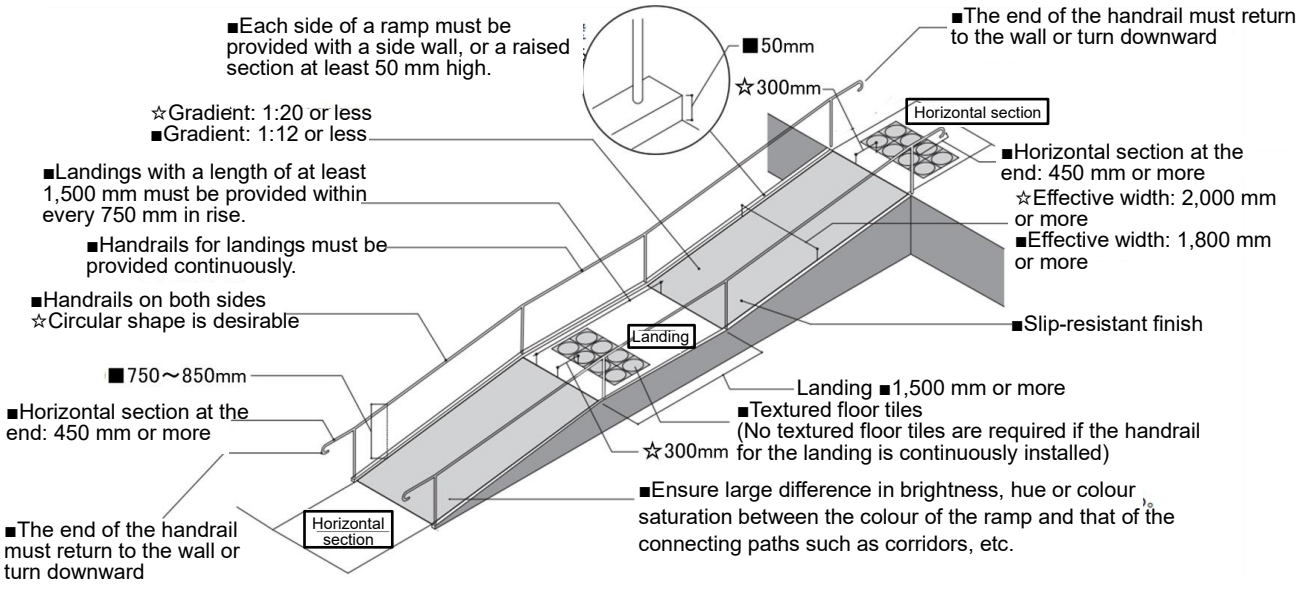
- ■ Handrails must be installed on ramps with a gradient exceeding 1:12 or a height exceeding 160 mm.
- ■ Handrails for landings must be installed continuously with those on rampd sections. However, this does not apply if it is impossible for unavoidable garden path circulation or other reasons.
- ☆ It is desirable that double handrails be installed on both sides of a staircase (upper rail: 800-850 mm, lower rail: 650 mm) in consideration of elderly people and children.
- ■ Handrails must be installed on both sides of staircases. If a single handrail is installed, it should be installed at the height of at least 750 mm but no more than 850 mm.
- ■ Each end of the handrails on ramps must have a horizontal section of at least 450 mm in length in order to support the pedestrian’s body when taking the first step or guide persons with visual impairment, and handrails must return to the wall or turn down

(Shapes)

- ☆ It is desirable that the shape of handrails be circular to allow for a firm grip to support the body safely. In the case of a circular handrail, as a general rule, it is desirable that the diameter of the cross-section be 30-40 mm, and the clearance between the wall and the handrail be 30-50 mm. It is desirable that handrail support brackets be attached to the underside of the handrails to make it easy for users to grip them.
- ■ Handrails must be straight in shape. However, this does not apply if it is impossible for unavoidable structural reasons.

(Display in braille)

- ■ At starting and ending points of handrails on ramps, guidance in braille must be provided as necessary.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Basic structure of a ramp

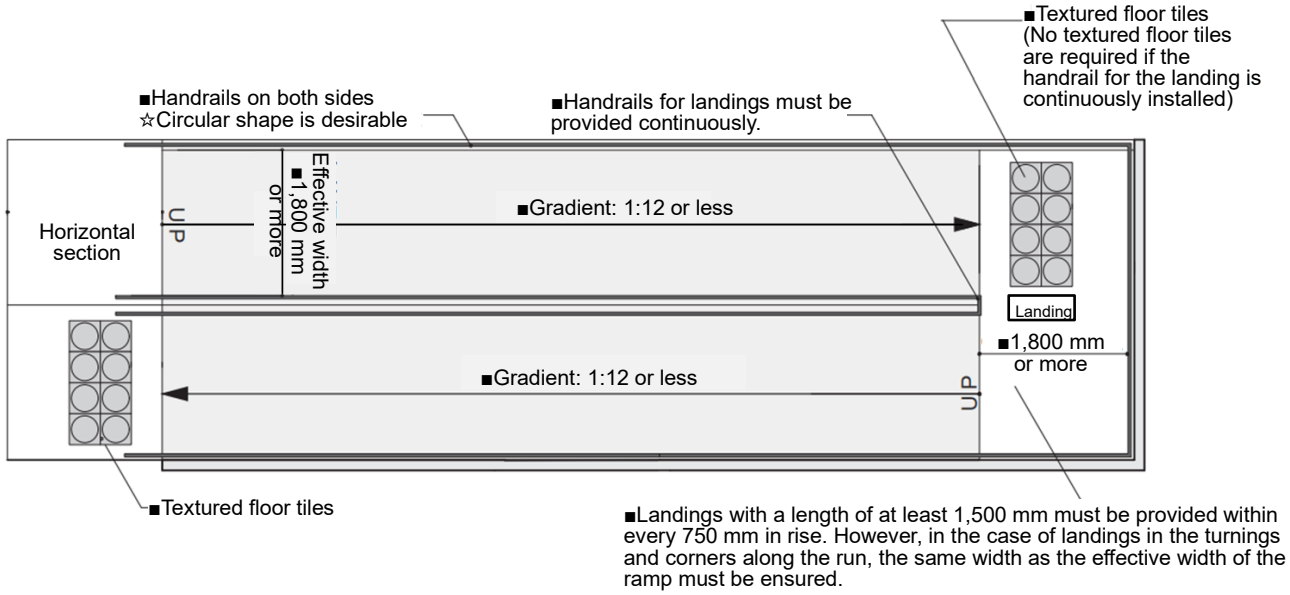


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Figure: In the case of a turning ramp

3.14 Passenger lifts

Lifts are an effective means of vertical mobility for elderly people, persons with disabilities, etc. In addition to the inside of the lifts, the lift lobbies must be equipped with equipment for elderly people, persons with disabilities, etc., such as buttons that are easy to operate and voice information systems.

3.14.1 General guidelines

(Locations)

- ■ Passenger lifts must be provided close to the main routes.

(Styles)

- ☆ It is desirable that lift cars have two access doors located in the front and back so that wheelchair users can use them without having to turn around in the car.
- ☆ Where several lifts are installed in one area, it is desirable that they are of the same specifications.
- ■ Passenger lifts must comply with both the Standards for elevators compatible with wheelchair users (JEAS-C506B) and the Standards for elevators compatible with persons with impaired vision (JEAS-515E) (both issued by the Japan Elevator Association).
- ■ The passenger lifts must be equipped with a central control system in the event of power outage, earthquake, and fire.

(Serviced floors)

- ■ The passenger lifts must provide access to floors with rooms for use and washroom for wheelchair users and aboveground floors.

(Eaves)

- ■ A shade or eave of a sufficient size must be installed over an exterior access point to passenger lifts in order to create a shelter from the sun and rain.

3.14.2 Doors

(Effective widths)

- ☆ It is desirable that the effective widths of the doorways to a car and lift entrance be at least 900 mm.
- ■ The effective widths of the doorways to a car and lift entrance must be at least 800 mm.

(Door-side walls)

- ☆ It is desirable that the doorways to a car and lift entrance have no door-side walls, otherwise a door-side wall only on one side of the door.

(Ensuring visibility)

- ☆ In order to ensure safety in emergencies, it is desirable to install glass windows or the like on the doors of lift cars facing the lift lobby.

(Safety system)

- ■ The doors must be automatic and sliding. They must be equipped with an obstacle detection device that stops the closing action when a closing door is obstructed and then resumes the closing action when the obstruction is removed.

3.14.3 **Lift cars**

(Sizes)

☆ It is desirable that, taking into account the traffic volumes and exhibition facility sizes, the lift cars be at least 2,100 mm wide and 1,500 mm long or of an equivalent standard size (JIS A4301: 2,150 mm wide x 1,600 mm long; or 2,000 mm wide x 1,750 mm long (with a capacity of 24 passengers)), and that several lifts be provided.

■ The lift cars must be at least 1,700 mm wide x 1,500 mm long, or of equivalent standard sizes (JIS A4301: 2,000 mm wide x 1,350 mm long; or 1,800 mm wide x 1,500 mm long (with a capacity of 17 passengers)). Where it is practically impossible to provide the cars of the specified sizes for structural reasons, lift arrangements must be planned to ensure smooth mobility of visitors by, for example, providing a multiple number of lifts.

(Illuminance)

■ The in-car lighting must have the illuminance that is approximately equal to that in the lift lobbies and adjacent pathways. It must ensure even brightness without flickering.

（Handrails）

Refer to 3.22 Fixtures and Equipment (Handrails, Counters, Vending Machines, Etc.) for the general guidelines concerning the handrails.

■ Handrails must be installed on both side walls in the lift cars, and must be of a shape that is easy to grip.

☆ It is desirable that handrails be also installed on the front walls.

(Installation of mirrors)

■ A mirror must be installed in a lift car to allow confirmation of the landing status and the opening/closing status of the door on the lift lobby side. A convex mirror may be used as long as the opening/closing status of the door can be confirmed.

3.14.4 **Call buttons, operation panels, and information systems**

(Installation positions)

■ Control systems (call buttons and operation panels) must be installed at positions easily accessible to wheelchair users on both side walls inside lift cars and in lift lobbies.

■ The position of floor number buttons at the top of the wheelchair-accessible operation panel installed on the side wall of the car must not exceed 1,100 mm from the floor surface.

■ The wheelchair-accessible call buttons in the lift lobbies must be installed at a height of approximately 1,000 mm from the floor surface.

(Call buttons and operation panel buttons)

☆ It is desirable that the floor number buttons on the operation panel inside the car be of a size that is easy to operate, and the numbers be embossed or tactile. It is desirable that they also have a cancelling function.

☆ For the door open and close buttons, it is desirable to take measures, such as adding triangle arrows, to make the door opening and closing easier to recognise.

- ☆ It is desirable to make the selected floor number button visually recognizable, and to make the numbers and letters on the operation panel buttons tactile by embossing them and adding braille in accordance with JIS T 0921.
- ☆ It is desirable that audible confirmation be provided when a button is pressed so that passengers can notice it.
- ■ Control systems installed inside lift cars and in lift lobbies (which are, when control systems are installed at positions easily accessible to wheelchair users and at other positions, limited to those installed at other positions) must have a structure that allows persons with visual impairment to smoothly operate using any of the following methods:
  (a) Braille
  (b) Embossed lettering
  (c) Voice guide
  (d) Other methods similar to the above
- ☆ It is desirable that push buttons be designed with colour arrangement and embossed lettering that are easily visible to persons with low vision, along with easy-to-understand display in braille.

(Information systems)

- ■ The lift cars must be equipped with a system that indicates the floors to stop at and the present position.
- ■ The lift cars must be equipped with a voice information system that announces the next floor to stop and warns of the closing doors of the doorways to a car and lift entrance. If this system is installed, it must first announce the next floor to stop and then warn of the closing door.
- ■ A voice information system that announces the car's direction of travel must be installed in the lift cars or lift lobbies.
- ☆ It is desirable the voice announcements made when the lift arrives use a clear difference in voice pitch to indicate whether the lift is going up or down.
- ☆ It is desirable that voice announcements inside the lift be also provided as textual information in consideration of persons with hearing difficulties.

(Overload alarm)

- ☆ For persons with hearing difficulties, it is desirable to visually indicate that the lift is overloaded at an easily visible position in the car, along with voice guidance.

(Emergency communication system)

- ☆ It is desirable to install two-way visual monitors or similar devices as a means of information transmission for persons with hearing difficulties.
- ■ Each lift must have a two-way communication that connects to an emergency response system.
- ☆ It is desirable to install buttons or monitor inside the lift car that enable persons with hearing difficulties to communicate with the outside (and that can identify that the person requiring emergency communication has an hearing difficulties).
- ☆ It is desirable to install an emergency supplies cabinet in the lift car that stores portable toilets, emergency drinking water, etc. If such a cabinet is installed, care must be taken to ensure that it does not obstruct the use of wheelchairs.

3.14.5 **Lift lobbies**

(Size)

■ The lift lobby must have a horizontal space of 1,500 mm x 1,500 mm or larger so that a wheelchair user can wait or turn around without obstruction. The horizontal space must not be located on the travel route.

(Height difference between lift car and lobby)

☆ It is desirable that the height difference between the lift car and the lift lobby floor at the time of landing be within the permissible range of ±10 mm.

(Information display)

■ The lift lobbies must be equipped with an information system that notifies the arriving car's travelling direction.

☆ It is desirable to place a "priority mark" indicating that persons with disabilities, elderly people, stroller users, etc. are given priority when using the lift.

☆ It is desirable to provide voice guidance near lifts.

(Kick plates)

☆ It is desirable to install kick plates around the lift lobby to protect walls and door frames, with a height of approximately 350 mm from the floor.

3.14.6 **Tactile floor tiles**

Refer to 3.26 Tactile floor tiles for the general guidelines concerning these facilities.

☆ It is desirable to install tactile floor tiles and other assistance for persons with visual impairment in front of the control systems (call buttons) in the lift lobbies.

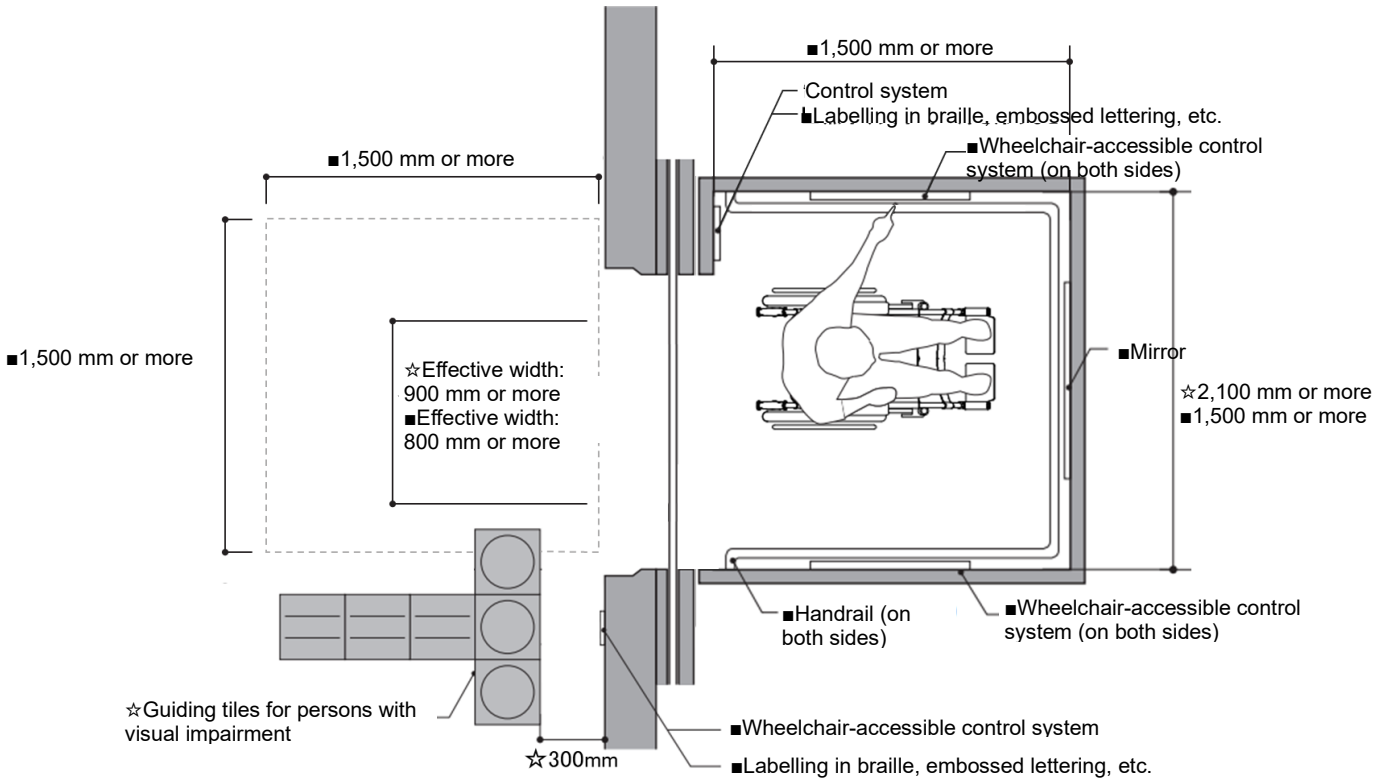

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Figure: Example of implementation around the lift

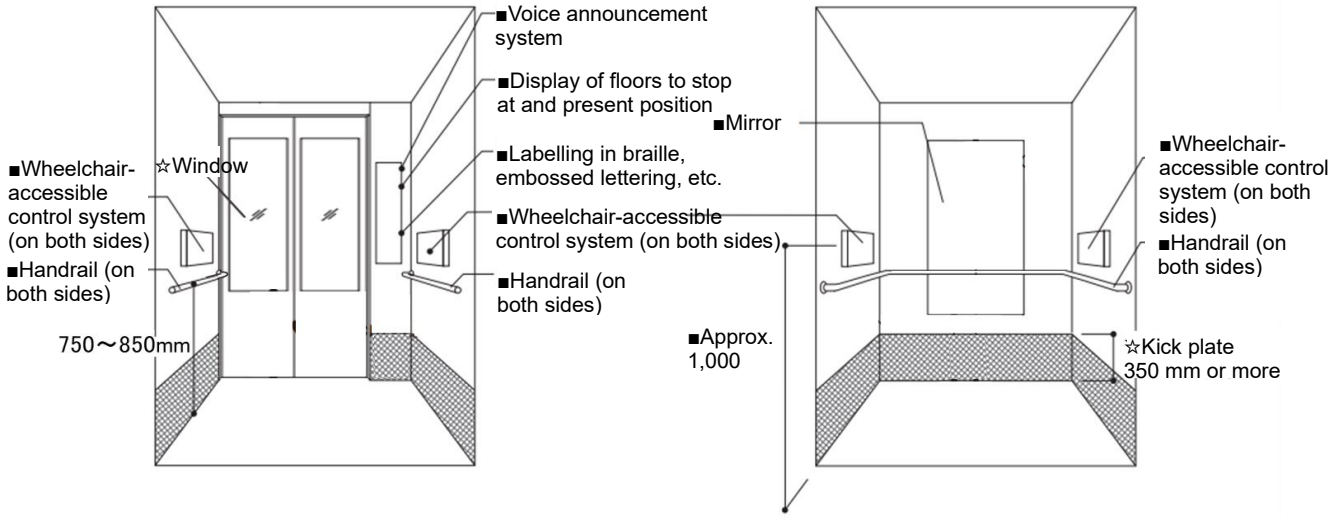

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Figure: Examples of implementation in the lift car

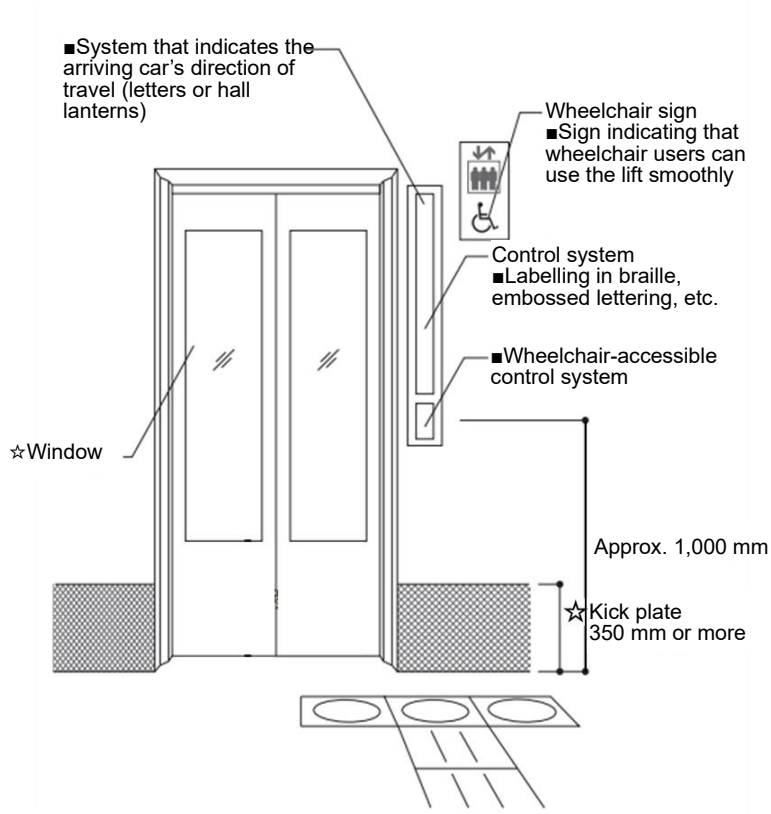

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Figure: Example of implementation in the lift lobby

3.15 Escalators

While lifts are a fundamental means of vertical travel that caters for the special needs of elderly people and persons with disabilities, escalators are also a viable means for many, including persons without disabilities. Where escalators are to be installed, due considerations must be given to elderly people and persons with disabilities. As for the escalators for horizontal mobility, these must be based on the standards set forth in these guidelines for the escalators for horizontal mobility.

3.15.1 General guidelines

(Widths)

☆ If escalators are provided, it is desirable that the width is in alignment with the type-1000 (the effective width of step: approx. 1,000 mm).

(Distinctiveness of steps)

■ The steps must be easily distinguishable from the combs by the use of colours of different brightness, hue, or colour saturation.

■ The steps must be demarcated on the side edges for easy distinction from one another by colours of different brightness, hue, or colour saturation.

☆ It is desirable that the steps are demarcated on all edges for easy distinction from one another (for example, side edges in yellow and stair nosing in green).

(Level steps)

☆ It is desirable that the level area on a flight have approximately three steps.

(Number of steps before reaching the normal step height)

☆ It is desirable to ensure a slow, gradual transition from the horizontal area to the normal step height.

☆ It is desirable that the number of steps before reaching the normal step height be approximately 5 steps.

(Structure of moving handrails)

☆ It is desirable that the moving handrails extend approximately 700 mm from the comb before boarding and after alighting.

■ Moving handrails must have horizontal extension of 1,200 mm minimum before steps start rising/dropping at each end of the flight.

(Installation of fixed handrails)

☆ It is desirable that the boarding and landing areas of escalators are provided with fixed handrails at least 1,000 mm long.

☆ It is desirable that measures are put in place to prevent injuries as a result of being caught between the moving and fixed handrails.

(Lighting)

■ The floors of boarding/landing areas must be appropriately lit.

(Other)

- ■ Where escalators are installed in parallel for both ascending and descending, the direction of travel must be on the left one.

3.15.2 **Cautionary notice**

(Display signs)

- ■ Display signs indicating the presence of escalators must be provided near the escalators.
- ☆ It is desirable that the escalators have display signs to caution against the risks of injuries by being caught in or falling.
- ☆ If display signs are installed, it is desirable to take measures in consideration of persons with low vision, such as putting marks on moving handrails, to make the direction of travel easy to understand.

(Dotted tactile warning tile)

- ■ Dotted tactile warning tiles as warning markings must be installed on the floor inside the fixed handrails, at approximately 300 mm before the landing plate at the boarding and landing areas of an escalator.

3.15.3 **Measures for guiding**

(Voice information systems)

- ■ Voice guidance equipment must be installed to provide information about the escalator's destination or direction of travel (ascending/descending; in the case of moving walks, entry/exit). However, this does not apply in cases where it affects exhibition presentation, etc.
- ☆ When installing a voice guidance device, it is desirable to install the sound source close to the boarding area and toward the flow line of the users, paying attention to the sound volume and quality which are sufficiently audible compared to the surrounding background noise.

3.15.4 **Emergency safety measures**

(Emergency stop buttons)

- ■ The escalators must be fitted with emergency stop buttons on the walls or pillars near the boarding and landing areas.

(Sensors to prevent entry in the wrong direction)

- ■ In the case of escalators that stop automatically, they must be equipped with sensors to prevent people from entering in the wrong direction.

3.16 Platform lifts

While passenger lifts are a fundamental means of vertical travel that caters for the special needs of elderly people and persons with disabilities, platform lifts may also serve the same purpose effectively for wheelchair users where the travel required is between about two floors. Where platform lifts are to be installed, due considerations must be given to wheelchair users.

Platform lifts are devices which wheelchair users can operate in their seated position. The car has the rated speed of 15 m/minute maximum and the floor area of 2.25 square meters maximum.

3.16.1 General guidelines

(Dimensions)

- ■ The platform must be at least 900 mm wide and 1,500 mm long.

(Adjacent areas)

- ■ An area of 1,500 mm square minimum must be provided to access the platform lift.

(Positions of call buttons in height)

- ■ Call buttons must be installed at approximately 700-1,200 mm above the floor.

(Doorways)

- ■ The doorway must be at least 900 mm wide.
- ■ Door-side walls must be installed.

(Handrails)

- ☆ It is desirable that the platform lifts are fitted with at least two handrails, each mounted at approximately 800-1,000 mm above the floor.

(Control system)

- ☆ It is desirable that the operation panels can be operated with the elbow.
- ☆ It is desirable that operation panels are also provided outside to operate the lift externally.

(Distance of travel)

- ■ The maximum distance of travel must be 2,000 mm for lifts without doors and 4,000 mm for lifts with doors.
- ■ In the case of platform lifts installed next to staircases, multiple platform lifts must not be installed consecutively in the same room.

3.17 Toilet Stalls

In order to meet the diverse needs of users and to make toilet stalls more user-friendly, it is necessary to appropriately arrange washroom for wheelchair users, individual washrooms accessible for ostomates, and individual washrooms with equipment for infants. To avoid users concentrating at a specific individual washroom, it is important to appropriately distribute various facilities and functions throughout the Expo site. Furthermore, there has been an increasing need for the installation of unisex individual washrooms in recent years, and it is required to design toilet stalls and individual washrooms in consideration of the situations of users, such as using washrooms with the assistance of a person of the opposite gender.

Exhibition facilities (buildings) are not obligated to provide washrooms, but it is desirable for washrooms to be available for visitors to use according to the Guidelines in facilities where the duration a visitor stays is generally long, the traveling distance is long, or where eating and drinking is entailed.

Refer to 3.20 Baby Care Rooms for information on equipment for infants.

3.17.1 General guidelines

(Wheelchair-accessible individual washroom)

- ■ At least one individual washroom must be provided that is easily accessible to wheelchair users when installing toilet stalls.
- ■ Wheelchair-accessible individual washroom must be planned as an integral part of a toilet stall wherever it is possible.
- ■ Wheelchair-accessible individual washroom must be located in an easily accessible and clearly visible location.
- ☆ It is desirable that at least one washroom for wheelchair users that is in consideration of caregivers or people accompanying wheelchair users of all genders be provided in a location that can be used by anyone.
- ☆ It is desirable that the washroom for wheelchair users installed in locations where people of all genders can use them be fitted with a large-sized changing table (care bed). When installing a care bed surface, it is desirable to ensure a sufficient space that does not interfere with the movement of a person with disability and a caregiver even when the bed is extended.

(Individual washrooms accessible for ostomy bag users)

- ■ At least one individual washroom must provide facilities for emptying ostomy bags when installing toilet stalls.

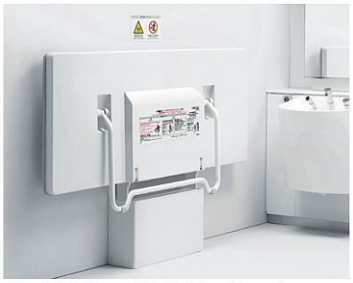
(Other individual washrooms)

- ☆ In addition to a washroom for wheelchair users, it is desirable to provide a spacious individual washroom with a door having a sufficient effective width and a sufficient space so that wheelchair and stroller users can use it.

CHECK

Install a large-sized bed for changing diapers or taking off and putting on clothes

A place where an adult can lie down is necessary for changing diapers or taking off and putting on clothes of people who need assistance, as well as for self-catheterisation by independent wheelchair users. If the number of toilet facilities with large-sized beds increases, it will expand opportunities for persons with disabilities and elderly people to go out.
Reference: “Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (Revised in 2016)” states that “when installing washrooms for wheelchair users or accessible toilet stalls, at least one of them must be equipped with a large-sized bed.”



Long-side folding type (foldable type multi-purpose changing table)

Short-side folding type (foldable changing table for public use)

(Source) TOTO Accessibility Book: Public Toilet, Feb. 2021

Figure: Examples of large-sized beds

3.17.2 **Flooring**

(Flooring)

- The floor must have a rough surface or be finished using slip-resistant materials.

3.17.3 **Doorways to toilet stalls**

(Doorways)

- If a door is installed at the doorway to a toilet stall, the door must be easy for elderly people, persons with disabilities, etc. to open/close and pass through.
- The effective widths of doorways must be at least 800 mm. However, this does not apply when the toilet stalls directly face corridors, etc.
- There must be no height differences in the approach to the doorway to toilet stalls. If it is structurally unavoidable, a ramp or a step with a height that poses no safety risk must be provided.

3.17.4 **Doorways to washrooms for wheelchair users**

(Widths)

- ☆ It is desirable that the effective widths of doorways to washrooms for wheelchair users be 950-1,000 mm or more.
- The effective widths of doorways to washrooms for wheelchair users must be at least 850 mm.

(Styles)

- ☆ The doors of washroom for wheelchair users should not open toward the inside where equipment is installed. Instead, it is desirable that the doors be manual or automatic sliding doors. Manual sliding doors should be able to be opened or closed with little effort, and it is desirable that they be able to stop in an open state.
- ■ A door-side wall with a width of 300 mm or more must be installed next to the door of the washroom for wheelchair users. However, this does not apply if the door has an automatic opening and closing mechanism that allows wheelchair users to easily open/close it and pass through.
- ☆ It is desirable that the doors of washroom for wheelchair users be equipped with a lever or other similar devices that can be operated with little effort to close the doors so that those who cannot use their hands well can handle them. In the case of automatic sliding doors, those devices include push buttons for operating the opening and closing.

(Area around the door)

- ☆ It is desirable that a space with a diameter of at least 1,500 mm be ensured outside the doors of washroom for wheelchair users.

(Door operation buttons)

- ☆ For automatic sliding doors, it is desirable that the door operation buttons be placed approximately 700 mm away from the door-side wall.
- ☆ For automatic sliding doors, it is desirable that the door operation buttons not be installed on the door-side wall, as this makes it difficult to operate them. Furthermore, it is desirable that the door operation buttons be installed in a position that does not interfere with operation.

(Locks)

- ☆ It is desirable that door locks be installed in two places, one in a normal position and the other in a high position out of reach of children, assuming that children are in the same room.
- ☆ It is desirable that the colours used to indicate that the door is locked or not be red and blue, and consideration should be given to brightness and colour saturation.
- ■ The door locking system must be able to be easily operated with little effort.

(Occupancy indicator)

- ☆ It is desirable that an occupied sign be linked to the lock and make it large and easy to see. For general individual washrooms, it is desirable to make it easy to see that the washroom is available for use by, for example, keeping the door open at all times when not in use.

3.17.5 **Washrooms for wheelchair users**

(Size of washroom for wheelchair users)

- ☆ It is desirable that dimensions inside a washroom for wheelchair users be at least 2,200 mm x 2,200 mm with a turning space of at least 1,800 mm in diameter, so that users of large electric wheelchairs can turn inside.
- ■ As a space where a wheelchair can turn inside a toilet stall without making adjustments to turn, a circular space with a diameter of at least 1,500 mm must be ensured so that the wheelchair does not interfere with the equipment in the toilet stall.
- ■ Each toilet space must ensure a sufficient space for a wheelchair user to smoothly use it.

(Toilet bowl access in washrooms for wheelchair users)

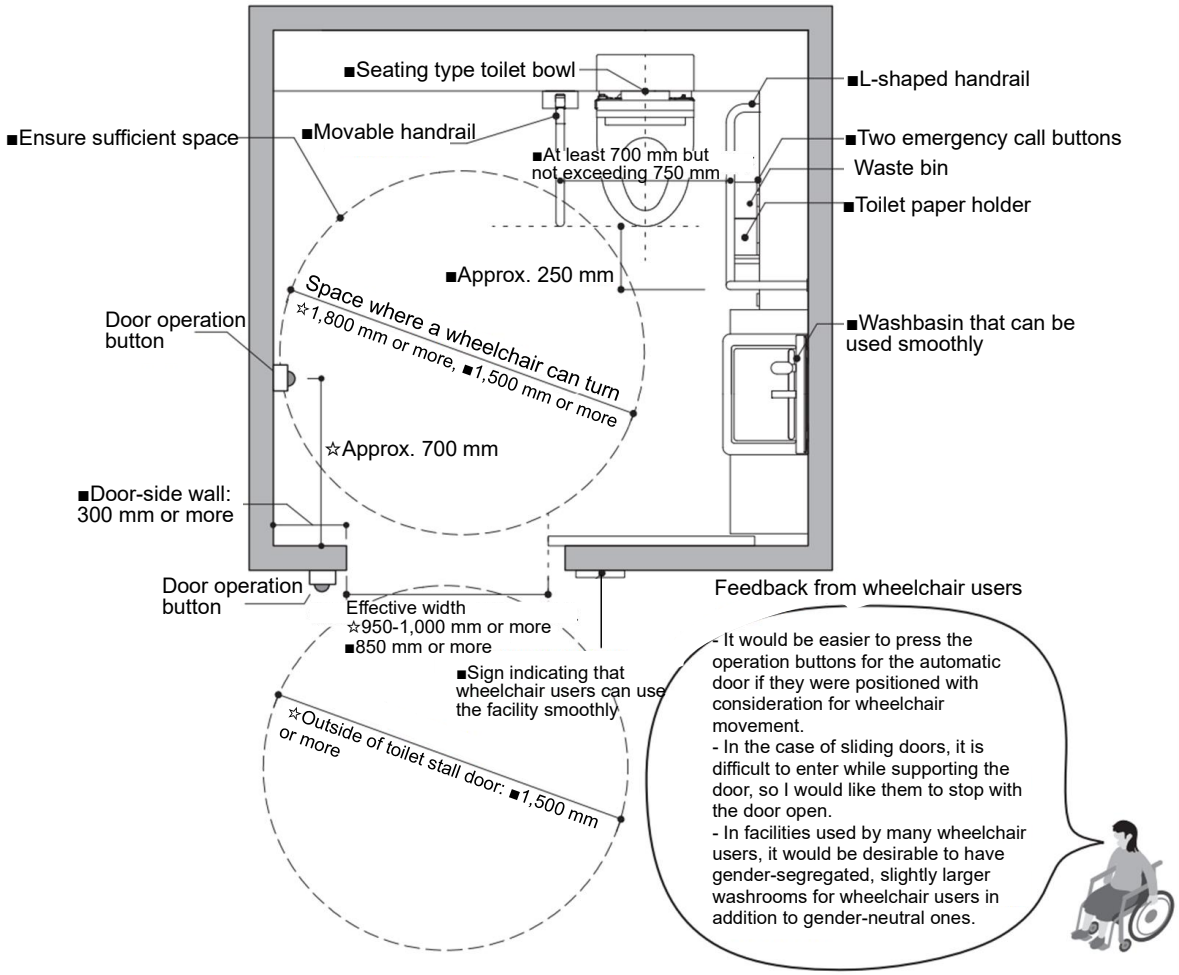
- ■ Equipment such as toilet bowl and washbasin must be installed with a sufficient space ensured for a wheelchair user to position themselves in front of and on the side of the toilet bowl and transfer to it.
- ■ When installing more than one washroom for wheelchair users, there must be at least one toilet bowl each that allows sliding onto the seat from the right side and from the left side.

(Space for a wheelchair on one side of a toilet bowl in washrooms for wheelchair users)

- ☆ It is desirable that washrooms for wheelchair users have a space at least 800 mm wide inside the cubicle so that a wheelchair user can slide onto the toilet seat sideways.
- ■ Washroom for wheelchair users must have a space at least 750 mm wide inside the cubicle so that a wheelchair user can slide onto the toilet seat sideways.

(Handrails in washrooms for wheelchair users

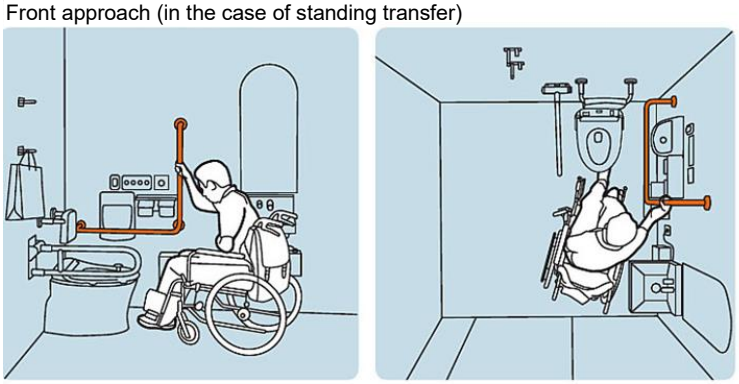
- ■ A handrail with a horizontal and vertical sections that are continuous (hereinafter referred to as “L-shaped handrail”) must be installed on the wall side of a seating type toilet bowl, and a movable type handrail must be installed on the opposite side.
- ■ The heights of the horizontal sections of the L-shaped handrail and movable type handrail must be aligned.
- ■ The spacing between the L-shaped handrail and the movable type handrail must be at least 700 mm but not exceeding than 750 mm.
- ■ The end of the movable type handrail must align with the end of the seating type toilet bowl.
- ■ The vertical section of the L-shaped handrail must be approximately 250 mm from the end of the seating type toilet bowl.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of washroom for wheelchair users

Front approach (in the case of standing transfer)

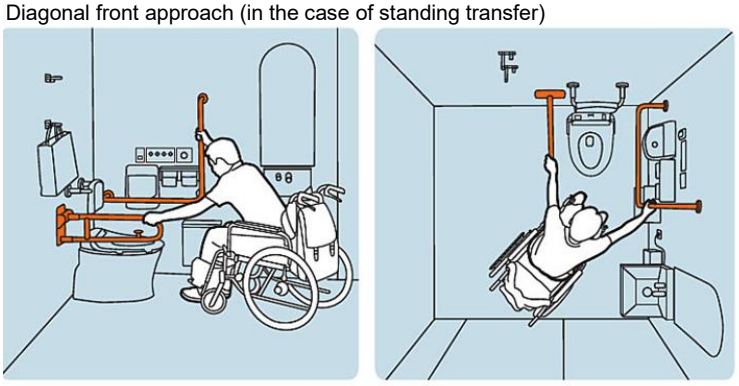


The wheelchair user places the wheelchair in front of the toilet, and transfers to it using the handrail.

CHECK

Allow sufficient space in front of the toilet for the wheelchair to approach.

Diagonal front approach (in the case of standing transfer)

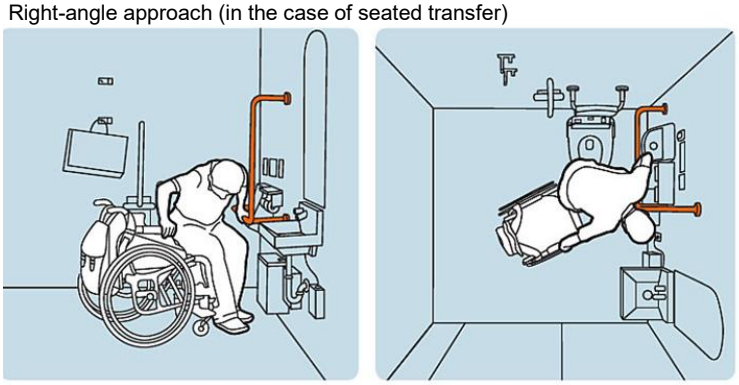


The wheelchair user approaches to the toilet from the front at angle, stands using the handrails, and transfers to the toilet.

CHECK

Allow sufficient space in front of and beside the toilet for the wheelchair to approach.

Right-angle approach (in the case of seated transfer)

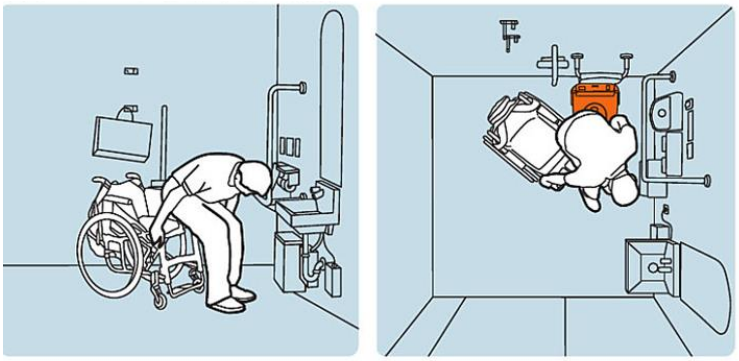


The wheelchair user approaches to the toilet approximately at a right angle, positions the wheelchair so that it contacts the toilet, and slides the hip to transfer to the toilet while holding the wheelchair and handrail.

CHECK

Allow sufficient space beside the toilet for the wheelchair to approach.
For a handrail mounted on the wall, select a handrail with a large front extension to ensure space between the handrail and the wall to prevent the wheelchair user's head from coming into contact with the wall during transfer.

Side approach (in the case of seated transfer)



The wheelchair user positions the wheelchair so that it contacts the toilet, and slides the hip to transfer to the toilet while holding the wheelchair and the handrail (or placing the hand on the toilet).

CHECK

Allow sufficient space beside the toilet for the wheelchair to approach.

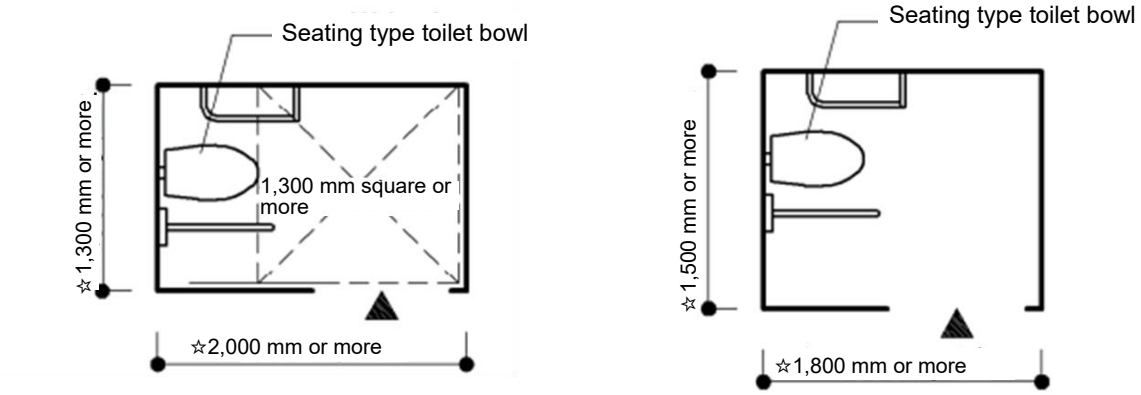
(Source) TOTO Accessibility Book: Public Toilet, Feb. 2021

Figure: Approaches to the toilet bowl for wheelchair users

3.17.6 **Minimal washrooms for wheelchair users**

(Size of minimal washrooms for wheelchair users)

- ☆ When installing a minimal washroom for wheelchair users, it is desirable that at least 2,000 mm x 1,3000 mm be secured for front/side entry.
- ☆ It is desirable that at least 1,800 mm x 1,500 mm be secured for side entry.
- ☆ It is desirable that the effective width of the doorway be at least 800 mm.



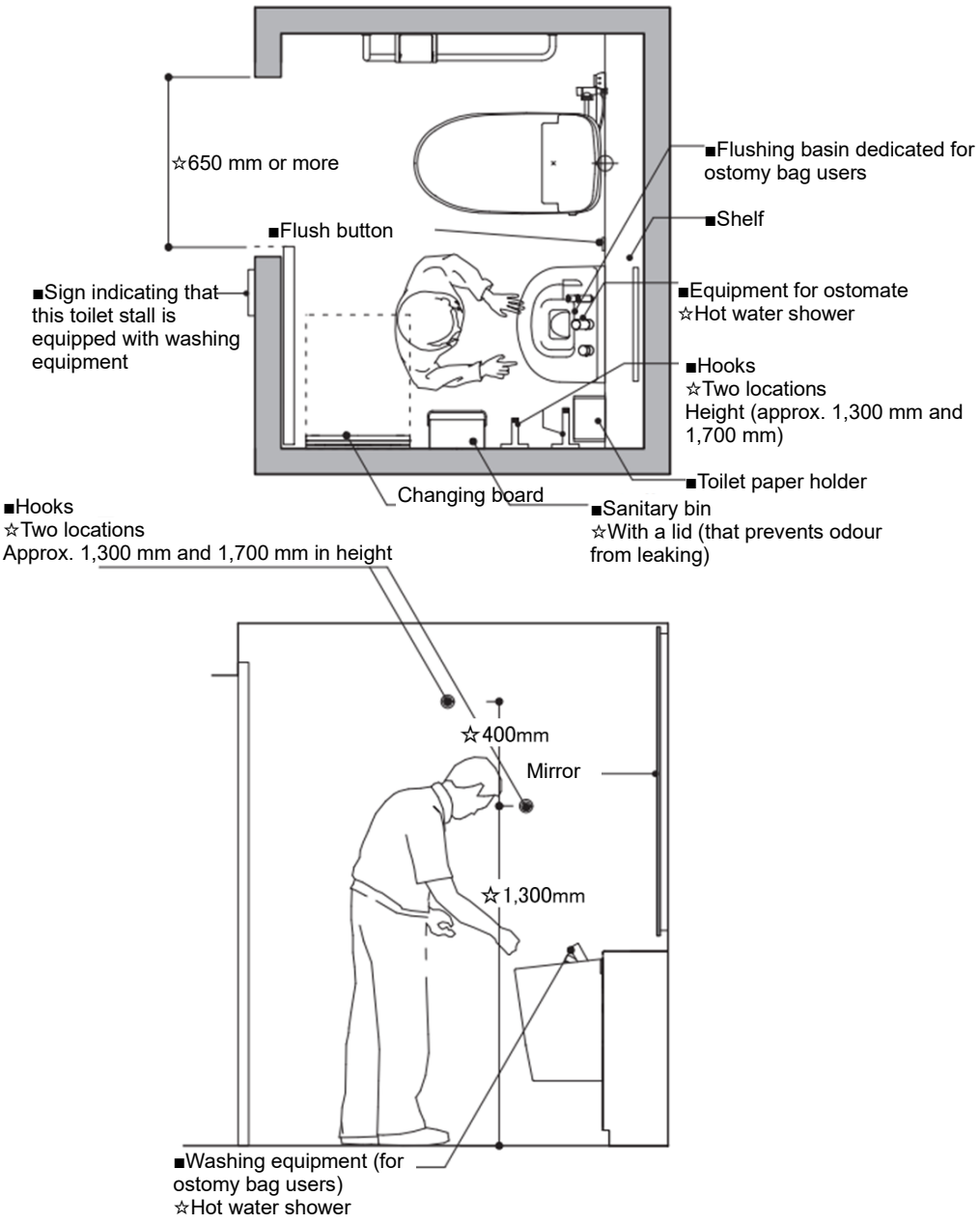
Simplified ostomy equipment can also be installed.

(Reference) Created based on Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities

Figure: Examples of minimal washrooms for wheelchair users

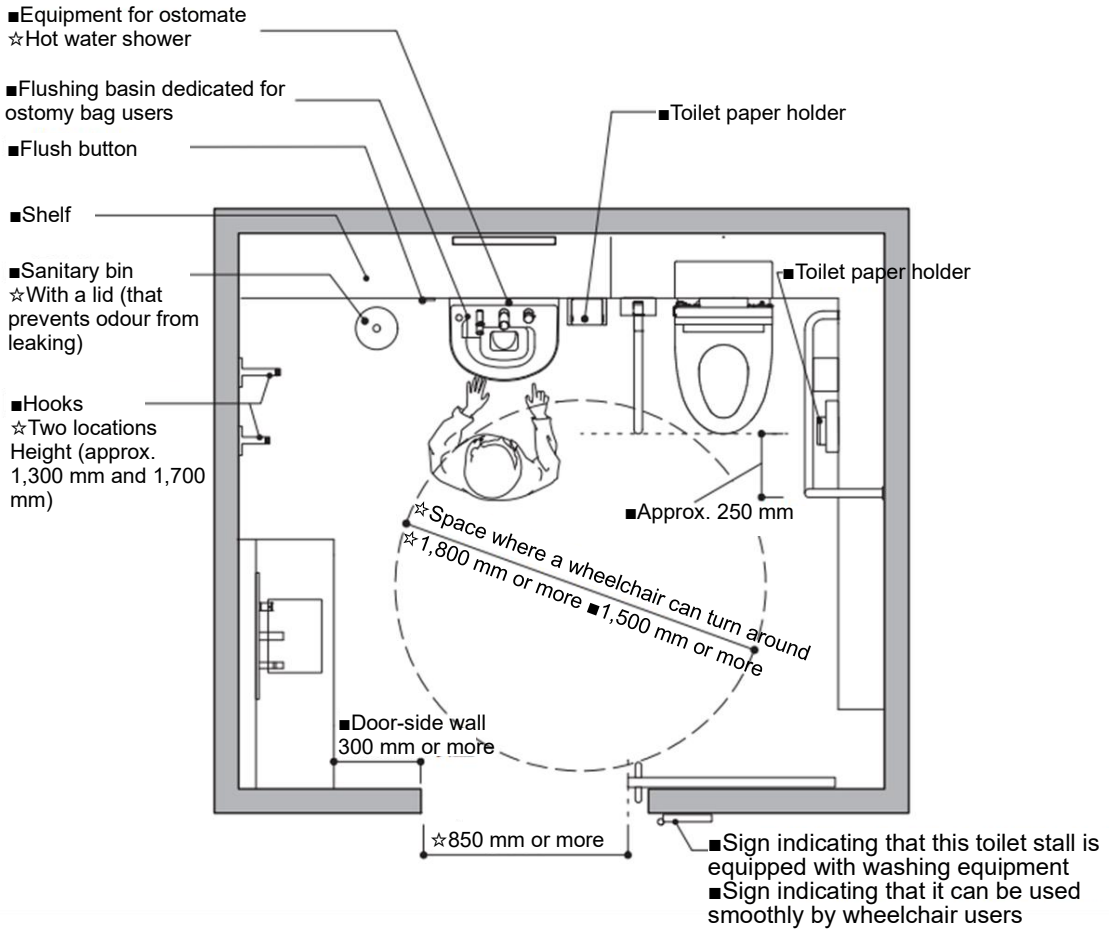
3.17.7 **Measures for equipment for ostomate**

- ■ If a toilet stall with equipment for ostomate is installed, a dedicated flushing basin, water tap, flush button, toilet paper holder, sanitary bin, shelf and hooks must be appropriately provided.
- ☆ It is desirable that sanitary bins have a lid to prevent odour from leaking.
- ☆ It is desirable that hooks be installed at two locations, at heights of approximately 1,300 mm and 1,700 mm.
- ☆ It is desirable that equipment for ostomate has a hot water shower. The hot water shower is used to wash dirty clothes or excretory opening (stoma) in case of leakage from an ostomy pouch or when changing pouches.
- ☆ It is desirable to install a full-length mirror that can reflect the entire body. The mirror is used to check if the ostomy pouch is properly applied.
- ☆ It is desirable that a toilet stall with equipment for ostomate have a washing basin. However, this does not apply if the toilet stall is located in a general washroom and it has a washing basin that can be used throughout the entire washroom.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Examples of implementation with equipment for ostomate



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of implementation with equipment for ostomate in washroom for wheelchair users

3.17.8 **Measures for toilet stalls other than those for wheelchair users**

If toilet stalls other than those for wheelchair users are installed, at least one of them (if they are separated for men and women, at least one for each) must meet the following requirements.

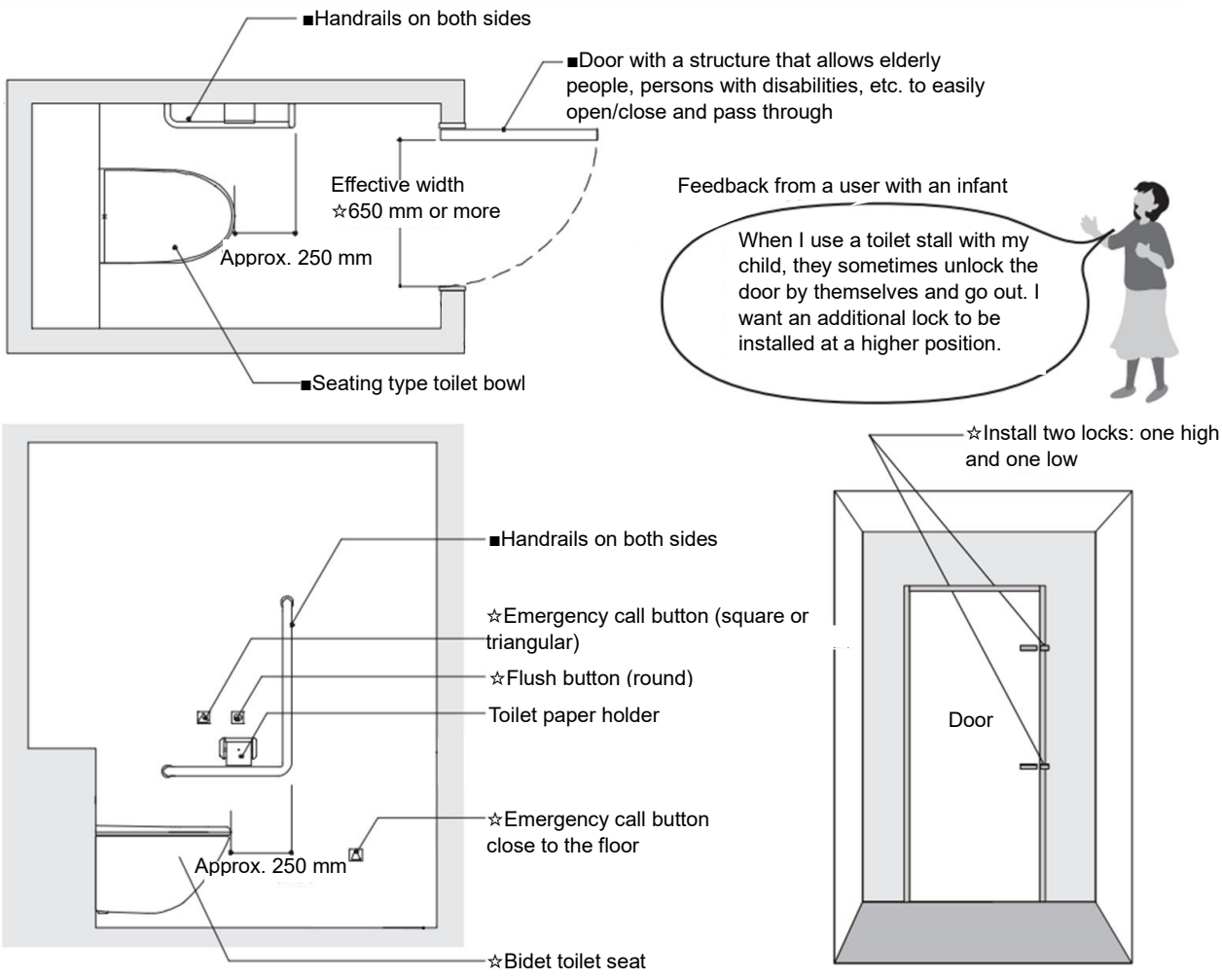
- ■ Handrails must be installed. They must be installed on both sides, and one of them must be an L-shaped handrail.
- ■ Doors must be designed so that elderly people, persons with disabilities, etc. can easily open, close and pass through them.
- ☆ It is desirable that the effective width of the doorway be at least 650 mm. For a spacious individual toile space that takes into consideration the use by wheelchair users, people accompanying infants, etc., it is desirable that the effective width of the doorway be at least 800 mm.
- ☆ Sliding doors that are easier to open and close than hinged doors are desirable. If a hinged door is used, it is desirable to design it to open outward or to be able to be removed in emergencies (by, for example, installing the toilet stall in a place that does not obstruct the passage) in order to prevent the door from being stuck.
- ☆ It is desirable for a toilet stall to have a structure that enables people to see from the outside that the toilet stall is occupied.
- ☆ In addition to installing a call button for emergencies, it is desirable that the shape, colour, and position of equipment be in accordance with JIS 0026
- ☆ For persons with visual impairment, if the flushing system is a light sensor type, it is desirable

to add a push button type.

☆ It is desirable that buttons be labelled with braille, embossed lettering, or tactile symbols.

☆ The shape of flush buttons must be round (○). It is desirable that the shape of emergency call buttons be easily distinguishable from the flush buttons (square (☐) or triangular (△)).

☆ For persons with visual impairment and hearing difficulties, it is desirable to provide equipment (such as flash lights) that can provide emergency information by voice and light. It is desirable that flash lights or similar equipment be installed in a position where their flashing can be sufficiently identified from all toilet stalls with their doors closed and that a sign or similar item stating that the flashing indicates an emergency be placed on the doors, etc. inside the toilet stalls.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Examples of measures for toilet stalls other than those for wheelchair users

3.17.9 **Measures for equipment for infants, etc.**

■ If toilet stalls other than those for wheelchair users are installed, at least one of them (if they are separated for men and women, at least one for each) must, as a general rule, have a diaper changing table for infants and an infant chair.

■ A diaper changing table for infants and an infant chair must be provided inside a toilet stall, and the door of the doorway to the toilet stall must have a sign indicating that it has a diaper

changing table for infants and an infant chair. If a diaper changing table for infants is installed outside a toilet stall, attention must be paid to the line of sight of other users.

☆ It is desirable that infant chairs be positioned with consideration for proximity to doors and distance from walls to prevent accidents such as infants getting their hands caught during use.

■ Infant chairs must be equipped with guards or other similar items so that infants can sit safely.

☆ It is desirable that the toilet stall equipped with a diaper changing table for infants and an infant chair be designed to accommodate a stroller together. It is desirable that consideration be given to the arrangement of the diaper changing table for infants and the infant chair to prevent an infant using them from accidentally unlocking the door.

☆ If a diaper changing table for infants is installed, it is desirable that the height from the floor be approximately 800-850 mm, the clearance under the table be 700-750 mm at minimum, and the depth be approximately 500 mm.

☆ It is desirable that a diaper changing table for infants be equipped with safety measures such as a fixing belt to prevent hand entrapment accidents and falls that may occur due to the installation location, and that warnings about the risk of hand entrapment or falling be displayed as necessary.

☆ It is desirable to install a luggage shelf, infant chair and sanitary bin near a diaper changing table for infants.

☆ If multiple diaper changing tables for infants are installed, it is desirable that at least one of them be low enough for wheelchair users to use.

☆ It is desirable that sanitary bins have a lid to prevent odour from leaking, and have a clear instruction on how to dispose of diapers, etc. (if items other than diapers are not allowed to be disposed of for recycling purposes, describe it clearly).

3.17.10 **Toilet bowls/urinals**

(Styles)

■ Toilet bowls must be of a seating type (standard style) in general.

☆ It is desirable to install toilet bowls with a spray wash feature for people who have difficulty using their hands. If such toilet bowls are installed, it is desirable to place the operating device in an easy-to-use position based on JIS S 0026, taking into consideration the arrangement of other equipment.

(Types of bowls in washroom for wheelchair users)

■ The toilet bowls must be of a seating type.

■ Toilet bowls must be fitted with a back rest. When installing a back rest, consideration must be given to its position so that it does not interfere with use by persons with disabilities.

(Toilet seat heights for washrooms for wheelchair users)

■ The heights of toilet seats must be approximately 400-450 mm from the finished floor surface.

(Provision of urinals)

☆ If urinals are installed, it is desirable that at least one of them meet the following requirements.

- Floor or wall mounted urinals (350 mm max. in height from the floor to the lip of the bowl), and other similar urinals.
- Handrails should be installed on the front and both sides. However, this does not apply to urinals for infants.

- A handrail installed on the front should be aligned with the face of the urinal.
- To minimise the distance of travel, handrails should be installed on the urinal closest to the entrance of a washroom.
- Sufficient space should be ensured in front of a urinal so that wheelchair users can use the space smoothly. As a space in front of a urinal where a wheelchair user can use smoothly, a space (1,350 mm square) where a wheelchair can turn 90 degrees around the centre of the axle should be provided.

*It is desirable to ensure a path with a width of at least 1,200 mm so that wheelchair users can easily reach a urinal.

*As a space in front of a urinal where a wheelchair user can use smoothly, it is desirable to provide a space (a circle with a diameter of at least 1,500 mm) where a wheelchair user can turn around.

*Even when installing urinals for infants, it is desirable to provide a space to allow a wheelchair user to approach the urinal.

3.17.11 **Auxiliaries in toilet stalls**

(Installation of operation equipment etc.)

■ When mounted on a side wall, flush buttons, call buttons, and paper (roll) holders must be positioned in compliance with the standard JIS S0026 in principle and take into consideration being in contrast from their surroundings.

(Flushing system)

■ The flushing system must be basically a push button type, and it must be installed so that it can be operated from the position seated on the toilet bowl, and the position seated on the wheelchair around the toilet bowl without transferring from the wheelchair to the toilet bowl. In addition, if an automatic flushing or sensor type is installed, a push button type must also be installed.

■ The operation buttons for the flushing system, etc. must be clearly identifiable in accordance with JIS S 0026, and this must be applied uniformly to flushing systems for toilet stalls including general ones.

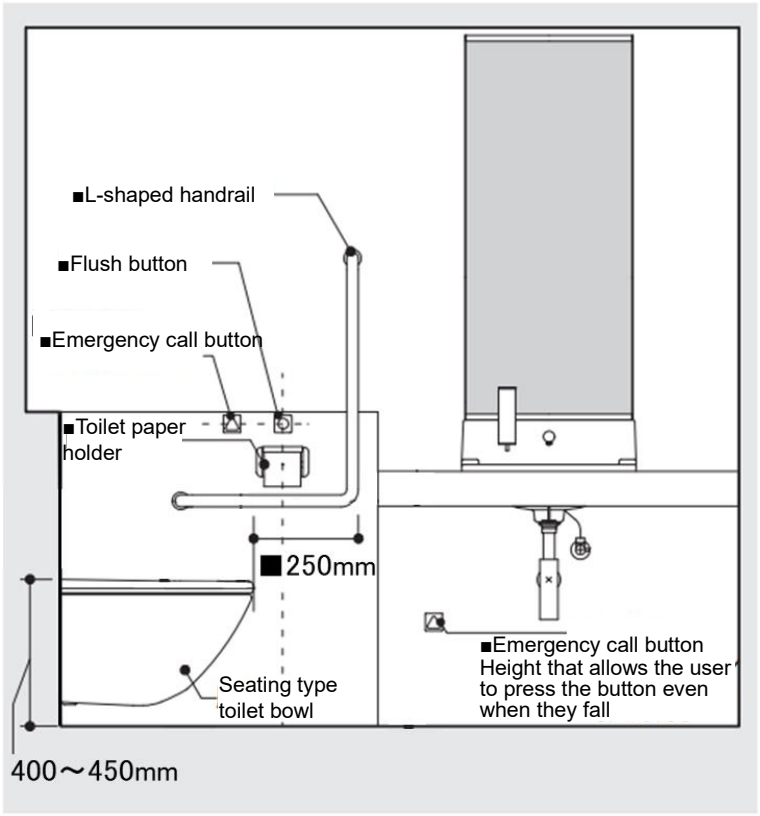
(Toilet paper holders)

■ Toilet paper holders must be installed within easy reach of a person when seated, and be of a colour that contrasts with the wall in accordance with JIS S 0026. Furthermore, toilet paper holders must be usable with one hand.

(Equipment to communicate information in emergencies)

■ Emergency call buttons must be provided at a position within reach of a person seated on a seating type toilet bowl and a position within reach of elderly people, persons with disabilities, etc. even when they fall.

☆ It is desirable that washrooms of facilities equipped with automatic fire alarm equipment have a light-based alarm system such as a display system for showing letters or signs, flash lights, and rotary beacon lights installed in a position that can be sufficiently confirmed from all toilet stalls and provide information regarding emergency situations such as fires for all people, including those with hearing difficulties.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Layout of operation equipment, etc.

(Installation of stands, hooks, etc.)

- ■ Washrooms for wheelchair users must have hooks for hanging luggage and stands for placing luggage.

3.17.12 **Washing basin**

(Positions of washing basin auxiliaries)

- ■ Auxiliaries for washing basins (soap dispensers, paper towel dispenser, etc.) must be installed at a height of approx. 800-1,000 mm above the finished floor level and within a range of approx. 750 mm from the centre of the washing basin so that people can use such auxiliaries.
- ■ Waste bins or other equipment must be installed in a manner that does not obstruct the use of auxiliaries or the opening and closing of doors.
- ☆ For washrooms that are expected to be frequently used by children, in addition to the standard type, it is desirable to provide multiple types of washing basins, such as those approx. 450 mm deep, mounted at a height of approx. 650 mm above the floor to make it easy to reach the water tap, taking into consideration the use by children, etc.

(Handrails)

- ■ Handrails must be installed on both side of the washing basin (excluding those for infants). If the washing basin does not have sufficient strength to support the load and cannot support the body, handrails must be installed on both sides and in front of the washing basin.

(Clearance under washing basin)

■ The lower end of a washing basin in a washroom for wheelchair users must be at a height of at least 650 mm but not exceeding 700 mm from the floor surface to allow space for the knees of a wheelchair user.

(Positions of mirrors)

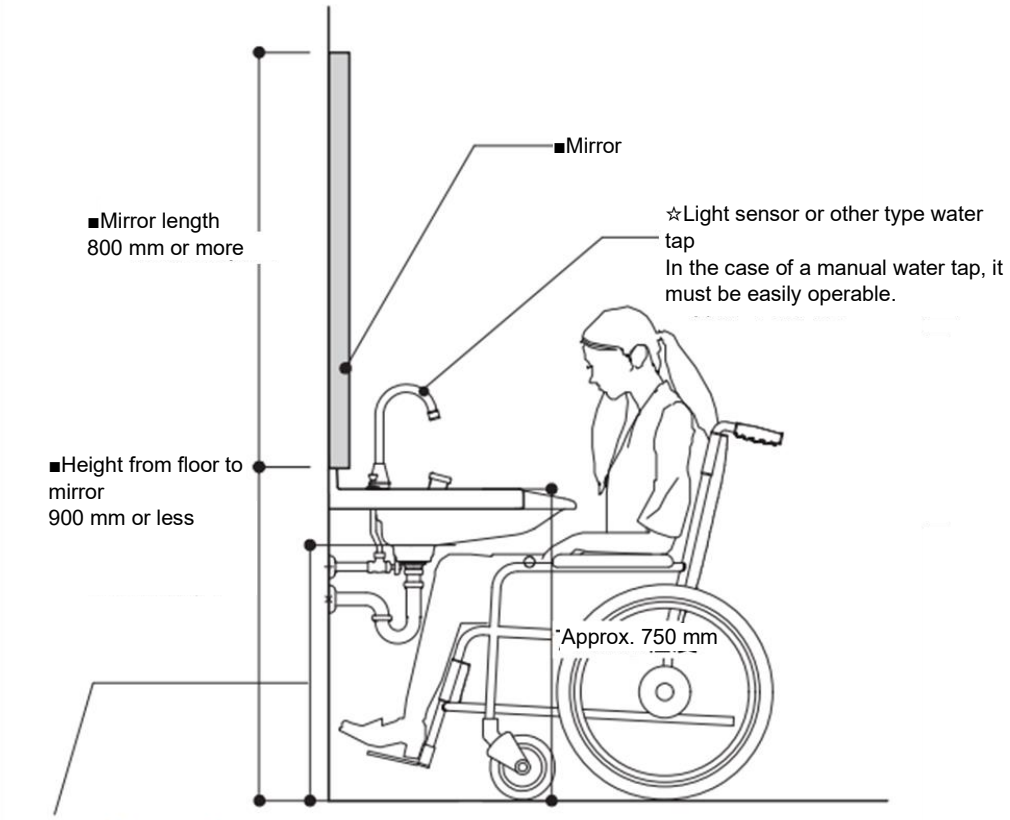
■ A mirror above the washing basin must have a length of at least 800 mm vertically upward from a position 900 mm or less from the floor surface. However, this does not apply to the position and length of mirrors for children.

(Types of water taps)

☆ It is desirable for the water tap to be automatic, such as with a light sensor. In the case of a manual type, it is desirable to use types that are easy to operate, such as a single-lever type.

(Paper towel dispensers)

■ When installing a paper towel dispenser, it must be one that can be operated with a lever or hands-free, installed within approx. 750 mm from a washing basin (except ones on the opposite wall), mounted so that the operation mechanism and outlet are at approx. 800-1,000 mm above the floor.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of a washing basin that can be used smoothly by wheelchair users

3.17.13 **Display signs**

(Indication of equipment, features, etc.)

- ■ Washrooms must be indicated to clearly show that they are male, female or unisex.
- ■ The doorways to washrooms for wheelchair users or somewhere near them must have signs indicating that they can be used smoothly by wheelchair users.
- ■ The doorways to toilet stalls equipped with washing equipment for ostomy bag users or somewhere near them must have signs indicating that the individual toile space is equipped with washing equipment.
- ☆ It is desirable that tactile maps, etc. be placed with their centre at a height of 1,400 mm to 1,500 mm from the floor surface. If there is a door, it is desirable to place the tactile maps, etc. on the wall on the latch side rather than on the door in order to reduce the risk that persons with visual impairment collide with the opening/closing door when they use tactile maps, etc.
- ☆ If there are toilet stalls with specific features in other locations, it is desirable that information about their locations be provided near these spaces.
- ☆ It is desirable to provide signs that show equipment, features, etc. provided in each toilet stall in a manner that they are visible even when the door is open.
- ☆ It is desirable to use standardised pictograms (those conforming to JIS Z 8210 if specified therein). It is desirable that tactile display signs include embossed letters or pictograms.

(Guidance at the doorways to washrooms)

- ☆ At the doorway to a washroom, it is desirable to provide voice guidance or the like and to display the layout of the inside of the washroom. Furthermore, it is desirable to place signs in braille and tactile maps, taking into consideration the use by persons with visual impairment.
- ☆ It is desirable to provide a voice guide near the washroom doorway
- ■ Where a voice guide is provided, the voice must inform of the men’s, women’s or shared facilities.
- ☆ It is desirable that the tactile maps, etc. describe the specific features in the accessible toilet stalls and indicate their respective positions.
- ☆ Where tactile maps are provided, it is desirable to install a voice information system to inform of their locations.
- ■ Two dotted tactile warning tiles must be installed on the floor in front of the tactile maps, etc. for the washrooms (This does not apply in the case that voice guidance is provided.)
- ■ Where a guide for routes to washrooms such as tactile floor tiles, it must lead to washrooms other than washrooms for wheelchair users.

3.18 Auditorium

Consideration must be given to auditoriums that are easy for elderly people, persons with disabilities, etc. to use (securing wheelchair-accessible seats, etc.), stage structures, and equipment (securing routes to go up to the stage from the auditorium or stage wings, etc.).

Furthermore, it is important to ensure sightlines for various users including wheelchair users. It is required to consider the gradient of the seating space and the arrangement of seats according to the purpose and actual use of the exhibition facility (building).

In addition, assuming diverse users, it is also necessary to take measures such as providing separate auditoriums, etc. or installing stroller parking areas for people accompanying infants and toddler.

3.18.1 General guidelines

- ■ All routes leading to the auditorium and stage including the backstage area must allow for smooth mobility.
- ■ For the auditorium, doorways, lobbies, routes leading to accessible seats, washrooms, rest areas, stage, etc. must all be planned in an integral and continuous manner.

3.18.2 Wheelchair accessible seats

(Number/proportion of seats, locations)

- ☆ When the total number of seats is over 100 but does not exceed 200, it is desirable to provide wheelchair-accessible seats equal to at least 2% of the total number of seats.
- ☆ When the total number of seats is over 200 but does not exceed 2,000, it is desirable to provide wheelchair-accessible seats equal to at least 1% of the total number of seats, plus two additional seats.
- ☆ It is desirable to provide wheelchair-accessible seats in multiple areas so that wheelchair users can choose freely. When providing wheelchair-accessible seats in multiple areas, it is desirable to distribute them at different levels and different horizontal locations.
- ☆ If a large number of wheelchair users are expected to use the seats, it is desirable to provide movable seats/viewing seats in addition to fixed ones, and to change the movable ones to wheelchair-accessible seats/viewing seats as necessary.
- ■ At least two wheelchair-accessible seats must be provided at locations that are easy for wheelchair users to view the stage, and wheelchair-accessible seats equal to at least 0.5% of the total number of seats must be provided.
- ☆ It is desirable to secure the necessary number of wheelchair-accessible seats and to position seating space that enables group use by wheelchair users and a selection of locations to choose from.
- ☆ It is desirable that seating space that is movable be provided in addition to fixed seating space for wheelchair-accessible seating.

(Securing accessibility)

- ■ Pathways, etc. must be of a sufficient width that allows wheelchair users to pass through easily.
- ☆ It is desirable to provide spaces in front of and behind wheelchair-accessible seats to allow for easy access and turnaround.
- ■ Steps, or ramps with a gradient exceeding 1:12 must not be provided.
- ■ If a ramp is provided, the ramp must be demarcated for easy distinction from their connecting paths such as pathways, etc. by colours of different brightness, hue, or colour saturation.
- ☆ It is desirable that wheelchair users can easily access from the doorways to the wheelchair-

accessible seats or from the wheelchair-accessible seats to the washrooms for wheelchair users.

(Number and width of seats for assisting companions)

- ■ Seats for assisting companions of wheelchair users must be provided in the same proportion as the wheelchair-accessible seats, and must be located next to the wheelchair-accessible sections, rather than behind them. Using an easily movable chair allows an assisting companion to sit next to a wheelchair user. If there are two or more wheelchair users, movable chairs can be quickly removed to allow wheelchairs to be placed side by side.
- ■ If there are two or more assisting companions, consideration must be given to ensure that they can sit in nearby seats, such as seats in front of the wheelchair-accessible seat.

(Size)

- ■ Wheelchair-accessible seats must be at least 900 mm in width and at least 1,500 mm in depth per seat.
- ☆ It is desirable that pathways in the auditorium have a space of at least 1,500 mm for a wheelchair to turn within every 50 m in the section.

(Floors)

- ■ Floors for the seats must be horizontal and be finished to be slip-resistant.
- ☆ If a wheelchair-accessible seat is located higher than other seats, it is desirable to provide a raised section at the edge of the floor to prevent a wheelchair from running off.

(Provision of electrical outlets)

- ☆ It is desirable to install at least one electrical outlet for a wheelchair-accessible seat indoors, for recharging electric wheelchairs, etc. Consideration should be given to installing the electrical outlet at a location that is easily accessible.

(Sightlines for wheelchair-accessible seats)

- ■ The height difference between the floor of the wheelchair-accessible seat and that of the row in front of it must be such that a wheelchair user can still see the stage or screen even when spectators in the rows in front of the wheelchair user stand up, ensuring a sightline (visibility line) to the stage or screen.
- ☆ It is desirable that guard rails, handrails, and other obstacles do not obstruct the sightline of users of wheelchair-accessible seat. It is desirable that the height of guard rails, handrails, etc. that do not obstruct the sightline of the users be at least 800 mm. It is also desirable that measures be taken to ensure that persons in wheelchairs do not obstruct the view of spectators in the rows behind them.

3.18.3 **General seats**

(Armrest types)

- ☆ When installing armrests on the pathway side, it is desirable that they be flip-up or horizontally-rotating type, assuming the transfer of wheelchair users.

(Seat number display)

- ☆ It is desirable that seats be clearly separated by area using colour coding or other means. It is desirable that sufficient consideration be given to the size, contrast, mounting position, etc.

of seat numbers, rows, columns, etc. so that they are easy to see and read.

☆ If seat numbers are marked, it is desirable to add braille.

(Enhanced amenity seats/space)

☆ It is desirable to install seats for those who do not use wheelchairs but have difficulty walking, assistance dog users, or those who require consideration for seating due to reasons such as poor mobility, tallness, and wide body as enhanced amenity seats.

☆ In addition to seating spaces for wheelchair users and their assisting companions, it is desirable to provide enhanced amenity seats equal to at least 1% of the total number of seats in the venue. It is also desirable that these seats be distributed various areas and located at the ends of rows within each area, with as few stairs as possible to go up and down to access them.

☆ It is desirable to ensure more space in front of and on one side of each enhanced amenity seat than normal.

(Arrangement for people accompanying infants, toddlers or persons with auditory and visual impairment)

☆ It is desirable to provide a separate auditorium or space where users such as people accompanying infants, toddlers or persons with intellectual disabilities, mental and developmental disabilities can view performance, etc. with no fear of disturbing other visitors. It is also desirable that such an auditorium or space be designed with consideration for infants who cannot use chairs.

☆ It is desirable that equipment (such as hearing loops) and space necessary to conform with the guidelines set forth in Chapter 4 Service so that various people including persons with difficulty obtaining information aurally and visually can enjoy performances through various means suitable for them.

■ Display must be provided that indicates availability of equipment for access to information.

3.18.4 **Vicinity of steps in auditorium**

(Safety measures for stairs)

■ For stairs in the seating areas, dotted tactile warning tiles must be installed at the exit points of the stairs to prevent hazards. It is desirable that dotted tactile warning tiles be installed approximately 300 mm away from the stair nosing, with a width that fits the stair width and a depth of approximately 600 mm. If the textured floor tiles obstruct passage in the pathway, a depth of at least 300 mm must be ensured.

☆ It is desirable that the steps of the pathway be constructed with uniform dimensions, and that landings with sufficient dimensions be ensured. Furthermore, it is desirable to use colours of different brightness, hue, or colour saturation so that stair nosing can be easily distinguished from treads and risers.

☆ It is desirable to install foot lights.

☆ For steps, it is desirable to install handrails at necessary locations to prevent tripping and falling down.

3.18.5 **Others**

☆ It is desirable to ensure sufficient lighting in the auditorium except during the time for performance, etc.

☆ If drinking fountains, vending machines, etc. are installed, it is desirable to install them in

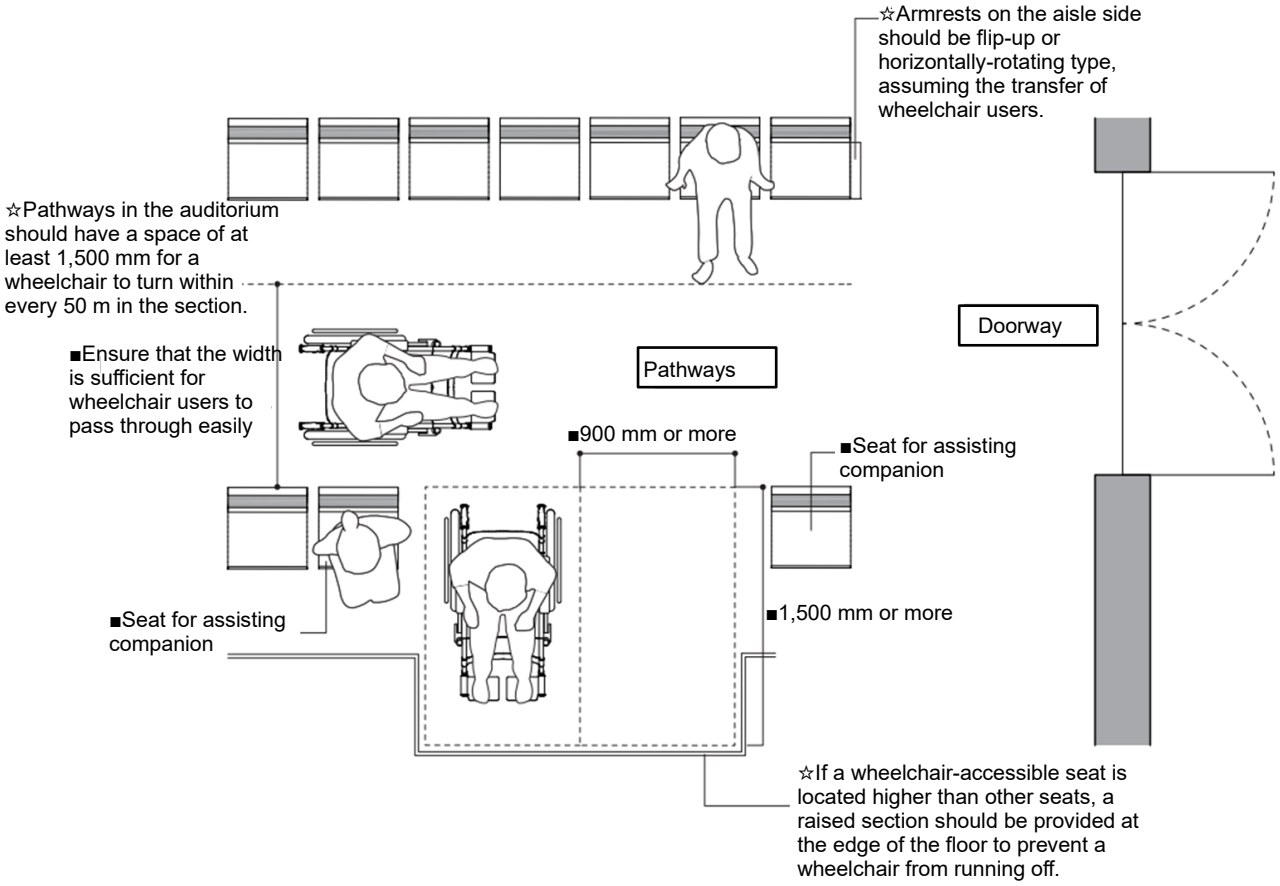
easily recognisable locations.

☆ It is desirable to install display signs that indicate the overall layout of the facility, locations of seats, lifts, washrooms for wheelchair users, rest areas, evacuation routes, etc.

☆ It is desirable to provide stroller parking areas near the auditorium or near the doorways to the facility where an auditorium is provided, assuming that children using strollers use the auditorium (including when a child and their parent/guardian use the same seat).

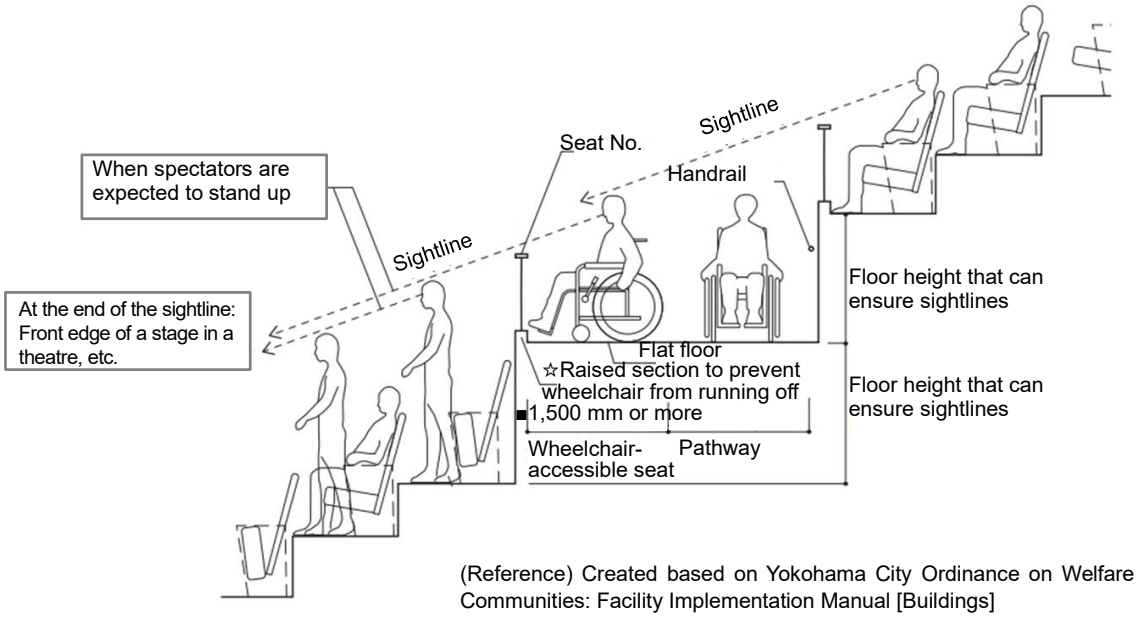
☆ It is desirable that the stroller parking area be large enough (with a depth of at least 1,000 mm) to accommodate strollers without folding them.

☆ When providing a stroller parking area, it is desirable to locate it in a place where people can see it in order to reduce the anxieties of theft, etc.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of implementation around wheelchair-accessible seat



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of implementation to ensure sightlines from wheelchair-accessible seat/viewing seat

3.19 Food service/retail vendor areas (cafeterias, restaurants, retail vendors, etc.)

If there are areas within facilities serving food such as cafeterias, restaurants, and areas where retail vendors sell souvenirs, etc., necessary arrangements must be made within the area for easy access by all people including elderly people, persons with disabilities, etc. Matters for consideration will be noted here for doorways, pathways, counters, and seats of store areas to ensure moving around, getting seated, shopping, communicating, and payment transactions in the food and shopping zones are smooth for the users.

3.19.1 Doorways

Refer to 3.10 Doorways for the general guidelines concerning the doorways.

(Effective widths)

- ☆ It is desirable to have at least 950 mm of effective width for doorways.
- ■ The effective widths for doorways must be at least 850 mm.

(Doors)

- ■ When doors are installed in store entrances or along the main route of stores, they must have a structure that automatically opens or closes or otherwise have a structure that allows wheelchair users to easily open and close them to pass through, and there must be no level difference on either side of the doors. If doors are always open during the opening hours or they are opened or closed by staff, hinged or similar doors are acceptable.

(Eaves, etc.)

- ☆ For small-scaled stores and the like built outdoors and serving customers outsides, it is desirable to install an eave or shade.

3.19.2 Pathways within an area

(Effective widths)

- ☆ It is desirable to have at least 1,800 mm of effective width for pathways in consideration of the flow of people.
- ■ The effective widths for pathways must be at least 1,000 mm, and exhibits or products must not be placed along pathways.

(Steps)

- ■ Steps must not be provided within store areas as a general rule. If steps are unavoidable, a ramp must be provided alongside them. (Refer to 3.13 Ramps for ramps)
- ☆ If steps are unavoidable, it is desirable that the steps be demarcated for easy distinction between the edges of the steps and the surrounding areas by colours of different brightness, hue, or colour saturation.

(Effective widths of pathways between tables)

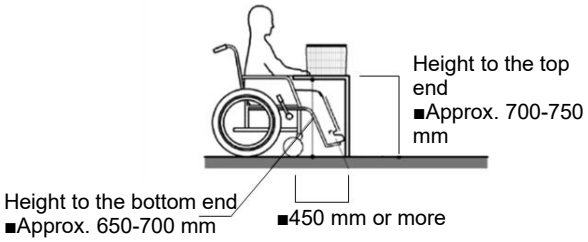
- ■ Main pathways must have a minimum effective width of 1,500 mm, and pathways between tables must have an effective width of at least 1,000 mm. Tables and chairs must be movable wherever possible to allow people to move between the tables.

■ Space that is at least a 1,400 mm square must be appropriately secured along pathways to allow easy turnaround for wheelchairs.

3.19.3 Bagging counter

(Height of bagging counter)

■ When installing bagging counters (where users bag their purchased items) so that people including wheelchair users, elderly people, and persons with disabilities have access to them, they must be approx. 650-700 mm from the floor to the bottom end and approx. 700-750 mm to the top end, and space below the counter must be at least 450 mm deep.



<Design illustration>

- Bagging counter
(Height to the top end: 720 mm, to the bottom end: 680 mm)

(Reference) Created based on Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)

Figure Example of a bagging counter

3.19.4 Counter with tray slides

■ A counter with tray slides must be approximately 700-800 mm in height from the floor level and at least 250 mm in depth, with knee-high clearance of approximately 650-750 mm below the counter and above the floor level, and must be continuous from the starting point where a tray is taken to the final payment transaction location.

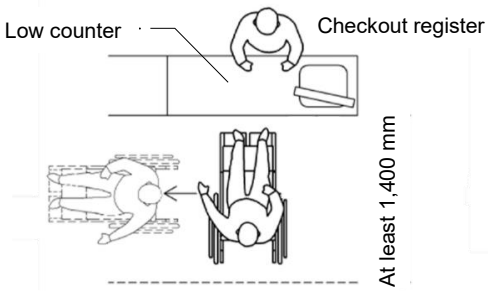
3.19.5 Checkout counter and low service counter

☆ For retail stores, when there are multiple checkout counters, or if the store only has unmanned checkout machines (self-checkout machine: cash register with which customers scan barcodes on products themselves and complete payment), then in addition to standing-style machines, at least one machine must be provided with a low counter that elderly people and persons with disabilities can use.

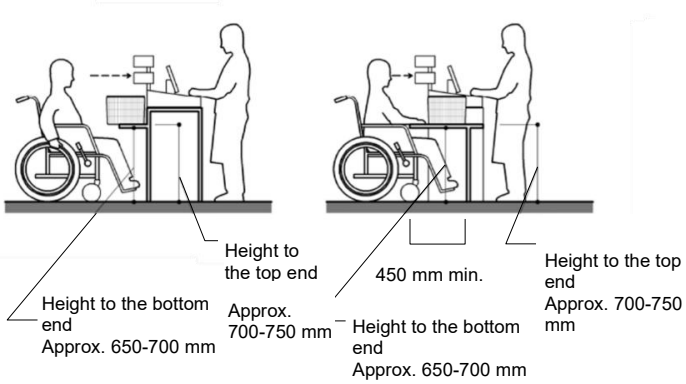
■ To enable wheelchair users to complete transactions face-to-face with store staff, the height of checkout counters/low service counters must be approximately 700-750 mm, and the knee-high clearance must be approximately 650-700 mm high, 750 mm wide and 450 mm deep, as standard.

■ Areas where staff members and visitors come face to face, such as checkout and low service counters and display cases, must have a pathway width of at least 1,400 mm. If there are any floor area or structural limitations and it is unavoidable, then the width must be at least 1,200 mm.

<Illustration of pathway in front of a counter>



<Illustration of checkout counter>



(Reference) Created based on Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)

Figure: Examples of checkout counters

3.19.6 **Condiments counter**

- ■ The height of the countertop must be approximately 700-750 mm, and the reach (depth) from the counter front edge must be 600 mm at a maximum. The knee-high clearance must be approximately 650-700 mm high, 750 mm wide, and 450 mm deep, as standard.
- ☆ It is desirable to provide a clear space with a minimum width of 300 mm and a minimum depth of 200 mm as a counter for adjusting seasoning, etc.

3.19.7 **Tables, seating, product shelves, and stroller parking areas**

Partitioned fixed booth seating is generally not only difficult to access for wheelchair users, but also difficult to use for persons with difficulty walking and elderly people. If fixed booth seating is used, common tables that can be used by wheelchair users, elderly people and people accompanying infants and toddlers must also be provided.

(Arrangement)

- ■ When arranging tables and chairs, the overall layout must be designed with consideration given to table sizes and pathway widths that are accessible to wheelchair users.
- ☆ It is desirable to provide not only partitioned spaces such as fixed booth seating but also spaces with movable tables and chairs, and to distribute them throughout the store so that visitors can choose their seats.

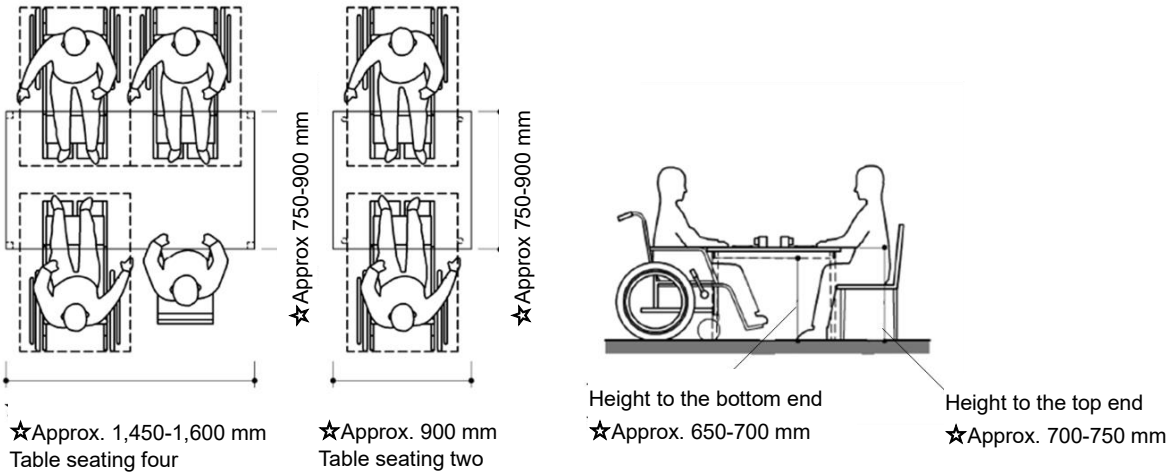
(Shapes and sizes of tables)

- ☆ It is desirable for tables to have sizes and shapes as follows based on access by wheelchair users.
  Table seating four: approx. width 1,450-1,600 mm x length 750-900 mm
  Table seating two: approx. width 900 mm x length 750-900 mm
  Height to the bottom end for all tables: approx. 650-700 mm Height to the top end: approx. 700-750 mm
- ☆ As a general rule, it is desirable to use movable tables in consideration of wheelchair users.
- ☆ It is desirable for tables at restaurants to have legs on four corners and be separate from chairs.
- ☆ For round tables in a restaurant with a central pillar leg, it is desirable for space between the

edge of the table to the main part of the pillar to be 500 mm apart.

☆ It is desirable to use tables and chairs with rounded corners to prevent sharp corners in consideration of the safety of children or the like.

■ If bar-style counters and seats are installed, each counter must have an additional low counter for two seats for wheelchair users and people who cannot use stools with high seats. This low counter must be approximately 700-800 mm high and at least 1,600 mm wide, and have a knee-high clearance with a height of approximately 650-750 mm across the entire width of the counter.



(Reference) Created based on Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)

Figure: Examples of table dimensions

(Number of seats)

■ Seats accommodating wheelchair and stroller users must be provided in an amount necessary for seating in store areas. In that case, seats must be situated in several locations keeping in mind use by caregivers, assisting companions, and two or more wheelchair users.

(Styles of chairs)

☆ As a general rule, it is desirable for all chairs to be movable in consideration of wheelchair users. However, since people accompanying infants, for whom it is easier to use sofa seating, are expected to visit, it is desirable to consider flexibly depending on the circumstances of expected visitors.

■ Even if fixed chairs are provided, movable chairs must be available in an amount that is more than half the total number of seats.

☆ It is desirable to arrange armchairs together with armless chairs. In order to assist persons with difficulty walking, it is desirable to provide at least one armchair (20%) for every five armless chairs.

☆ It is desirable that bench-type seating have a firm backrest and that the minimum leg room under the bench be at least 1/3 of the seat depth.

☆ It is desirable that all seats be designed so that the supports and diagonal members of chairs do not obstruct leg rooms.

(Product shelves, etc.)

☆ It is desirable for product shelves to be of a height and depth that makes it easier for wheelchair users to choose and reach for products laid out on the shelves.

(Pram / Stroller parking areas)

☆ It is desirable to provide stroller parking areas in the food service areas, assuming that children using strollers use regular seats (including chairs for children) when eating or drinking.

☆ It is desirable that the stroller parking area be large enough (with a depth of at least 1,000 mm) to accommodate strollers without folding them.

☆ When providing a stroller parking area, it is desirable to locate it in a place where people can see it in order to reduce the anxieties of theft, etc.

3.20 Baby care rooms

In order to create an environment that is easy for visitors accompanying infants and toddlers to use, it is required to provide diaper changing tables and infant chairs in washrooms (refer to 3.17 Washrooms), as well as places for the care of infants (baby care rooms) that can be used for infant feeding, baby food feeding, diaper changing, etc. so that such visitors can stay at facilities they want to visit for a certain period of time.

3.20.1 Provision as a principle

- ☆ It is desirable to provide a baby care room that can be used for infant feeding, diaper changing, etc. depending on the purpose and usage of the facility.
- ■ If a place that can be used for infant feeding and diaper changing is provided, a sign or the like indicating to that effect must be provided at or near the door of the doorway to the place.
- ■ If a place that can be used for infant feeding and diaper changing is provided, the route from the doorway of the building in which it is located must be accessible (refer to 3.11 Corridors, etc. (Indoor)).
- ☆ It is desirable that diaper changing tables for infants, chairs for infant feeding, etc. be appropriately located in positions that make it easy for parents and infants/toddlers to use such equipment so that it does not obstruct the passage of stroller users, etc.

3.20.2 Doorways

Refer to 3.10 Doorways for the general guidelines concerning the doorways.

(Styles)

- ■ The width and style of doorways must take the use of strollers into consideration.

(Doorways and approach to the facilities)

- ■ There must be no steps that obstruct passage.

(Installation of display signs)

- ■ Signs must be installed by the doorways to indicate that the equipment such as infant chairs and diaper changing tables are provided, together with their layouts, and this information must be also available in braille.
- ☆ It is desirable to provide signs in a manner that they are visible even when the doors are open.

3.20.3 Space for feeding infants

(Ensuring privacy of breastfeeding mothers)

- ■ Space must be closed off in consideration of privacy for breastfeeding. Privacy must be ensured with curtains, partitions, doors that locks from the inside (with status indicator), etc.
- ☆ It is desirable to provide spaces where both men and women can use (e.g., spaces for feeding milk or baby food, and diaper changing tables for infants).

(Interior design)

- ■ Interior must be designed with colours clearly visible for persons with low vision.

(Equipment)

- ■ The room must be equipped with chairs for feeding infants, baby chairs, diaper changing tables, and sanitary bins.
- ☆ It is desirable that space for personal belongings, a hot-water serving equipment, and tubs or washing basins are provided.
- ☆ If equipment is placed near the doors, it is desirable to take measures such as installing door pockets to prevent infants and toddlers from getting their hands caught.
- ☆ It is desirable to install full-length mirrors so that the baby care room users can groom themselves inside the room.

3.20.4 **Diaper changing tables for infants / toddler**

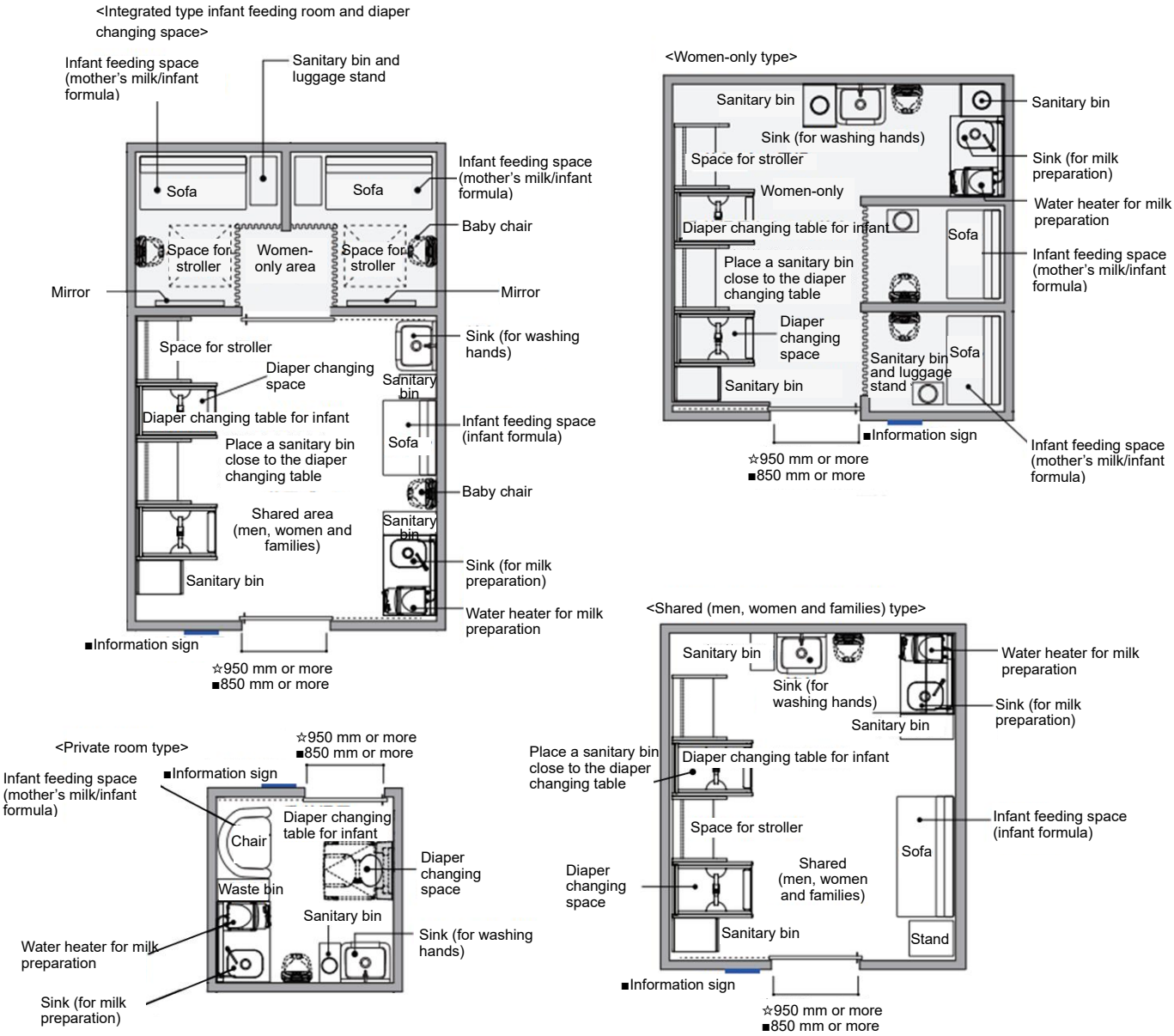
- ☆ If multiple diaper changing tables for infants are installed, it is desirable that at least one of them be low enough for wheelchair users to use.
- ☆ It is desirable to place a sanitary bin close to a diaper changing table for infants.
- ☆ It is desirable that sanitary bins have a lid to prevent odour from leaking, and have a clear instruction on how to dispose of diapers, etc. (if items other than diapers are not allowed to be disposed of for recycling purposes, describe it clearly).

Refer to 3.17 Washrooms (Measures for Equipment for Infants, etc.) for the structure of diaper changing tables for infants.

3.20.5 **Additional facilities**

(Equipment to communicate information in emergencies)

- ■ Baby care rooms of facilities equipped with automatic fire alarm equipment must have a light-based alarm system such as a display system for showing letters or signs, flash lights, and rotary beacon lights installed and provide information regarding emergency situations such as fires for all people, including those with hearing difficulties.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Examples of infant feeding rooms/diaper changing spaces (baby care rooms)

3.21 Prayer rooms

The Expo Site will be visited by many people of diverse religious and cultural backgrounds. It is desired that facilities are prepared to cater to special needs of those people. Matters concerning the prayer room that serves as a place for spiritual activity such as prayer, devotion, silent prayer, meditation, reflection, and pondering in a serene environment and a small ablution facility for cleansing one's body before prayer will be noted here. Accessibility by all must be considered when providing the facilities.

(Doorways)

Refer to 3.10 Doorways for the general guidelines concerning the doorways.

- ■ If providing a room of worship, doorways must have an area free from obstructions, with space secured for removing shoes, and ensuring removed shoes do not block pathways.
- ■ Area for removing shoes must include chairs to sit on when removing shoes.

(Space for prayer)

- ■ Chairs must be provided in the prayer space for people who are unable to kneel in prayer.
- ☆ It is desirable to provide multiple spaces for prayer, assuming that they may be used separately by men and women.

(Ablution facility)

- ☆ If providing a facility for ablution to cleanse one's body, it is desirable to position it close to the doorway.
- ☆ It is desirable that handrails are placed horizontally on the wall of the ablution facility at a height of 700-800 mm.
- ☆ It is desirable that soap space, and paper towel dispensers are placed in the ablution facility at a height of 700-1,200 mm.
- ☆ It is desirable for open space having a width of 1,200 mm to be available in front of ablution equipment.

3.22 Fixtures and equipment (handrails, counters, vending machines, etc.)

Internal and external fixtures and equipment are vital facilities for the convenience and comfort of visitors, and therefore the equipment need to be implemented in such a way that is accessible for all.

3.22.1 Handrails

Handrails are necessary equipment for elderly people, persons with disabilities, etc. as support to keep from falling, for standing up, moving around, and as guidance for people who are visually impaired, among others. Handrails must conform to positioning, shape and size fitting for the facility they will occupy, the location, and needs of users.

Standards common to all facilities are as follows. See 3.12 for stairs, 3.13 for ramps, 3.14 for lifts, 3.15 for escalators, and 3.17 for washrooms regarding individual standards based on the facility.

(Installation heights)

- ☆ In the case of double handrails, it is desirable that the upper and lower handrails be installed at the heights of 800-850 mm and 650 mm, respectively.
- ■ Single handrails must be installed at the height of 750-850 mm.

(Continuity)

- ■ Handrails must be installed continuously from the starting point to the finishing point. Handrails must be installed to match the gradient along staircases and ramps so that the gradient can be detected by users.

(Distance from the wall)

- ☆ It is desirable that the clearance between the wall and the handrail be 30-50 mm. It is desirable that handrail support brackets be attached to the underside of the handrails to make it easy for users to grip them

(Shape)

- ☆ It is desirable that the shape of handrails be circular to allow for a firm grip to support the body safely. In the case of a circular handrail, as a general rule, it is desirable that the diameter of the cross-section be 30-40 mm.
- ■ Handrails must be straight in shape. However, this does not apply if it is impossible for unavoidable structural reasons.

(End part treatment)

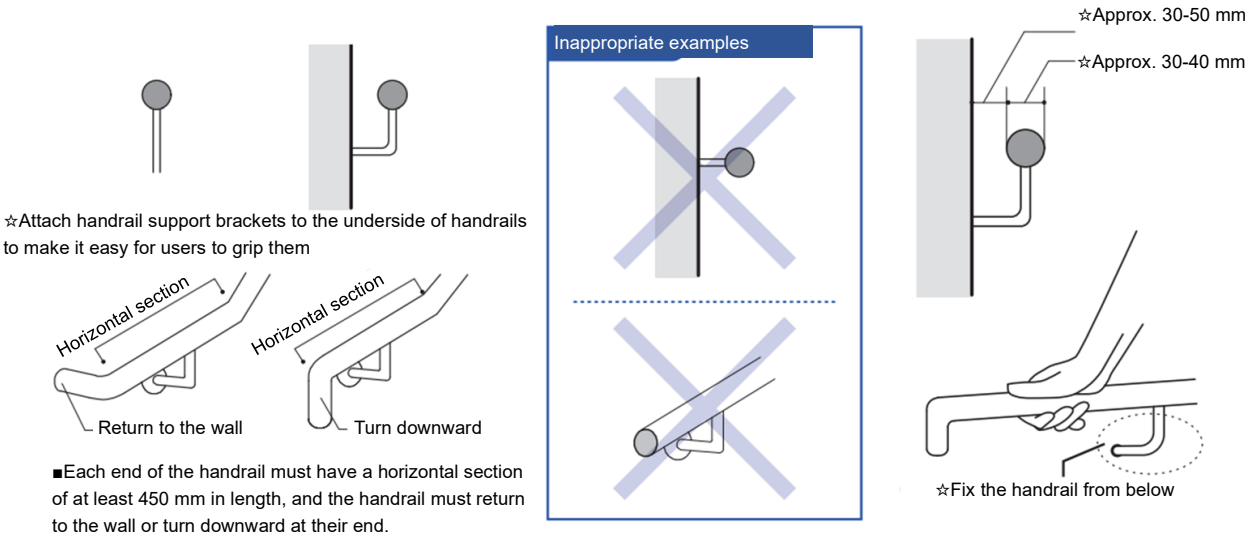
- ■ Each end of handrails must return to the wall or turn downward at their ends.

(Materials and colours)

- ■ The handrail materials must be pleasant to the touch, corrosion resistant, durable and easy to manage and maintain, and the handrails must be in colours that make them easy to locate.

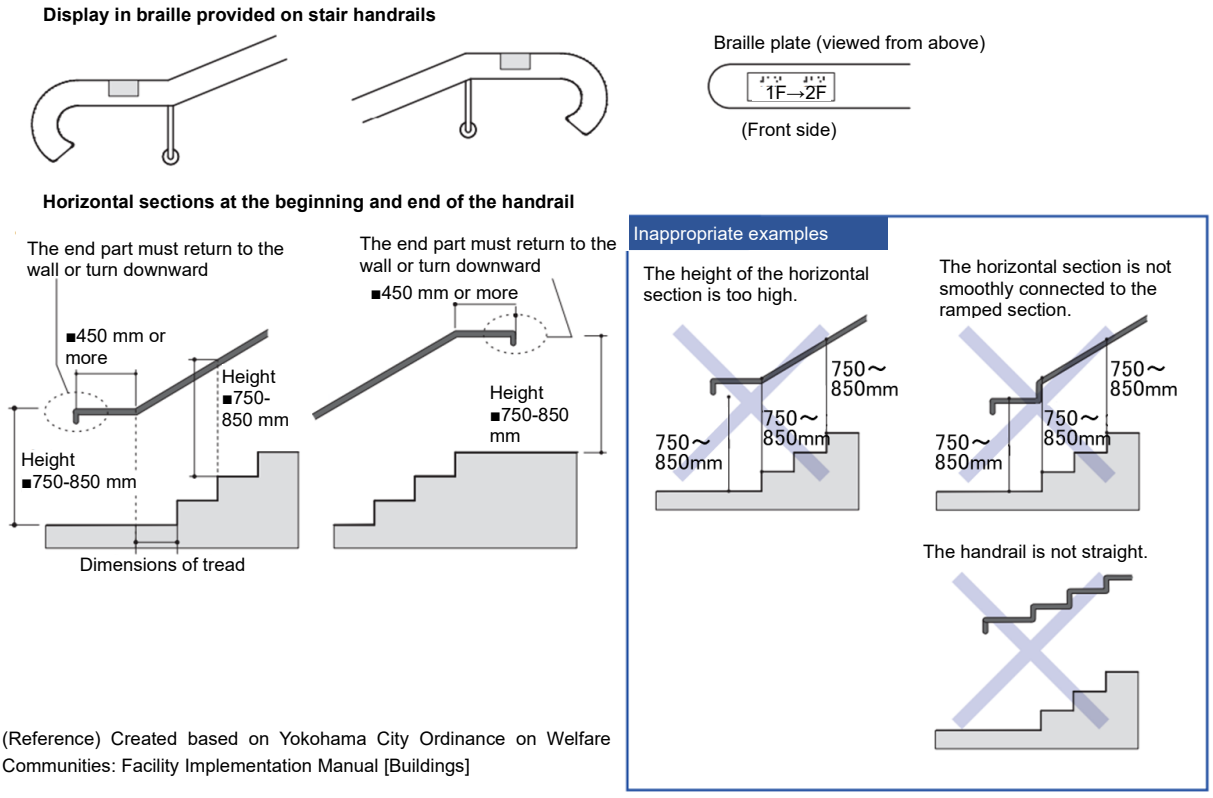
(Display in braille)

- ■ At starting and ending points of handrails on staircases, steps and ramps, guidance in braille must be provided as necessary.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Handrail shapes, fixing methods, and termination details.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

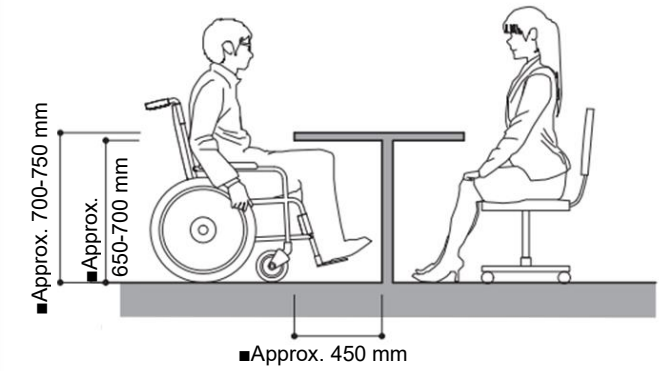
Figure: Handrail structure (structure of starting and ending points, etc.)

3.22.2 **Counters**

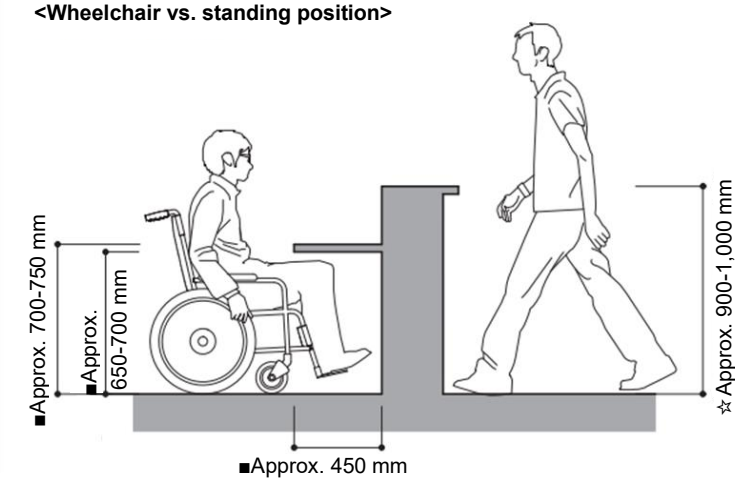
(General guidelines)

- ■ The dimensions of counters, writing desks, public telephone stations, etc. must be approx. 650-700 mm high at the lower end, approx. 700-750 mm high at the upper end, and approx. 450 mm deep so that wheelchair foot supports and knees can fit in the space underneath them.
- ☆ It is desirable to have an indent for resting a cane or umbrella, or a hook or similar device to rest a cane.

<Wheelchair vs. sitting position>



<Wheelchair vs. standing position>



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Basic dimensions of counters and writing desks

(Wheelchair-accessible counters)

■ In order for wheelchair users to approach, sufficient space (1,500 mm x 1,500 mm or larger) must be ensured in front of the counter, etc. to allow wheelchair users to turn around.

(Low seating counters)

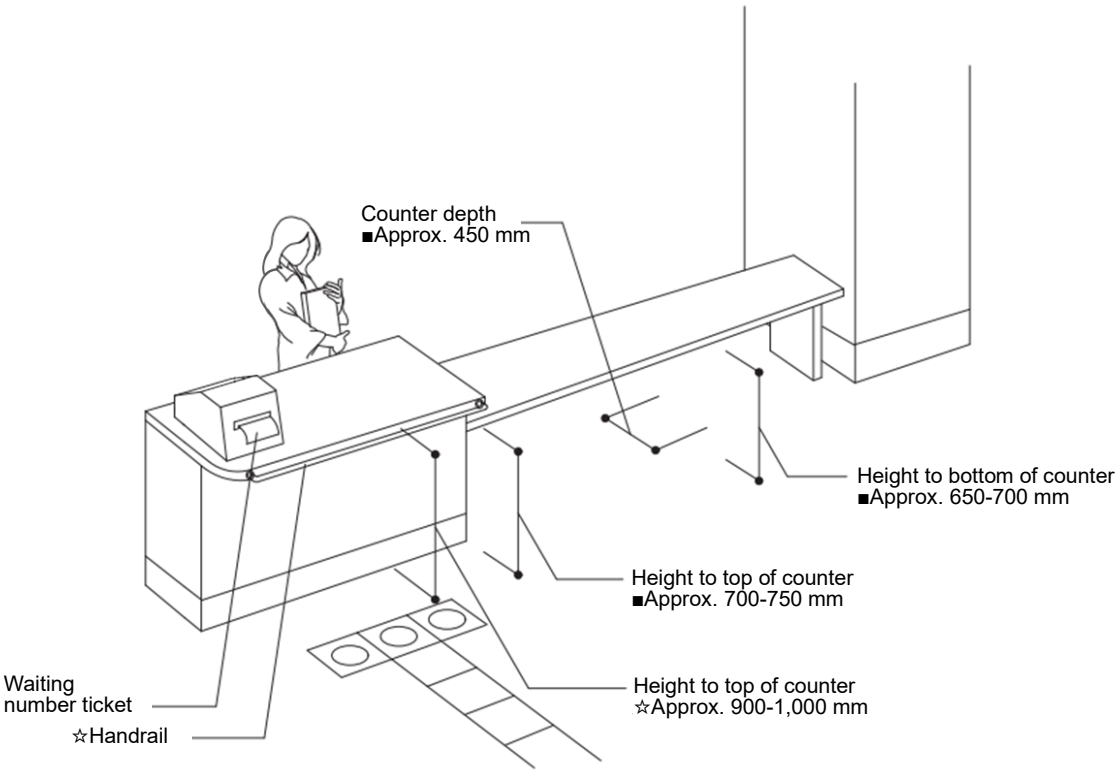
☆ It is desirable that chairs for low seating counters are 400-460 mm high and with armrests provided.

(Standing height counters)

☆ It is desirable that the counters are 900-1,000 mm tall.

■ When installing a standing-height counter or the like, the counter must be fixed so that it can support the body, and a handrail must be installed for support as necessary.

☆ It is desirable to have a horizontal handrail installed to place a hand on when getting up.



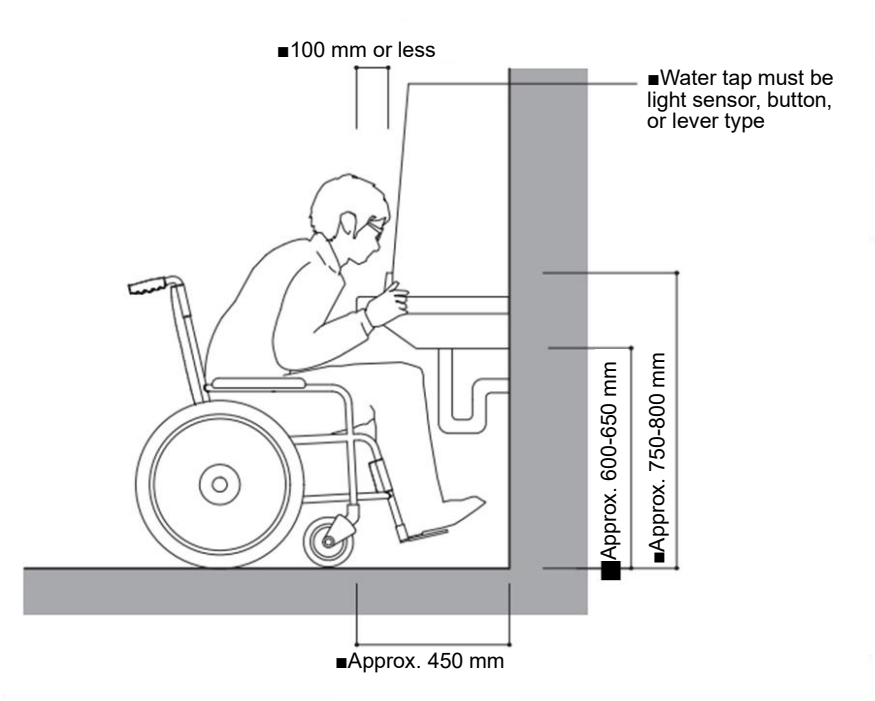
(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of implementation of a counter

3.22.3 **Drinking fountains**

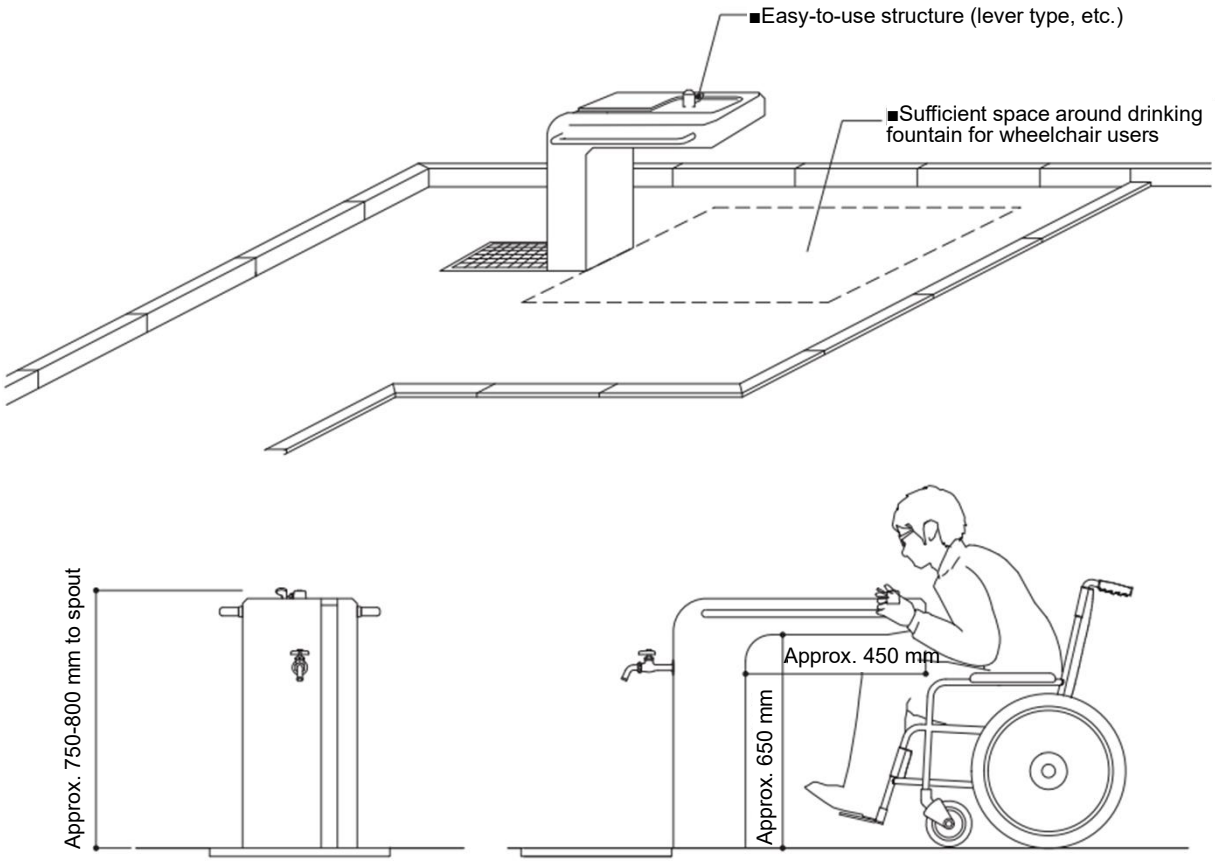
(Installation)

- If a drinking fountain is installed, it must be at a height that makes it easy for wheelchair users to use it, and sufficient space must be ensured around it.
- The water tap must be light sensor, button, or lever type.
- The dimension of the drinking fountain must be approx. 600-650 mm high at the lower end, and approx. 450 mm deep so that wheelchair foot supports and knees can fit in the space underneath it.
- A horizontal space where wheelchair users can approach must be ensured.
- The spout of the drinking fountain must be located at a height of approximately 750-800 mm, and must be installed within approximately 100 mm from the edge so that wheelchair users can use it.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Basic dimensions of drinking fountain



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Figure: Example of implementation of drinking fountain (outdoor)

3.22.4 **Vending machines, ticketing machines, etc.**

(Positions and heights of the equipment)

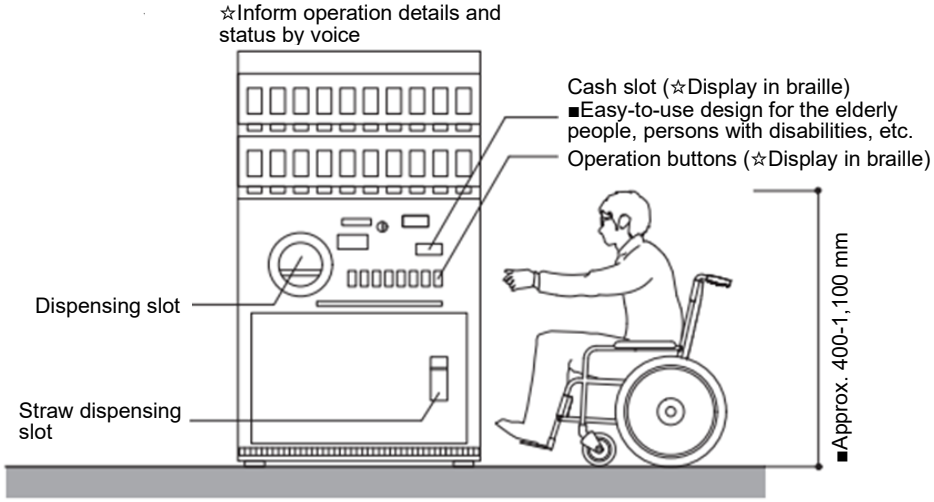
- ■ If vending machines or ticketing machines are installed, sufficient space must be ensured in front of them so that wheelchair users can smoothly use them.
- ■ Operation buttons of vending machines and ticketing machines, and operation buttons, cash slots and cash outlets of automatic teller machines must be located at a height of approximately 400-1,100 mm from the floor.

(Specifications of the equipment)

- ■ Operation buttons, cash slots, cash outlets, etc. must be designed so that elderly people, persons with disabilities, etc. can smoothly use them.

(Display in braille and voice guidance)

- ☆ It is desirable that operation buttons of vending machines and ticketing machines display item names, prices and other information in braille. It is also desirable that operation buttons, cash slots, etc. of automatic teller machines display information in braille. It is desirable to provide a system to inform operation details and status by voice.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Basic dimensions and implementation example of vending machine

3.22.5 **Litter bins, electrical outlets**

(Provision as a principle)

- ■ If litter bins are installed, they must be positioned so that all users have access to them.
- ☆ It is desirable that litter bins be provided in washrooms and by vending machines, benches for resting, spaces for feeding infants, and diaper changing tables.
- ■ Litter bins must not be installed near doors so as to ensure doors open, close, and lock easily.

(Height)

■ It is desirable that the litter bin openings are approx. 900 mm (1,200 mm max.) tall.

(Easy identification)

■ Litter bins must be easily identifiable in terms of their shapes and colours, with garbage classification displayed in an easy-to-understand manner.

(Lid operation styles)

☆ It is desirable that litter bins reflect consideration of the fact that it may be difficult for some people to open a lid with hands or feet (avoid foot-pedal type lid).

(Provision of electrical outlets)

☆ It is desirable to provide electrical outlets in appropriate locations within rooms for resting, resting areas, and information points for use by visitors. Electrical outlets must be installed at locations that are easily accessible to all persons including wheelchair users.

3.22.6 **Entrance/exit gates**

(Styles)

■ Revolving gates must not be installed.

(Effective widths)

☆ If a gate or a device to restrict entry or exit (e.g., metal detector) is installed, it is desirable to install at least one wide gate with a width of at least 900 mm.

■ The effective width of at least 850 mm must be ensured.

(Opening direction)

☆ If a gate device is installed, it is desirable that the date open toward the side opposite to the user (i.e., in the direction of travel).

(Arrangements for wheelchair users)

■ If turnstiles or other ticket control devices that generally do not allow access by wheelchairs, gates or doorways accessible for wheelchairs must be installed adjacent to them.

3.22.7 **Windows**

(Handle styles)

☆ It is desirable that window handles are ones that do not require a twisting action of the wrist, preferably operable with the arms or elbows or automated to be opened/closed easily.

(Installation heights)

☆ It is desirable for windows to be installed at 900 mm from the floor. It is also desirable that measures are put in place to prevent trip and fall accidents if the windows are within 1,200 mm from the floor.

3.23 Interior design (interior decorations, equipment, and other arrangements)

3.23.1 Rooms

Matters noted here are common for all rooms inside buildings except for corridors, etc. (3.11); washrooms (3.17); auditorium (3.17); food service/retail vendor areas (3.19); baby care rooms (3.20); and prayer rooms (3.21)

(Floor finish)

- ■ There must be no steps in rooms. If steps unavoidable, a ramp must be installed. (Refer to 3.13 for ramps.)
- ☆ If steps are unavoidable, it is desirable that the steps be demarcated for easy distinction between the edges of the steps and the surrounding areas by colours of different brightness, hue, or colour saturation.

(Turnaround space for wheelchairs)

- ■ Each of the rooms must have one or more space of at least 1,400 mm x 1,400 mm secured for a wheelchair (hand-operated or electric) to turn around.

3.23.2 Lockers

(Installation heights)

- ■ Lockers for wheelchair users and short people must be placed 600-1,200 mm from the floor and account for at least 50% of all lockers.

(Locker number display)

- ☆ It is desirable that locker numbers are clearly indicated, labelled in braille, and displayed in embossed lettering.

(Operation panel, etc.)

- ☆ As touch panels are difficult for persons with visual impairment to use, if installing such panels then it is desirable for there to be another version without touch panels (such as with keys) available as well.

3.23.3 Balconies

(Doorways)

- ■ Doorways must be flat and horizontal.
- ■ Doorways must be at least 900 mm wide.
- ■ Doorways must be level with the adjacent floors wherever it is possible.

(Size)

- ■ Balconies must be joined together and wide enough for wheelchair users to pass through.
- ■ They must have an area size of at least a 1,500 mm square.

(Floor finish)

■ The floor must have a rough surface or be finished using slip-resistant materials on which canes, wheelchairs, and legs will not get easily caught on.

3.23.4 **Pram/Stroller parking areas**

Not only when using the food service area or the auditorium, but also when visitors accompanying infants play in the facility or participate in various experience programmes, there are cases where they need to leave their strollers temporarily. Therefore, it is necessary to ensure spaces where they can leave their strollers safely.

(Location)

☆ When providing a stroller parking area, it is desirable to locate it in a place where people can see it in order to reduce the anxieties of theft, etc.

(Size)

☆ It is desirable that the stroller parking area be large enough (with a depth of at least 1,000 mm) to accommodate strollers without folding them.

3.24 Evacuation equipment, etc.

Necessary planning and design arrangements with the following points in mind must be in place for evacuation routes to be put in place and for necessary information guidance to safely and quickly evacuate all people by considering the characteristics of the venue users, the use of the place, and emergency protocols for each of the exhibition facilities, in order to enable all people including elderly people, persons with disabilities, etc. to evacuate smoothly in case of an emergency.

- Information on emergency situations such as fires and earthquakes must be swiftly and appropriately relayed to elderly people, persons with disabilities, etc.
- Consideration must be given to ensure information is provided to persons with visual impairment and those with hearing difficulties.
- For the smooth evacuation of elderly people and persons with disabilities, flowline design for emergency evacuation routes must be easily identifiable and information is to be provided for people to easily find the direction in which to evacuate.
- Assistance in evacuating wheelchair users and others is necessary depending on the use and size, etc. of facilities. Temporary refuge areas and routes to those areas must be provided as well as leading individuals to those areas as appropriate.

3.24.1 Evacuation routes

(Flowline)

- ■ Evacuation routes must be put in place for each of the exhibition and event facilities to safely and quickly evacuate all people.
- ■ Evacuation routes must be step-free.

(Provision of evacuation instruction equipment)

- ☆ It is desirable that emergency exit lights, travelling flashing lights systems, phosphorescent tiles, etc. are installed on the ceiling along the evacuation routes.
- ■ So that evacuation instructions can be relayed in case of disaster, equipment and mechanisms for emergency notification using texts and lights, in addition to sound, must be installed.

3.24.2 Temporary refuge area

(Provision as a principle)

- ☆ It is desirable that safe, temporary refuge areas are provided on staircase landings, on balconies connected to stairs, stair vestibules, and corridors, etc. in areas that do not block evacuation routes to be used while waiting for rescue in emergencies.

(Necessary features)

- ■ If providing a temporary refuge area, so that wheelchair users have adequate space for refuge, there must be at least 900 mm x 1,300 mm of space per person secured.
- ■ Structure of the temporary refuge space shall be fire resistant and smoke- and flame-insulated as necessary for awaiting rescue.
- ■ The temporary refuge space shall be equipped with two-way communication equipment to call for rescue, describe current situations, etc., with the centre of selection buttons positioned at a height of approx. 1,000 mm from the floor.

(Indication)

■ Temporary refuge space must be clearly indicated as such to be easily identifiable. If a staircase or stair vestibule is to be installed, there must be indication by the entryway that temporary refuge space is provided there.

3.24.3 Methods of communication

☆ It is desirable that equipment be installed that takes into consideration elderly people, foreign nationals, persons with intellectual disabilities, etc. in addition to those with visual and hearing difficulties in communicating information in a way that is easy to comprehend.

3.24.4 Automatic fire alarms, emergency alarm systems, and fire extinguishers

(Locations)

■ Automatic fire alarm transmitters, emergency alarm systems and fire extinguishers must be installed in places accessible to all people, including wheelchair users.

■ Automatic fire alarm transmitters and emergency alarm systems must be mounted directly on walls free from obstruction for use with a maximum operable height of 1,100 mm.

(Features)

■ Lighting type emergency exit lights must be installed at doorways leading to the outside and doorways to direct stairs.

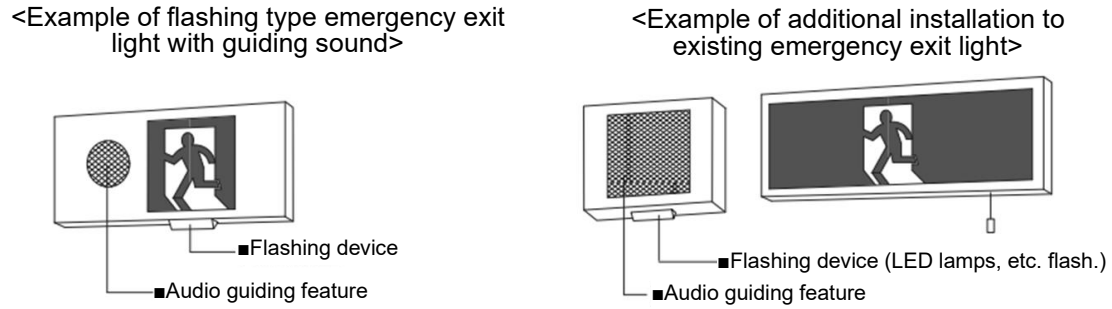
■ Alarm equipment that informs of fire by an auditory device must be installed.

☆ It is desirable that alarm equipment be provided with equipment capable of broadcasting alarms simultaneously throughout the building.

■ Emergency exit lights installed in a building with automatic fire alarm equipment must have a flash mode and audio guiding feature.

☆ It is desirable that flashing type emergency exit lights be provided with an audio guiding system that indicates the location of doorways, etc.

■ These exit lights must not trigger the flash mode or audio guiding when the automatic fire alarms on the path from the lights towards the evacuation points are set off.

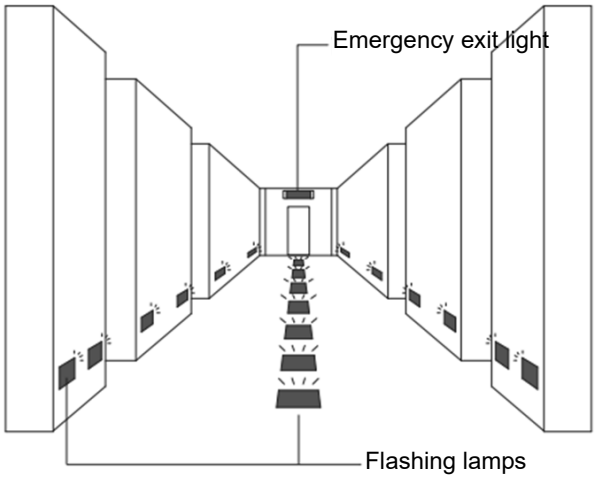


(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Examples of alarm equipment with auditory device and flashing type emergency exit light

3.24.5 **Other**

- ■ Door opening devices must be able to continue functioning even under emergency alarm conditions.
- ■ Lighting must be installed so that evacuation routes leading out from areas under alert can be seen even under emergency alarm conditions.
- ☆ It is desirable to install a device (evacuation guidance system using sequentially flashing lights) to indicate the direction of evacuation using green lamps embedded in a floor or wall that sequentially flash toward the direction of evacuation when a fire alarm is received. When installing such a system, it is required to comply with the fire evacuation guidance standards, so consultation with the fire department is required concerning the installation method.



(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of evacuation guidance system using sequentially flashing lights

- ☆ In emergencies, it is desirable to install devices (such as digital signage) that provide information on the situation using text in consideration of information transmission to persons with hearing difficulties.

(Source) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of emergency text display device

Common guidelines

3.25 Display signs

If there are accessible lifts or washrooms in the venue, it is important to clearly indicate them with signs that are easy for everyone to understand. As a general rule, pictograms specified in JIS Z 8210 should be used, and if not specified in JIS Z 8210, international standards, etc. should be used as reference to design pictograms that are easy for everyone, including children and foreign nationals, to understand.

When information is provided using notices and signs, it is necessary to provide it with content and in a manner that are easy to understand for all users, including elderly people, persons with disabilities, etc. If notices that display the facility layout and routes throughout the venue are installed, it is important to install them at easily accessible locations near doorways and to give sufficient consideration to the structure, such as the height that is easy to see.

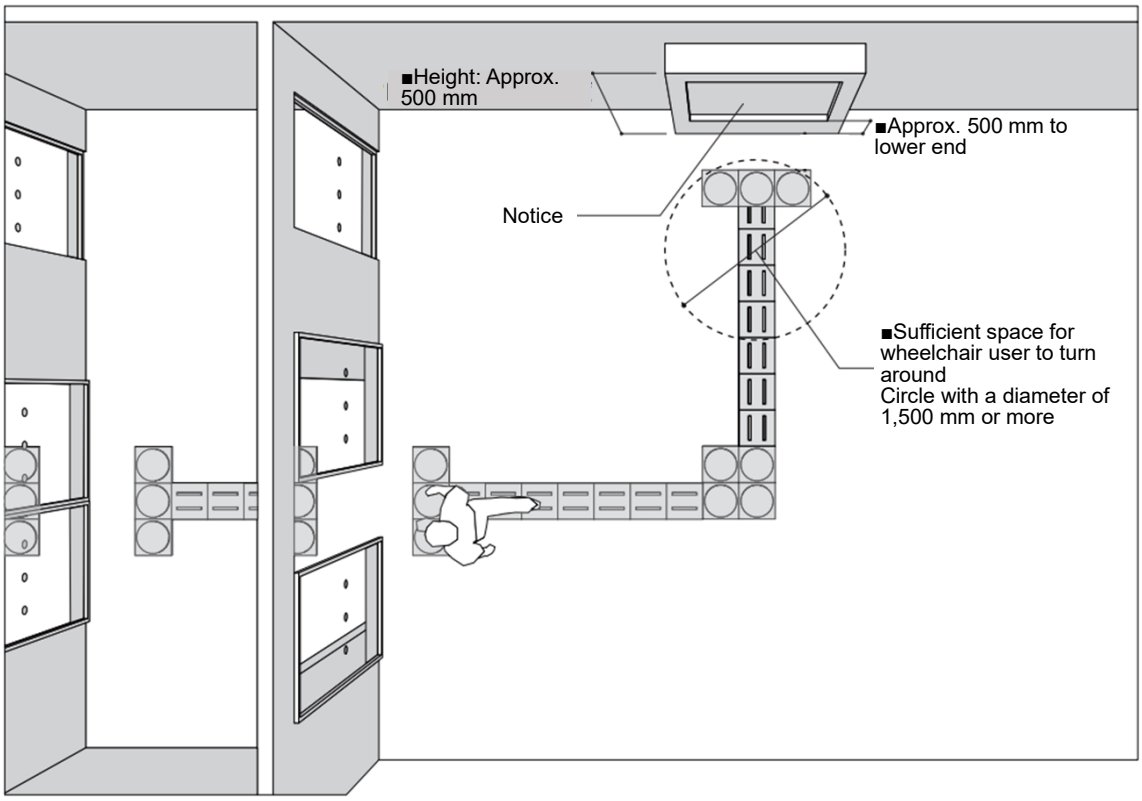
3.25.1 General guidelines

(Locations)

- ■ Displays and markings must be installed at locations that do not obstruct the passage of elderly people, persons with disabilities, etc.
- ■ Notices must be installed at main doorways, other places where users gather, etc. in a manner that does not obstruct passage, taking into consideration the use by elderly people, persons with disabilities, etc.
- ■ Signs must be installed at main doorways, branch points of pathways, etc. in a manner that does not obstruct passage, taking into consideration the use by elderly people, persons with disabilities, etc.
- ■ A horizontal space must be provided in front of notices so that a wheelchair user can turn around without obstruction (a circle with a diameter of 1,500 mm or more).

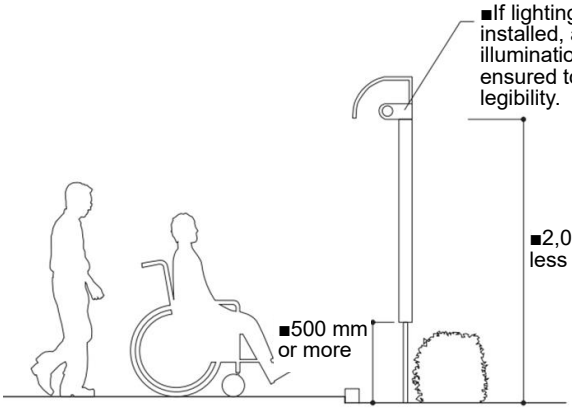
(Installation height)

- ■ Displays and markings must be installed at a height that is easily visible to elderly people, persons with disabilities, etc.
- ■ The height of the display surface of a notice must be within a range of 500-2,000 mm from the floor, based on the average eye level and angle of elevation. This standard assumes that users view the board surface from a distance of approximately 1,000 mm.
- ■ If signs protrude onto the pathway, they must be installed with their lower ends located at a height of at least 2,000 mm above the ground so as not to obstruct the passage of elderly people, persons with disabilities, etc.
- ☆ It is desirable that signs highlighting specific areas such as washrooms be installed at a height of 2,500 mm from the floor and above the doors of doorways so that they are visible even in a crowd. In addition, in consideration of persons with low vision, it is also desirable to install signs on walls at a height of 1,400-1,600 mm from the floor.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of notice installation (indoor)



Equipment example of notice and tactile map

(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Parks]

Figure: Example of notice implementation (outdoor)

(Notice specifications)

- ■ Large and easy-to-understand letters, symbols, figures, etc. must be used, and their colours must have a contrast effect with base colours.
- ■ Letters, symbols, figures, etc. must be those that make content to be displayed on signs easily identifiable (if the content is specified in JIS Z 8210, those that comply with that standard).
- ☆ It is desirable to use Universal Design Fonts and other legible fonts, and ensure the text sizes, brightness, hue or colour saturation that make the content to be displayed easily readable.

☆ It is desirable to avoid difficult expressions and use plain words.

☆ A combination of hiragana (furigana), pictograms, English, etc. should be used, and pictograms should basically be compliant with information symbols specified in JIS Z 8210. For information symbols (pictograms) not specified in JIS Z 8210, they should be in line with the “Public Information Symbols Guideline 2021 (Foundation for Promoting Personal Mobility and Ecological Transportation),” or standardised information symbols (pictograms) should be used. If original information symbols are designed, it is desirable to consider them by, for example, hearing opinions about easily recognisable designs so that elderly people, persons with disabilities, etc. can recognise such original information symbols.

(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

(Display content)

■ For accessible lifts or other means of vertical mobility, washrooms or parking facilities, signs indicating their presence must be provided near them.

■ Signs installed near washrooms must indicate that they have washrooms for wheelchair users, large-sized changing tables (care beds), equipment for ostomate, infant chairs, or diaper changing tables for infants.

(Pictogram/character size)

■ The character width-to-height ratio must be between 3:5 and 1:1.

☆ It is desirable that the size of pictograms be based on visual range as shown in the table below.

Visual range	Size of pictogram
L < 7 m	60 mm × 60 mm
7 m < L < 18 m	110 mm × 110 mm
L > 18 m	200 mm × 200 mm

☆ It is desirable that the size of characters be based on visual range as shown in the table below.

Visual range	Japanese character height	English character height
30 m	At least 120 mm	At least 90 mm
20 m	At least 80 mm	At least 60 mm
10 m	At least 40 mm	At least 30 mm
4-5 m	At least 20 mm	At least 15 mm
1-2 m	At least 9 mm	At least 7 mm

(International symbol of access)

■ The international symbol of access must be displayed in dark blue and white, or black and white.

☆ It is desirable that the international symbol of access is larger than a 100 mm square but less than a 450 mm square.

(Illumination)

■ If lighting equipment is installed, adequate illumination must be ensured to enhance legibility.

☆ If necessary, it is desirable to install lighting equipment suitable for night use.

(Tactile maps)

☆ It is desirable to provide braille information and tactile maps for persons with visual impairment on general notices. It is desirable that general notices be installed with consideration for the angle and height that make it easy to read braille information, and that tactile floor tiles be installed continuously from the doorways, etc. of the venue. It is desirable that information points and other similar facilities have explanatory leaflets with descriptions of the venue's overview in braille and tactile drawings available.

3.26 Tactile floor tiles

It is necessary to establish routes to guide persons with visual impairment to information equipment or information points that are accessible to them. For hazard prevention, measures must be taken, such as not placing anything on the routes that obstructs the passage.

Furthermore, consideration must be given to the structure of tactile floor tiles for the safe, secure and smooth use by persons with visual impairment. Appropriate equipment such as voice devices and braille guidance must be placed at necessary locations for warning/cautioning.

3.26.1 Routes to guide persons with visual impairment (routes leading to information equipment)

（Provision of guiding equipment）

- ■ Guiding tiles for persons with visual impairment (e.g., striped tactile direction guiding tiles and dotted tactile warning tiles) must be installed on the route leading from outside the venue to the doorways to the venue and the main garden path in the common spaces.
- ☆ Where it is necessary to select a guiding method other than the installation of tactile floor tiles, it is desirable that other means of guiding assistance be provided, such as voice information guide and personal escort by staff members, etc.
- ■ Guiding tiles for persons with visual impairment must be installed, or equipment to guide persons with visual impairment using voice or other methods must be provided to guide persons with visual impairment from the doorways to buildings and garden sites to information equipment, information points, etc.
- ■ If there is a tactile guide map on a notice, tactile floor tiles must be installed toward the front side of the braille and embossed lettering on the notice.
- ☆ If necessary, it is desirable to install tactile floor tiles or equivalent flooring materials in corridors to indicate the locations of the doorways to washrooms.
- ■ Buildings, gardens or other on-site locations must be equipped with facilities to indicate to persons with visual impairment the locations of accessible lifts or other means of vertical mobility or washrooms within the buildings, gardens or other on-site locations, using one of the following methods. However, this does not apply if information points are provided.
    a. Labelling in braille
    b. Embossed lettering
    c. Voice guide
    d. Other methods similar to the above
- ☆ In addition to displays, it is desirable to provide voice guidance (which conveys the situation or equipment details through verbal explanation) and auditory guidance (which conveys the location or direction using electronic sounds or birdcalls). It is desirable that guidance be designed to minimise interference with voice, and include information that can guide users to locations where facility staff are stationed.
- ■ If guidance for persons with visual impairment is provided using braille or embossed lettering, the characters on diagrams must be accompanied by braille, and the lines must be embossed.

3.26.2 **Guiding tiles for persons with visual impairment**

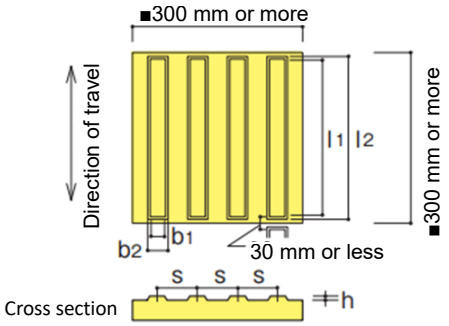
(Routing guidelines)

- ☆ It is desirable in principle that the tactile floor tiles are laid down in straight lines, no curves, and turnings are right angles.
- ☆ It is desirable that tactile floor tiles are laid on the main footpath routes so that persons with visual impairment do not have to walk longer distances unnecessarily.
- ☆ It is desirable that textured tiles, etc. are not interrupted by drain box covers, etc. along on-site pathways.
- ☆ If tactile floor tiles are installed continuously on pathways, etc., it is desirable that they be installed in the centre of the pathway, not too close to the wall, and that a distance that does not obstruct the passage of persons with visual impairment be ensured.
- ■ If tactile floor tiles are installed from the doorway to a building to the interior of a facility, they must also be installed continuously in the windbreak room. It is desirable that the direction of travel not be changed in the windbreak room.

(Shapes and sizes of tiles)

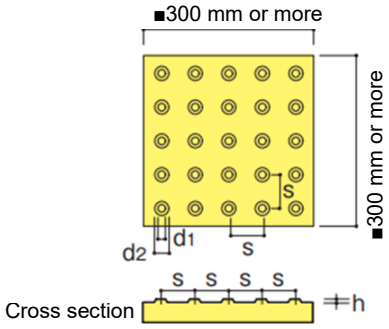
- ☆ It is desirable that the shapes, sizes, and arrangements of the tiles comply with the JIS T9251 standards.
- ■ The size must be at least 300 mm in both length and width.
- ■ The shape of protrusions must be easily recognisable by persons with visual impairment.
- ■ When indicating the direction of travel, projections must be line-shaped.
- ■ To caution and warn visually impaired people's attention, projections must be in the shape of dots.

<Line-type textured floor tiles (for guiding)>



Symbol	Measurement	Tolerance
b1	17mm	+1.5mm 0
b2	b1+10mm	
s	75mm	
h	5mm	+1mm
l1	270 mm or more	
l2	l1+10mm	

<Dot-type textured floor tiles (for cautioning/warning)>



Symbol	Measurement	Tolerance
d1	12mm	+1.5mm 0
d2	d1+10mm	
s	55～60mm	
h	5mm	+1mm

(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Structure of striped tactile direction guiding tiles / dotted tactile warning tiles

(Colours)

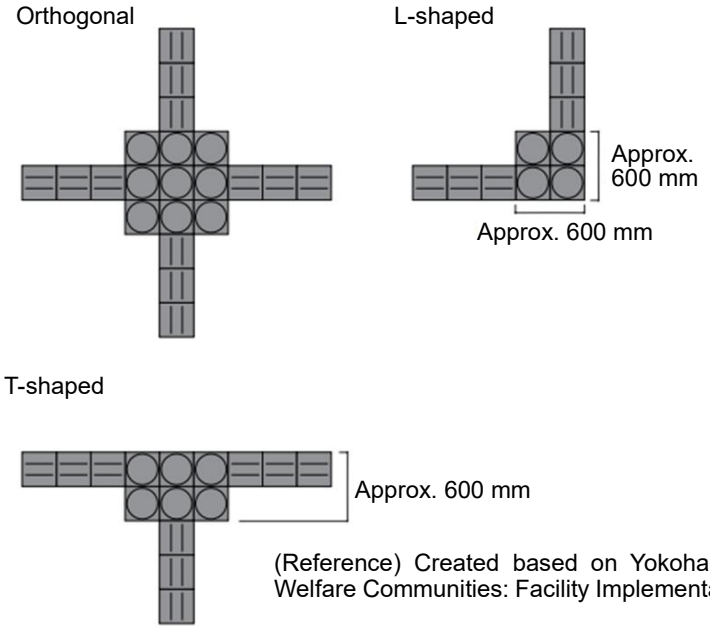
- ■ The colour must be yellow as a general rule, and tactile floor tiles must be demarcated for easy distinction between the tactile floor tiles and the surrounding floor surface by colours of different brightness, hue, or colour saturation.

(Material)

- ■ The material must have sufficient strength, be slip-resistant, durable, hard to fade, and less likely to decrease in brightness.
- ■ Guiding tiles with metal studs must not be used because they are less visible to persons with low vision, slippery, and may come loose.

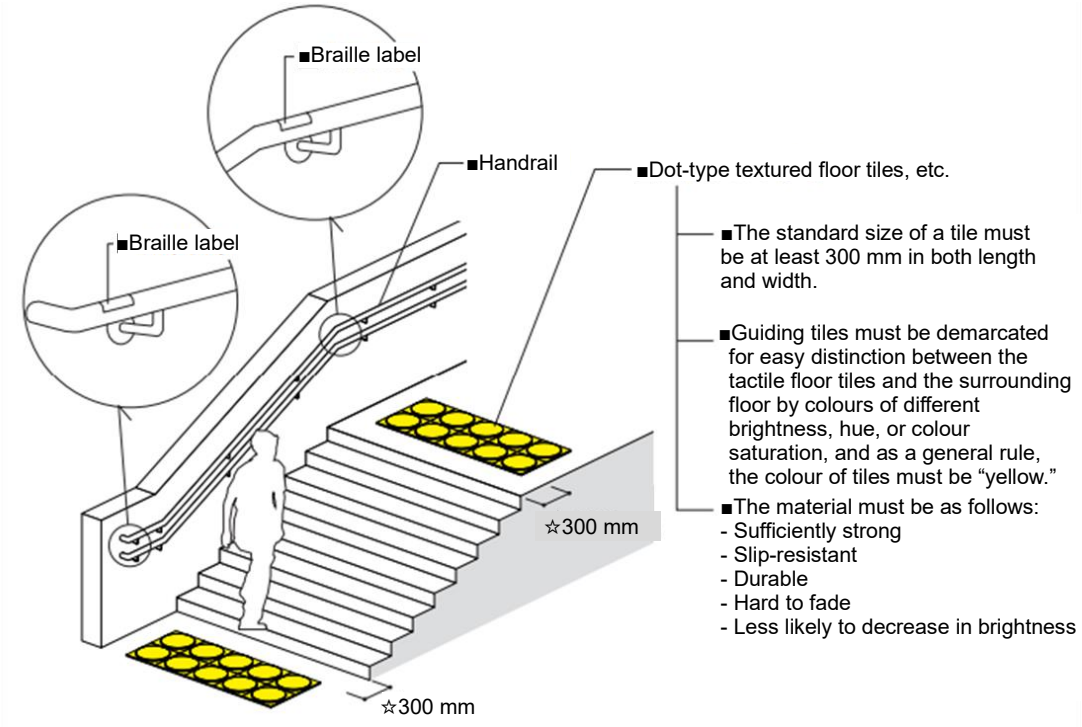
(Positioning)

- ■ In areas adjacent to the upper edges of ramped sections, dotted tactile warning tiles, etc. must be installed to give warning to persons with visual impairment. However, this does not apply to ramped sections where the gradient does not exceed 1:20 or where the height does not exceed 160 mm and the gradient does not exceed 1:12, or landings with handrails that are continuous with those installed in the ramped sections.
- ■ Dotted tactile warning tile, etc. must be installed in the following areas to warn persons with visual impairment.
  (a) Areas adjacent to the upper and lower edges of steps
  (b) Areas adjacent to roadways
- ☆ It is desirable to install dotted tactile warning tiles (approximately 600 mm) in areas adjacent to the upper and lower edges of steps to prevent visually impaired people from stepping over.
- ☆ It is desirable that dotted tactile warning tiles be installed 300 mm away from the upper edge of steps.
- ■ Dotted tactile warning tile must be installed near ramps, staircases and steps to warn of potential hazards, as well as in areas where it is necessary to give advance notice of a change in walking direction.
- ■ Striped tactile direction guiding tiles must be installed so that their linear protrusions are parallel to the direction in which persons with visual impairment are guided.



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Examples of installation of tactile floor tiles



(Reference) Created based on Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual [Buildings]

Figure: Example of implementation of areas around staircase

(Arrangements for elderly people and wheelchair users)

- ☆ It is desirable that plans for the installation of tactile floor tiles takes into account the arrangements for elderly people and wheelchair users by leaving sufficient room for these people’s safe and easy passage.
- ☆ If indoors, a guiding mat can be used as guiding equipment in place of striped tactile direction guiding tiles and dotted tactile warning tiles.

In addition to the above, refer to 3.1 Pathways Within the Expo Site, 3.2 Staircases, 3.3 Ramps, 3.6 Pathways, 3.10 Doorways, 3.11 Corridors, etc., 3.12 Staircases, 3.13 Ramps, 3.14 Passenger Lifts, 3.15 Escalators, 3.16 Platform Lifts, and 3.17 Washrooms regarding installation methods for the various unit spaces.

3.27 Calm down/cool down spaces, sensory spaces, etc.

Depending on the nature of the disability, persons with disabilities may feel uneasy or fearful depending on the circumstances of the environment, such as crowds, sounds and lights, which may lead to panic. Calm down/cool down spaces and sensory spaces are necessary as facilities for those people to feel comfortable visiting and enjoying the Expo. Therefore, it is desirable for such facilities to be planned and designed keeping in mind the need to incorporate the following objectives.

- Function in allowing users to enjoy exhibits and other venues at their own pace and desired manner
- Features that will help users avoid panicking or calm them down when panic sets in

(Location)

☆ For facilities where a large number of visitors gather in a large space and where stimulation from sound, lighting, and images may be strong, it is desirable to provide a space where lighting is not too bright, sound is insulated, crowds and looks of others can be avoided for users to feel safe, and performances can be enjoyed through soundproof glass (sensory spaces).

■ Calm down/cool down spaces (individual rooms or space) must be provided where visitors can calm themselves in facilities where a large number of visitors gather in a large space and where stimulation from sound, lighting, and images may be strong.

☆ It is desirable to gain the opinions of those directly involved so that calm down/cool down spaces and sensory spaces can be designed and positioned with visitors' flowlines and behavioural patterns in mind.

(Necessary features and equipment)

■ Calm down/cool down spaces and sensory spaces require the following features.
- Shading and sound insulation must be ensured
- Walls must be made from soft material (prepare buffering against collision)
- Lighting must be equipped with brightness adjustment and light distribution feature
- Security (locks, alarms for emergencies, etc.) must be fully in place

☆ It is desirable that equipment to display the time, chair to sit in and relax, water dispensing equipment, and vending machines are provided.

☆ To respond to various needs, in addition to calm down/cool down spaces and sensory spaces, it is desirable for diverse and multiple rooms for resting and space to be provided for users to choose from according to their own pace and preference.

☆ To be equipped for overcrowding, it is desirable for calm down/cool down spaces to be prepared as movable and soundproof.

☆ It is desirable for calm down/cool down spaces to be large enough to accommodate assisting companions who require use of the room.

☆ As for the interior of calm down/cool down spaces and sensory spaces, the walls should be made of soft materials and cool colours, warm colours, etc. should be used so that users can spend with peace in mind.

3.28 Areas for waiting/queueing

If queues are anticipated at venue doorways, each exhibition facility, etc., it is necessary to put into consideration arrangements for the queueing and waiting spaces to ensure everyone, including elderly people and persons with disabilities, are able to queue safely and move along smoothly. In addition to consideration of effective widths of pathways for queueing, placing trees for shade against the heat, and roofs / benches for resting, design arrangements are desired to secure adequate space between people, and priority entrances for shorter waiting times as measures to protect people who face physical and emotional difficulty when queueing for long periods, etc.

(Provision of priority entrances)

☆ It is desirable that priority entrances be provided for persons with disabilities, etc.

(Information about waiting times for facilities)

■ Audio guidance and text display about the approximate time for waiting before entering the facilities must be provided.

(Effective width of queueing lane)

■ The effective width of each lane in the queueing area must be approx. 1,500 mm.

(Gradients)

☆ It is desirable that the floor of a queueing area be horizontal or, if sloping, the gradient not exceed 1/50 (2%).

(Equipment for resting and shades)

■ If queues require standing, install resting equipment such as benches to alleviate physical and emotional burden of elderly people, persons with children, children, persons with disabilities, etc. that are adequate for the type of queues.
For example,
- if queueing is expected to be longer than 50 m in length, install equipment at the 50 m location.
- if queue is a zigzag, install equipment at the U-turn location ensuring it does not obstruct those waiting in line.

☆ It is desirable to ensure a horizontal space of 1,500 mm x 1,500 mm or larger around a bench or other equipment for resting so that a wheelchair can approach and stay adjacent to it.

☆ In areas where user needs are particularly high and there is a possibility that usage will become concentrated, it is desirable to provide priority seats so that elderly people and persons with disabilities can sit there preferentially.

☆ It is desirable that shades are provided in the queueing area.

(Ensuring identifiable arrangements)

■ When using partition poles or the like in the queueing area, colours that sharply contrast with the surrounding areas must be used to clearly distinguish the queueing area from other surrounding environments.

3.29 Assistance dog toilets

The actual cases of toilet use by assistance dogs vary, such as cases using a washroom for wheelchair users, outdoor toilet space where assistance dogs can relieve themselves, or dedicated indoor toilet for assistance dogs.

In addition to using other toilets not for assistance dogs such as washrooms for wheelchair users, it is desirable to install toilets specifically for assistance dogs.

(Facilities)

- ☆ It is desirable to install toilets specifically for assistance dogs.
- ☆ If toilets specifically for assistance dogs are installed, it is desirable to design them with consideration for summer sunlight and rainy weather.

4 Services

Table of Contents

4 Services

This chapter provides standards of Recommendation and Standard categories for specific guidelines related to services provided integrally with facility implementation within the Expo site.

Recommendation: Marked with "☆" at the beginning of a line

Recommendation indicates a "desirable" item and is defined as a standard that is particularly recommended for this Expo in order to realise safe and smooth mobility for visitors as well as enhance convenience and provide comfort in the use of facility.

Standard: Marked with "■" at the beginning of a line

Standard indicates an item that must or should be ensured and is defined as a standard that should be at least complied, with regardless of legal obligations.

This chapter provides the standards for services and the measures (examples) to be taken in various situations in order to ensure that visitors with various circumstances can enjoy the Expo as other visitors do. The measures (examples) are intended to provide a direction, but are not limited to those listed herein. Rather, each entity is required to understand these Guidelines and exert its originality and ingenuity, aiming at providing better services than the measures (examples).

The relationship between the main standards, which serve as prerequisites for the preparation of the Guidelines is as described in Chapter 2, Section 2.2 Basis for Setting Standards. However, this chapter takes into consideration the characteristics of the international horticultural expo particularly based on the "Universal Service Guidelines" for the 2025 World Exposition Osaka, Kansai and the "Aichi-Nagoya 2026 Accessibility Guidelines."

4.1 Staff support

Staff support is a major factor that determines the impressions visitors have of the Expo. In particular, the staff members dealing with visitors have many contact points with visitors in every situation, and are required to respond flexibly depending on the situation. Their responses greatly influence the satisfaction of visitors.

4.1.1 General guidance

(Staff assignment)

■ In order to deal with various circumstances of visitors, consideration should be given to ensure that staff members who can respond to visitors are assigned at the venue entrance spaces with entrance and exit gates, pickup and drop-off areas, information centres, care centres, etc.

Measures (examples)

- Assign sign language interpreters.
- Assign interpreters who can speak Japanese and English.

(Accurate support for people with various circumstances)

■ Support should be provided considering that some visitors have various circumstances.

Measures (examples)

- To make it easier for visitors to ask their needed support, provide information on the content of basic support.
- The staff should wear clothes that make it easier for visitors to identify them.
- Guide visitors via their preferred method of communication (multilingual support, written communication, speech recognition, sign language, communication support boards, illustration boards, etc.).
- If visitors are not able to stay calm in one place, guide them to a calm down/cool down space, sensory space, etc.
- For those who have difficulty understanding the content of the audio, display signs, take time to explain it carefully.
- For those who have difficulty waiting their turn (persons with disabilities, the elderly, pregnant women, children, etc.), devise measures such as presenting the time to wait.
- Give priority to visitors who need consideration when they need to queue or wait, for example at security checks or when entering or leaving the venue.
- If requested, guide visitors to a prayer room.
- Operation should be conducted by avoiding gender-based guidance or operations judged by appearance. In addition, it should be done by deepening understanding of SOGIESC*, etc. through training, etc. and by respecting differences in the personalities of people with diverse SOGIESC, such as values and lifestyles.
  *SOGIESC is an acronym for sexual orientation, gender identity, gender expression, and sex characteristics.
- When guiding people with various circumstances, call sufficient attention of those around them as necessary to ensure safety. However, consideration should be given to their privacy when calling attention.
- Create an environment where all those who wish to receive support can feel free to consult, and provide services with consideration for their situations.

(Responding to people who need support)

■ If a person who need support wishes to be assisted by a staff member and the person himself/herself or his/her companion, etc. makes a request or shows a help card, etc., consideration should be given to ensure that support is provided in accordance with their wish (It is only at the person's own request, and if there is no request, the same treatment will be given without distinction to other visitors. Also, when speaking to give support, do so to the person in question, not to the companion).

Measures (examples)

- Assuming various cases such as assistance and leading for people with physical disabilities, or priority leading for people with intellectual, mental and developmental disabilities, etc., tools such as communication support boards should be always available and used together for communication.

(Consideration for guiding visitors who move around)

■ In order to ensure that all visitors can move around the Expo site safely and comfortably, provide appropriate guidance and instructions, taking into consideration the nature of disabilities, the use of strollers, etc.

■ When guiding visitors, call sufficient attention of those around them as necessary to ensure safety. However, consideration should be given to their privacy when calling attention.

(Information on waiting time for admission)

■ When providing information on waiting times for admission, information should be posted in written forms, such as on placards, etc., in addition to voice information so that people can see the estimated time even in the middle of the waiting line.

Measures (examples)

- Provide oral guidance on waiting times, and also display waiting times using placards, etc.
- Presentation of promotional videos, etc. and performances in the waiting area, etc. to make time spent waiting enjoyable, a staging incorporating voice guides and textual information.
- Secure evacuation pathways so that people who feel sick or want to rest during the waiting time can leave the queue in the middle.
- Set up priority entrances so that people who need assistance can enter the Expo site with a sense of security.

(Handling of assistance dog users)

■ All assistance dogs are allowed to enter the facilities as visitors do, and assistance dog users and assistance dogs should not be separated when dealing with them.

Measures (examples)

- Assistance dog washrooms or washrooms within the Expo site (washrooms for wheelchair users) should be operated with the understanding that assistance dogs also use them.
- Remind visitors not to touch or feed assistance dogs.
- If there are facilities with strong light, sound or odours, inform assistance dog users of it.

4.1.2 **Staff training**

Effective training should be provided to all Expo staff members, including volunteers so that all visitors, including the elderly, persons with disabilities, expectant mothers, those with infants/toddlers, those who need assistance accessing information such as those that are unfamiliar with the use of ICT devices, foreign nationals and LGBTQ people, can stay in the Expo site in peace and safely.

In order for all staff members to understand the concept of removing social, institutional and psychological barriers (barrier-free mind), training should be effective and appropriate, with a focus on practical aspects.

The three key points for embodying “barrier-free mind” are as follows:

1. Understanding the “Social Model of Disability,” which holds that it is society’s responsibility to remove social barriers for people with disabilities.
2. Ensuring that there is no discrimination (unjust discriminatory treatment and failure to provide reasonable consideration) against people with disabilities and their families.
3. Cultivating the ability to communicate with diverse others who have conditions different from your own, and cultivating the ability to imagine and sympathise with the difficulties and pains that all people have.

(Implementation of training)

■ In order to prevent inadequate treatment of people with disabilities and communication barriers due to misunderstandings and stereotypes, training should be provided to all staff members, including volunteers, to raise their awareness. Through the training, ensure that training attendees have correct understanding and knowledge and can provide appropriate services.

Measures (examples)

A) Training to raise awareness of how to treat people with disabilities

This training is for all staff members, and covers themes related to how to treat people with disabilities, etc. to deepen understanding of disabilities. Staff members who have previously attended similar training are also eligible to attend this training to reconfirm their understanding.

- Content of the training

The themes of the training on how to treat people with disabilities are what kind of service can be satisfactory for visitors regardless of the presence or absence of disabilities, and how to meet the demands of people with disabilities, etc. In order to understand what people who participate in the Expo want, staff members need to try to understand the people themselves, not their disabilities.

- Theme of the training

The main themes of the training are as follows.

Since needs of people with disabilities differ depending on the type of disability and the severity of individual disability, staff are required to respond to them in accordance with their needs. People with disabilities are not just wheelchair users.

- The term “people with disabilities” include a variety of disabilities. For example, there are people with visual impairment, people who have difficulty walking that use walking frames or canes, assistance dog users, or people with intellectual, mental and developmental disabilities. Furthermore, it should be recognised that there are people with “invisible” impairments, such as auditory impairments or those inside joints.

Communicate appropriately with people with disabilities with respect for them

- When supporting a variety of visitors, including people with hearing difficulties or visual impairment, it is important to carefully communicate with them in an appropriate manner and to spend the time necessary.
- When talking about matters of a person with a disability, speak to the person themselves, not their companion.
- When dealing with persons with disabilities, etc., do so with respect.
- When dealing with people with developmental disabilities or language disorders, be aware that it may be necessary to respond to them more carefully and they may require more time. In particular, it may be difficult for people with hyperacusis to understand what is being said in a noisy place, so it is desirable to prepare a quiet place.
- When listening to a person with a disability, do not interrupt them or stop the conversation suddenly.
- When dealing with wheelchair users, take a step back or be eye level with them to eliminate the need for them to look up, so that they do not put a strain on their neck.
- If you do not understand what a person with a disability is saying after listening once, ask them to say it again. Or, repeat what the person has said to check if you understand it correctly.
- Generally, communicate with people that have hearing difficulties through writing. However, understand that among people with hearing difficulties, some may have difficulty understanding Japanese, and to write with words that are easy for them to understand.
- Some people with hearing difficulties read lips. In such cases, Staff should turn their face toward the person who is reading lips, and not hide their face when speaking (do not cover mouth with hands).

  Staff may wear masks for reasons such as infection prevention, but they should take into consideration the fact that some people do lip reading, and remove their masks at the request of such people if it is possible to do so according to the situation.
- Be aware that too much sunlight or shade may obscure facial expressions and make lip reading difficult.
- Speak clearly with a normal speed and tone unless requested to speak in a particularly loud voice or slowly. If necessary, move to a quiet place.
- Use clear and concise sentences.
- If staff determine that the person they are speaking to does not understand what they say, they should repeat the same content. Try rephrasing it, and make sure that the person they are speaking to understands it. For people with hearing difficulties or developmental disabilities, using gestures may make communication easier. When showing a direction, using a map is also helpful.
- Avoid using sentences where the meaning of yes or no is ambiguous as an answer. For example, say, “Did you need help finding a seat?” instead of saying, “Did you need help finding a seat or are you okay on your own?”

Main means of communication for people with hearing difficulties

Written communication	- A method of communicating by writing words on the palm of the hand or on paper. - It is the easiest method, but has a disadvantage that it takes time.
Lip reading	- A method of reading the movements of the mouth of a person who is speaking. - Move the mouth clearly and a little slowly.
Sign language	- A method of expressing using hand and body movements. - Some sign language words and sentences are simple and fun to learn, but specialised skills and knowledge are required to become a sign language interpreter.
Speech recognition	- A method of converting spoken words into written text in real time using speech recognition technology (app). - Can be used widely for one-on-one conversations as well as meetings, lectures, etc.
Air writing	- Writing characters in the air.
Others	- For the late-deafened and hard-of-hearing persons, summary writing is desired. - Tablet devices are also helpful as communication means.

Provide flexible support according to the needs of persons with disabilities, etc.

- It is essential to understand what to do and what not to do when a person with a disability requests your support.
- Do not assume that people with disabilities need support just because they have a disability.
- Even if a person with a disability seems to be struggling, they may be able to cope appropriately with the situation at their own pace and in their own way. First, ask the person directly, and if they say they do not need assistance, do not impose support.
- Do not touch a person with a disability, their assistance dog, or a walking frame without their permission. Touching them without permission is considered rude, and may cause the person with a disability to lose balance.
- If you expect that a person with a disability may need support, speak to the person.
- In accordance with the Act on Assistance Dogs for Persons with Physical Disabilities, assistance dogs are required to be admitted to public facilities. If you see an assistance dog, you should check its harness or vest to identify the type (a guide dog, service dog or hearing assistance dog), and accept it or provide necessary support.
- If you are unable to leave your position but there is a person with a disability, etc. that needs support to use a seating area or other facilities within a venue, contact the manager or leader to ask for support.
- When a wheelchair user asks for support, ask them where their destination is, and tell them that you will push the wheelchair before starting to push it.
- When guiding a person with visual impairment, stand half a step in front of them, have them hold your elbow or shoulder, and guide them while paying attention to their speed. (Some people who are accompanied by a guide dog prefer to walk alone.)
- Always inform a person with a disability of any changes in the situation, such as “We will go down a ramp soon,” or “We are approaching a staircase.” Upon arrival at the destination, tell them where they are and ask if they need another staff member to continue assisting them.

- Technical terms

  Technical terms will be explained during the training.

  This is to ensure that all staff members use common keywords to provide services to all visitors in a manner that is not considered rude.

- Training implementation method

  In order to provide training to all staff members involved in the Expo, “trainer training” programs should be prepared to train trainers for each role.

  In addition, self-learning tools, such as e-learning and DVDs, to prepare an environment in which staff members can participate in training at home.

  Self-learning tools should be provided to all staff members in printable data format.

B) Evacuation training

This training is for all staff members. Thoroughly educate staff members for emergency situations in response to all visitors and conduct practical training in anticipation of actual operation.

- Use help cards and other devices as markers to provide appropriate information and guidance to ensure that visitors who require consideration are not left behind.
- Speak and guide in a way that is not intimidating.
- Voice information (including verbal guidance) should be unified so as not to cause confusion during evacuation guidance.
- Inform staff members that visitors may have emergency contact cards*.

  *An emergency contact card is a card that contains information such as a person’s chronic disease, medications the person is taking, and emergency contact information in case of emergency.

C) Venue-specific training

This training is for staff in charge of venue implementation and operation.

- Content of the training

  In addition to detailed information on facilities that may be used by persons with disabilities at the venues, this training should cover other venue facilities and services.

  In order for training participants to learn more concrete response in accordance with simulations of each venue operation, it is desirable that this programme includes tours of accessible facilities/equipment and services, advice on service procedures, confirmation of evacuation guidance routes and evacuation guidance locations for persons with disabilities in case of emergency, and multiple possible scenarios specific to each venue.

- Structure of the training programme

  The person responsible for each venue should evaluate the services and facilities of the venue with experienced accessibility experts. After that, training on accessible facilities and services should be provided to all relevant staff members.

(Response during the Expo period)

■ Staff and volunteers should share the actual events that occur in operation after the opening of the Expo to improve services, and training opportunities should be ensured throughout the Expo period by updating training content.

(Regarding recruitment)

■ Diverse staff and volunteers should be recruited to support the Expo, regardless of country/region, culture, race, gender, generation, disability status, etc. Many participating staff members and volunteers should be assigned to positions so that they could take advantage of their individual characteristics and abilities.

4.2 Information communication tools

Information communication tools include web content such as reservation and purchase systems, websites and distributive items such as maps for checking information before visit or at the venues, and display signs, digital signage and broadcast within the venues.

It is necessary to provide necessary information assuming various situations including emergency situations, and to disseminate information with consideration to its ease of understanding, usability and visibility so that all visitors can obtain the information they need.

4.2.1 Web content

(Web content in general)

■ The following systems to be established by the organisers should be prepared in accordance with the Web Accessibility Foundation Committee's "Guidelines for Design for the Elderly and Persons with Disabilities – Equipment, Software and Services in Information and Communications – Part 3: Web content" (JIS X 8341-3 2016) corresponding ordering guidelines so that visitors who intend to participate in the Expo can achieve their objectives, such as collecting information related to the Expo, purchasing admission tickets, and reserving exhibition facilities and car parks.

Corresponding systems: Official website, official social media accounts (X (former Twitter), Facebook, Instagram, etc.)

Various systems to be established by the organisers: Purchase system, reservation system, apps, etc.

Measures (examples)

- When using images, provide alternate text.
- Consideration should be given to the ease of understanding of text, legibility of characters (character size, thickness, font, colour, use of furigana (pronunciation guides)).
- All information should be accessible by keyboard operation.
- Web content structure should be designed to be easy to view on both computers and smartphones.

(Specifications for websites, etc.)

■ When providing information using websites, etc., consideration should be given to their convenience so that anyone can obtain information they need.

■ Information should be provided in Japanese and English.

■ Video content should have Japanese and English subtitles. Subtitles should be in a size that is easy to read.

Measures (examples)

- Equipped with a text-to-speech function for textual information to be provided.
- Display Japanese and English subtitles on videos to be provided, including subtitles for environmental and scenic descriptions.
- Provide alternate text (textual information) for images, photographs, etc.
- Consideration should be given to the ease of understanding of text, legibility of characters (character size, thickness, font, colour, use of furigana (pronunciation guides)).

(Information posted on websites, etc.)

■ Websites, etc. should provide necessary information so that people with diverse needs can obtain it in advance.

Measures (examples)

- Post venue maps (including washrooms, rest areas, calm down/cool down spaces, sensory spaces, first-aid stations, slopes, care centres, baby care rooms, assistance dog washrooms).
- Post cautionary statements.
- Post response procedures and evacuation routes in the event of a disaster.
- Post information on the availability of baby food, menus for children, and allergens.
- Provide information on the content of basic support.
- Provide real-time information on waiting times for admission, emergency situations, etc.
- Provide information on staff's clothes, signs, etc.
- Use sensory maps, etc. that include information through the five senses, such as visual, hearing and smelling, to provide information on details of staging, performance, etc.
- Use AI chat to smoothly resolve questions.
- Show procedures for purchasing or reserving tickets in an easy-to-understand flow.
- Create a page where people can learn how to have fun when visiting.

4.2.2 **Display signs**

For general guidelines concerning displays and signs, refer to 3.25 Display Signs.

(Display signs and explanations)

- ■ Consideration should be given to the legibility (size, thickness, font, colour, etc.) of letters and symbols, hue, illuminance, etc. for display signs and explanations (such as captions for exhibits).
- ■ Text should be in Japanese and English.
- ■ Placement of important matters, such as warnings and safety-related items, should be well thought out.

Measures (examples)

- − Concurrent use of pictograms. (Washrooms, rest areas, etc.)
- − To distinguish information, try to use different colours to make it easy to distinguish, and also use arrows and hatches (shading, diagonal lines, etc.).
- − Multiple languages should be provided.
- − Explanatory text should be edited using plain language as much as possible to make it easy for all visitors to read.

(Measures for people who have difficulty getting visual information)

- ■ Consideration should be given to ensure that visitors who have difficulty obtaining information by visual can obtain the same level of information by using senses other than vision, such as touch and hearing.

Measures (examples)

- − Introduce voice commentary equipment.
- − Install tactile maps.
- − Provide braille.
- − Provide information using two-dimensional codes, etc.

(Measures for people who are sensitive to light, smell and sound)

- ■ Provide announcements using display signs in front of spaces where strong light or smell, loud noise, etc. are generated.

4.2.3 **Digital signage**

For general guidelines concerning display signs, refer to 3.25 Display Signs.

(Ease of viewing displayed content)

- ■ Consideration should be given to the legibility (size, thickness, font, colour, etc.) of letters and symbols displayed, hue, illuminance, etc.
- ■ Text should be in Japanese and English.
- ■ As for the speed to switch displayed contents, consider that some people will read slowly. (Set the switching speed to be slow, display fewer characters, make sentences shorter, etc.)

(Measures for people who have difficulty obtaining information by hearing)

- ☆ In emergencies, it is desirable to consider information communication to people with hearing difficulties, and to inform them of the situation in writing.
- ■ For people who have difficulty obtaining information audibly, provide the contents of voice commentaries and broadcasts in written form so that they can obtain information through non-auditory senses and share their experiences.

(Installation of easy-to-see digital signage)

- ■ Consideration should be given to the placement of digital signage that is easily visible to children and wheelchair users.

Measures (examples)

- − Digital signage should be installed with consideration to obstacles.

4.2.4 **Voice information and broadcast**

(Voice information for information displays, explanations, etc.)

- ☆ It is desirable that information displays and explanations (such as captions for exhibits) should be provided with voice guidance to ensure that they are easy for all visitors to understand.
- ■ In particular, important matters, such as warnings and safety-related items, should be provided with voice guidance.

Measures (examples)

- − Install navigation systems, such as voice devices and braille guides in locations where they are required to call attention.
- − Introduce voice commentary equipment.
- − Install voice guidance equipment used to confirm the locations of passenger lifts, escalators, washrooms, etc.
- − Provide voice announcements in front of spaces where strong light or smell, loud noise, etc. are generated.

- ■ As for guidance broadcast, in order for the content to be understood in a short time, it is necessary to limit the number of languages to lead to solid understanding. Therefore, the guidance broadcast should be provided in Japanese and English.

4.2.5 **Distributive items such as maps**

(Distributive items about the entire venue)

- ■ Consideration should be given to provision of information to people with visual impairment who have difficulty obtaining information with their eyes, those who are sensitive to light, smell and sound, people who need care in communicating and understanding, etc.
- ■ Text should be in Japanese and English.

Measures (examples)

- − Prepare materials that show the facility layout, functions, etc.
- − Provide information on consideration for sound, light, vibration, etc. (sensory maps)
- − Provide tactile maps, and materials in braille.
- − Multilingual operations.
- − Use plain Japanese in brochures, etc., and use furigana (pronunciation guides) for difficult words and phrases including those in English.
- − Care should be taken to make text easier to read
- − Use visual icons, etc. in brochures, etc., and consider the legibility (size, thickness, font, colour, etc.) of letters.

■ Consideration should be given to ensure that brochures are distributed to people who do not have smartphones or other mobile devices or who are not good at using smartphones, and that staff must provide interpersonal assistance.

(Printed matters for visitors at individual facilities (menus, product descriptions, brochures, etc.)

- ☆ If detailed written descriptions such as explanatory text are deemed undesirable from the viewpoint of space and visibility, it is desirable to use pictograms, photographs, or ICT tools such as two-dimensional codes.
- ■ Text should be in Japanese and English.

4.3 **Multilingual support**

The basic rule for multilingual support is that Japanese and English must be used.

If languages other than Japanese and English are required depending on the situation, flexible multilingual support becomes possible by using ICT tools such as translation apps and two-dimensional codes. Therefore, it is desirable to respond to each situation individually.

(Staff members dealing with visitors)

☆ When multilingual support is required, it is desirable to use translation apps, etc. as necessary.

(Interpreters)

■ Interpretation should be provided in Japanese and English. However, this shall not apply when the participants are limited to official participants or related parties who use a specific language, and interpretation in Japanese and the specific language may also be provided.

(Web content)

■ Languages used on websites, etc. should be Japanese and English.

(Display signs)

☆ It is desirable to use pictograms effectively as an auxiliary medium for multilingual support.

■ Display signs should be in Japanese and English.

(Digital signage)

☆ It is desirable to use pictograms effectively as an aid to multilingual support.

■ Languages used on digital signage should be Japanese and English.

(Still and moving image content)

■ If subtitles are provided, they should be in Japanese and English. Subtitles should be in a size that is easy to read.

(Guidance broadcast)

■ Guidance broadcast should be provided in Japanese and English. In order for the content to be understood in a short time, it is necessary to limit the number of languages to lead to solid understanding.

(Printed matters about the entire venue)

■ Printed matters about the entire venue should be in Japanese and English.

(Printed matters for visitors at individual facilities (menus, product descriptions, brochures, etc.)

☆ If detailed written descriptions such as explanatory text are deemed undesirable from the viewpoint of space and visibility, it is desirable to use pictograms, photographs, or ICT tools such as two-dimensional codes.

■ Printed matters for visitors (menus, product descriptions, brochures, etc.) should be in Japanese and English.

(Explanation on exhibits, etc.)

■ Explanation on exhibits should be in Japanese and English.

☆ If it is difficult to put detailed explanation in Japanese and English from the viewpoint of space and visibility of explanation on exhibits, etc., it is desirable to use ICT tools such as two-dimensional codes.

(Events)

■ Announcements should be made in Japanese and English. If subtitles are added to screens, etc., they should be in Japanese and English. However, for official events, flexible arrangements should be made according to the attendees. Subtitles should be in a size that is easy to read.

(Name badges for staff)

■ When staff wear name badges, Japanese and alphabetic notations should be used to make it easier for visitors to recognise staff names through uniform notations. The use of native language notation is optional.

Multilingual items and applicable languages are as described below.

<table>
<tr><th>Multilingual items</th><th>Examples</th><th>Applicable language principle</th></tr>
<tr><td rowspan="2">Staff support</td><td>Staff members dealing with visitors</td><td>Do not specify a specific language
Use a translation app as needed</td></tr>
<tr><td>Interpreters</td><td rowspan="9">Japanese and English</td></tr>
<tr><td>Web content</td><td>Websites, etc.</td></tr>
<tr><td colspan="2">Display signs</td></tr>
<tr><td colspan="2">Digital signage</td></tr>
<tr><td colspan="2">Still and moving image content</td></tr>
<tr><td colspan="2">Guidance broadcast</td></tr>
<tr><td>Printed matters for visitors</td><td>- Menus
- Product descriptions
- Brochures, etc.</td></tr>
<tr><td colspan="2">Explanation on exhibits, etc.</td></tr>
<tr><td>Events</td><td>- Announcements
- Screens, etc.</td><td>Generally, Japanese and English are to be used, but flexible arrangements are to be made according to the attendees.</td></tr>
<tr><td>Others</td><td>Name badges for staff</td><td>Japanese and Roman alphabet</td></tr>
</table>

4.4 Services at each facility

4.4.1 Admission ticket sales and entrance/exit gates

(Admission ticket sales)

■ Purchase and reservation procedures should be shown using an easy-to-understand flow chart.

(Guidance/guide at the venue entrance)

■ Consideration should be given to providing guidance/guide at and around the venue entrance by using textual information in addition to voice guidance.

(Priority admission)

■ Give priority to visitors who need consideration when they need to queue or wait, for example at security checks or when entering or leaving the venue.

Measures (examples)

- Set up priority entrances.
- Ensure that information displays at priority entrances are easy to understand, taking into consideration the legibility (size, thickness, font, colour, etc.) of letters and symbols, hue, illuminance, etc. Furthermore, text should be in Japanese and English.
- Consideration should be given to the width of priority entrances so that wheelchair users can pass.

4.4.2 Information centres, etc.

(Wheelchair rental)

■ Support tools, etc. should be introduced so that visitors can move around the Expo site comfortably.

Measures (examples)

- Lend wheelchairs and other support tools.

(Operation of prayer rooms)

■ Since people of various religions and cultures visit prayer rooms, they should be operated with consideration for praying, prayer, silent prayer, meditation, and thought.

(Operation of assistance dog washrooms)

■ Assistance dog washrooms should be operated with the understanding that assistance dogs use assistance dog washrooms and washrooms within the Expo site (washrooms for wheelchair users).

(Operation of calm down/cool down spaces, sensory spaces, etc.)

■ Depending on the nature of the disability, people with disabilities may feel uneasy or fearful depending on the circumstances of the environment, such as crowds, sounds and lights, which may lead to panic. To ensure that they can enjoy the Expo with peace of mind, facilities such as calm down/cool down spaces and sensory spaces are necessary. The organiser should operate them so that those who need them can use them.

Measures (examples)

- In the facilities where there are calm down/cool down spaces and sensory spaces, the usage status will be checked, and those who wish to use them will be able to do so without making an application.
- In the facilities where there are no calm down/cool down spaces and sensory spaces, if there are those who wish to use them, appropriate measures should be taken, such as dividing a space to allow them to relax or taking them to a nearby rest room. If it is difficult to move to a calm down/cool down space due to the nature of the disability or the nature of the symptoms, efforts should be made to protect the dignity of the parties concerned by moving to the nearest deserted place or by blindfolding in a partition to avoid attracting attention from other visitors.
- Consideration should be given to allowing companions to use them together.

(Operation of rest rooms)

☆ In order to meet various needs, it is desirable for diverse and multiple rooms for resting and spaces to be provided for users to choose from according to their own pace and preference.

(Operation of first-aid stations)

■ First-aid stations staffed by medical professionals should be operated to give aid to those who feel sick.

(Operation of lost child centres)

■ In the event of a lost child, a lost child centre should receive reports, register lost child information, conduct searches, and provide temporary protective custody.

Measures (examples)

- Distribute lost child badges, and make inquiries.
- Operate a lost child search system.

(Operation of baby care rooms)

■ Diaper changing tables for infants/toddlers and baby/infant chairs should be provided in washrooms, and spaces for the care of babies and infants (baby care rooms) that can be used for feeding babies, feeding infants, changing diapers, etc. should be operated.

Measures (examples)

- Prepare spaces for feeding babies.
- Provide hot water for infant formula.

(Rental of strollers, etc.)

■ Rental service of strollers, etc. should be provided so that visitors can move around the Expo site comfortably.

(Operation of kids' spaces)

■ Kids' spaces should be operated as a space that visitors with young children can freely use as a rest area.

Measures (examples)

- Prepare toys for infants/toddlers to play with.

4.4.3 Washrooms

(Operation of washrooms)

■ In order to meet the needs of diverse users, and make washrooms more user friendly, toilet stalls, such as washrooms for wheelchair users, individual toilet spaces with equipment for ostomates, and individual toilet spaces with equipment for infants/toddlers should be appropriately operated.

Measures (examples)

- In the vicinity of washrooms for wheelchair users, put up posters to encourage people who do not need them to use regular toilets.
- In the vicinity of washrooms that are expected to be used by a particularly large number of people, place displays that show the locations of nearby washrooms to distribute the usage.

4.4.4 Exhibits

(Explanation on exhibits, etc.)

■ If explanations on exhibits are prepared, they should be placed in a position that is easy to read.

■ Explanations should be in Japanese and English.

☆ If it is difficult to put detailed explanation in Japanese and English from the viewpoint of space and visibility of explanation on exhibits, etc., it is desirable to use ICT tools such as two-dimensional codes.

Measures (examples)

- Place explanations in front of the exhibits.
- Remove obstacles and take into consideration the height of the installation position so that people who have difficulty getting visual information, wheelchair users, and children can get close to the installation position of the exhibits.
- Pay attention to the legibility (size, thickness, font, colour, etc.) of letters and symbols, hue, illuminance, etc.
- Use not only different colours but also arrows and hatches (shading, diagonal lines, etc.)

(Measures for people who have difficulty getting visual information)

■ Measures should be taken to allow people who have difficulty getting visual information to share their experiences by getting information with non-visual senses such as touch and hearing.

Measures (examples)

- Rental of portable voice explanation systems.
- Provide voice explanation.
- Install braille captions.
- Distribute braille explanatory printed materials.
- When collecting comments of impressions by paper, provide braille tools so that comments can be collected in braille.

(Measures for people who have difficulty obtaining information by hearing)

■ Measures should be taken to make it possible for people who have difficulty obtaining information by hearing to share their experiences by obtaining information with non-auditory senses, such as by presenting textual information such as audio explanation.

Measures (examples)

- Install digital signage to provide a text display of audible explanations regarding the exhibits, etc.
- Provide subtitles, including those for environmental and scenic descriptions, for exhibits with audio
- Install hearing aid equipment (hearing loop system, etc.)
- Set up sign language videos for explanations about the exhibits.
- Distribute explanatory printed materials.

(Multifaceted experience and advance notice)

■ It is required to try to provide performances that allow multifaceted experiences such as those using smell, wind, light, vibration, and touch, and inform in advance if there are performances that involve loud sounds, flashing lights, etc.

Measures (examples)

- Devises ways to have aromas related to the exhibition waft throughout the exhibition areas. (However, avoid excessive scents because some people have chemical sensitivity or hypersensitivity.)
- In scenes in which the volume is partly increased, indicate a specific volume.
- Play sounds related to the exhibition.
- Introduce bodysonic* and subtitles for people with hearing difficulties.
  *Bodysonic is a device that allow users to feel sound through their bodies.
- Create replicas that visitors can touch and experience. (Materials should be durable, such as plastic or silicone.)

(Circulation in the exhibition)

■ It is required to make the circulation in the exhibition such that it does not cause any congestion.

(Installation of exhibits)

■ Measures should be taken to install exhibits in a way that helps various people look at them, including wheelchair users and children.

Measures (examples)

- Consider the height of exhibit installation so that wheelchair users and children can get close to and see them.
- Devise ways to allow visitors to see exhibits from various angles.
- Move exhibits up and down or rotate them.
- Display the same objects in multiple places.
- If exhibits or events are to be viewed along pathways, pay attention to the locations of pathways and guidance given to visitors so that wheelchair users and children can view exhibits from their eye level even during peak hours without any problem.

(Illumination for exhibits)

■ Adequate illumination should be ensured except when necessary for the protection, staging, etc. of exhibits.

Measures (examples)

- Adjust the illumination according to the exhibit.
- Use sensor-activated lighting. (Lighting that is activated when a person approaches. Some gradually brighten to illuminate exhibits, which also helps protect them)
- The background should be as plain as possible. (Consider brightness, colour saturation, shape, etc.)
- Consider the colour combination of the background and the text.

■ Attention should be paid to lighting methods (e.g., lighting arrangements that eliminate reflection and glare, not only for adults, but also for children and wheelchair users).

(Operation of exhibits)

■ When installing exhibits that visitors can operate, make sure that the operating parts, such as levers and switches, are easy for all visitors to use.

Measures (examples)

- Operating parts should be placed in two locations, high and low, so that wheelchair users can operate them (or in one location at a height where both wheelchair users and people who do not use wheelchairs can operate. In that case, the main buttons should be placed at a height of about 1100 mm).
- Switches should be lever-type knobs, large switches, those with lighting or vibration mode, or with sensors.
- If colours or shades are to be applied to operating parts, contrast should be added so that people with visual impairment can operate them.
- A sufficient space and shape should be provided so that operating parts can be used while in a wheelchair or after transferring to a chair. The riser height should be at least 600 mm and the depth of the space should be about 400 mm.
- Staff should provide assistance in response to requests for support.

(Low-height exhibits)

■ When installing low-height exhibits on the floor, consider the location, colour and illuminance to reduce the risk of stumbling.

(Use of rides)

■ If rides that allow visitors to enjoy exhibits while riding are to be used, rides that all visitors including people with disabilities can get on and off should be prepared.

Measures (examples)

- Introduce vehicles which people can ride with a wheelchair, or vehicles on which their companions can also ride together.

4.4.5 **Events**

(Advance notice)

■ Information and precautions should be provided in advance.

Examples of content that requires advance notice

1. When information is provided by sign language interpretation, subtitles, multilingual interpretation using equipment, or supplementary sound.
2. When there are precautions for entry of stroller users, etc.
3. When there is strong light, sound stimulation, vibration, etc.
4. Time required for events, whether there is a break time, etc.

Sentences for advance notices (examples)

○Examples of advance notices for all events (in official guidebooks, etc.)

- Sign language interpretation, subtitles, etc. are provided.
- During busy hours, please be careful not to bump into other visitors with your stroller.
- There may be flashes or some loud sounds.

○Examples of advance notices for each event (on the website or in distributive items, etc.)

<When equipment, etc. is available>

- Seats for people in wheelchairs are available.
- Sign language interpretation and subtitles are available.
- Staff members who can help with scene interpretation, etc. are available.

<When there is light or sound stimulation>

- Special effects, such as flashes, water and smoke, are used.
- Some scenes may have loud sounds. (Specific volume should be indicated.)

(Notices by printed materials)

■ Event titles, dates and times, contact information, and venue names (location names) should be printed in a font that is easy to read, such as a universal font of 14 points or larger.

■ Colours should be used in consideration of colour blindness.

(Viewing spaces)

■ If a viewing space is provided, visitors who wish to use it should be given support, such as staff guiding them to the viewing space.

(Seats)

■ Appropriate operations should be conducted so that wheelchair users can select wheelchair-accessible seats. In addition, if a viewing space that does not have seating is provided, staff should guide wheelchair users to positions that make it easy for them to see, in accordance with their wishes.

☆ It is desirable to make it possible for wheelchair users to select wheelchair-accessible seats from those in multiple areas or location.

(Installation positions for display signs, etc.)

■ Regarding the routes to the seats, etc., consideration should be given to posters, notices and other posted objects, as well as the display signs listed in 3.25, so that they are not difficult to see due to reflection of lighting, etc. by adopting heights considering various disabilities, letter sizes in accordance with the distance from pedestrians, and universal fonts.

(Participatory events)

■ Participatory events should be designed to be enjoyable for all visitors, and should be operated in a manner that allows anyone including the elderly, persons with disabilities and children to participate.

4.4.6 Shop operation, food, beverage, and product sales

(Provision of information and shop operations corresponding to universal services)

■ It is necessary to provide facility information that can be used by all visitors, and when disseminating information, it should be devised in a way easy for visitors to see and understand that so that it would not be complicated. In addition, necessary information should be provided by utilising the website produced by the organiser or other means so that the information can be confirmed in advance.

Measures (examples)

- Provide minced or liquid food according to the needs of the persons concerned. Alternatively, create an environment where visitors can bring in and use blenders or other equipment to make food they have purchased into minced or liquid food.
- Shops with facilities for heating special-purpose foods (infant formula, food for the sick, food for people with swallowing difficulty, etc.), blenders and water facilities should be clearly labelled for users.
- Restaurants should be able to disclose the ingredients used in their menus.
- Food diversity initiatives, such as halal, vegetarian, vegan and allergy, should be noted on menus.
- Shops that offer baby food or menus for children should be clearly labelled for users.
- Provide support according to the needs of the persons concerned through active communication with them.
- Wheelchair users and assistance dog users can enter all shops.
- Sell products for breastfeeding.

(Support for guidance, shopping, etc.)

■ Approach all visitors as necessary, and provide support.

Measures (examples)

- Indication of product names, menus and price lists should be designed to be easy to understand (for example, by using large letters and universal fonts, and using furigana (pronunciation guides) for kanji). Descriptions in Japanese and English and photographs should be used to make them easy for visitors to see. In addition, since displays in high and low locations may be difficult to see, the installation positions and angles should be devised to make the displays easy to see.
- Support visitors in their shopping as necessary. For example, take items located in high or low positions or on a flat surface with depth that are out of reach of wheelchair users, or explain about/take items in positions that are difficult to see.

- At restaurants, prepare cutlery (forks, spoons, straws, etc.) that are easy to use for children and people with disabilities. When condiments are provided, both individually-packaged and bottled ones should be made available.
- In retail shops, provide places to wait during companion's shopping and spaces to rest.
- For restaurants that call visitors for their turn, devise ways to make the call recognisable both visually and audibly by means of voice guidance, display devices, staff support, etc.

(Seating)

■ Tables, chairs, etc. should be arranged so that the seats used by wheelchair users and stroller users and the areas around them can be smoothly used and spaces with no obstacles to passage can be secured.

Measures (examples)

- Tables along pathways should be arranged to provide effective width that allows wheelchair users to pass even when guests are seated at the tables to be secured.
- When laying out tables and chairs, an overall plan that takes into account the size of the tables and the width of the pathways that are accessible to wheelchair users should be developed.
- Provide movable chairs so that people in wheelchairs and strollers can sit at a table directly. It should be planned so that companions or family members can sit at the same table.
- In addition to chairs, tables, screens and partitions should be able to be moves to secure pathways and spaces.
- Plan and adjust the positions of table legs, etc. taking into consideration the heights of lower and upper edges of a table or counter, and the depth of the space beneath it so that wheelchair users can approach the table or counter.
- Provide chairs and tables in consideration of the physical size of children.
- Chairs, tables, etc. should have no sharp corners in consideration of the safety of children.
- In restaurants, wheelchair users should be seated at a table. In addition, to accommodate the needs of people with intellectual, mental and developmental disabilities, provide private rooms or movable partitions so that they can eat calmly.
- Stroller parking areas should be provided in eating and drinking areas, assuming that children using strollers use ordinary seats (including use of children’s chairs) when they eat and drink. In addition, provide spaces where chairs which have been moved from tables can be kept when children use them while being seated in a stroller, and operate the spaces appropriately.

(Menu)

■ Menu descriptions should be easy to understand for all visitors.

Measures (examples)

- Provide information on allergies, calories and measures for food diversity, and multilingual descriptions.
- Provide ways for people with hearing difficulties, people with intellectual, mental and developmental disabilities, foreign nationals, etc. to make orders without speaking, such as a touch-panel ordering system in which menus are indicated by letters and images, and provide ways for people with visual impairment, etc., such as display in braille, black-and-white inverted displays, voices, call bells, etc.

(Purchase and payment)

■ Take measures that make purchase and payment easy for all visitors.

Measures (examples)

- At the payment counter, take measures according to each customer's situation, such as reading out the names of items one by one as necessary while entering them into the register, or not rushing customers when they are making payment.
- In order to facilitate smooth communication with persons with disabilities, written communication boards and communication support boards using symbols for communication support should be provided at payment counters, etc.
- The payment counter should be arranged in such a way that users are able to see the amount displayed, making it easy to use.

(Circulation)

■ In addition to making circulation easy to understand for everyone, make sure that there is sufficient effective width to allow two wheelchair users to pass each other, or a wheelchair user and a person or stroller user to pass each other, and that there is sufficient space for a wheelchair to turn, so that all people can use the facilities comfortably.

Measures (examples)

- Eliminate steps to allow people using wheelchairs or strollers to enter shops while being using them.
- When using partition poles or the like in queues, make sure there is enough spacing for wheelchair users and stroller users, and use colours that sharply contrast with the surrounding areas to clearly distinguish the queue area from other surrounding environments.
- When guiding or providing information by voice, organise the information so that it does not become excessive, and pay attention to the voice and speed that are easy to hear. In addition, devise ways to provide gesture and textual information together with voice guide and information.

4.4.7 Garden paths and circulation

(Garden paths and circulation)

■ In order to ensure that all visitors can move around the Expo site safely and comfortably, provide appropriate guidance and instructions, taking into consideration the nature of disabilities, the use of strollers, etc.

■ When guiding visitors, call sufficient attention of those around them as necessary to ensure safety. However, consideration should be given to their privacy when calling attention.

(Mobility devices for moving in the Expo site)

■ Introduce support tools, etc. so that visitors can move around the Expo site comfortably.

Measures (examples)

- For mobility devices for moving in the Expo site, introduce support tools that allow persons with disabilities to ride comfortably.
- Mobility devices for moving in the Expo site can accommodate people using wheelchairs or strollers as they are.

4.5 Emergency response

(Emergency guidance and information provision)

- Setting up display signs, broadcasting, providing information in advance, providing human guidance, and providing guidance in multiple languages should be done for the safe evacuation of all visitors, including the elderly, people with disabilities and foreign nationals, in the event of an emergency.
- Information on emergency response should be posted on the website, etc. produced by the organiser so that visitors can check it in advance.

Measures (examples)

1. Evacuation guidance signs
   - Install display signs that can recognise accessible emergency exits.
   - Use pictograms, text and audio guides in combination.
   - Install display signs that show evacuation routes.
2. Evacuation routes, etc.
   - Prepare venue maps that show evacuation routes.
   - Provide guide and support to temporary waiting spaces.
3. Evacuation support
   - For visitors who can use staircases, staff should guide them with support.
   - For visitors who cannot use staircases, staff should quickly respond to them, such as by getting help from visitors around them.
4. Evacuation guidance for people with hearing difficulties and who are hard of hearing
   - Take measures to notify emergencies by means other than sound.
   - During evacuation guidance, staff should guide visitors using signage in the Expo site.
   - Guidance using light, etc. should also be implemented.
   - Sound quality should be improved by introducing speech intelligibility enhancement technology, or other means.
5. Evacuation guidance for people who have difficulty understanding evacuation instructions
   - Call out to them and briefly communicate the situation around them and the content of evacuation instructions.
   - If there are visitors who are in trouble because they cannot understand evacuation instructions, call out to them and communicate the situation around them and the content of evacuation instructions.
   - If there are visitors who cannot understand evacuation instructions or who are panicking, ensure their safety, avoid danger to their lives, respond to them appropriately so that they do not get injured, and gently say, “It is all right,” while guiding them to evacuate.

References/Relevant Literature

References/Relevant Literature

Reference materials and other literature relevant to the preparation of the Guidelines are listed below. Use the links provided under 2.4 Compliance with Laws and Regulations for details of these texts and documents.

(Main relevant laws and regulations)

1) Building Standards Act and Order for Enforcement of the Act
2) Basic Act for Persons with Disabilities
3) Act for Eliminating Discrimination against Persons with Disabilities
4) Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc. (Accessibility Improvement Act) and Order for Enforcement of the Act
5) Yokohama City Ordinance on Welfare Communities and Enforcement Rules, etc. for the Ordinance
6) Architectural Design Standards Taking into Consideration Smooth Use by Elderly People and Persons with Disabilities (March 2021)
7) Guidelines for Smooth Transportation, etc. in Urban Parks [Revised Second Edition] (March 2022)
8) Guidelines for Smooth Transportation, etc. on Roads (January 2024)
9) Yokohama City Ordinance on Welfare Communities: Facility Implementation Manual

(Reference standards)

1) IPC Accessibility Guide
   [Japan Paralympic Committee official website]
   https://www.parasports.or.jp/paralympic/what/data.html
2) Tokyo 2020 Accessibility Guidelines
   [Olympic and Paralympic Games Tokyo 2020 TMG Portal Site]
   https://www.2020games.metro.tokyo.lg.jp/special/watching/tokyo2020/organising-committee/accessibility/index.html
3) Universal Design Guidelines for the 2025 World Exposition [Revised version]
   [Japan Association for the 2025 World Exposition official website]
   https://www.expo2025.or.jp/wp/wp-content/uploads/220630_udgl_minkanpabirion- 02.pdf
4) Universal Service Guidelines for the 2025 World Exposition
   [Japan Association for the 2025 World Exposition official website]
   https://www.expo2025.or.jp/wp/wp-content/uploads/241003_universalserviceguideline_JP.pdf
5) Universal Design Guidelines for Transport Accessibility for the 2025 World Exposition
   [Japan Association for the 2025 World Exposition official website]
   https://www.expo2025.or.jp/wp/wp- content/uploads/traffic_access_ud_guideline_202306.pdf
6) Aichi-Nagoya 2026 Accessibility Guidelines

[Aichi-Nagoya Asian Games and Asian Para Games Organizing Committee official website]
https://www.aichi-nagoya2026.org/tournament/accessibility/

Bureau
International
des Expositions

AIPH

Japan Association for the International Horticultural Expo 2027, Yokohama