



2021 Facility Accessibility Design Standards



Revision History

Edition	Date	Notes



Facility Accessibility Design Standards

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City of London
Fleet and Facilities – Financial Services
Facilities Design and Construction
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Alternate formats of the document are available upon request.
Please contact our accessibility specialist at accessibility@london.ca.

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Introduction

1.0

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Background



1.1

The Facility Accessibility Design Standards (FADS) is a technical design document used by City of London staff to enhance accessibility beyond the minimal requirements of the Ontario Building Code (OBC).

FADS is used when planning and designing municipal facilities as an aid to remove and prevent barriers for people with disabilities.

Originally introduced in 2001, our standards reflect extensive research on accessible and inclusive environments that included consultation with organizations such as the Canadian Hearing Society, Canadian National Institute for the Blind, Community Living London, Learning Disabilities Association, Ontario March of Dimes and Thames Valley Children’s Center.

Going beyond existing accessibility regulations, standards and guidelines, FADS incorporates the principles of “universal design” that benefit people of all ages and abilities (**Refer to Section 1.1.2, The Principles of Universal Design**). This approach continues to earn London praise as being on the leading edge in building an accessible community.

Implementation of the City of London’s Facility Accessibility Design Standards will make newly constructed and / or renovated facilities accessible to people of all ranges of physical and sensory ability.

1.1.1 Obtaining permission to reproduce, adopt or adapt City of London standards

The City of London continues to encourage and support municipalities in their accessibility endeavours and in working together for the removal of barriers in our communities. We are happy to provide permission to utilize and / or reproduce our standards upon submission of a completed FADS Authorization Request form. To date more than 50 municipalities in Canada and the United States have adopted - or adapted - the City of London's Facility Accessibility Standards for use in their community.

This standard addresses accessibility requirements for the design and construction of new facilities, as well as the retrofit, alteration or addition to existing facilities, owned, leased or operated by the City of London. This standard particularly addresses the needs of persons with disabilities, including, but not limited to users of mobility aids, people with limited stamina and / or dexterity, people with hearing or vision loss and people with cognitive disabilities.

This standard is intended to encompass the intent of the Ontario Human Rights Code, in terms of respecting the dignity of persons with disabilities. The phrase "respects their dignity" means to act in a manner which recognizes the privacy, confidentiality, comfort, autonomy and self-esteem of persons with disabilities, which maximizes their integration and which promotes full participation in society" (Source: Ontario Human Rights Commission).

1.1.2 The Principles of Universal Design

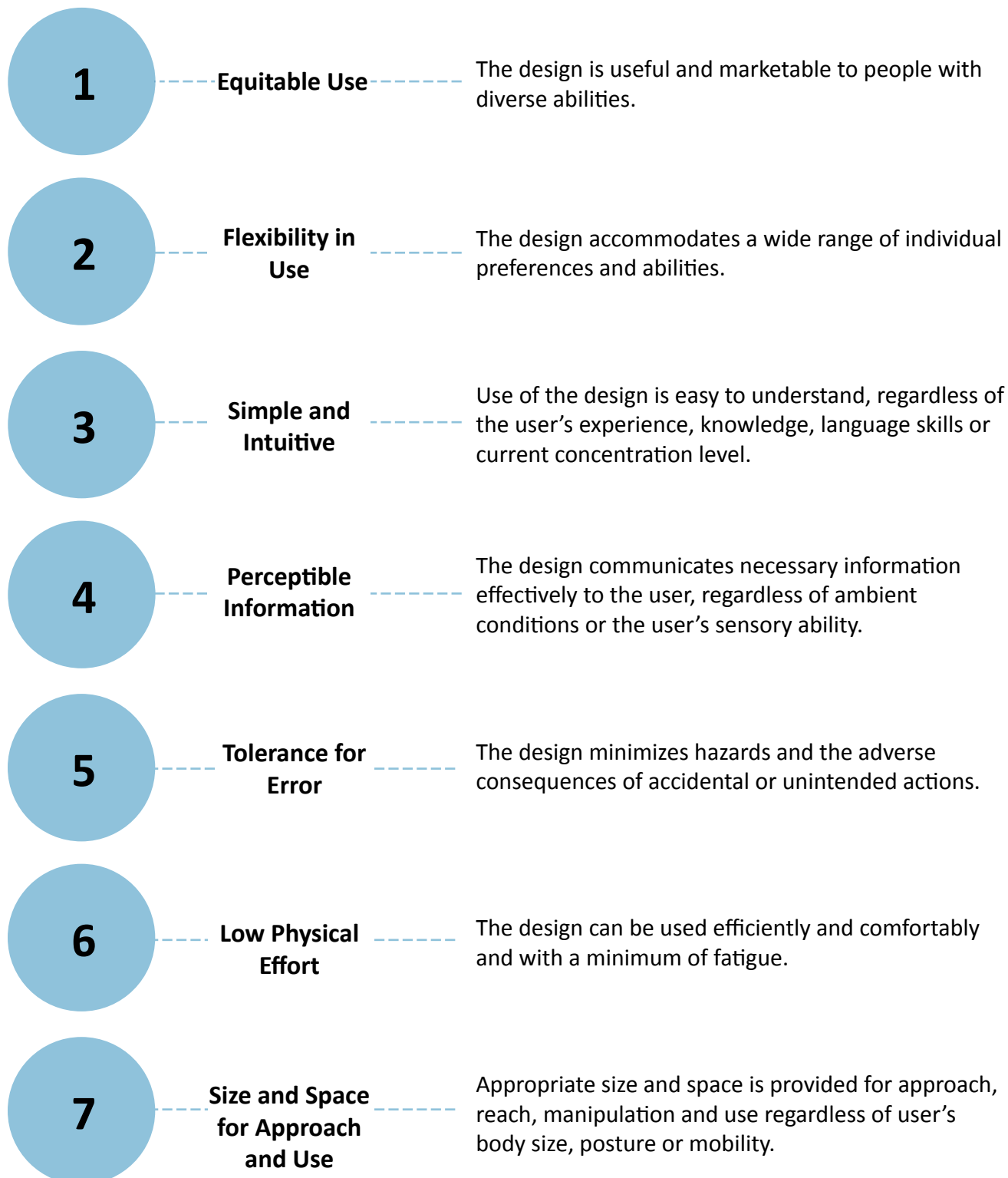
This standard incorporates the belief in universal design that recognizes the broad diversity of people who use facilities. Universal design is defined as: "The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (Source: North Carolina State University 1997).

The universal design philosophy is structured around the seven Design Principles identified in **Section 1.1.3, "Information Graphic, Principles of Universal Design"**.


Additionally, refer to **Appendix A** for further information on the universal design principles and their guidelines.

1.1.3 Information Graphic: Principles of Universal Design

Principles of Universal Design



Source: North Carolina State University, Center for Universal Design, 1997.



Scope, Application and Enforcement

1.2

Application

The requirements of this standard shall be:

- mandatory for all newly constructed and retrofitted facilities owned, leased or operated by the City of London; and
- encouraged for all other facilities, whether new or retrofitted.

All areas of newly designed or newly constructed facilities and altered portions of existing facilities shall comply with **Sections 2 to 5**, unless otherwise provided in this section or as modified in **Section 6**.

The specific facility types listed in **Section 6** shall, in addition to all of the provisions specified in **Sections 2 to 5**, comply with the additional design requirements specified in **Section 6**.

Where a facility contains more than one use covered by a special application section, each portion shall comply with the requirements for that section in addition to all other general provisions.

All facilities shall be accessible for employees, as well as patrons and other users. All areas intended for use by employees shall be designed and constructed to comply with this standard.

This standard applies to temporary facilities, as well as permanent facilities.

Exception

The requirements of **Sections 2 to 5** do not apply to:

- service rooms;
- elevator machine rooms;
- janitor rooms;
- service spaces;
- crawl spaces;
- attic or roof spaces;
- residential occupancies;
- buildings of Group F Division 1 occupancy, as defined by the Ontario Building Code (latest edition with all amendments); and
- buildings which are not intended to be occupied on a daily or full-time basis, including, but not limited to, automatic telephone exchanges, pump houses and substations.

1.2.1 Retrofitting, Alterations and Additions

Application of these standards related to retrofitting, alterations and additions also requires the following:

- Each addition to an existing facility shall be regarded as an alteration;
- Each space or element added to the existing facility shall comply with the applicable provision(s) of this standard;
- Except where the provision of accessible features is technically infeasible, no alteration shall decrease or have the effect of decreasing accessibility or usability of an existing facility to below the requirements for new construction at the time of alteration;
- If existing elements, spaces or common areas are altered, then each such altered element / space / feature / area shall comply with all applicable provisions. If the applicable provision for new construction requires that an element / space / feature / area be on an accessible route and the altered element / space / feature / area is not on an accessible route, this route shall be altered to become accessible;
- If alterations of single elements, when considered together, amount to an alteration of a room or space in a facility, the entire space shall be made accessible;
- No alteration of an existing element, space or area of a facility shall impose a requirement for greater accessibility than that which would be required for new construction;
- If an escalator or stairs are proposed as a means of access where none existed previously, and major structural modifications are necessary for such installations, then a means of accessible access shall also be provided;
- If a planned alteration entails alterations to an entrance, and the facility has an accessible entrance, the entrance being altered is required to be accessible;
- If the alteration work is limited solely to the electrical, mechanical or plumbing system, hazardous material abatement, automatic sprinkler retrofitting, and does not involve the alteration of any elements or spaces required to be accessible under these standards, then this standard does not apply (except for alarms and assistive listening systems);
- An alteration that affects the usability of or access to an area containing a primary function shall be made to ensure that, to the maximum extent feasible, the path of travel to the altered area, the washrooms and drinking fountains serving the altered area are readily accessible to and usable by individuals with disabilities; and

- Where the provision of accessible features is technically infeasible, and the standard allows a reduction of manoeuvring space from the requirements for new construction, the reduced dimensions are minimums. Where possible, larger manoeuvring spaces must be provided.

1.2.2 Heritage Facilities

This standard will apply to alterations to a heritage facility, however, under the Ontario Human Rights Code, there are allowances for modification to the defining features of a heritage facility which are deemed to alter the essential nature or substantially affect the viability of the enterprise. Public heritage facilities should be assessed for compliance to accessibility standards on an individual basis, to determine the most effective and least disruptive means of retrofit, where required. Consider the following general guidelines:

- **Facilities and / or areas that are generally used independently by the public and have undergone extensive modernization should be permanently and fully accessible. This includes parking areas, reception areas, washrooms, food service areas and gift shops. It can also include walkways and garden areas. If accessibility is limited by non-heritage elements, those elements should be revised;**
- **Facilities and / or areas which are used only by guided tour groups, through which assistance could easily be provided to open doors or to place a temporary ramp, could remain as existing or with minor temporary modifications;**
- **It is desirable to provide a complete experience of a public heritage facility. If an accessible area or areas can be provided to fully experience a given site or facility context, access to the entire site or facility is not necessary; and**
- **Access to above-grade and below-grade areas is not necessary if the context of those areas can be adequately provided on the accessible floor level.**

If the retrofit for accessibility of a main public entrance in a heritage facility would substantially threaten or destroy the historic significance of the facility, access shall be provided at an alternative entrance with directional signs at the main public entrance. The accessible entrance should have a notification system (if not generally used by the public) and remote monitoring (if security is an issue).

Safe egress from a heritage facility is required.

1.2.3 Equivalent Facilitation

In a retrofit situation where the requirements of a section of this standard are technically infeasible to implement, equivalent facilitation may be proposed.

Equivalent facilitation proposals shall be referred to the **Director, Fleet & Facilities (or delegate)** for review and approval on an individual basis.

1.2.4 Implementation

The Facilities Design and Construction Division of the City of London, other City departments, as well as contracted consulting firms shall be responsible for the application of the 2021 Facility Accessibility Design Standards, when designing and administering all construction and renovation projects associated with new facilities, as well as the retrofit, alteration or addition to existing facilities, owned, leased or operated by the City of London.

Designing and constructing to this standard shall be included as a mandatory requirement in all City of London Request for Proposals, Tender Documents and Construction Contracts.

1.2.5 Enforcement

The Facilities Design and Construction Division of the City of London and other City departments, through the project management function, shall ensure compliance to this standard during the pre-planning, design, construction documents preparation and contracts administrative phases.



Space and Reach Requirements

1.3

Application

The dimensions and manoeuvring characteristics of wheelchairs, scooters and other mobility devices are as varied as the people who use them. Traditionally, accessibility standards have taken a conservative approach to wheelchair manoeuvrability, reflecting the needs of a physically strong individual using a manual wheelchair. Such an approach excludes the many users without such a degree of strength or those using a larger mobility device.

This standard more accurately reflects the vast array of equipment that is used by persons to access and use facilities, as well as the diverse range of user ability. This standard incorporates more generous space requirements, particularly related to the dynamic movement of people using wheelchairs, scooters or other assistive devices.

Space and reach provisions for persons who use wheelchairs, scooters and other mobility devices shall comply with this section.

1.3.1 Clearance and Turning Space Requirements

A minimum clear floor / ground space and turning space is required to accommodate diverse users and types of mobility aids. These requirements are consistently applied throughout this standard, applicable for both exterior and interior environments including a “universal” clear floor / ground space and a suitably dimensioned clear turning space / circle for users of mobility aids, as follows:

- a. minimum clear floor / ground space of 920 mm by 1525 mm (36 in by 60 in) for a single wheelchair or scooter for forward or parallel approach to an object (**Figure i**). Clear floor / ground space for wheelchairs may be part of the knee space required under some objects; or
- b. turning space of 2500 mm (98½ in) in diameter for users of mobility aids to make a 360-degree turn (**Figure ii**) or various required clearances for a 180-degree turn (**Figure iii**).

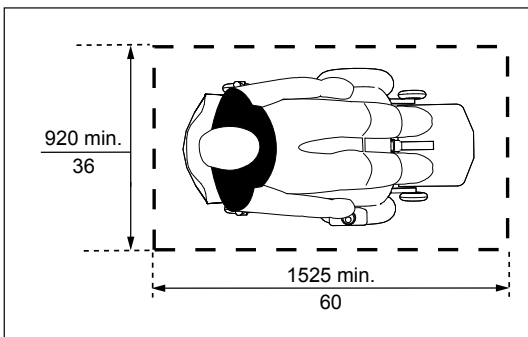


Figure i: Universal Clear Floor / Ground Space for Mobility Devices

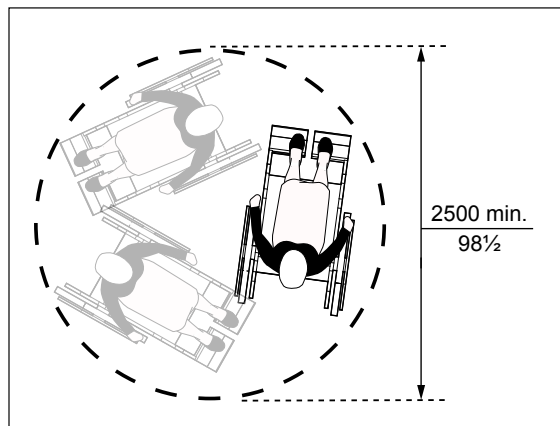


Figure ii: 360° Turning Space / Circle

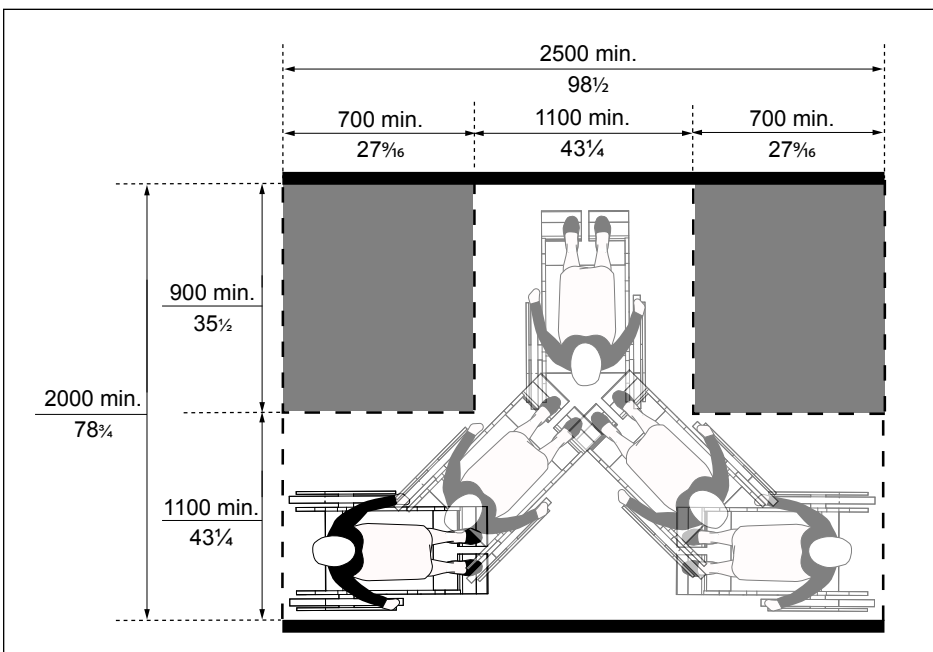


Figure iii: 180° Turning Space

1.3.2 Clearances at Alcoves

One full, unobstructed side of the clear floor space or ground space for a wheelchair or scooter shall adjoin or overlap an accessible route or adjoin another clear floor space for mobility aids. If a clear floor space is located in an alcove or otherwise confined on all or part of three sides, additional manoeuvring clearances is required as shown in **Figures iv, v, vi, and vii**.

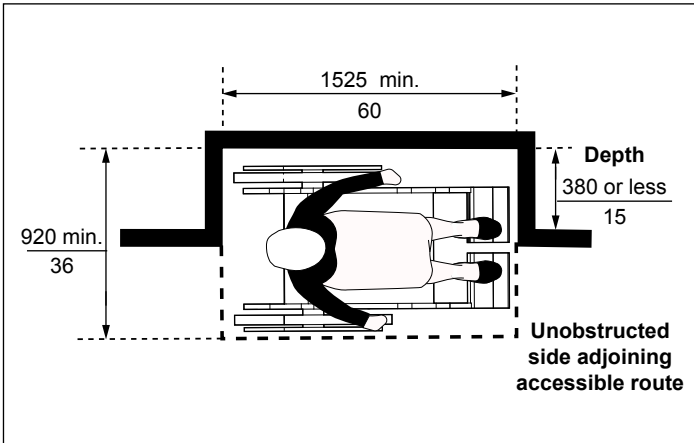


Figure iv: Clearances at Alcove - Side Approach where Depth of Alcove is 380 mm (15 in) or less

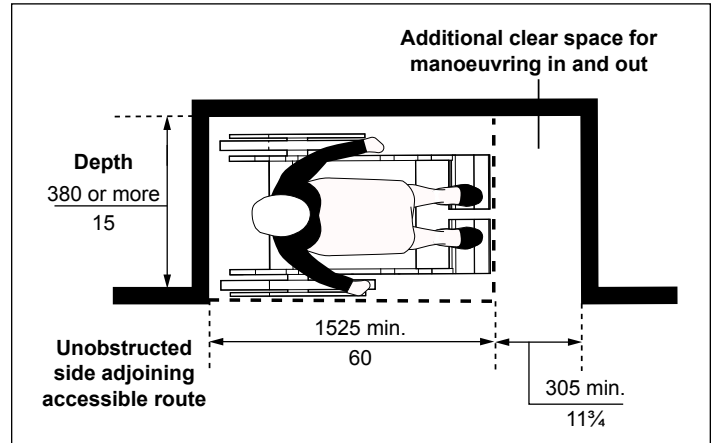


Figure v: Clearances at Alcove - Side Approach where Depth of Alcove is more than 380 mm (15 in)

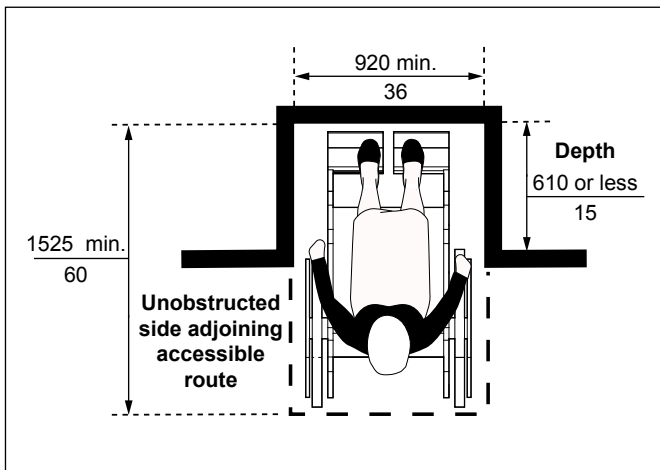


Figure vi: Clearances at Alcove - Front Approach where Depth of Alcove is 610 mm (24 in) or less

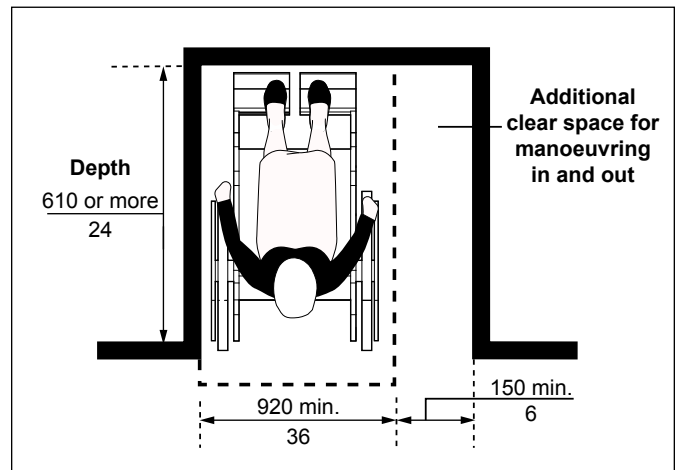


Figure vii: Clearances at Alcove - Front Approach where Depth of Alcove is more than 610 mm (24 in)

1.3.3 Reach Requirements

The following requirements relate to minimum and maximum reach ranges, based on a forward (frontal) or a side (parallel) approach to an object, element or feature. This includes consideration for whether the reach is without an obstruction, or whether it is over an obstruction. Additionally, reach range related specifically to touching versus grasping an object, element or feature is addressed where there is a side or forward approach over an obstruction.

1.3.3.1 Forward Reach: No Obstruction

Where a minimum clear floor space of 920 mm (36 in) wide by 1525 mm depth (60 in) allows a forward approach to an object, feature or element, with no obstruction, provide: **(Figure viii)**

- a. maximum high forward reach of 1200 mm (47 in) above finished floor; and
- b. minimum low forward reach of 400 mm (15¾ in) above finished floor.

1.3.3.2 Forward Reach: With Obstruction

Where a minimum clear floor space of 920 mm (36 in) wide by 1525 mm depth (60 in) allows a forward approach to an object, feature or element, with an obstruction, provide: **(Figures ix and x)**

- a. maximum high forward reach of 1100 mm (43¾ in) above finished floor, with a maximum depth for touch reach at 610 mm (24 in); or
- b. maximum high forward reach of 1100 mm (43¾ in) above finished floor, with a maximum depth for grasp reach at 510 mm (20 in).

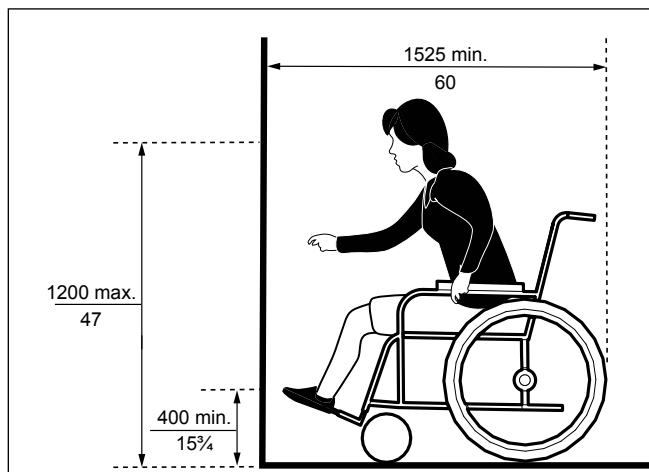


Figure viii: Forward Reach - No Obstruction

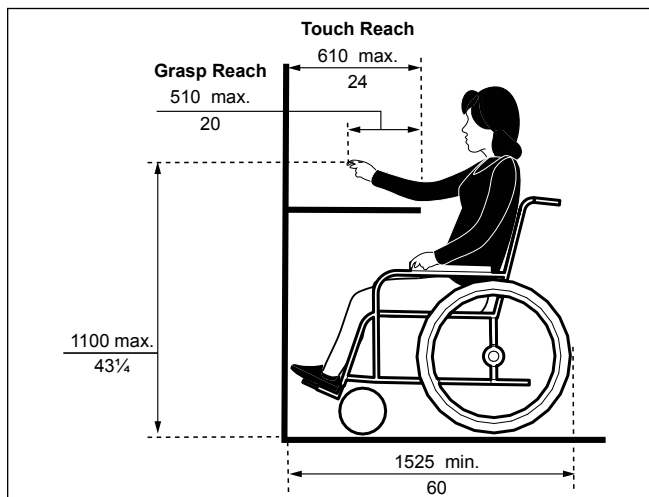


Figure ix: Forward Reach over an Obstruction - Section View

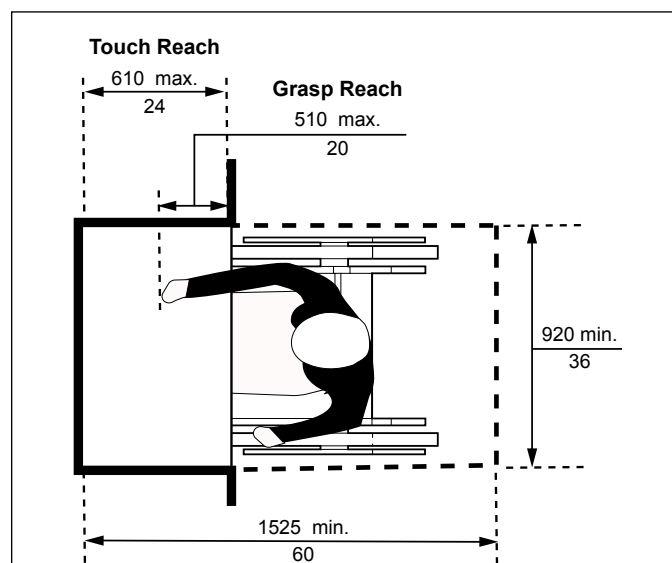


Figure x: Forward Reach over an Obstruction - Plan View

Best Practice

Despite these requirements, optimal reach range identified in other sections of these standards is 900 to 1100 mm (35½ to 43¾ in), for either side or frontal approach, when obstructed or when there is no obstruction.

Additionally, the Ontario Building Code requires all controls for the operation of facility services to be mounted at a maximum of 1200 mm (47 in) above the finished floor for thermostats or manual fire pull stations and 900 to 1100 mm (35½ to 43¾ in) for all other controls including typical light switches.

1.3.3.3 Side Reach: No Obstruction

Where a minimum clear floor space of 920 mm (36 in) wide by 1525 mm depth (60 in) allows a side approach to an object, feature or element, with no obstruction and with a maximum reach depth of 255 mm (10 in), provide: **(Figures xi and xii)**

- a. maximum high side reach of 1370 mm (54 in) above finished floor; and
- b. minimum low side reach of 230 mm (9 in) above finished floor.

1.3.3.4 Side Reach: With Obstruction

Where a minimum clear floor space of 920 mm (36 in) wide by 1525 mm depth (60 in) allows a side approach to an object, feature or element, over an obstruction that is maximum height of 865 mm (34 in), provide: **(Figure xiii)**

- a. maximum high side reach of 1170 mm (46 in) above finished floor, with a maximum depth for touch reach at 610 mm (24 in); or
- b. maximum high side reach of 1170 mm (46 in) above finished floor, with a maximum depth for grasp reach at 510 mm (20 in).

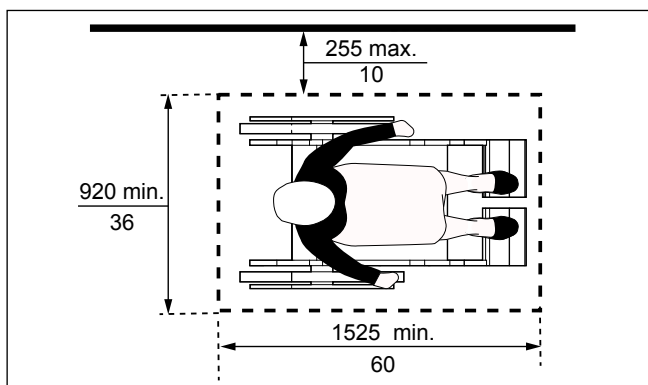


Figure xi: Side Reach - No Obstruction - Plan View

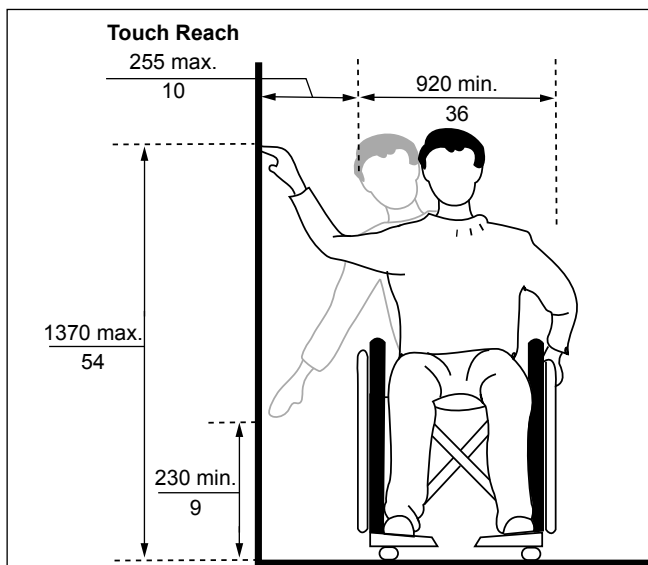


Figure xii: Side Reach - No Obstruction - Section View

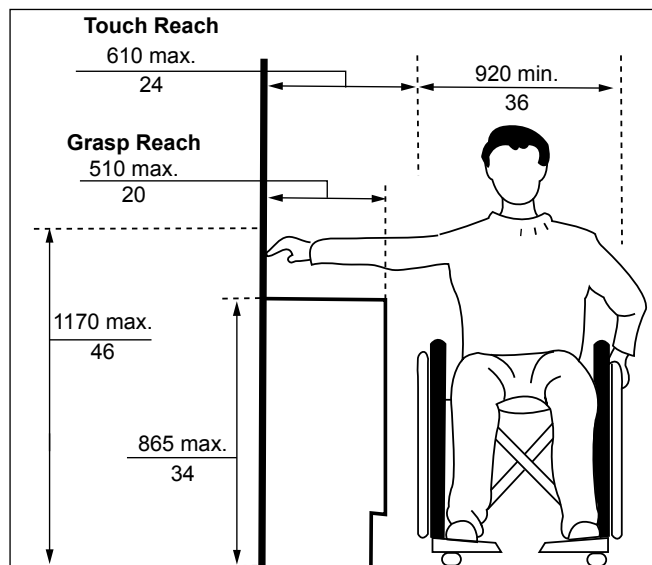


Figure xiii: Side Reach over an Obstruction - Section View

How To Use This Document

1.4

1.4.1 Standard Organization

These standards were organized to provide accessibility criteria in the following sections, in order to group and identify issues that are related. These sections are identified and colour-coded as follows:

1.0

Introduction

2.0

Common Elements:
Exterior and Interior

3.0

Exterior Environments

4.0

Interior Environments

5.0

Systems, Controls and
Communications

6.0

Special Facilities and
Spaces

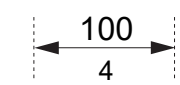
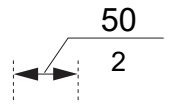
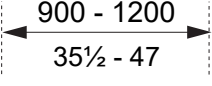
7.0

Appendices

These sections are further divided into additional subsections that refer to specific site or facility elements. At the start of each section, the **“Application”** of the standards is identified to assist with implementation and how each section relates or applies to the built environment, element or feature.

1.4.2 Dimensions

The dimensions for specific accessibility criteria are stated in millimetres (mm) or metres (m) throughout this document, rounded up to the nearest multiple of five. Measurements in inches (in) or feet (ft) are provided adjacent to metric measurements in brackets, for example 1525 mm (60 in), and are converted from the metric measurement. Where metric measurements are too small or specific, imperial conversion is not provided in order to maintain accuracy. Dimensions that are not marked as “maximum” or “minimum” are absolute, unless otherwise indicated. All dimensions for construction purposes are subject to conventional industry tolerances. Dimension conventions for diagrams are as follows:

Convention	Description
	dimension showing measurements in millimetres (unless otherwise specified) above the line and inches (unless otherwise specified) below the line
	dimension for small measurements
	dimension showing a range with minimum - maximum
min.	minimum
max.	maximum

1.4.3 Tables, Figures and Graphics

Throughout these standards, several tables, figures and graphics are provided to assist the user with understanding the application of the accessibility criteria and design issues under consideration. These are summarized in **Section 7.0, Appendices**.

1.4.4 Definitions

Throughout this document, terminology may be used that may not be familiar or understood. For the purposes of this standard, words and terms have their meanings defined in **Section 7.1, Glossary**.

1.4.5 Feedback Form

The City of London recognizes that accessibility best practices continue to evolve and change over time, with the expectation that these standards are recognized as a “living document” and will be updated on a regular basis. A feedback form is provided in **Section 7.4, Feedback Form** for any recommendations on how to improve this document or to provide new information.

Common Elements: Exterior and Interior

2.0

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Ground and Floor Surfaces

2.1

Application

This section applies to ground and floor surfaces throughout interior and exterior environments. The type of materials and finishes used for ground and floor surfaces are essential in determining accessibility.

Reference

- Sec. 3.3 Exterior Paths of Travel
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.4 Acoustics
- Sec. 5.7 Lighting

Note

Irregular surfaces, such as cobblestones or pea-gravel finished concrete are difficult for both walking and pushing a wheeled mobility device.

The use of pavers along accessible routes should be carefully considered since they may heave or settle due to weather conditions and can become potential tripping hazards.

When using pavers, provide controls to prevent any potential heaving due to frost and minimize the number of joints.

Pavers may be used as accent banding to delineate the accessible route.

Uneven surfaces can create unpleasant and damaging vibration for users of wheeled mobility aids.

Sand and gravel surfaces are extremely difficult surfaces for users of mobility aids to maneuver.

Note

A firm surface does not change under vertical force / pressure.

A stable surface does not change or erode under angular forces.

Hard floor surfaces, such as marble or terrazzo, may amplify footsteps and add another level of noise for persons who are Deaf, deafened or hard of hearing.

Glare from polished floors can be uncomfortable for all users and can be a particular obstacle to people with vision loss by obscuring important orientation and safety features.

2.1.1 Surfaces

Ensure all ground and floor surfaces in interior and exterior environments: **(Figures 1 & 2)**

- a. are firm, stable and slip-resistant;
- b. have a matte finish to minimize glare;
- c. are well-drained;
- d. have joints between surfaces no wider than 6 mm ($\frac{1}{4}$ in) (preferred) or a maximum of 13 mm ($\frac{1}{2}$ in); and
- e. where ground and floor surfaces have a change in level **(Table 1)**:
 - i. no bevel is required (e.g., vertical change permitted), where the change in level is less than 6 mm ($\frac{1}{4}$ in);
 - ii. provide a beveled slope of 1:2 (maximum - the ratio rise to run), where the change in level is between 6.1 mm and 13 mm ($\frac{1}{4}$ in and $\frac{1}{2}$ in);
 - iii. provide a slope, ramp or curb ramp, where the change in level is greater than 13 mm ($\frac{1}{2}$ in); and
 - iv. for exterior ground surfaces, refer to **Section 3.3, Exterior Paths of Travel** for additional details.

Table 1: Changes in Level - Edge Treatments

Change in Level (height)	Edge Treatments
0 - 6 mm (0 - $\frac{1}{4}$ in)	May be vertical
6.1 - 13 mm ($\frac{9}{32}$ - $\frac{1}{2}$ in)	Bevel, maximum slope 1:2
over 13 mm (over $\frac{1}{2}$ in)	treat as a sloped floor, ramp or curb ramp

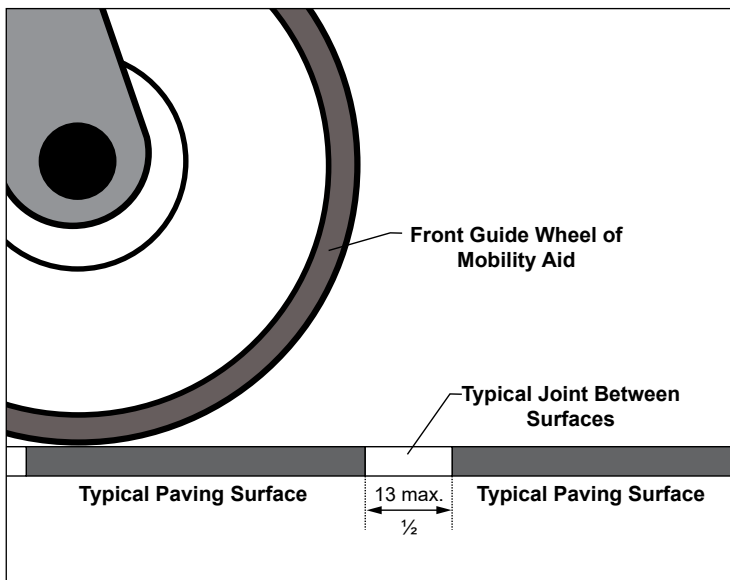


Figure 1: Joints Between Surfaces - Section View

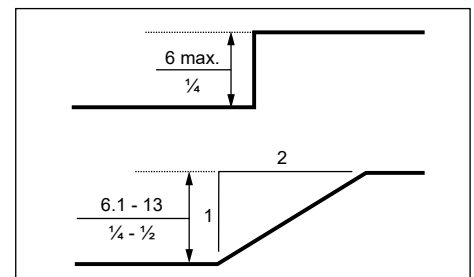


Figure 2: Changes in Level



Ensure a smooth transition is provided between sidewalk segments.

2.1.2 Carpets

Where carpeting is used ensure:

- it is securely fastened;
- combined carpet and pad height does not exceed 13 mm (½ in);
- any cushion, under padding or backing is firm to reduce rolling resistance for wheeled mobility aids;
- it is a low level loop, textured loop, level cut pile or level cut / uncut pile texture; and
- exposed edges fasten to the floor surfaces with trim conforming to **Table 1**.

2.1.3 Floor Mats or Grating Systems

Where floor mats or grating systems are used:

- ensure they are securely fixed or recessed in floor and level with surrounding floor area to prevent potential tripping hazards;
- ensure maximum mat height of 13 mm (½ in) with beveled edges; and
- provide high colour / tonal contrast between floor mats / grating systems and surrounding surfaces.



Example of a recessed floor mat system which is preferred.

Note

Disruptive, confusing and heavily patterned ground or floor surface designs can be misinterpreted as level changes by people with vision loss and are not accessible.

High colour / tonal contrasted floor mats can provide textural and visual cues for people with vision loss. They can be used to indicate doorways or circulation intersections.

Best Practice

Avoid the use of any grate, opening or cover along accessible routes, especially high traffic areas, in order to prevent any potential tripping hazards.

Note

Openings larger than 13 mm ($\frac{1}{2}$ in) may potentially catch wheels of mobility aids, canes or crutches.

2.1.4 Gratings and Covers

Openings can include sewer catch basin covers or drainage grates, utility covers and tree grates. Where there are any openings along the path of travel, or where gratings or other covers are required in both interior and exterior environments, ensure: **(Figures 3a & 3b)**

- ensure openings do not allow passage of an object that has a diameter greater than 13 mm ($\frac{1}{2}$ in); and
- elongated openings are oriented perpendicular to the pedestrian path of travel.

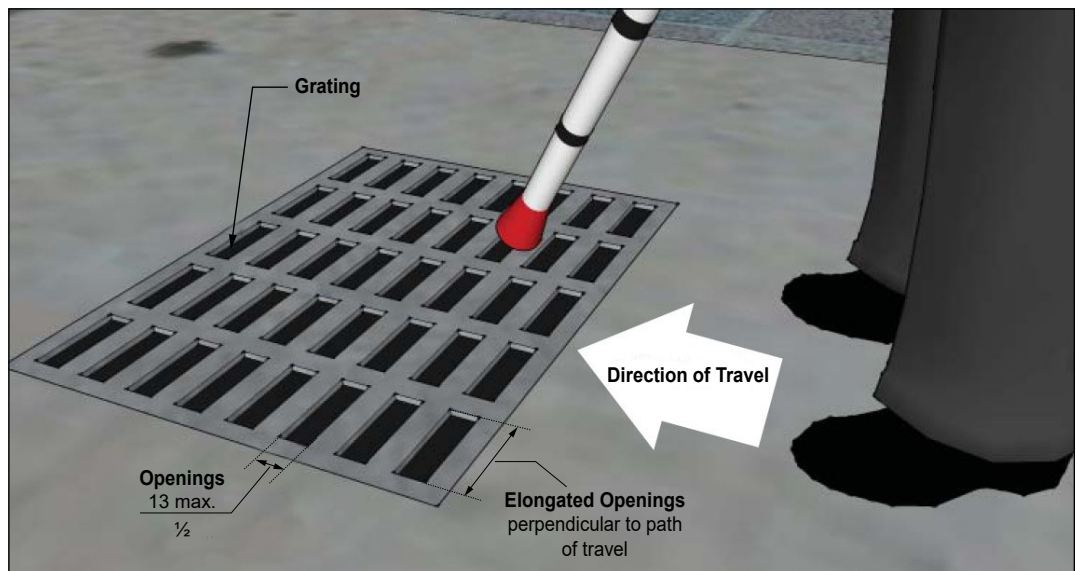


Figure 3a: Grating Opening

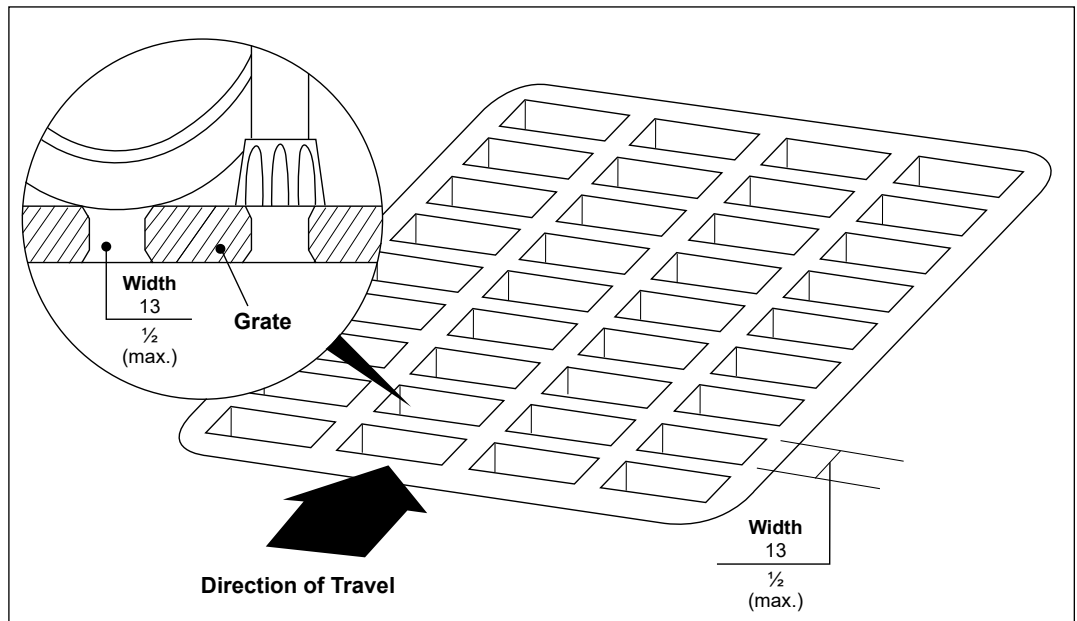
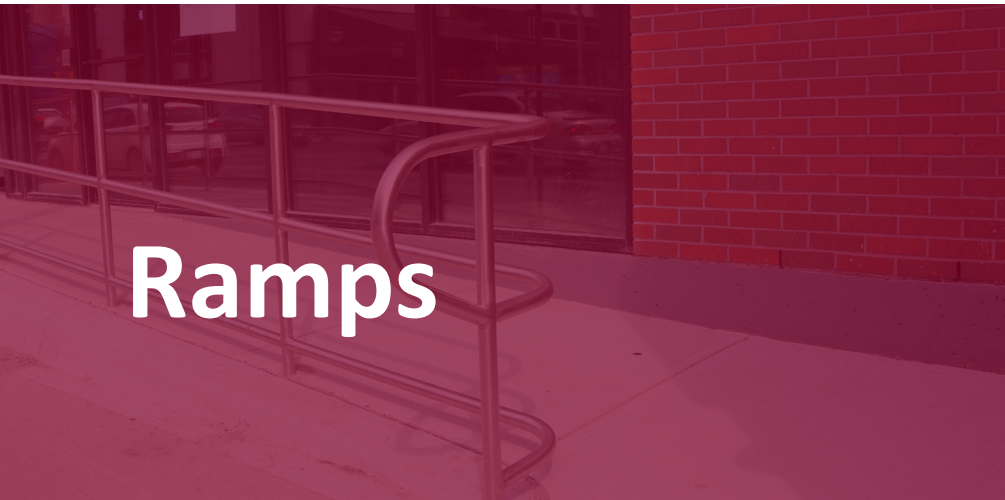


Figure 3b: Gratings - Section View



2.2

Application

This section applies to ramps provided as part of an accessible route within exterior or interior environments.

Additionally, refer to the Ontario Building Code (OBC) and the Integrated Accessibility Standards Regulation (IASR) for ramp requirements.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.4 Guards and Handrails
- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 5.7 Lighting

Note

It is preferred to avoid providing ramps in new construction where alternate universal design solutions are possible.

Best Practice

Where ramps are specifically designed for use by persons with vision loss, a ramp surface of up to 1525 mm (60 in) wide is preferred, in order to allow space for a companion or guide dog.

Exterior ramp and landing surfaces should be heated to prevent snow and ice accumulation during winter conditions. Additionally, provide designated areas for snow piling at exterior ramps, located away from any accessible pedestrian routes.

2.2.1 Design Features

For accessible ramps, ensure: **(Figures 4, 9 & 10)**

- a. a minimum clear width of 1100 mm (43¼ in);
- b. individual ramp sections are a maximum length of 9000 mm (29 ft 6 in);
- c. the provision of landings:
 - i. at top and bottom of ramp;
 - ii. where there is any directional change; and
 - iii. between each ramp section where overall length of ramp exceeds 9000 mm (29 ft 6 in);
- d. a stable, firm and slip resistant surface, with surfaces for exterior ramps and their approaches designed to prevent water accumulation;
- e. handrails on both sides of the ramp;
- f. a wall or guard on both sides of the ramp; and
- g. a minimum lighting level of 50 lux (5 foot candles) consistently over ramp surfaces, measured at floor or ground surface **(Refer to Section 5.7, Lighting)**.

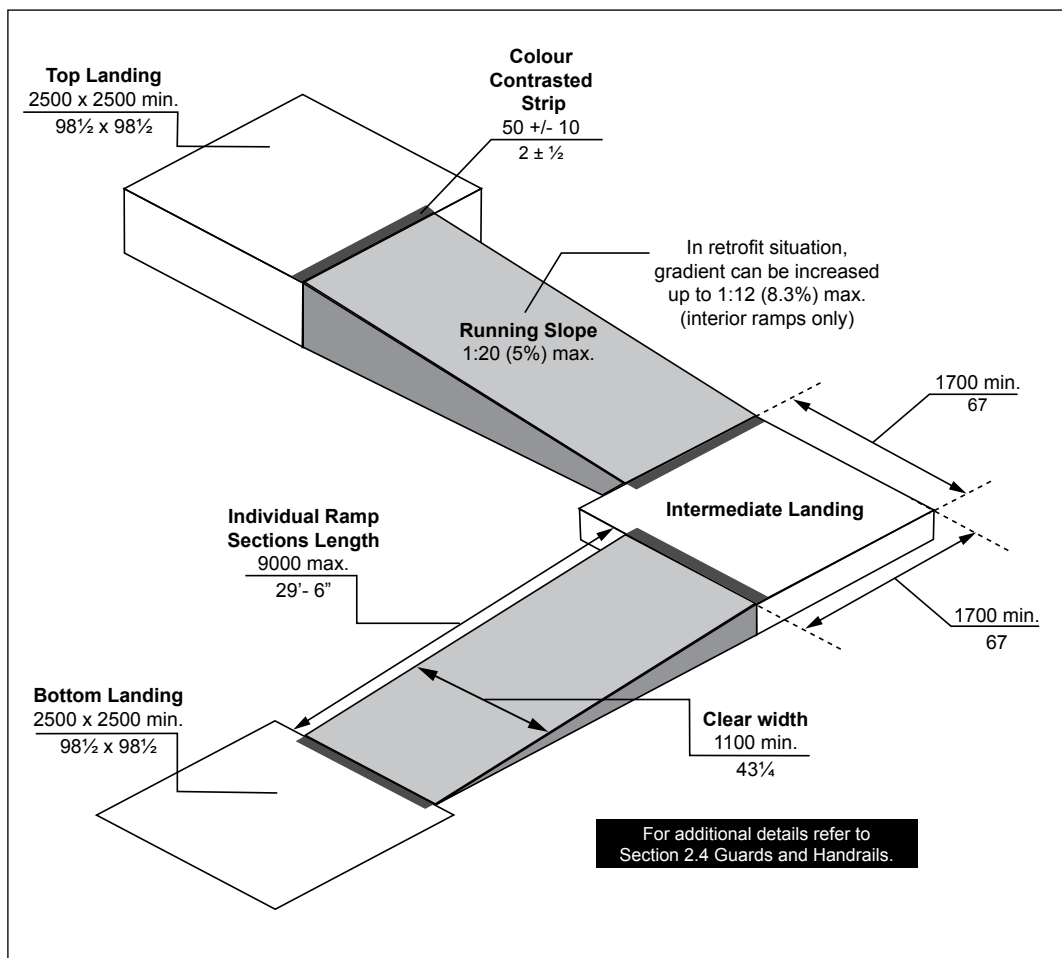


Figure 4: Ramp Design Features

2.2.1.1 Running Slope

- ensure maximum running slope of 1:20 (5%) is provided; and
- in a retrofit situation, a maximum running slope of 1:12 (8.3%) may be used, where it is technically infeasible to provide a running slope of 1:20 (5%), excluding exterior ramps where a maximum running slope of 1:15 (6.7%) must be provided.

2.2.1.2 Cross Slope

- ensure maximum cross slope of 1:50 (2%).

2.2.1.3 Colour Contrasted Strip

- provide a high colour / tonal contrasted and slip-resistant strip at the beginning and end of ramp sections, and where landings meet a slope change; and
- ensure strips are 50 ± 10 mm ($2 \pm \frac{1}{2}$ in) wide, extending along the width of the ramp.

2.2.1.4 Edge Protection

Provide edge protection along ramps and landings: **(Figures 5a, 5b & 5c)**

- with a curb, minimum 100 mm (4 in) high, where no solid enclosure or guard is provided; and
- with a solid rail, guard or other barrier that extends to within 75 mm (3 in) of the finished ramp surface.

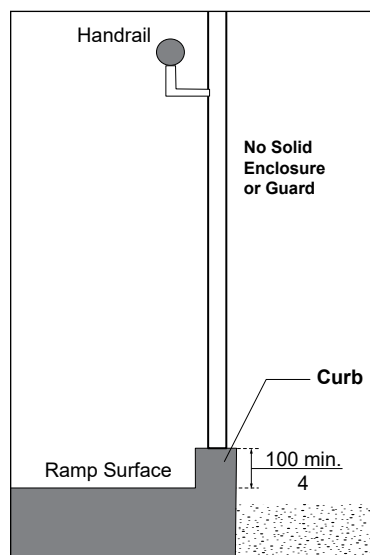


Figure 5a: Curb Protection - Cross Section

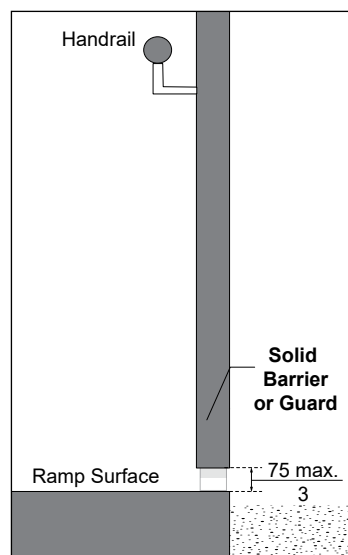


Figure 5b: Solid Barrier Protection - Cross Section

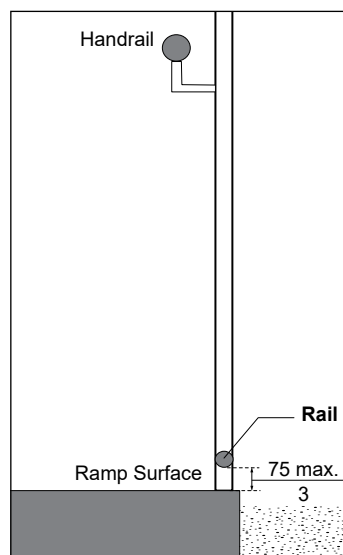


Figure 5c: Rail Protection - Cross Section

Note

Shallower slopes for ramp surfaces are always preferred.

Floors or walks in an accessible route / path of travel having a slope steeper than 1 in 20 (5%), must be designed as ramps.

Best Practice

Where space is available, a landing dimension of 3150 mm by 3150 mm (124 in by 124 in) is preferred in order to accommodate powered wheelchairs and large scooters.

2.2.2 Landings

For accessible ramp landings: (Figure 4, 6, 7a, 7b)

- ensure landings are level and have a maximum cross slope of 1:50 (2%);
- provide a minimum clear space of 2500 mm by 2500 mm (98½ in by 98½ in) or 1700 mm by 1700 mm (67 in by 67 in) (minimum in retrofit situations) at top and bottom landings, as well as where a doorway leads to a ramp landing;
- provide a minimum clear space of 1700 mm (67 in) long and at least the same width as the ramp for an in-line landing or minimum 1700 mm by 1700 mm (67 in by 67 in) for landings with a 90-degree turn;
- where overall length of ramp exceeds 9000 mm (29 ft 6 in), provide intermediate landings; and
- where doorway leads to a ramp landing, ensure length of landing is extended:
 - 600 mm (23½ in) beyond the latch side of the door opening, when the door swings towards the ramp landing; and
 - 300 mm (11¾ in) beyond the latch side of door opening, when door swings away from the ramp landing.

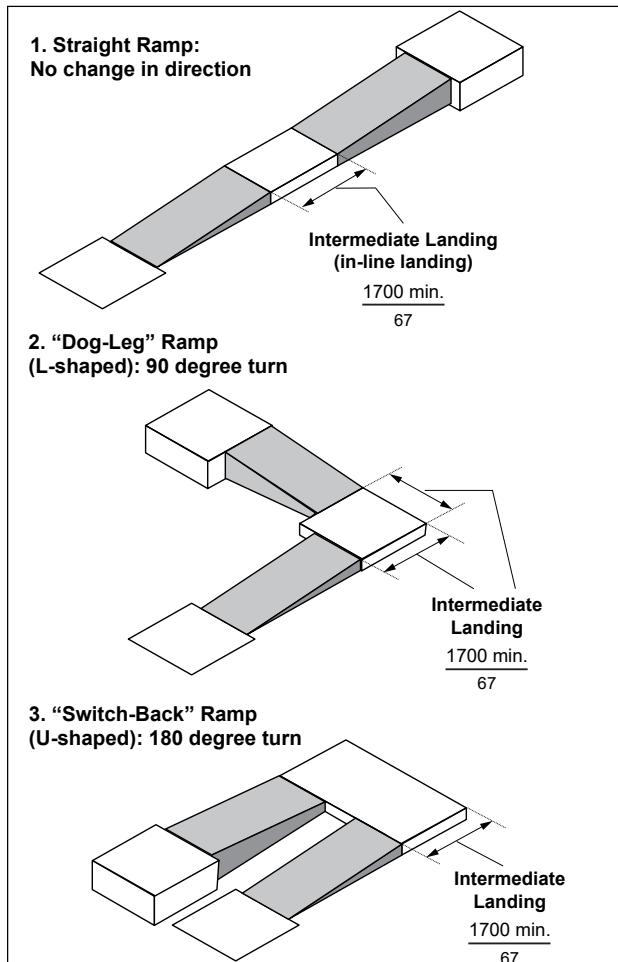


Figure 6: Typical Ramp Configurations

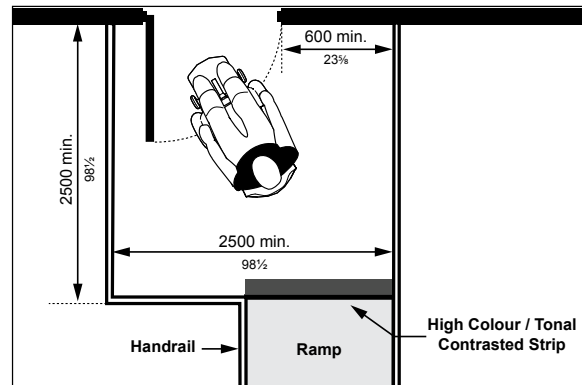


Figure 7a: Door Swings into Ramp Landing - Plan View

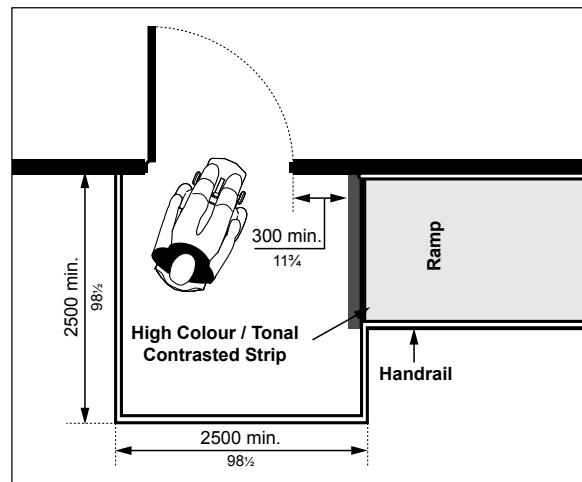


Figure 7b: Door Swings Away From Ramp Landing - Plan View

2.2.3 Handrails and Guards

2.2.3.1 Handrails

Where handrails are required: (Figures 8a, 8b, 8c & 9)

- mount continuously on both sides of ramp, including landings, at consistent height between 865 mm and 965 mm (34 and 38 in), measured vertically from the surface of the ramp;
- provide clear width of 950 mm to 1100 mm (37½ to 43¼ in) between handrails and / or any projections into the ramp surface, including where intermediate handrails are provided for ramps that are more than 2200 mm (86⅝ in) wide, with a maximum of 1650 mm (65 in) between handrails;
- where ramps are greater than 2200 mm (86⅝ in) wide, one or more intermediate handrails which are continuous between landings must be provided and located so that there is 900 mm (35½ in) between at least one set of handrails;
- ensure high colour / tonal contrast is provided between handrails and mounting surfaces;
- provide extensions with the following criteria:
 - extend horizontally a minimum of 300 mm (11¼ in) at top and bottom landings;
 - design to return to the post, floor or wall; and
 - ensure handrails are terminated in a manner that will not obstruct pedestrian path of travel or create potential bumping hazards;
- ensure all additional handrail requirements are provided (Refer to Section 2.4, Guards and Handrails).

Exception

Where a ramp serves as an aisleway for fixed seating, the requirement for ramp handrails does not apply.

Note

Handrails that do not meet the vertical mounting requirements are permitted provided that they are installed in addition to the required handrail.



Ensure handrail extensions do not obstruct path of travel or create hazards.

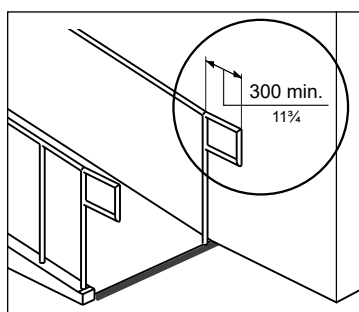


Figure 8a: Handrail Returns to Post

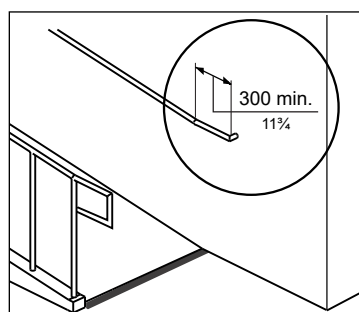


Figure 8b: Handrail Returns to Wall

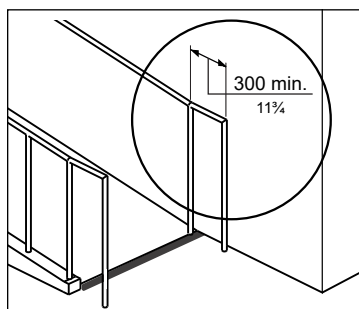


Figure 8c: Handrail Returns to Floor

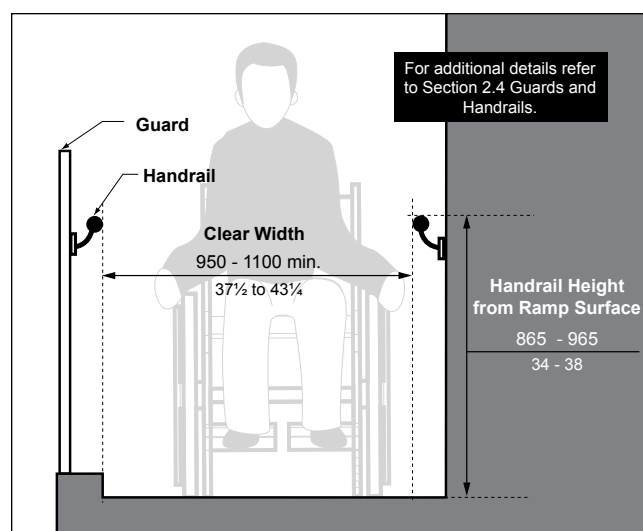


Figure 9: Handrail Design and Features - Section View

2.2.3.2 Guards

Where guards are required: **(Figure 10)**

- mount at a minimum of 1070 mm (42 in) high, measured vertically to the top of the guard from the ramp surface; and
- ensure that no member, attachment or opening located between 140 mm (5½ in) and 900 mm (35½ in) high above the ramp surface will facilitate climbing.

For ramps under the jurisdiction of the IASR, the ramp must have a wall or guard on both sides. While OBC Section 3.8.3.4 requires a wall or guard on both sides of the ramp, there are conditions in OBC Section 9.8.8.1 that only require a guard if the difference in elevation is more than 600 mm (23⅝ in) or where the adjacent surface within 1200 mm (47¼ in) has a slope steeper than 1:2.

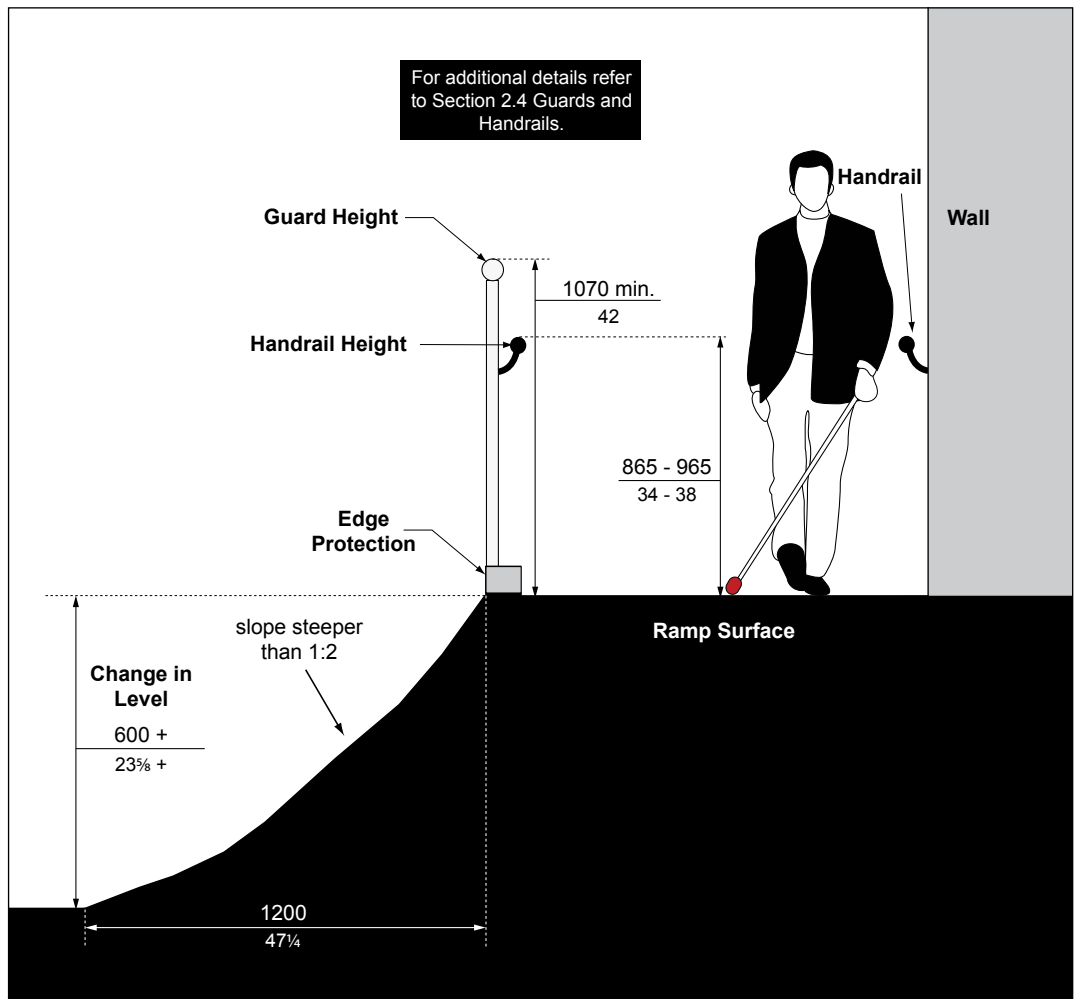


Figure 10: Guard Provision at Ramp - Section View



Stairs

2.3

Application

This section applies to stair systems, where provided for exterior or interior environments.

Additionally, refer to the Ontario Building Code (OBC) and the Integrated Accessibility Standards Regulation (IASR) requirements for stairs.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.4 Guards and Handrails
- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 5.7 Lighting

Note

Colour contrasted horizontal strips can also be fully integrated within the design of the nosing or finish used on the tread. For exterior stairs, exposed to the elements, and / or stair systems that have a high level of pedestrian traffic, durable strips are recommended (e.g., carborundum).

Designated areas for snow piling to be provided at exterior stairs, located away from pedestrian routes.

2.3.1 Design Features

- ensure surface is stable, firm, slip-resistant and non-glare; and
- provide minimum lighting level of 100 lux (10 foot candles) consistently over stair system, measured at tread surface (**Refer to Section 5.7, Lighting**);

2.3.2 Treads and Risers

For stair treads and risers: (**Figure 11**)

- ensure uniform riser height (rise) and tread depth (run) throughout any stair system;
- provide riser height (rise) a minimum of 125 mm (4 $\frac{7}{8}$ in) to a maximum of 180 mm (7 in);
- provide tread depth (run) a minimum of 280 mm (11 in) to a maximum of 355 mm (14 in); and
- ensure all risers are closed.

2.3.3 Nosings

For stair tread nosings: (**Figure 11**)

- ensure no abrupt undersides;
- ensure they do not project more than 25 mm (1 in) over the tread below and are sloped to the riser at an angle greater than 60 degrees to the horizontal;
- ensure leading tread edge is rounded, curved or beveled profile with a radius of curvature between 6 mm and 10 mm ($\frac{1}{4}$ in and $\frac{1}{2}$ in); and
- provide horizontal strips:
 - 50 mm (+/- 10 mm) (2 \pm $\frac{1}{2}$ in) depth;
 - at the leading edge of the tread, starting at a maximum of 25 mm (1 in);
 - with a high colour / tonal contrast compared to tread and riser finishes with slip-resistant surface; and
 - that extend the full width of the tread.

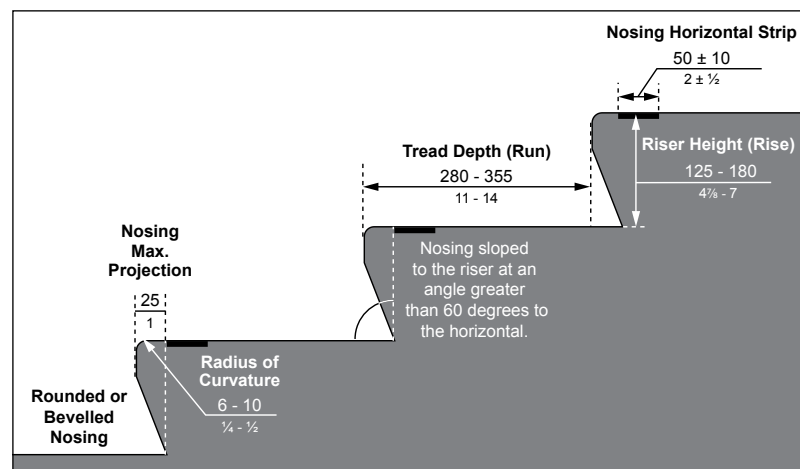


Figure 11: Stair Design Features - Section View

2.3.4 Tactile Attention Indicator (TAI) Surfaces

Provide TAI surfaces as follows: (Figure 12)

- a. at the top of all flights of stairs starting one tread depth back from the leading edge of the top step;
- b. at the top step, starting one tread depth back from the leading edge, at the following locations:
 - i. at each landing incorporating an entrance into a stair system;
 - ii. where the regular pattern of a stairway is broken; and
 - iii. where the run of a landing which does not have a continuous handrail is greater than 2100 mm (82¾ in);
- c. with a surface depth a minimum of 610 mm (24 in), extending the full width of the stair;
- d. mounted a maximum of 3 mm (⅛ in) above or below the surrounding surface; and
- e. ensure all additional TAI requirements are provided (Refer to Section 2.6, Tactile Walking Surface Indicators).

Note

Tactile attention indicators that are provided at the head of stair systems act as a warning, and high colour / tonal contrasted nosings increase the visibility of each step when descending, especially for users with vision loss.

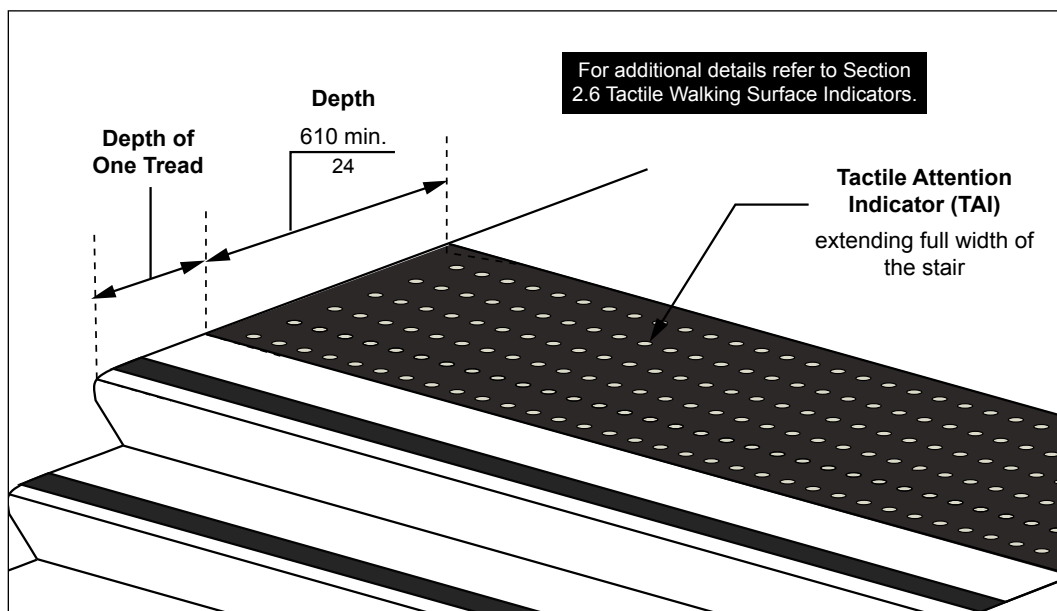


Figure 12: Tactile Attention Indicators (TAI) at Top of Stairs

2.3.5 Guards and Handrails

2.3.5.1 Guards

Where there is a change in level 600 mm (23⅝ in) or more in floor level adjacent to stairs, ensure guards are provided as identified in **Section 2.4, Guards and Handrails**.

Best Practice

Where stairs are wider than 1800 mm (70 $\frac{1}{2}$ in), provide intermediate handrails and ensure clear width between handrails is between 900 mm and 1000 mm (35 in and 39 $\frac{3}{8}$ in).

Note

Handrails ensure a safe descent and climbing of stairs for all users. They are an additional wayfinding guide for users with vision loss when continuous and if a high colour / tonal contrast is provided.

2.3.5.2 Handrails

Provide handrails as follows: (Figures 13 & 14)

- a. where stair system contains three or more steps;
- b. mount on both sides of stairs, at a consistent height between 865 mm and 965 mm (34 in and 38 in), measured from leading edge of stair tread;
- c. ensure high colour / tonal contrast is provided between handrails and mounting surfaces for improved visibility;
- d. be continuous around landing less than 2100 mm (82 $\frac{3}{4}$ in) in length from the top of stairs, except where the landing:
 - i. is intersected by an alternative accessible route; or
 - ii. has an entry door leading into it;
- e. be continuous on the inside edge of stairs;
- f. where stairs are more than 2200 mm (86 $\frac{1}{2}$ in) wide, provide one or more intermediate handrails with a maximum of 1650 mm (65 in) between handrails; and
- g. provide extensions with the following criteria:
 - i. extend horizontally a minimum of 300 mm (11 $\frac{3}{4}$ in) at the top of flight of stairs, starting immediately above tread nosing;
 - ii. extend diagonally at the slope of the stair flight, for a horizontal distance equal to one tread depth beyond the bottom tread nosing, at the bottom of flight of stairs then extend 300 mm (11 $\frac{3}{4}$ in) parallel to the floor surface;
 - iii. design to return to the wall, post or floor;
 - iv. ensure handrails are terminated in a manner that will not obstruct pedestrian travel or create hazards;
- h. ensure all additional handrail requirements are provided (Refer to Section 2.4, Guards & Handrails).

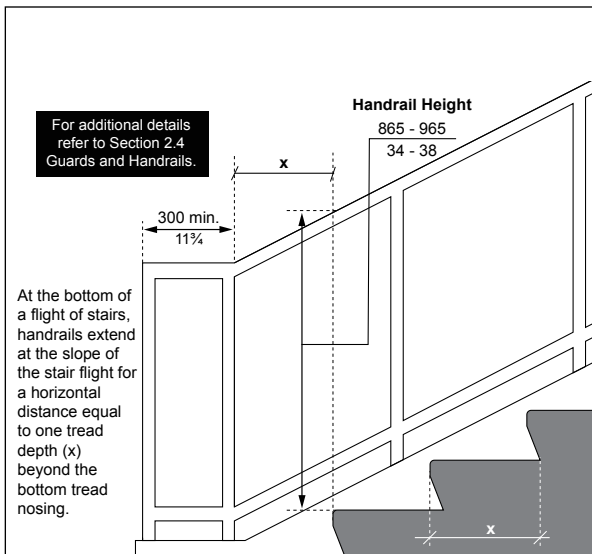


Figure 13: Handrail Extensions at Stairs - Section View

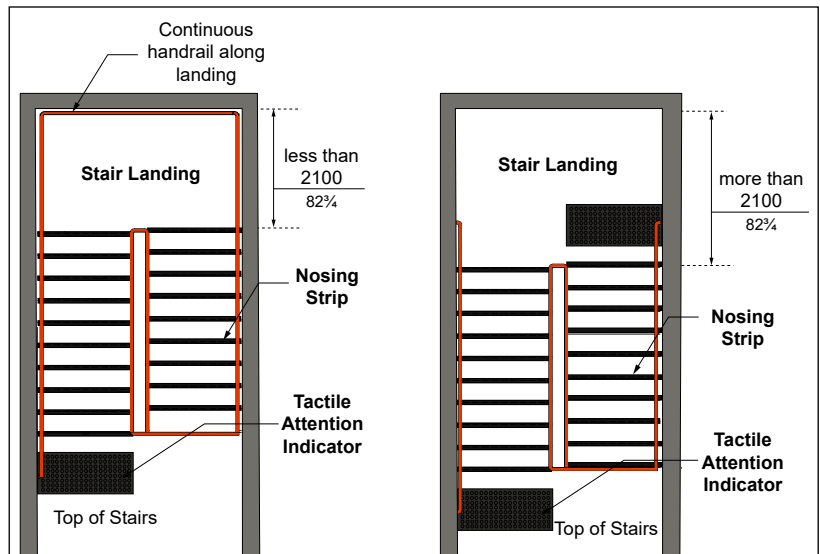


Figure 14: Continuous Handrails at Landings - Plan View



Guards and Handrails

2.4

Application

This section applies to guards and handrails at ramps, stairs and other areas in both interior and exterior environments.

Reference

Sec. 2.2 Ramps

Sec. 2.3 Stairs

Note

Guards are typically provided at ramps, stairs, terraces and elevated viewing platforms in both interior and exterior environments.

Best Practice

In environments used frequently by children, lowered handrails are permitted, provided they are in addition to the required handrails.

2.4.1 Guards

- ensure they comply with additional OBC or IASR requirements, as applicable (e.g., context specific issues, including guards for exterior stairs and ramps more than 10 meters (33 feet) above adjacent ground level, mounted at a minimum of 1500 mm (59 in) high);
- mount at a minimum of 1070 mm (42 in) high, measured vertically to the top of the guard from the ground / floor surface;
- design to prevent the passage of a sphere with a diameter greater than 100 mm (4 in); and
- ensure no member, attachment or opening located between 140 mm and 900 mm (5½ in and 35 in) high above the level protected by the guard will facilitate climbing.

2.4.2 Handrails

For handrails: (Figures 15a, 15b & 15c)

- ensure handrails are continuous with grasping surface, uninterrupted by mounting brackets, newel posts or any other construction elements;
- provide rounded edges, free of abrasive elements;
- provide outside diameter between 30 and 40 mm (1⅜ in and 1⅞ in) or circular cross-section, which is preferred;
- where non-circular cross sections are provided, ensure perimeter dimension a minimum of 100 mm (4 in) and a maximum of 125 mm (5 in), with cross section dimension a maximum of 45 mm (1¾ in);
- provide clearance of 50 mm (2 in) (minimum for smooth surfaces) or 60 mm (2⅜ in) (minimum for rough surfaces) between grasping surface and any adjacent surface;
- where handrails are in a recessed area, ensure clearance a minimum of 50 mm (2 in) between handrail surface and adjacent surface with clearance a minimum of 450 mm (17¾ in) above the handrail; and
- design and construct handrails and their supports to withstand:
 - the loading values obtained from the non-concurrent application of a concentrated load not less than 0.9 Kilonewtons (kN) or (202 pounds) applied at any point and in any direction; and
 - a uniform load not less than 0.7 Kilonewtons (kN) / meter or (48 pounds / feet), applied in any direction.

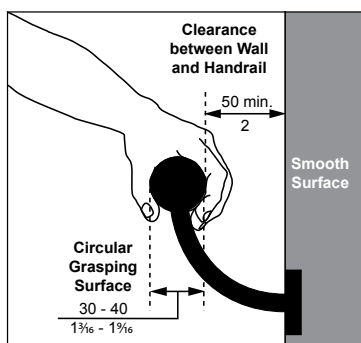


Figure 15a: Handrails on Smooth Wall - Section View

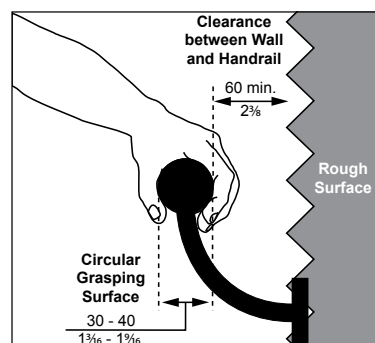


Figure 15b: Handrails on Rough Wall - Section View

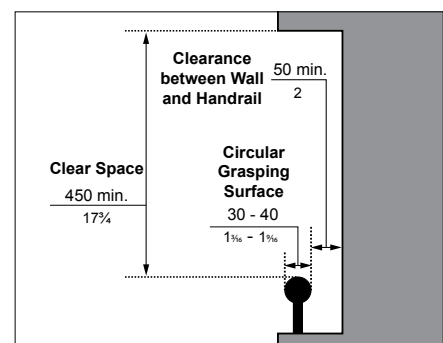


Figure 15c: Handrails in Recessed Area - Section View

Overhanging and Protruding Objects

2.5

Application

This section applies to overhanging and protruding objects throughout and around facilities (interior and exterior environments) to prevent any hazard or obstruction for all users. Protruding objects are typically mounted on walls, ceilings or other locations adjacent to interior and exterior paths of travel.

Reference

- Sec. 2.3 Stairs
- Sec. 2.4 Guards and Handrails
- Sec. 3.3 Exterior Paths of Travel
- Sec. 4.3 Interior Accessible Routes

Best Practice

Wing walls, extending from protruding edge to floor / ground surface, provide cane detection, where protrusion is greater than 100 mm (4 in).

Where possible, an enclosure at the underside of the stairs for protection is recommended.

(Figure 18a)

Note

Fixed planters or seating are options for providing protection under stairs as long as they are placed within cane detection limits.

2.5.1 Protruding Objects

Where objects protrude along accessible paths of travel: (Figure 17)

- ensure the clear width of an accessible path of travel or manoeuvring space is not reduced; and
- ensure objects protruding more than 100 mm (4 in) from wall have a leading edge that is cane detectable.

2.5.2 Headroom Clearance

Where applicable: (Figures 16, 17, 18a & 18b)

- provide a minimum of 2100 mm (82¾ in) headroom clearance; and
- where the headroom clearance is less than 2100 mm (82¾ in) over a portion of the accessible path of travel, provide a rail or other barrier with a leading edge that is cane detectable around the object that is obstructing the headroom clearance.

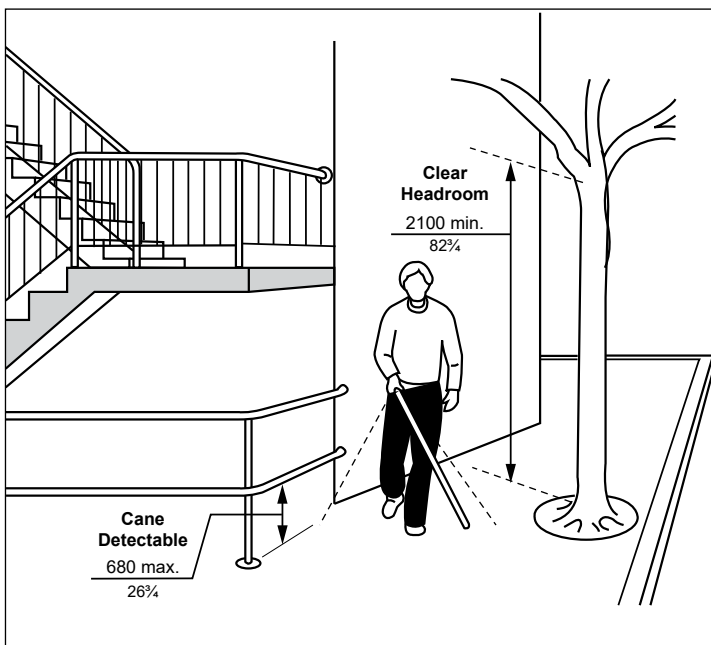


Figure 16: Headroom Clearance - Exterior

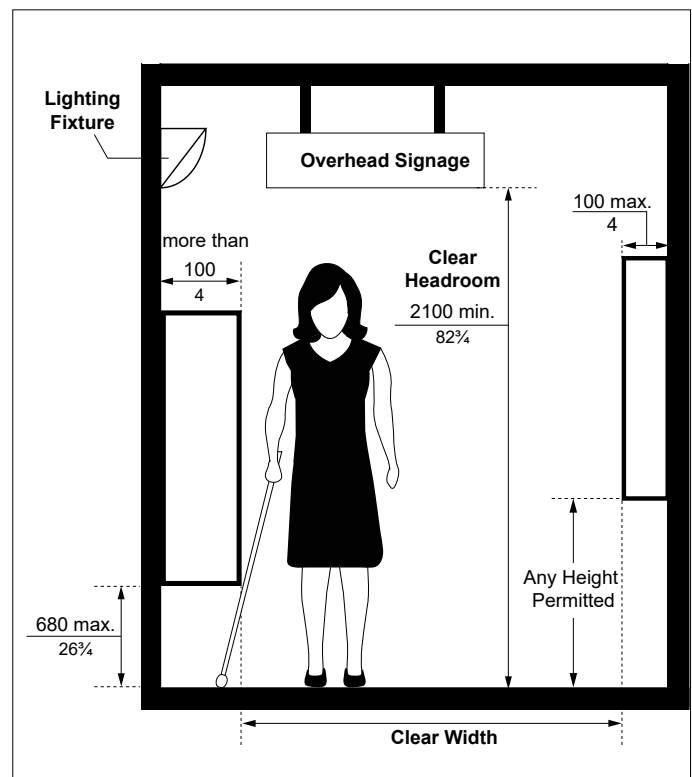


Figure 17: Protruding Objects and Headroom Clearance - Interior

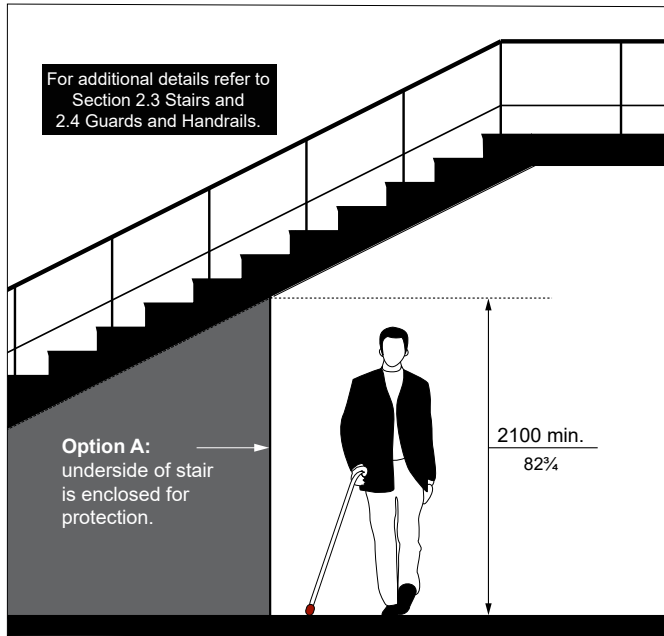


Figure 18a: Option A - Enclosed Protection Underneath Stairs

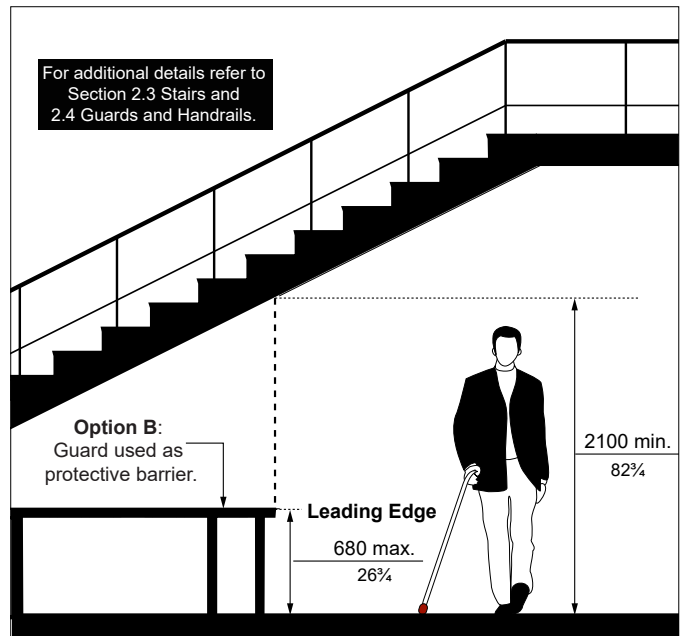


Figure 18b: Option B - Guard / Protective Barrier Protection Underneath Stairs

2.5.3 Cane Detectable Leading Edge

Where an accessible path of travel is obstructed by overhanging or protruding objects, either the objects themselves must be cane detectable, or a rail or other barrier with a leading edge that is cane detectable must be provided as follows:

(Figures 17 & 18a)

- wall mounted barriers must have a horizontal element at 680 mm (26³/₄ in) high, or lower, to be detectable by people who use white canes; and
- floor mounted barriers such as curbs must be at least 75 mm (3 in) high, unless they include a railing or other component that has a horizontal element at 680 mm (26³/₄ in) high, or lower.

Tactile Walking Surface Indicators

2.6

Application

A tactile walking surface indicator (TWSI) refers to a standardized surface, detectable underfoot or by a long white cane, to assist people with vision loss by alerting or guiding them.

There are typically two (2) types of TWSI used in both interior and exterior environments:

- **Tactile attention indicator (TAI)** surfaces call for caution at potential hazards (e.g., change in elevation, vehicular routes and train tracks). They are composed of truncated domes. Typical locations where TAI surfaces are required include:
 - i. at curb ramps and depressed curbs;
 - ii. where walking surfaces between pedestrian and vehicular areas are not separated by curbs; and
 - iii. at stairs.
- **Tactile direction indicator (TDI)** surfaces provide information about the direction of travel to facilitate wayfinding. They are composed of flat topped elongated bars, positioned parallel to the direction of travel. Typical locations where TDI surfaces are required include:
 - i. large expanses of open floor areas to indicate the primary route of travel; and
 - ii. leading from the entrance of a facility to major features or destinations, such as a self-service kiosk or an information / customer service counter.

Both cast in place (e.g., embedded within concrete) and surface applied TWSI systems are available for new construction and retrofits depending on the mounting surface and application. Surface applied systems require beveled edges to prevent potential tripping hazards.

Reference

- Sec. 2.3 Stairs
- Sec. 3.3 Exterior Paths of Travel
- Sec. 3.4 Curb Ramps and Depressed Curbs
- Sec. 4.3 Interior Accessible Routes
- Sec. 6.7 Recreational and Community Facilities
- Sec. 6.12 Elevated Platforms or Stages

2.6.1 Design Features

Provide tactile walking surface indicators (TWSIs) with: **(Figures 19 & 20)**

- raised tactile profile;
- truncated domes (e.g., circular and flat-topped domes) or elongated bars;
- slip-resistant and non-glare surfaces;
- edges beveled or level with surrounding surface to which it is applied or maximum height of 3 mm ($\frac{1}{8}$ in) above or below; and
- a high colour / tonal contrast between the TWSI and the adjacent surfaces (e.g., with a difference of 70% minimum in light reflectance value or LRV).

2.6.2 Tactile Attention Indicator (TAI) Surfaces

Where provided and required, as identified in other sections of these standards, TAI specifications for flat-topped truncated domes include: **(Figure 19)**

- height of 4 mm to 5 mm ($\frac{1}{25}$ in to $\frac{1}{5}$ in);
- top diameter between 12 mm to 25 mm ($\frac{1}{2}$ in to 1 in);
- lower base diameter 10 mm +/- 1 mm ($\frac{1}{2}$ in) more than the diameter of the top (e.g., a base diameter of 21 mm to 36 mm (0.83 in to 0.98 in) is typical);
- square grid layout / arrangement; and
- center to center spacing between adjacent domes is adjusted depending on the size of their top diameters, as identified in **Table 2**.

Note

Applying a high colour / tonal contrasted finish to a concrete surface does not provide an appropriate tactile profile for detection by foot or cane.

For more information on requirements for truncated domes, refer to: ISO 23599:2019 (or current edition) "Assistive products for blind and vision-impaired persons -- Tactile walking surface indicators."

Table 2: Truncated Dome Spacing Requirements

Top Diameter of Flat Topped Domes (mm)	Spacing Between the Centers of Adjacent Domes (mm)
12	42 to 61
15	45 to 63
18	48 to 65
20	50 to 68
25	55 to 70

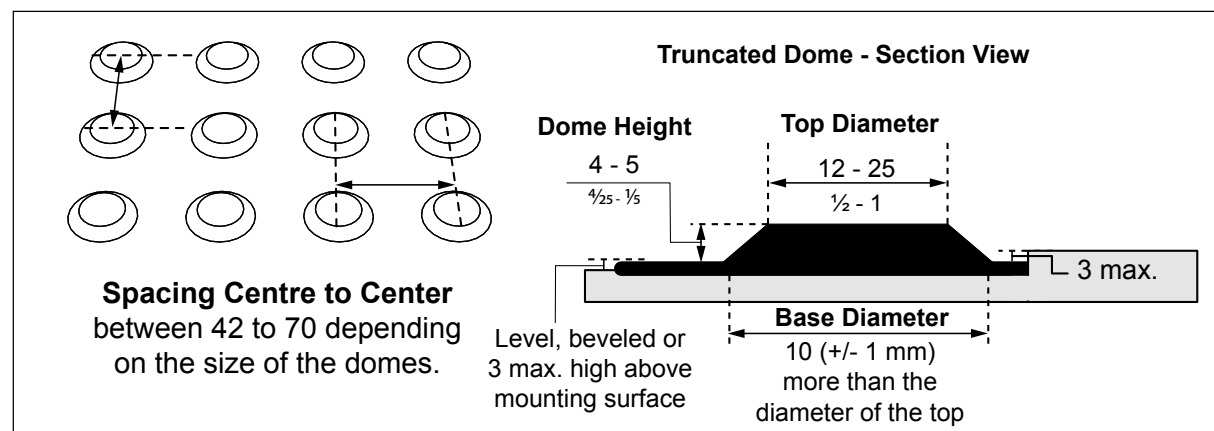


Figure 19: Truncated Dome Specifications

Note

A tactile direction surface indicator layout that is as continuous as possible is easiest to follow.

Refer to the CSA Group's "Accessible Design for the Built Environment" (CSA B651- current edition) for additional recommendations and examples of tactile directional indicator configurations.

Provision of TDI surfaces to be determined on a case by case basis and is dependent upon the type of facility, size of spaces and overall relationship to other wayfinding strategies implemented.

2.6.3 Tactile Direction Indicator (TDI) Surfaces

Where provided to facilitate wayfinding and to indicate a primary path of travel to a key element, feature or destination (e.g., within a facility or throughout a site), TDI specifications for flat-topped elongated bars include: **(Figure 20)**

- consistent use and placement, ensuring that the high colour / tonal contrast used is not yellow;
- height of 4 mm to 5 mm ($\frac{1}{25}$ in to $\frac{1}{5}$ in) high;
- top width between 17 mm ($\frac{2}{3}$ in) and 30 mm ($\frac{3}{16}$ in);
- lower base width of 10 mm (+/- 1 mm) ($\frac{1}{2}$ in) more than width of the top;
- top length a maximum of 270 mm (10 $\frac{2}{3}$ in) and a base length 10 mm (+/- 1 mm) ($\frac{1}{2}$ in) greater than the top length;
- maximum space of 30 mm ($\frac{3}{16}$ in) between the ends of the parallel bars;
- center to center spacing between adjacent bars is adjusted depending on their width, as identified in **Table 3**; and
- provision of a drainage gap, with a width of 20 mm to 30 mm ($\frac{3}{4}$ in to $\frac{3}{16}$ in) in between elongated bars, when used in exterior environments where there is a risk of water ponding.

Table 3: Elongated Bar Spacing Requirements

Width of Flat Topped Elongated Bars (mm)	Spacing Between the Centers of Adjacent Bars (mm)
17	57 to 78
20	60 to 80
25	65 to 83
30	70 to 85

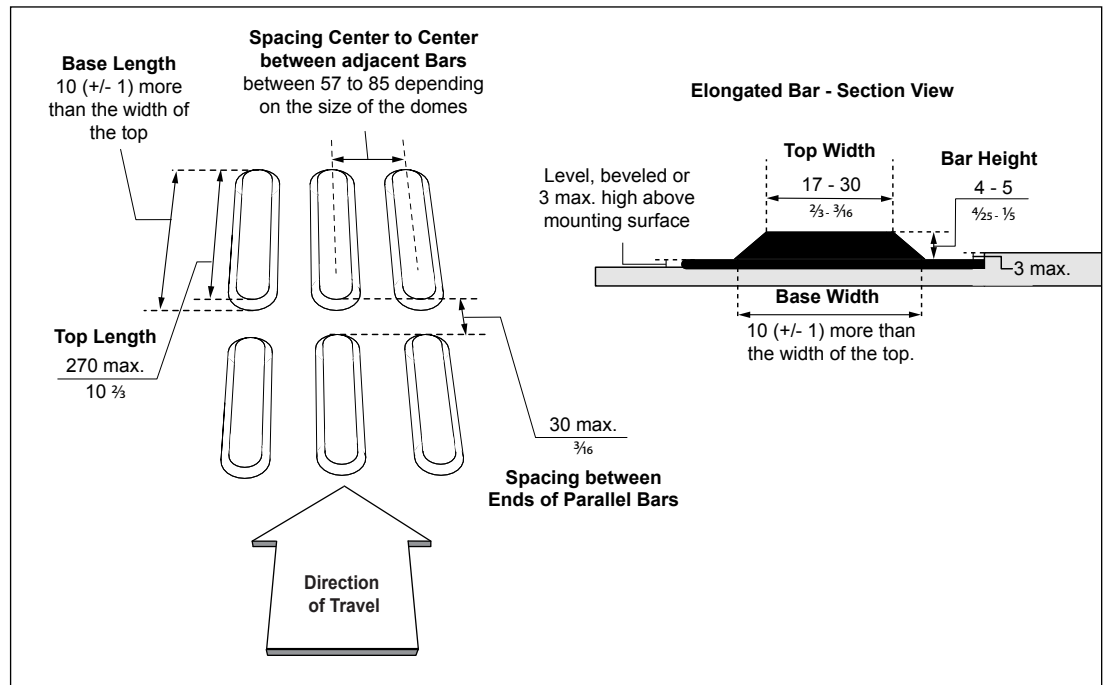


Figure 20: Elongated Bar Specifications

2.6.4 Additional Specifications

Provide a tactile attention indicator (TAI) for the following elements as follows:

2.6.4.1 Reflecting Pools / Water Features

- a. install 920 mm (36 in) from the leading edge of any drop-off; and
- b. ensure it extends the full length around all unprotected edges that border the drop-off.



Rest Areas

2.7

Application

This section applies to rest areas provided along accessible paths of travel within a facility or throughout exterior environments.

Benches and seating are provided at rest areas and waiting areas for people who may have difficulty with standing or walking for extended periods or limited stamina.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 3.3 Exterior Paths of Travel
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.7 Lighting

Note

Where rest areas are located in exterior environments, ensure surface has a slope no greater than 1:50 (2%) to allow suitable drainage, as well as maneuverability for users of mobility aids.

2.7.1 Consultation Requirements

When constructing new or redeveloping existing exterior paths of travel that will be maintained, consultation on the design and placement of rest areas must occur with:

- a. the public and persons with disabilities; and
- b. the City of London Accessibility Advisory Committee.

2.7.2 Design and Placement

To determine the provision and placement of rest areas, consider the input received through the consultation process and other factors such as available space, property requirements, and volume of pedestrian traffic, applicable to either exterior or interior environments. Consider providing rest areas, spaced no more than 30 m (98 ft 5 in) apart, to maximize the usability of the paths of travel for people with reduced stamina.

Where rest areas are provided: **(Figure 21)**

- a. ensure ground and floor surfaces are firm, stable and slip-resistant;
- b. provide high colour / tonal contrast for seating compared to surroundings and through floor / ground finish and texture, to distinguish the rest area from the accessible path of travel;
- c. provide clear ground / floor space a minimum of 920 mm (36 in) wide by 1525 mm (60 in) long to accommodate service animals, mobility aids or strollers;
- d. where seating is provided, ensure seating is:
 - i. stable or firmly mounted, set back at a minimum of 600 mm (23⁵/₈ in) from adjacent accessible path of travel;
 - ii. designed with both backrests and armrests, with no arm rest required adjacent to the clear floor / ground space at transfer side;
 - iii. between 450 mm (17³/₄ in) and 500 mm (19⁵/₈ in) high from the ground / floor surface;
 - iv. designed based on other detailed requirements for benches **(Refer to Section 2.8, Seating, Tables and Work Surfaces)**;
- e. ensure they are located adjacent to an accessible route; and
- f. provide a curb, a minimum 100 mm (4 in) high or other protective barrier at rear and at side of clear ground / floor space, where there is a change in elevation (e.g., a drop-off or downward slope).

2.7 Rest Areas

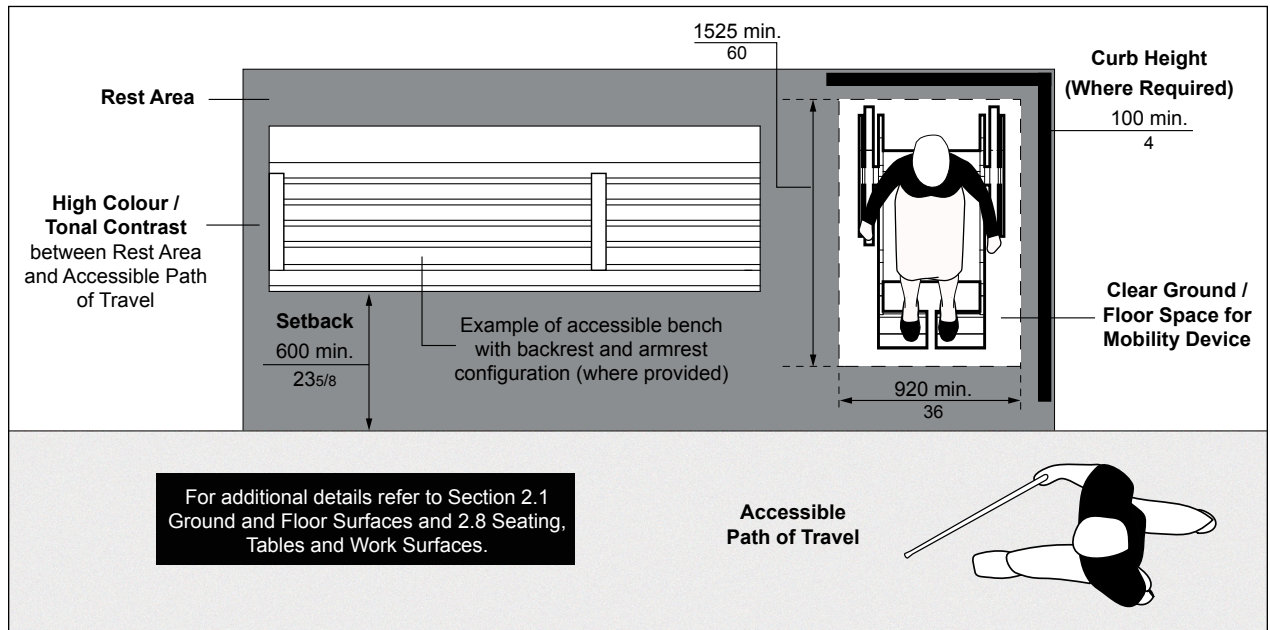


Figure 21: Rest Area - Plan View



Seating, Tables and Work Surfaces

2.8

Application

This section applies to site and facility furniture, provided in exterior or interior environments which typically includes, but is not limited to seating (e.g., benches), tables and work surfaces. Some common locations, where site and facility furniture can be found are:

- rest areas and accessible routes;
- dining facilities;
- waiting areas;
- lobbies; and
- office environments.

Reference

- Sec. 6.2 Meeting and Multi-purpose Rooms
- Sec. 6.4 Cafeteria and Dining Facilities
- Sec. 6.5 Kitchens and Kitchenettes
- Sec. 6.6 Libraries
- Sec. 6.10 Service Counters
- Sec. 6.11 Waiting and Queuing Areas
- Sec. 6.13 Office Environments

Note

Furniture provisions should be reviewed on a case by case basis, specific to facility type and occupancy. Some locations may require more furnishings if high level of public traffic and use is expected.

Best Practice

Where multiple benches are provided, consider option of some benches oriented to face each other where possible. This arrangement allows people to see each other, which is beneficial for people with hearing and communication disabilities to facilitate interaction. Also consider different configurations for armrests and backrests.

Note

Where only one bench is provided, ensure it is accessible, with no arm rest provided adjacent to the clear ground / floor space and with a two arm rest configuration: one provided at the other end and one within the middle.

Where an arm rest is provided in the middle of the bench, ensure it is located one seat-width from the transfer side of the bench with no arm rest. For example a three-seat bench would have the middle arm at 1/3 of the width whereas a two-seat bench would have the middle arm at 1/2 of the width.

2.8.1 Benches and Seats

Provision of benches and seats are typically recommended for people who may have difficulty with standing or walking for extended periods, limited stamina, or for users of mobility aids.

For accessible benches and seating: **(Figure 22)**

- ensure seat height is between 450 mm and 500 mm (17¾ in and 19⅝ in) above finished floor / ground;
- ensure seat depth is between 330 mm and 510 mm (13 in and 20 in);
- provide back support, extending at a minimum of 320 mm (12½ in) above the seat surface, or affix the seat to a wall;
- provide at least one (1) arm rest at a height between 220 mm and 300 mm (8¾ in and 11¾ in) from the seat for additional support with no arm rest required adjacent to the clear floor / ground space at transfer side;
- ensure bench is stable at all times; and
- ensure seating surfaces provide high colour / tonal contrast with surroundings to enhance visibility.

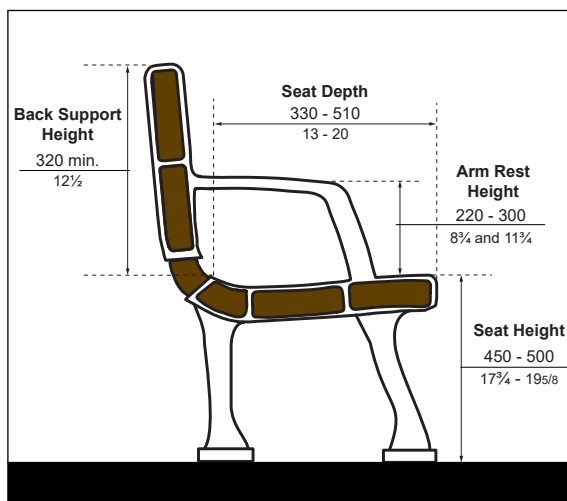


Figure 22: Typical Accessible Bench Dimensions - Section View

2.8.2 Tables and Work Surfaces

For tables and work surfaces: (Figures 23a & 23b)

- ensure top surface is between 710 mm and 865 mm (28 and 34 in) high;
- provide clear knee space a minimum of:
 - 920 mm (36 in) wide; and
 - 480 mm (18 $\frac{7}{8}$ in) depth by 685 mm (27 in) high;
- where toe clearance is required based on table design, ensure toe space is a minimum of 350 mm (14 in) high;
- ensure top surface and edges provide a high colour / tonal contrast with adjacent surroundings to enhance visibility; and
- ensure clear floor space provided at table and work surfaces for users of mobility aids is:
 - a minimum of 920 mm wide by 1525 mm depth (36 in by 60 in), with a maximum depth of 480 mm (18 $\frac{7}{8}$ in) under the table, for a forward approach; or
 - a minimum of 1525 mm wide by 920 mm depth (60 in by 36 in), for a side approach.

Best Practice

Provide a clear floor space or ground surface with turning diameter of 2500 mm (98 $\frac{1}{2}$ in), to allow both side and front approach by users of larger wheeled mobility aids, such as powered scooters and wheelchairs.

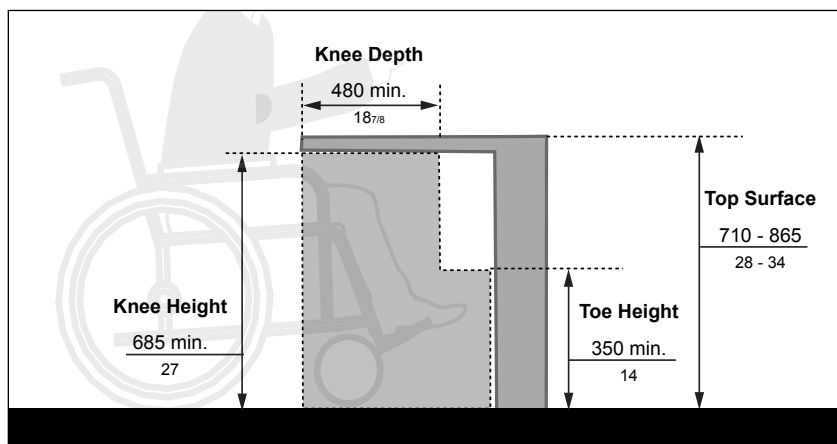


Figure 23a: Knee and Toe Clearances - Elevation View

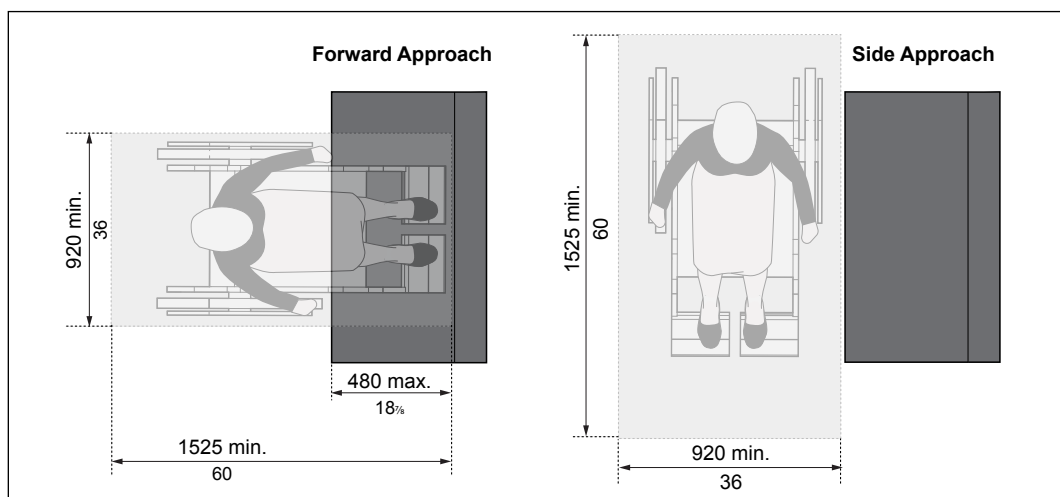


Figure 23b: Clear Floor Space Requirements and Approach at Tables and Work Surfaces - Plan View

2.8.3 Speaker Podiums

- a. locate on an accessible route;
- b. ensure they are height-adjustable for use from a seated or standing position, with automatic controls preferred;
- c. provide clear floor space a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth configured for forward approach;
- d. provide clear knee space a minimum of:
 - i. 920 mm (36 in) wide; and
 - ii. 480 mm (18 $\frac{7}{8}$ in) depth by 685 mm (27 in) high;
- e. ensure controls and operating mechanisms are mounted in compliance with **Section 5.1, Controls and Operating Mechanisms**.



Drinking Fountains and Bottle Filling Stations

2.9

Application

This section applies to drinking fountains and bottle filling stations where provided throughout interior and exterior environments.

Reference

Sec. 3.3 Exterior Paths of Travel

Sec. 4.3 Interior Accessible Routes

Best Practice

The provision of two drinking fountains / bottle filling stations, one at lowered, accessible height and the other at standing height meets the needs of diverse users.

Locating drinking fountains / bottle filling stations adjacent to the accessible route or recessing it in an alcove is preferred as it prevents potential bumping hazards.

Note

For standing use, spouts are located between 965 mm and 1090 mm (38 in and 43 in) above floor.

The space beneath the drinking fountain / bottle filling station may be included as part of the clear floor area or turning space, provided that appropriate toe and knee clearances are available for a forward or parallel approach to an unrecessed or partially recessed drinking fountain / bottle filling station.

2.9.1 Design and Layout

Where drinking fountain and bottle filling station fixtures are provided, ensure:

- at least 50% are accessible on each floor level to all users, including lowered units for people using mobility aids, people of short stature, children, others who may have trouble bending and persons who have limited manual strength or dexterity, where there is more than one;
- provision of an accessible, lowered unit, where only one is provided on a floor level;
- they are located adjacent to an accessible route, recessed or with a leading edge that is cane detectable at a maximum of 680 mm (26 $\frac{3}{4}$ in) high, if they protrude 100 mm or more into an accessible route; and
- provision of high colour / tonal contrast, compared with background / surroundings for easy identification.

2.9.2 Clear Floor Space Requirements and Approach

Provide clear floor space as follows: (Figure 24)

- a minimum of 920 mm wide by 1525 mm depth (36 in by 60 in) for forward approach;
- a minimum of 1525 mm wide by 920 mm depth (60 in by 36 in) for side approach;
- ensure one fully unobstructed side adjoins an accessible route or adjoins another clear floor area; and
- ensure clear floor space does not overlap the minimum space of the accessible route used to access the drinking fountain.

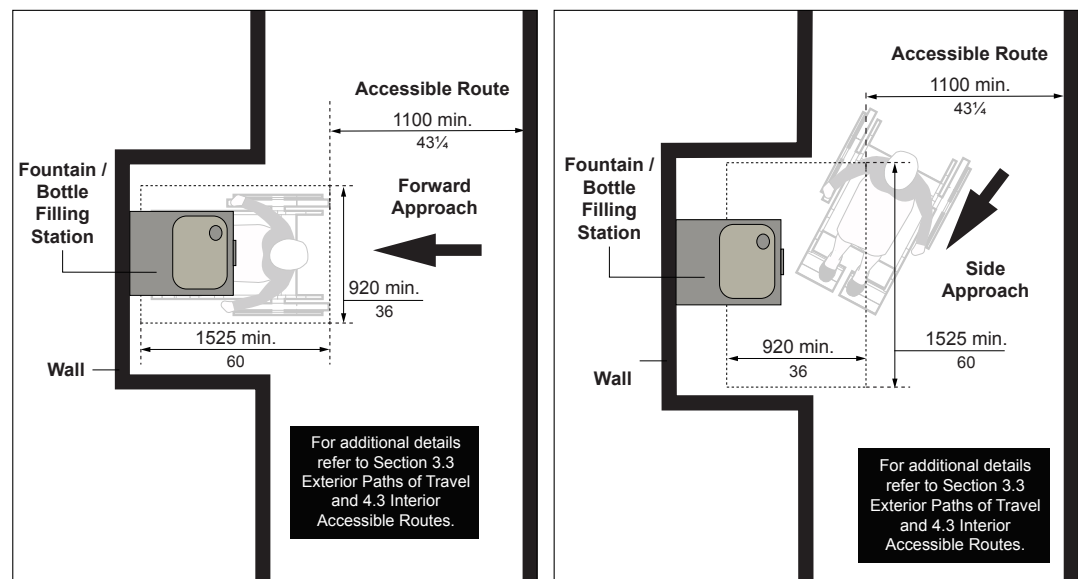


Figure 24: Clear Floor Space Requirements and Approach at Recessed Drinking Fountain / Bottle Filling Station - Plan View

Best Practice

Automatic or hands free operating controls are preferred.

2.9.3 Knee and Toe Clearances

Where accessible, lowered drinking fountains and bottle filling stations are provided: **(Figure 25)**

- ensure clear knee space under the fountain is 920 mm (36 in) wide by 200 mm (7⁷/₈ in) depth at a minimum of 735 mm (29 in) high above the floor;
- ensure clear toe space under the fountain is a minimum of 350 mm (13³/₄ in) high above finished floor to a depth a minimum of 300 mm (11³/₄ in) measured from clear knee space; and
- ensure the depth at the base of the fountain is a minimum of 700 mm (27¹/₂ in) .

2.9.4 Operating Controls

Ensure operating controls are: **(Figure 25)**

- not foot-operated;
- located at the front or on both sides of the drinking fountain; and
- automatic or operable with one hand, requiring a force of no more than 22 Newtons (5.0 pounds) to operate without turning / twisting of the wrist or pinching of the fingers.

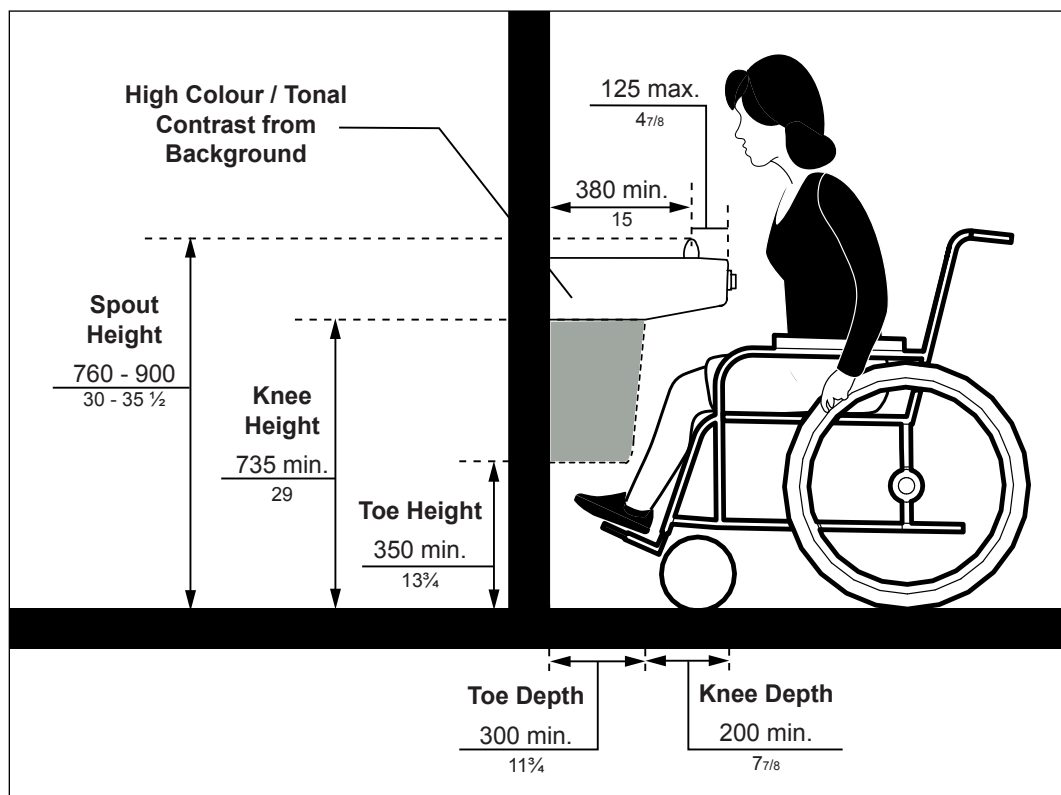


Figure 25: Drinking Fountain Design and Layout - Elevation View

Note

The purpose of requiring the drinking fountain to have a flow / projection of water at a minimum of 100 mm (4 in) high is so that a cup can be inserted under the flow of water for users who cannot use the drinking fountain.

2.9.5 Water Spout

For drinking fountain water spouts, ensure: **(Figure 25)**

- a. a mounting height between 760 mm (30 in) and 900 mm (35½ in) above the finished ground / floor for accessible units;
- b. to locate at a maximum depth of 125 mm (4⅞ in) from the front edge of the drinking fountain, including bumpers, and 380 mm (15 in) from the vertical support;
- c. water flows / projects a minimum of 100 mm (4 in) high; and
- d. water flows / projects at a vertical angle of:
 - i. 30 degrees maximum, where spouts are located less than 75 mm (3 in) from the front of the unit; or
 - ii. 15 degrees maximum, where water spouts are located between 75 mm and 125 mm (3 in and 4⅞ in) from the front of the unit.



Example of multiple height drinking fountains and bottle filling stations, City of London.



Materials and Finishes

2.10

Application

This section applies to key materials and finishes related to exterior ground and interior floor surfaces that address both accessibility and safety needs of diverse users, including users of mobility aids, and people with vision or hearing loss. Key strategies include:

- Preventing glare reflecting off of surfaces;
- Providing smooth and non-abrasive surfaces where grasping is required;
- Ensuring no tripping or slipping hazards due to uneven surfaces;
- Consistent application and strategic use of tactile features and high colour / tonal contrast, including for enhancing wayfinding as well as making elements of the built environment more prominent and easily identifiable; and
- Selecting materials and finishes that enhances overall mobility and accessibility for diverse users (e.g., firm, stable and slip resistant).

Note

Refer to other applicable sections of these standards, for detailed requirements related to the surfaces and finishes of tactile walking surface indicators (TWSI's), stairs, steps, ramps and handrails.

2.10.1 Design Requirements

2.10.1.1 Exterior Finish Materials

Key accessible design requirements for exterior finish materials include:

- a. surfaces for any accessible route to be firm, stable and slip-resistant, through the use and proper installation of:
 - i. concrete;
 - ii. asphalt;
 - iii. precast paving / unit pavers;
 - iv. interlocking brick / patio stones; and
 - v. other decking (e.g., with level surface).
- b. where wood decking is used, ensure:
 - i. boards are laid perpendicular to the primary path of travel / accessible route;
 - ii. joints are no greater than 6 mm ($\frac{1}{4}$ in) wide, with variations in level of no more than 3 mm ($\frac{1}{8}$ in); and
 - iii. surface and spacing allows water to drain effectively and prevent any ponding / accumulation.
- c. where gratings / grills are required as covers, ensure:
 - i. to locate them off of and away from the primary path of travel / accessible route;
 - ii. spacing of bars are located perpendicular to the primary path of travel / accessible route; and
 - iii. openings / spacing is a maximum of 13 mm ($\frac{1}{2}$ in).

2.10.1.2 Interior Finish Materials

Key accessible design requirements for interior finish materials include:

- a. where carpeting is used, ensure it is:
 - i. low-level loop construction;
 - ii. 10 or 12-gauge non-static fibre; and
 - iii. directly glued to sub-floor.
- b. where hard, monolithic materials are used, ensure the surfaces are firm, glare-free and slip-resistant;
- c. where floor tiles, bricks or pavers are used, ensure joints are flush (preferred) or a maximum of 6 mm ($\frac{1}{4}$ in); and
- d. for all walls in corridors and key circulation spaces, or adjacent to key features such as stair or ramp handrails, ensure surfaces are non-abrasive from the floor level to a minimum of 2000 mm ($78\frac{3}{4}$ in) above the finished floor.

Texture and Colour

2.11

Application

This section applies to the effective use of texture and colour related to exterior ground and interior floor surfaces and finishes that address accessibility, wayfinding and the safety needs of diverse users, including users of mobility aids, and people with vision or hearing loss. Key strategies include:

- Use of high colour / tonal contrast to assist with identifying elements or features from their mounting surfaces or surroundings, such as:
 - i. tactile walking surface indicators compared to ground or floor;
 - ii. a door handle compared to door surface / glazing; and
 - iii. accessible signage background compared to mounting surface (e.g., wall);
- Avoiding the use of any extensive colours or colour patterns that can result in visual confusion, which is especially problematic for users with vision loss and people with cognitive disabilities; and
- At the earliest phase of the design process, conducting a detailed review and study of how corridors are positioned as well as the overall exterior / interior layouts of spaces. This can then be coordinated with the later use of simple and consistent colour and texture patterns on floor and wall surfaces, that assists all users with navigating through spaces and areas, can support acoustical design for users with hearing loss, as well as overall wayfinding throughout an environment.

Reference

Sections 2, 3, 4, 5 and 6

Sec. 2.10 Materials and Finishes

Note

Other sections of these standards provide additional information related to the use of high colour / tonal contrast as well as textures and finishes where required and based on the specific design requirement or type of element / feature of the built environment.

Best Practice

More guidance on the application of high colour / tonal contrast, and the best practice of providing a colour and tonal contrast of 70% or more can be found in:

- Canadian National Institute for the Blind (CNIB, 2009), *Clearing Our Path - Universal design recommendations for people with vision loss.*
- Global Alliance on Accessible Technologies and Environments (GAATES, 2014), *Illustrated Technical Guide to the Accessibility Standard for the Design of Public Spaces.*

2.11.1 Design Requirements

2.11.1.1 General Strategies

Key strategies related to effective use and provision of texture and colour for diverse settings include:

- a. for exterior colour schemes, incorporating a high colour / tonal contrast, as a safety measure, to differentiate boundaries of objects, to distinguish objects from their background (e.g., accessible street furniture such as waste receptacles), and for enhancing overall spatial orientation;
- b. provision of tactile walking surface indicators (TWSI's), either for attention or directional purposes, using either truncated domes or elongated directional bars, for suitable texture and identification by foot or by long-cane, as detailed in other applicable sections of these standards;
- c. for exterior environments, use of stone texture for edging related to landscaping and pathways, that provide a distinct surface texture and contrast to the surroundings and that do not project, cause an obstruction or is a potential tripping hazard; and
- d. applying carborundum or other textured surface that is non-slip and with a high colour / tonal contrast for either exterior or interior stair nosings and changes in elevation at ramp landings (e.g., to identify change in surface slope).



Example of the use of high colour / tonal contrast to define edge of exterior accessible route, City of London.

Best Practice

Generally, for seniors and people with vision loss, colours considered to be in the warm end of the spectrum (yellow, orange, bright red, etc.) are easier to recognize than those at the cool end of the spectrum.

2.11.2 High Colour / Tonal Contrast

For both exterior and interior environments, the consistent and strategic use of high colour / tonal contrast is important for:

- a. defining edges or boundaries of distinctive objects (e.g., stair nosings, doors, handrails, exit doors, curbing along exterior pathways, street furniture etc.), which also enhances safety and wayfinding, especially for users with vision loss;
- b. visually defining the boundaries of open landscapes, accessible routes, interior corridors, rooms or spaces (i.e., where the wall meets the floor), including the use of baseboards in monochromatic interior environments that contrast with the adjacent wall and floor colours, to provide boundary definition, or raised edging and curbing for exterior environments;
- c. enhancing wayfinding, exemplified when used:
 - i. as part of a signage band located on walls at eye level, a band can be easier to follow than monolithic wall colouring, and can be the visual cue for other essential signs;
 - ii. to visually identify end walls or return walls in long corridors, that also clearly identifies a change of direction or the end of the space;

- iii. as part of supplementary textural cues (e.g., by using different but consistent floor textures, surfaces or materials, in primary and secondary accessible routes);
- iv. for spatial orientation and to clearly define edges or boundaries of materials, where they may change, such as carpeting or floor tiles where they define the junction between walls and floors, doorway recesses and corridor intersections, for example; and
- v. for exterior or interior signage systems (e.g., minimum 70% light reflectance value, or LRV is required). Refer to **Table 4** for examples of suitable high colour / tonal contrast.

Table 4: CNIB Recommendations on the Use of Colour / Tonal Contrast

Use noticeably different colours side by side to distinguish different key building elements. Examples of suitable combinations are:	<ul style="list-style-type: none"> · Black/white · Yellow/black · Chocolate brown/white · Dark blue/white · Dark red/white · Dark purple/white · Dark green/white · Orange/black
Avoid these colour combinations, which have limited / low contrast:	<ul style="list-style-type: none"> · Yellow/grey · Yellow/white · Black/violet · Red/black · Grey/white · Light blue/white
Avoid these colour combinations, which have limited / low contrast and are particularly difficult for people with colour blindness:	<ul style="list-style-type: none"> · Red/green · Blue/green

Source: Adapted from Canadian National Institute for the Blind (CNIB), “Clearing Our Path – Universal design recommendations for people with vision loss” (2009).



Example of effective use of textures for different flooring types and the use of high colour / tonal contrast at the junction between surfaces (e.g., carpet and tactile, resilient flooring). Additionally, example of corridor baseboard with high colour / tonal contrast compared to wall and floor surfaces, for enhanced wayfinding, City of London.

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Exterior Environments

3.0

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Parking

3.1

Application

This section applies to accessible parking spaces provided for the following types of exterior or interior parking facilities:

- parking garages or related structures (e.g., above or below grade);
- surface parking; and
- on-street parking.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 3.3 Exterior Paths of Travel
- Sec. 3.4 Curb Ramps and Depressed Curbs
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Exception

Off-street parking facilities that are used exclusively to park the following types of vehicles:

- buses;
- delivery vehicles;
- law enforcement vehicles;
- medical transportation vehicles, such as ambulances; and
- impounded vehicles.

The requirements in respect of off-street parking facilities do not apply to off-street parking facilities if:

- the off-street parking facilities are not located on a barrier-free path of travel, regulated under Ontario's Building Code; and
- the facility is one of multiple off-street parking facilities on a single site that serve a building or facility, where appropriate accessible parking facilities are provided elsewhere on the same site.

Best Practice

Four percent (4%) of the total number of parking spaces to be accessible.

Ensure accessible parking spaces are located as close as possible to any related site and facility amenities (e.g., parking meters or payment / ticketing machines, accessible routes and entrances, etc.).

Where facilities may expect a higher proportion of people with disabilities using their services (e.g., Seniors' Centers, Long Term Care and other medical facilities), the provision of additional accessible parking spaces is to be determined on a case by case basis. The appropriate number of spaces may be calculated based on the anticipated demand and a detailed review of the facility's occupancy levels.

3.1.1 Types of Parking

Three (3) types of designated accessible parking spaces are required where parking is provided: **(Figure 26a)**

- a. Type A spaces (minimum 3400 mm (133⁷/₈ in) wide) consist of wider parking spaces which accommodate larger vehicles such as vans that are equipped with transfer ramps and has signs that identifies the spaces as "VAN ACCESSIBLE". An Accessible Permit is required to use these spaces;
- b. Type B spaces (minimum 3400 mm (133⁷/₈ in) wide) are standard accessible parking spaces. An Accessible Permit is required to use these spaces; and
- c. Type C spaces (minimum 3200 mm (126 in) wide) are limited mobility / caregivers parking spaces. These are wider parking spaces that are near the entrance of the facility in order to accommodate people with limited mobility, expectant mothers, caregivers and persons who use a walker, cane, crutches or stroller. These spaces are not required for all facilities. A Permit is not required to use these spaces.

3.1.2 Provision

- a. provide Type A, B and C spaces in accordance with requirements identified in **Table 5**. Note: Space dimensions are shown in brackets as (mm / in).

Table 5: Requirements for the Provision of Designated Accessible Parking Spaces

Total Number of Parking Spaces	Total Number of Accessible Spaces Required	Number of Type A (Van Width) (3400 / 133 ⁷ / ₈)	Number of Type B (Standard Width) (3400 / 133 ⁷ / ₈)	Number of Type C (Limited Mobility Width) (3200 / 126)
1- 12	1	1	0	1
13-25	1	0	1	1
26 - 50	2	1	1	1
51 - 75	3	1	2	2
76 - 100	4	2	2	2
101 - 133	5	2	3	2
134 - 166	6	3	3	2
167 - 250	7	3	4	3
251 - 300	8	4	4	3
301 - 350	9	4	5	4
351 - 400	10	5	5	4
401 - 450	11	5	6	4
451 - 500	12	6	6	4
501 - 550	13	6	7	4
551 - 600	14	7	7	4
601 - 650	15	7	8	5
651 - 700	16	8	8	5
701 - 750	17	8	9	6

Table 5: Requirements for the Provision of Designated Accessible Parking Spaces
(Continued)

Total Number of Parking Spaces	Total Number of Accessible Spaces Required	Number of Type A (Van Width) (3400 / 1337/8)	Number of Type B (Standard Width) (3400 / 1337/8)	Number of Type C (Limited Mobility Width) (3200 / 126)
751 - 800	18	9	9	6
801 - 850	19	9	10	7
851 - 900	20	10	10	7
901 - 950	21	10	11	8
951 - 1000	22	11	11	8
1001 and over	11 +1 % of total	(1) Where an even number is required, provide equal number of Type A and B (2) Where an odd number is required, provide equal number of Type A and B plus an additional Type B		4, plus 1 for each 100 over 500

- b. where a parking facility serves multiple buildings or accessible entrances, distribute accessible parking spaces to enable users to park near as many accessible entrances as possible;
- c. where more than one parking facility is provided at a site:
 - i. ensure the number and type of accessible parking spaces provided is determined based on the total number of parking spaces required for each of the separate parking facilities; and
 - ii. locate and distribute accessible parking spaces among the off-street parking facilities in a manner that provides substantially equivalent or greater accessibility in terms of distance from an accessible entrance or user convenience (e.g., protection from weather, lighting, security and comparative maintenance);
- d. where the parking facility is a multi-level parking facility, ensure the accessible parking spaces are easy to identify and have at least one accessible route leading to an entrance, exit or elevator lobby.

Note

The values in **Table 5** are derived from formulas contained in the Regulation. The Regulation uses percentages to determine the number of accessible spaces and ratios to divide them between Type A or Type B.

Where an uneven number of accessible parking spaces are required, the extra Type B space may be changed to a Type A space.

Best Practice

Ensure accessible parking spaces are located within a maximum of 30 m (98 ft 5 in) from accessible entrance(s).

Accessible parking spaces and adjacent access aisles should be regularly maintained, kept clear of debris and snow, and where possible, have overhead protection for users from the elements (e.g., such as direct sun, rain or snow).

Avoid having the accessible route cross through a drive aisle. Pedestrians should not have to travel behind parked vehicles or move along roadways. Ensure any pedestrian crossing or travel area is clearly marked so it is visible to drivers and pedestrians.

Where spaces are configured such that the front or rear of parked vehicles is immediately adjacent to a pedestrian walkway, consider a design that prevents vehicle overhangs which could reduce the width of the walkway.

3.1.3 On-Street Parking

3.1.3.1 Consultation Requirements

When constructing new or redeveloping existing on-street parking spaces, consultation on the need, location and design of accessible on-street parking spaces must occur with:

- a. the public and persons with disabilities; and
- b. the City of London Accessibility Advisory Committee.

3.1.3.2 Additional Considerations

The City of London provides special parking privileges in public parking areas and on public roadways to holders of a valid Accessible Parking Permit. Any person who holds an Accessible Parking Permit (APP) is eligible. Detailed information on the City's APP program, including on-street privileges, off-street privileges, and restrictions of the program can be found on the City of London website.

3.1.4 Design and Layout

3.1.4.1 General Features

- a. locate accessible parking spaces as close as possible to an accessible entrance and integrate with an accessible route;
- b. maximum running slope of surface at 1.5%;
- c. maximum cross-slope of surface at 1%;
- d. ensure vertical height clearance of 2750 mm (108¼ in) (exterior, minimum) or 2590 mm (102 in) (interior, minimum) at designated parking spaces, along the vehicle access and egress routes, and at any vehicular entrance where required;
- e. ensure ground surface is firm, stable and slip-resistant;
- f. ensure spaces are clearly indicated by high colour / tonal contrasted and white coloured line markings; and
- g. for all types of spaces, provide consistent and minimum lighting level of 30 lux (3 foot candles) over designated parking spaces (all types). **(Refer to Section 5.7, Lighting).**

3.1.4.2 Perpendicular Parking Space Layout

Where designated accessible parking spaces (e.g., perpendicular layout) are provided: **(Figure 26a)**

- a. ensure minimum width of:
 - i. 3400 mm (133⁷/₈ in) for “Type A” van accessible spaces;
 - ii. 3400 mm (133⁷/₈ in) for “Type B” standard parking spaces; and
 - iii. 3200 mm (126 in) for “Type C” limited mobility / caregivers spaces.
- b. provide an access aisle, for Type A and B spaces, adjacent and parallel to each accessible parking space that:
 - i. is a minimum of 2000 mm (78³/₄ in) wide, or 1525 mm (60 in) wide where technically infeasible in a retrofit application;
 - ii. extends the full length of the space and does not cross any vehicular route;
 - iii. is clearly indicated by high colour / tonal contrast diagonal pavement markings, and where protected by bollards (optional), with a minimum clear width of 1220 mm (48 in) between bollards; and
 - iv. connects with adjacent accessible path of travel, through level access, curb ramp (centered on access aisle) or depressed curb (with required tactile walking surface indicator (TWSI) / tactile attention indicator (TAI));
- c. ensure length of 5500 mm (216¹/₂ in); and
- d. ensure provision of vertical signage, centered in front of the parking space and pavement signage, centered near the back of the parking space.

Note

Where two accessible parking spaces are provided adjacent to each other, they may share an access aisle **(Figure 26a)**.



Accessible parking spaces with shared access aisle connected to pedestrian route.



Accessible parking spaces with access aisle and curb ramp, City of London.

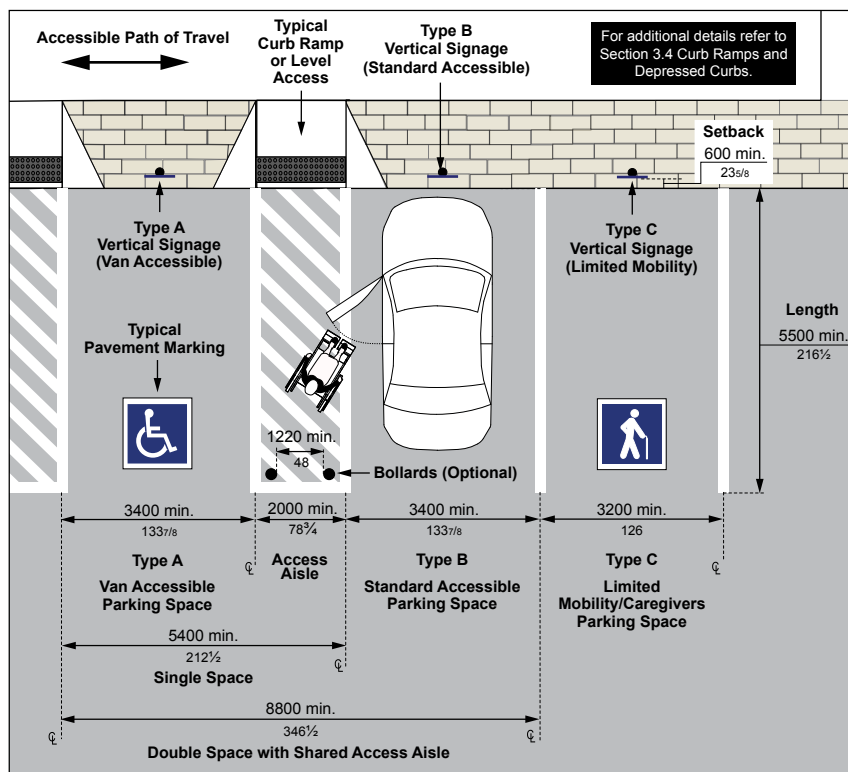


Figure 26a: Perpendicular Accessible Parking Space Dimensions - Plan View

3.1.4.3 Parallel Parking Space Layout

Where parallel parking spaces are provided: (Figures 26b, 27a, 27b & 28a)

- a. ensure minimum width of 3900 mm (153½ in);
- b. ensure minimum length of 5400 mm (212½ in);
- c. provide access aisle at rear of space or recessed into adjacent boulevard that:
 - i. extends full width or length of space;
 - ii. is 2000 mm (78¾ in) wide preferred, or a minimum of 1525 mm (60 in) wide, where technically infeasible due to roadway, boulevard and parking space layout constraints;
 - iii. is clearly indicated by high tonal contrasted and white coloured diagonal pavement markings; and
 - iv. leads directly to an accessible curb ramp and path of travel;
- d. provide a minimum clear space of 2500 mm by 2500 mm (98½ in by 98½ in) at sidewalk level and adjacent to the passenger side or recessed access aisle; and
- e. ensure provision of vertical signage, Type A, located at the front of space (on the sidewalk) and pavement signage, centered in the parking space.

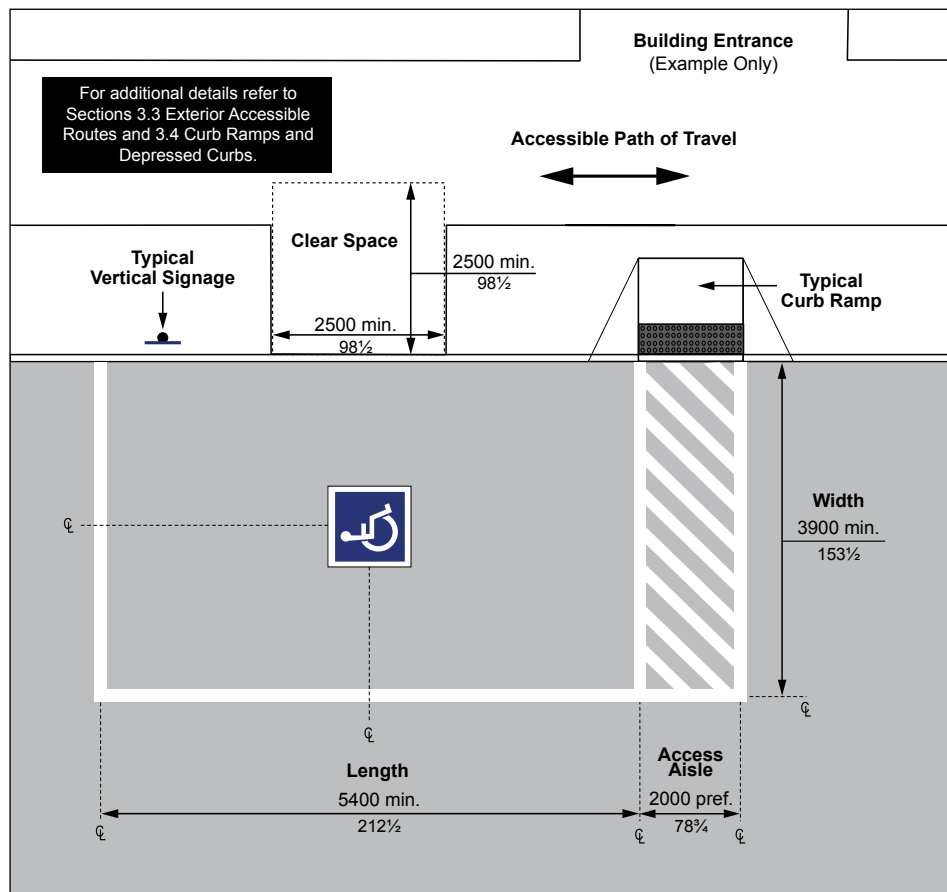


Figure 26b: Parallel Parking Space Dimensions - Plan View

3.1.5 Signage and Pavement Markings

For signage and pavement markings: (Figures 27a, 27b, 27c, 28a & 28b)

- ensure spaces are clearly designated with pavement markings and vertical signage, containing the International Symbol of Accessibility or symbol for limited mobility;
- provide directional signage with appropriate directional arrows, marked with the International Symbol of Accessibility, to indicate the location of accessible parking spaces, and / or the location of the nearest accessible entrance if the spaces or entrance are not easy for users to locate when entering or using the site; and
- for indoor parking facilities, incorporate a sign at the vehicle entrance indicating the minimum overhead clearance at the accessible parking spaces and along the vehicle access and egress routes.

Note

Refer to the City of London’s Parking By-law for signage requirements.

Wherever possible, locate parking signs away from pedestrian routes, as they may constitute an overhead and / or projection hazard.

3.1.5.1 Vertical Signage

Vertical signage is required as follows: (Figures 27a, 27b & 27c)

- mark with International Symbol of Accessibility or symbol for limited mobility, which must not be mounted on fences or building faces;
- ensure a minimum size of 300 mm (11¾ in) wide by 450 mm (17¾ in) high;
- mount at height of 1500 mm (59 in) to 2000 mm (78¾ in) centered (e.g., wall or post-mounted), from ground / floor and in front of space, with a maximum set back 600 mm (23⅝ in) from the front edge of the parking space;
- ensure a high colour / tonal contrast is provided between sign and background environment or mounting surface;
- provide information text, compliant with City By-law requirements; and
- provide signage that identifies Type A spaces as “VAN ACCESSIBLE”.



Example of Type A “VAN ACCESSIBLE” vertical signage, City of London.

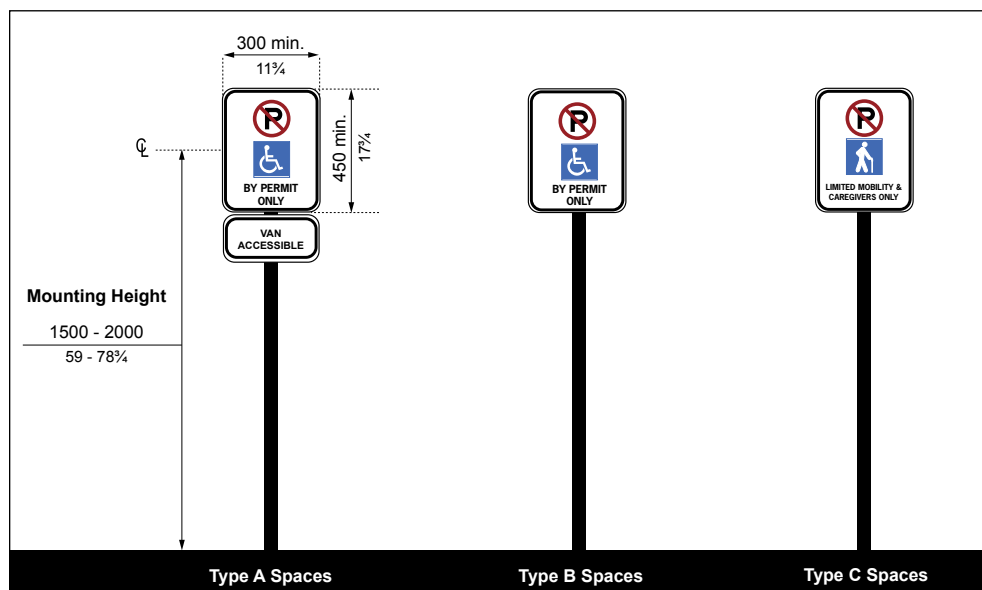


Figure 27a: Designated Parking Spaces, Vertical Signage - Mounting Height and Typical Dimensions

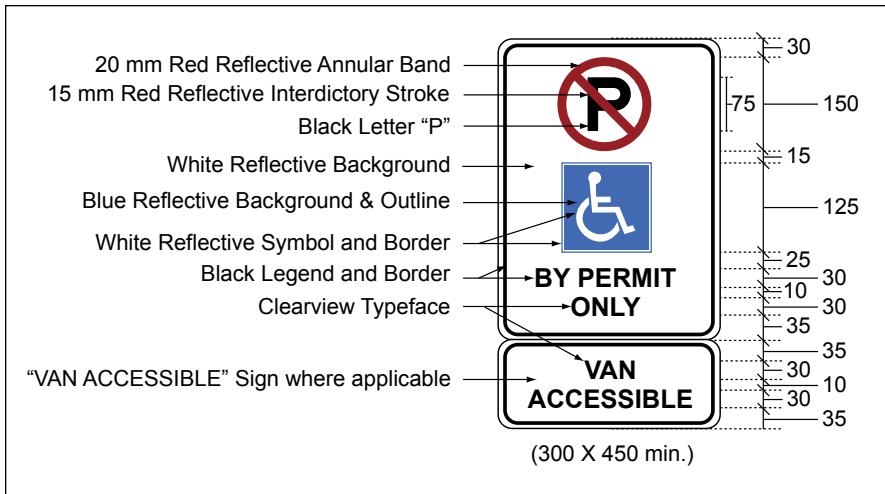


Figure 27b: Type A Vertical Signage - Detailed Dimensions



Figure 27c: Type C Vertical Signage - Detailed Dimensions

3.1.5.2 Pavement Marking

- a. mark with International Symbol of Accessibility or symbol for limited mobility: **(Figure 28a & 28b)**
 - i. ensure 1525 mm (60 in) wide by a minimum of 1525 mm (60 in) depth;
 - ii. provide a white or yellow border with a blue background field colour;
 - iii. locate centered, near the back of the space for perpendicular (e.g., 90 degree) or angled parking spaces and centered for parallel parking spaces; and
- b. ensure all pavement markings are slip resistant and clearly visible through use of high colour / tonal contrast compared to the surface of the parking space.

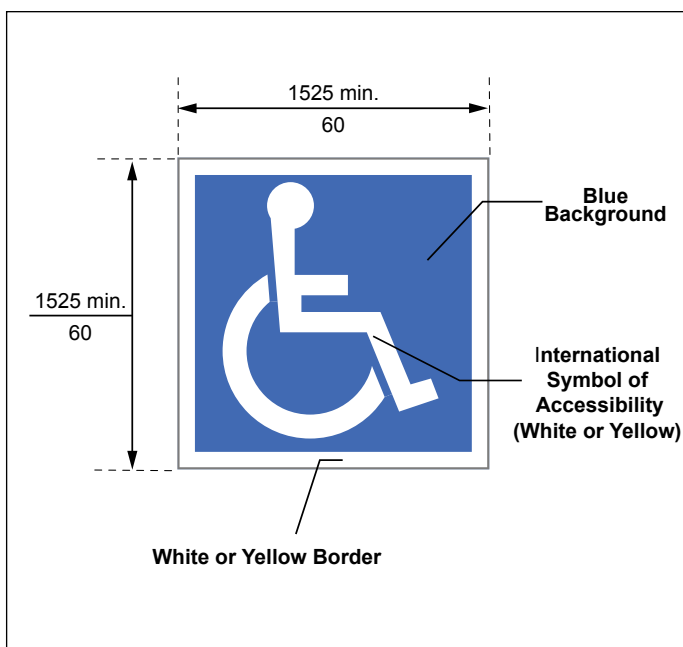


Figure 28a: Accessible Parking Pavement Marking

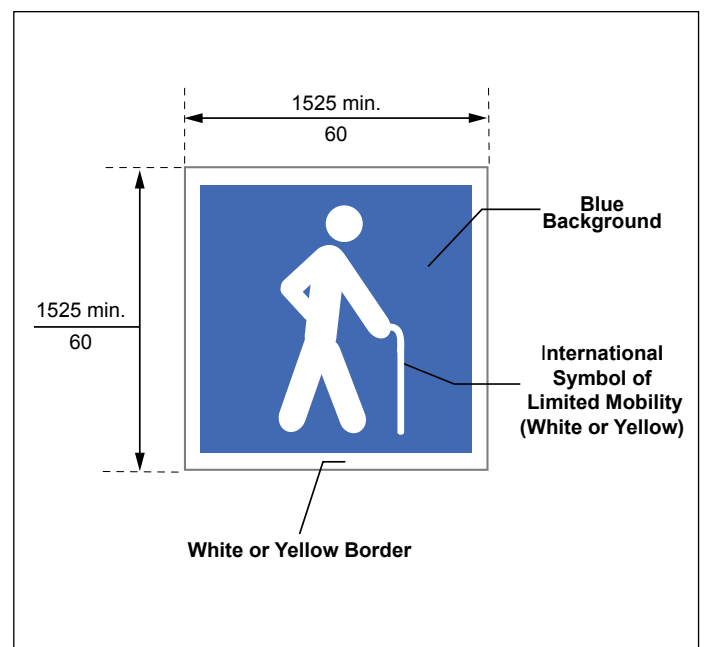



Figure 28b: Limited Mobility Pavement Marking



Passenger Loading Zones

3.2

Application

This section applies to exterior passenger loading and drop-off zones where passengers transfer from vehicles to a pedestrian area which provides an accessible route to a facility.

Passenger loading and drop-off zones are important features for:

- people who have difficulty walking long distances or have limited stamina;
- users of mobility aids; and
- people who travel with companions or caregivers (e.g., person with vision loss or cognitive disability, the very young, and seniors).

Reference

- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 3.3 Exterior Paths of Travel
- Sec. 3.4 Curb Ramps and Depressed Curbs
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Note

Transit stops, shelters and related amenities are not classified as part of passenger loading zones.

If the passenger loading zone is a designated mobility transit stop or zone, it shall comply with all relevant City by-laws.

Note

In a retrofit situation where providing a 2500 mm (98½ in) wide access aisle is technically infeasible, the access aisle width may be reduced to 2000 mm (78¾ in) **(Figure 29b)**.

Use of bollards may be an alternate design strategy.

3.2.1 Design and Layout

Where a passenger loading zone (PLZ) is provided: **(Figures 29a & b)**

- a. locate the Passenger Loading Zone (PLZ) as close as possible to the nearest accessible entrance or a maximum of within 30 m (98 ft 5 in);
- b. locate the PLZ away from any traffic flow and design so that users avoid entering any adjacent vehicular routes and drive aisles;
- c. where practical, provide overhead protection (e.g., a canopy to protect users from weather conditions) with a minimum clearance (i.e., vertical dimension) of 3600 mm (141¾ in) throughout vehicular pull-up space and passenger loading zone;
- d. include a side access aisle that:
 - i. is adjacent, parallel and at the same level as the vehicular pull-up space;
 - ii. is a minimum of 2500 mm (98½ in) wide by 7400 mm (291½ in) long;
 - iii. provides a minimum clearance height of 3600 mm (141¾ in) at the vehicle pull-up space and along the vehicle access and egress routes, with signage indicating the clearance height; and
 - iv. provides diagonal pavement markings (e.g., yellow or white colour and are clearly visible through use of high colour tonal contrast compared to surface), extending the full length of the space;
- e. provide at least one curb ramp, for users of mobility aids, where there is a change in level;
- f. where the accessible route and the access aisle are not separated by a curb and level access is provided, install tactile walking surface indicators (TWSI's) that:
 - i. are detectable by foot or cane;
 - ii. are clearly visible through the use of high colour / tonal contrast compared to adjacent mounting surface;
 - iii. extend across the full length of the space; and
 - iv. meet the requirements identified for tactile attention indicator (TAI) surfaces **(Refer to Section 2.6, Tactile Walking Surface Indicators)**.

3.2.2 Vertical Signage

Vertical signage is required as follows: **(Figure 29c)**

- a. mark with the International Symbol of Accessibility to formally designate passenger loading and drop-off zones;
- b. ensure a minimum size of 300 mm (11¾ in) wide by 450 mm (17¾ in) high;
- c. mount at height of 1500 mm (59 in) to 2000 mm (78¾ in) centered (e.g., post-mounted), from ground / floor; and
- d. provide information text, compliant with City By-law requirements (e.g., "ACCESSIBLE LOADING ZONE").

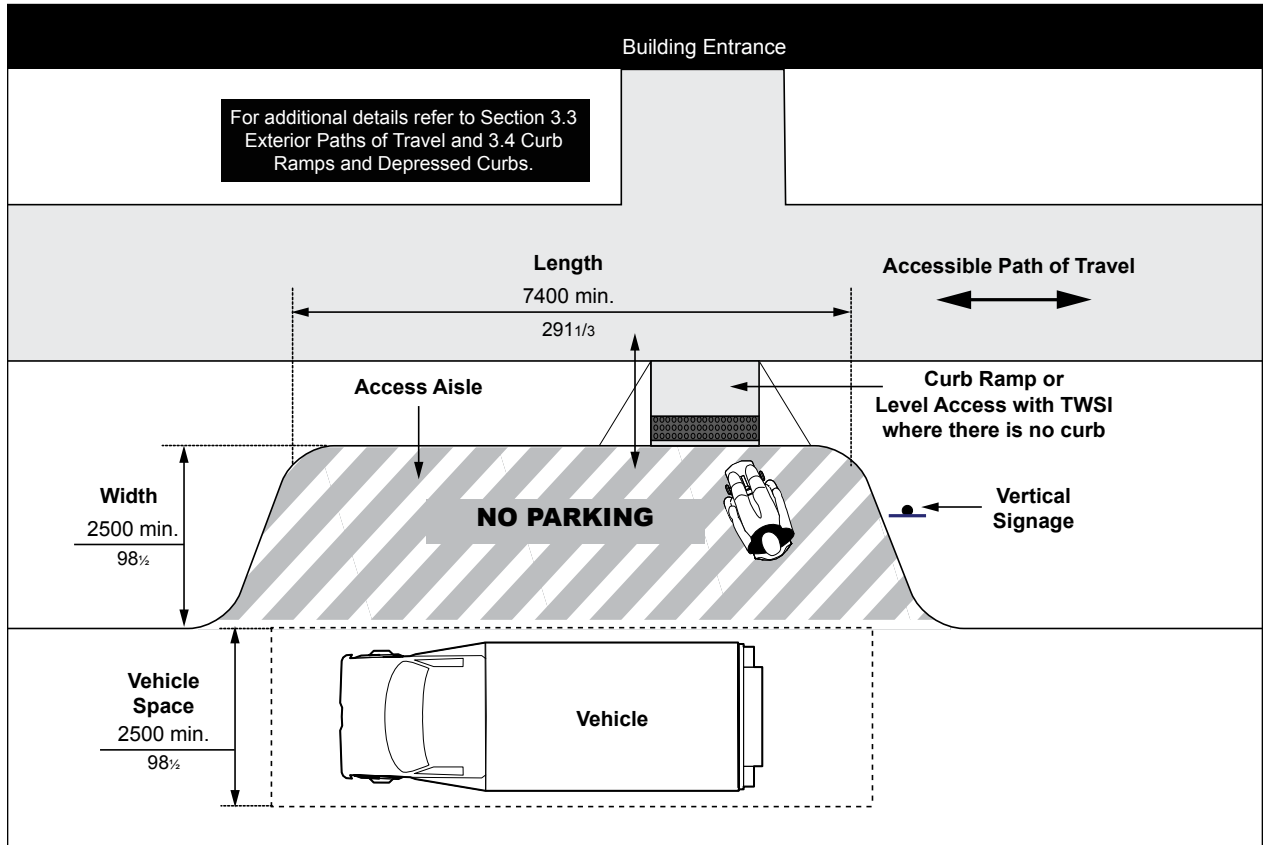


Figure 29a: Passenger Loading Zone - Plan View

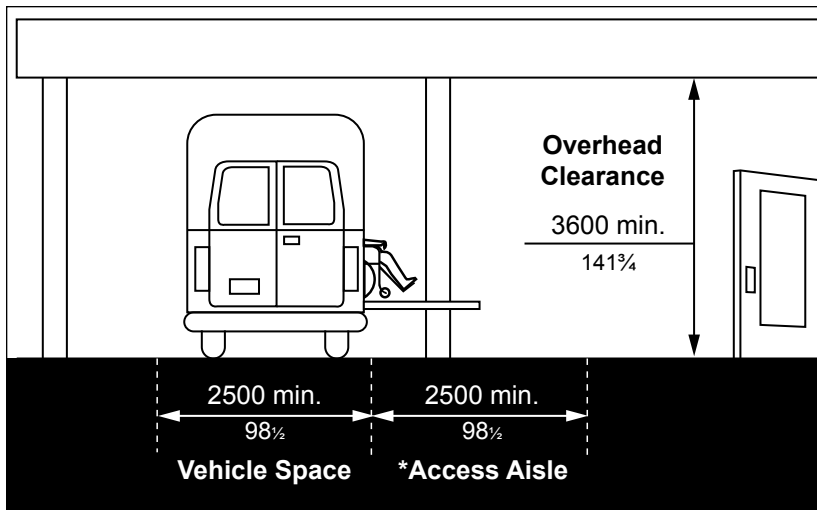


Figure 29b: Clearances at Passenger Loading Zone (* Refer to Note)

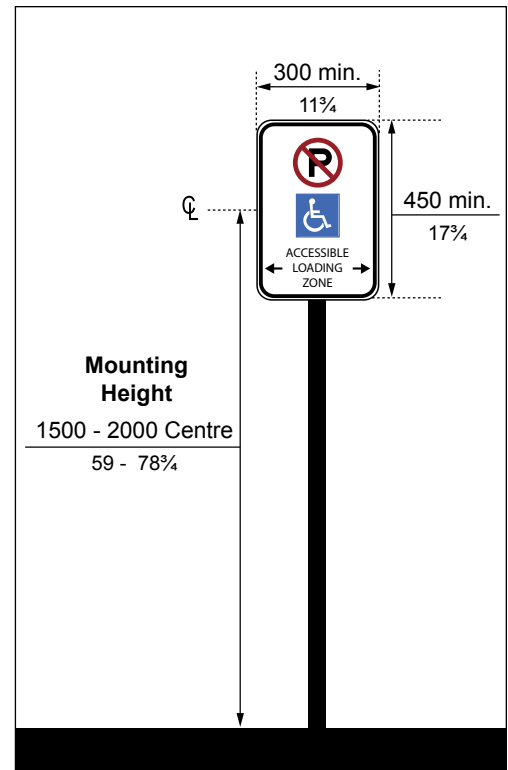


Figure 29c: Accessible Loading Zone Vertical Signage

A photograph of an exterior path of travel, showing a paved walkway curving through a grassy area with trees and a building in the background. The image is overlaid with a blue tint.

Exterior Paths of Travel

3.3

Application

This section applies to exterior paths of travel, which typically include, but are not limited to:

- pedestrian circulation routes that serve as connections between the property line / site boundary of a facility, or at facility entrances, exits, elements or amenities;
- public right-of-ways (e.g., sidewalks and walkways);
- ramps; and
- curb ramps and depressed curbs.

This section applies to sidewalks or walkways used for pedestrian travel, intended to serve a functional purpose and that do not provide a recreational experience.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.2 Ramps
- Sec. 2.4 Guards and Handrails
- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 2.7 Rest Areas
- Sec. 3.4 Curb Ramps and Depressed Curbs
- Sec. 5.7 Lighting

Note

Shallower slopes for ramp surfaces are always preferred.

Walkways that are part of an exterior accessible route / path of travel having a slope steeper than 1 in 20 (5%), must be designed as ramps.

Best Practice

Where possible, provide clear width a minimum of 2000 mm (78¾ in) for exterior paths of travel.

Note

The contrasting surface adjacent to the accessible route may be accomplished by landscaping features such as grass or alternative textured material. Consider locating all planting and street furniture in an amenity zone, adjacent to the sidewalk or walkway, and using a different tone or material to emphasize the difference in function of the amenity zone (**Refer to Section 3.6, Site Furniture**).

It is important that the cross slope be minimal to allow for adequate drainage. The greater the cross slope, the more likely it will affect the balance of an individual while walking or using a mobility aid.

3.3.1 General Features

For exterior accessible routes or paths of travel: (**Figure 30c**)

- ensure ground surfaces are firm, stable and slip-resistant;
- provide adequate drainage to prevent water accumulation;
- ensure headroom clearance is not less than 2100 mm (82¾ in);
- provide lighting levels consistently over frequently used pedestrian routes, including walkways and paths, at a minimum 50 lux (5 foot candles), measured at the ground (**Refer to Section 5.7, Lighting**);
- provide a high colour / tonal or textural contrast on ground surfaces to help define primary accessible routes and assist with wayfinding;
- where a pedestrian route crosses or joins a vehicular route and the walking surfaces are not separated by curbs, railings or other elements between the pedestrian and vehicular areas, provide tactile attention indicators (TAI), continuous along the full length of the crossing boundary (**Refer to Section 2.6, Tactile Walking Surface Indicators**); and
- consider providing level rest areas and stopping places along the path of travel, especially sloped walkways longer than 30 m (98 ft 5 in), for users of mobility aids and people with reduced stamina and meet the requirements identified for rest areas and seating (**Refer to Section 2.7, Rest Areas**).

3.3.2 Clear Width

Provide required clear width as follows: (**Figures 30a & 30b**)

- provide a minimum clear width of 1600 mm (63 in) or 1830 mm (72 in) preferred for higher traffic areas and to allow two users of mobility aids to pass;
- where the clear width of exterior paths of travel is less than a minimum of 1830 mm (72 in), provide a minimum passing area, 1830 mm wide by 1830 mm long (72 in by 72 in) at intervals of 30 metres (98 ft 5 in) or less;
- where passing areas are provided, ensure they are not considered to be part of any rest area that may also be provided; and
- ensure the entrance to exterior paths of travel provide a clear opening a minimum of 950 mm (37½ in), whether the entrance includes a gate, bollard or other entrance design.

3.3.3 Running and Cross Slopes

For exterior accessible routes or paths of travel, provide required running and cross slopes as follows: (**Figures 31a & 31b**)

3.3.3.1 Running Slope

- ensure maximum running slope is 1:20 (5%), excluding curb ramps, or design as a ramp if running slope exceeds 1:20 (5%); and

- b. where the exterior path of travel is a sidewalk, a running slope greater than 1:20 (5%) is allowed but it cannot be steeper than the slope of the adjacent roadway.

3.3.3.2 Cross Slope

- a. provide a maximum cross slope of 1:50 (2%), where the surface is asphalt, concrete or some other hard surface.

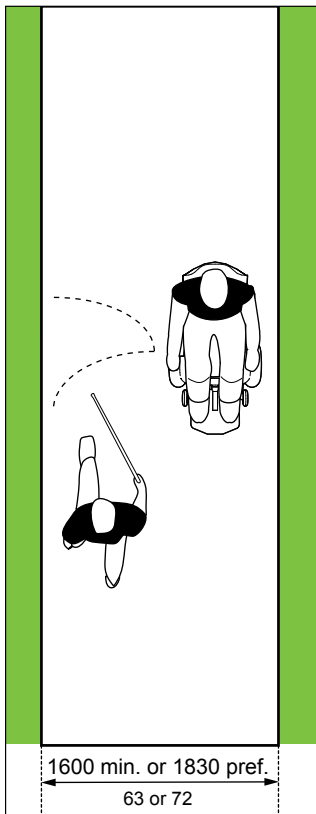


Figure 30a: Minimum Clear Width of Exterior Path of Travel

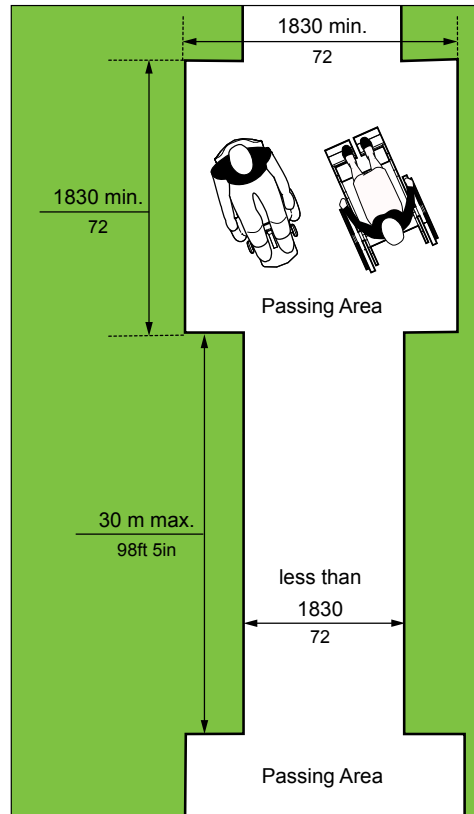


Figure 30b: Reduced Clear Width and Required Passing Area

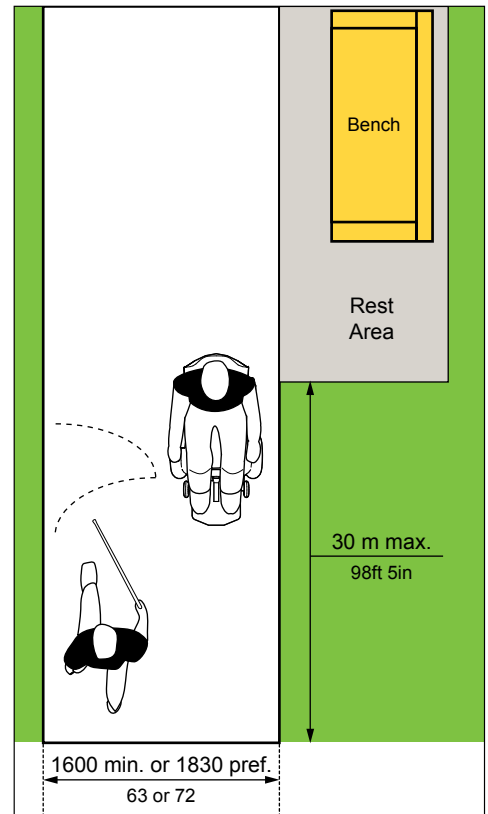


Figure 30c: Rest Area

Note

EXCEPTION: A maximum cross slope of 1:20 (5%) is permitted where conditions do not allow (e.g., a retrofit), or 1:10 (10%) maximum in all other cases (e.g., where surface is not asphalt, concrete or some other hard surface).

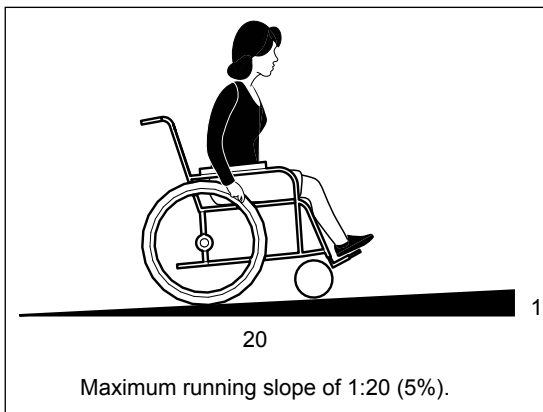


Figure 31a: Running Slope

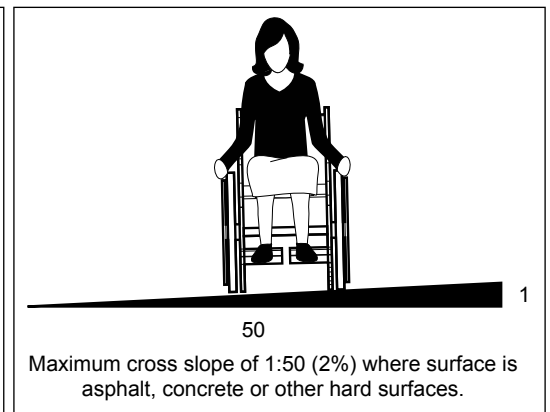


Figure 31b: Cross Slope

3.3.4 Changes in Level

- a. where there is a change in level or drop-off immediately adjacent to the accessible path of travel: **(Figures 32a & 32c)**
 - i. provide colour contrasted curb or other barrier protection, minimum of 100 mm (4 in) high above path of travel, where change in level is between 200 mm and 600 mm (7 $\frac{7}{8}$ in and 23 $\frac{5}{8}$ in); and
 - ii. provide guards mounted at a minimum height of 1070 mm (42 in), measured vertically to the top of the guard from the ground surface, where change in level is more than 600 mm (23 $\frac{5}{8}$ in) or where the adjacent surface within 1200 mm (47 in) from the accessible route has a slope of more than 1:2;
- b. ensure slope requirements are provided, based on the height of the level change **(Refer to Section 2.1, Ground and Floor Surfaces).**

Note

Ensure curb or other barrier protection is designed to allow surface drainage.

Exception

Guards are not required if the slope of the surface adjacent to the accessible route is not steeper than 1:2 within 1200 mm (47 in) from the accessible route **(Figure 32b).**

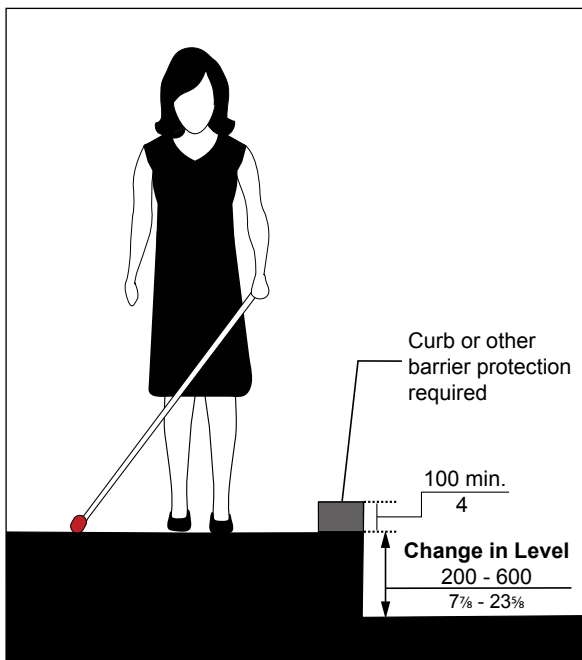


Figure 32a: Change in Level - Edge Protection Required

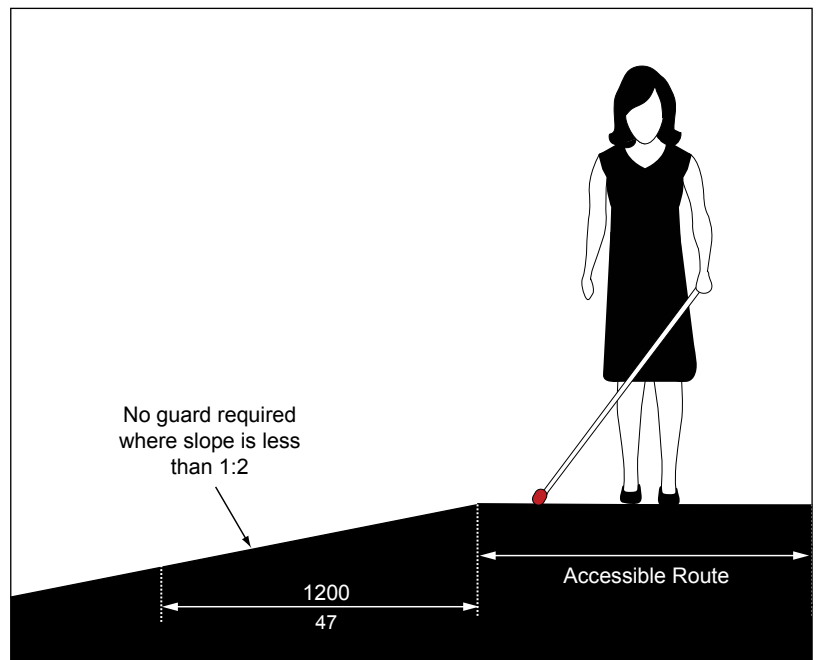


Figure 32b: Exception - No Guard Required

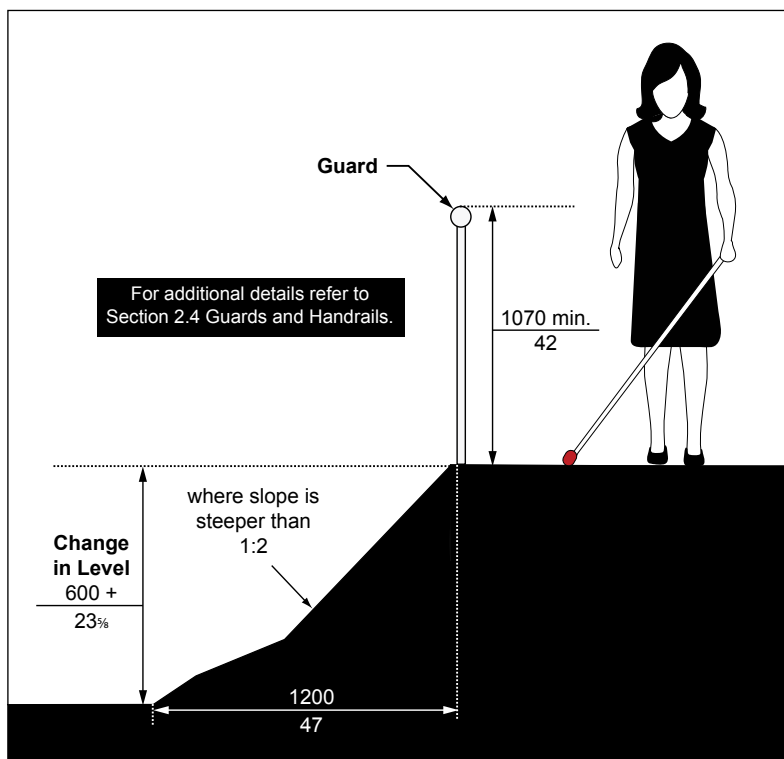



Figure 32c: Change in Level - Guard Protection Required

3.3.5 Rest Areas

When constructing new or redeveloping existing exterior paths of travel intended to be maintained, **Refer to Section 2.7, Rest Areas.**



Curb Ramps and Depressed Curbs

3.4

Application

Curb ramps and depressed curbs help people with disabilities safely and independently negotiate level changes on public sidewalks and other pedestrian routes. They are required when there is a change in level between the exterior path of travel and adjacent vehicular route.

The provision of curb ramps and depressed curbs ensures a continuous accessible path of travel between vehicular and pedestrian routes, for the following typical locations:

- pedestrian crossings at intersections;
- parking spaces, passenger loading zones and related access aisles; and
- any other exterior pedestrian route where there are elevation changes.

The choice between providing a curb ramp or a depressed curb depends on physical characteristics, volume of pedestrian traffic and space availability. The flared sides of the curb ramps provide additional directional assistance, however, having a raised curb between curb ramps may not be suitable for high pedestrian traffic locations, or possible due to intersection geometry, and therefore a depressed curb may be required.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 3.1 Parking
- Sec. 3.2 Passenger Loading Zones
- Sec. 3.3 Exterior Paths of Travel

Note

“Curb ramp” means a ramp that is cut through a curb at a roadway and slopes up to a sidewalk. Types are usually categorized by their structural design and how they are positioned relative to the sidewalk and roadway. Permitted curb ramp types include:

- perpendicular - one that is aligned so that the ramp is generally perpendicular to the centerline of the roadway, and users will generally be travelling perpendicular to traffic when they enter the street at the bottom;
- parallel - one that has two ramps leading towards a centre level landing at the bottom; and
- combination of perpendicular and parallel.

“Depressed curb” means a seamless gradual slope at transitions between sidewalks and walkways, typically used at intersections.

Best Practice

Provide a maximum running slope of 5% and cross slope of zero.

Provide a counter slope less than 11%.

Note

It can be very difficult for people with visual disabilities to orient themselves relative to the crosswalks at larger corners of intersections designed with depressed curb ramps.

Alternatively, consider providing a full height curb around the corner radius with appropriate transitions between the separate depressed curbs or curb ramps at each crosswalk.

3.4.1 Design and Layout

Key design requirements for curb ramps and depressed curbs include:

- a. a stable, firm and slip-resistant surface with a smooth transition between curb ramp and adjacent surfaces (e.g., roadway, sidewalk and top landing);
- b. align the curb ramp or depressed curb with the direction of travel (e.g., crosswalks) and with the curb ramp or depressed curb on the opposite side of the roadway to help users orient themselves and to allow someone to maintain a straight line of travel, especially for users with vision loss;
- c. design to provide suitable drainage, to prevent water, snow and ice accumulation within the accessible path of travel; and
- d. ensure gratings and other openings are not placed on curb ramps, depressed curbs or within pedestrian crossings.

3.4.2 Width

Provide clear width as follows: **(Figures 35a & 35b)**

- a. a minimum clear width of 1525 mm (60 in), exclusive of flared sides;
- b. where the width of the sidewalk is greater than 1525 mm (60 in), provide a curb ramp with the same width as the sidewalk, exclusive of flared sides; and
- c. where the alternate curb ramp configuration is used, the width of the top of the depressed curb may be reduced to a minimum of 1220 mm (48 in).

3.4.3 Running and Cross Slopes

For the running and cross slopes, ensure: **(Figure 34)**

- a. maximum running slope is between 1:50 and 1:20 (2% and 5%);
- b. for retrofit applications (e.g., where it is technically infeasible to achieve these slopes), provide a maximum running slope of 8%;
- c. maximum cross slope of 1:50 (2%); and
- d. where the counter slope at a curb ramp or depressed curb is greater than 11%, provide a transition area that:
 - i. extends the full width of the curb ramp;
 - ii. begins at the base of the curb ramp and extends to a length of at least 600 mm (23⁵/₈ in) on the street; and
 - iii. has a maximum cross slope of 1:50 (2%).

Best Practice

Provide a landing of 1700 mm by 1700 mm (67 in by 67 in) or more where possible to accommodate larger wheeled mobility aids.

Note

Flared sides are not considered part of the accessible path of travel.

Landings are not required at depressed curb ramps since the associated shallow slope of the surface is suitable.

Landings shall be permitted to overlap other landings and clear space.

Concrete border width around TAI may be increased and adjusted to suit corner geometry.

3.4.4 Flared Sides

For flared sides, ensure: **(Figures 33 & 35a)**

- surface is stable, firm, slip-resistant and non-glare;
- the sides are clearly demarcated with grooved edges;
- a maximum cross slope of 8% is provided, measured parallel to the curb line, where pedestrians are likely to walk across them; and
- a minimum clear width of 1525 mm (60 in).

3.4.5 Landing

For landings, ensure: **(Figures 35b & 35e)**

- a level landing at a minimum length and width of 1220 mm (48 in) is provided at the top of the curb ramp or a level rest area at a minimum length of 1400 mm (55 in) for curb ramps at wide median sidewalk crossings;
- an additional landing if users must change direction while using the curb ramp; and
- running and cross slopes are a maximum of 2% (1:50).

3.4.6 Tactile Attention Indicators (TAI)

Where curb ramps or depressed curbs are provided on an exterior path of travel, provide tactile attention indicators (TAI), as follows: **(Figures 33, 35a & 35b)**

- at the bottom portion of the curb ramp or depressed curb, set back 150 mm to 200 mm (5 $\frac{7}{8}$ in to 7 $\frac{7}{8}$ in) from the back edge of the curb, and following any curvature in the curb;
- are installed in concrete and with a minimum 150 mm (5 $\frac{7}{8}$ in) concrete border around the TAI for locations within a non-concrete sidewalk or walkway;
- are installed with the tops of the domes level with the adjacent concrete surface;
- have drainage cuts from the lower corners and other low points of the TAI to the curb;
- have a minimum depth of 610 mm (24 in);
- ensure the TAI extends along the full width of the curb ramp;

- g. for depressed curb ramps, ensure TAI extends along the bottom portion of the depressed curb that is flush with the roadway, and to a minimum width of 1525 mm (60 in); and
- h. for detailed requirements related to TAI surfaces, **Refer to Section 2.6, Tactile Walking Surface Indicators.**

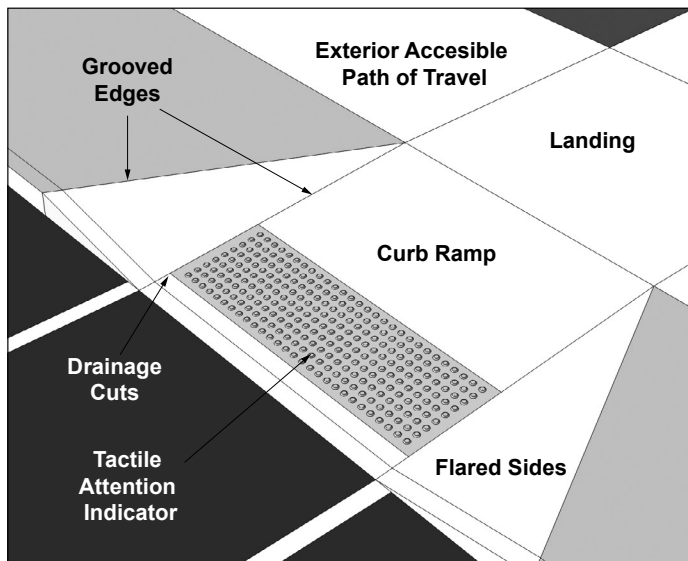


Figure 33: Typical Curb Ramp Features

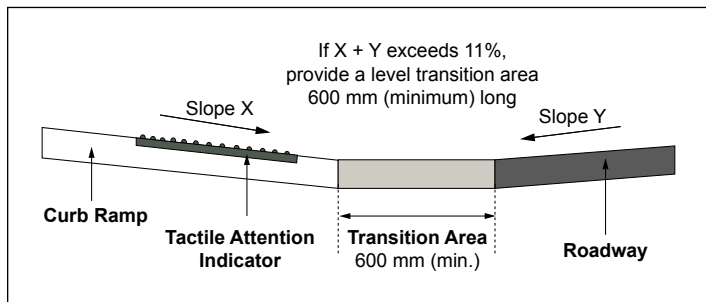


Figure 34: Transition Area - Counter Slope

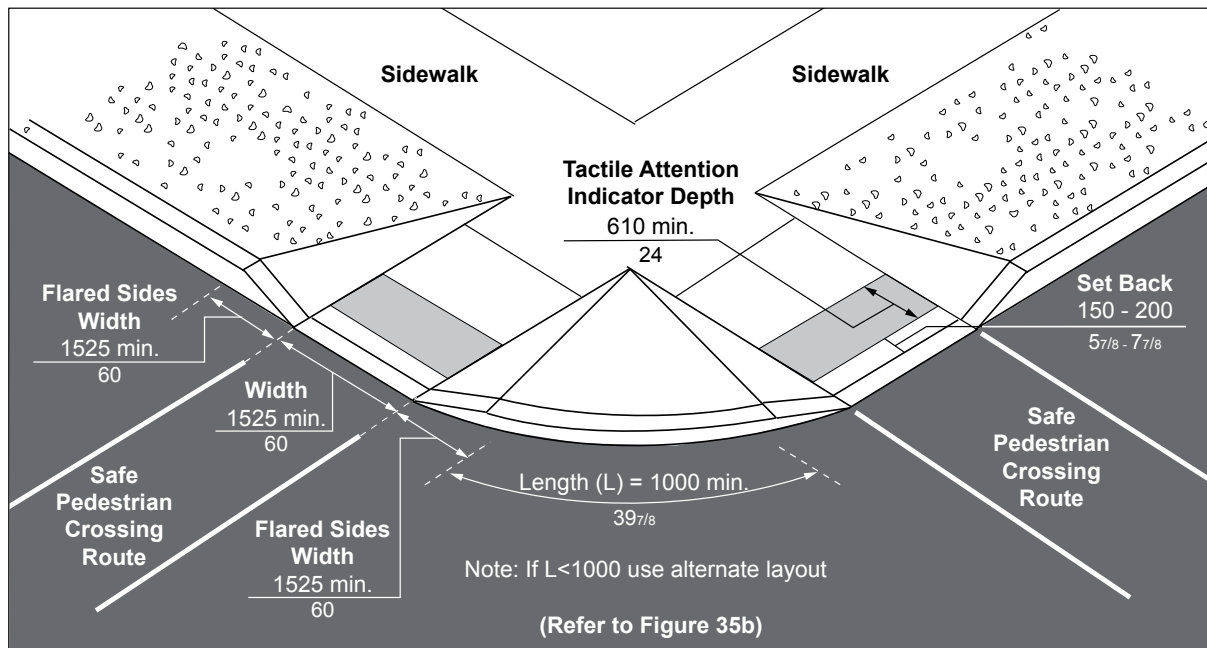


Figure 35a: Standard Curb Ramp

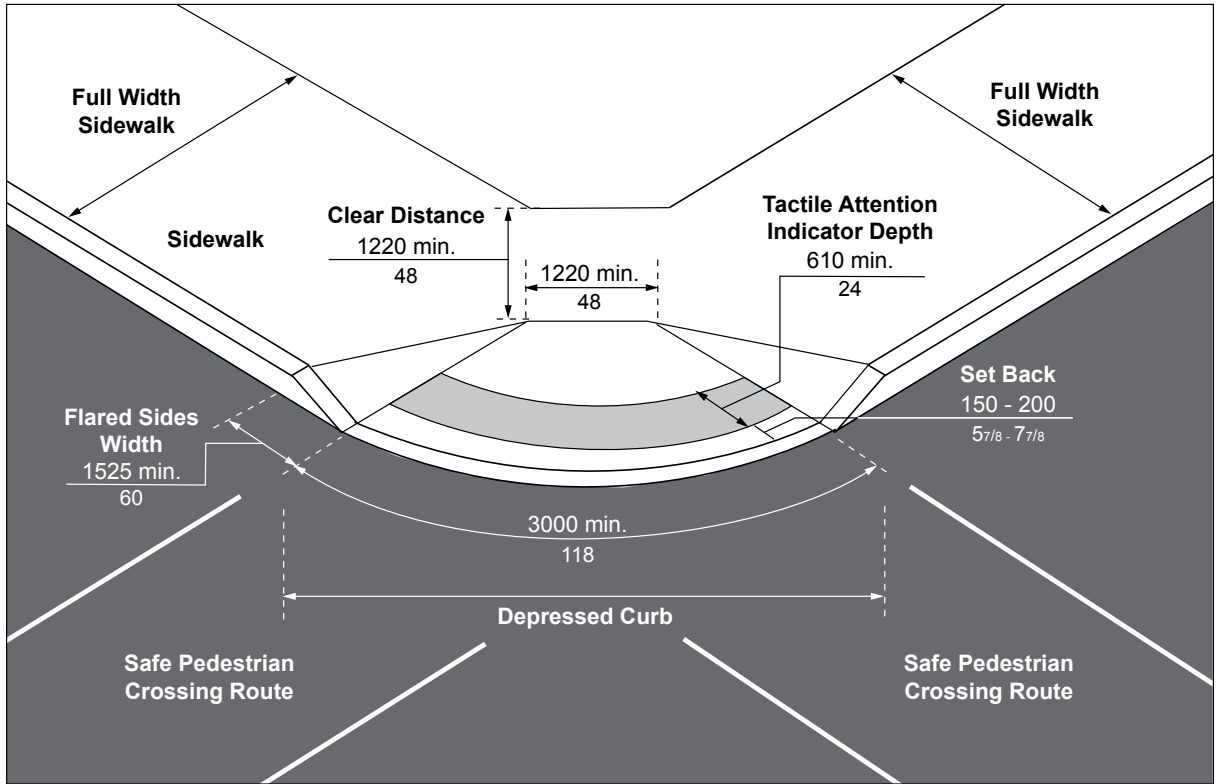


Figure 35b: Alternate Curb Ramp: Depressed Curb

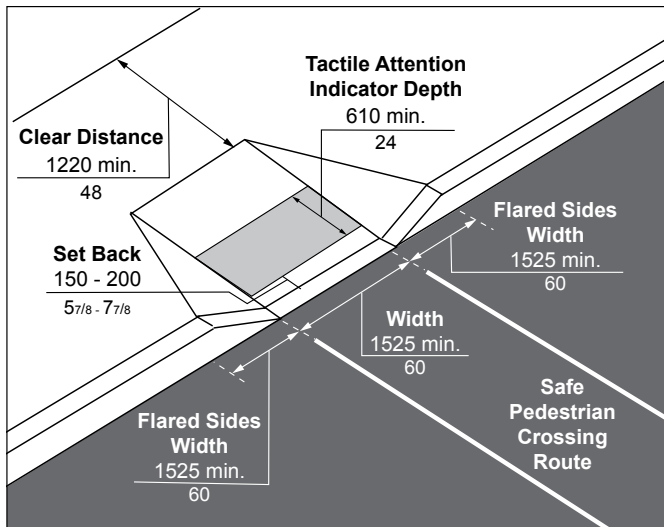


Figure 35c: Curb Ramp at Mid-Block Crossing

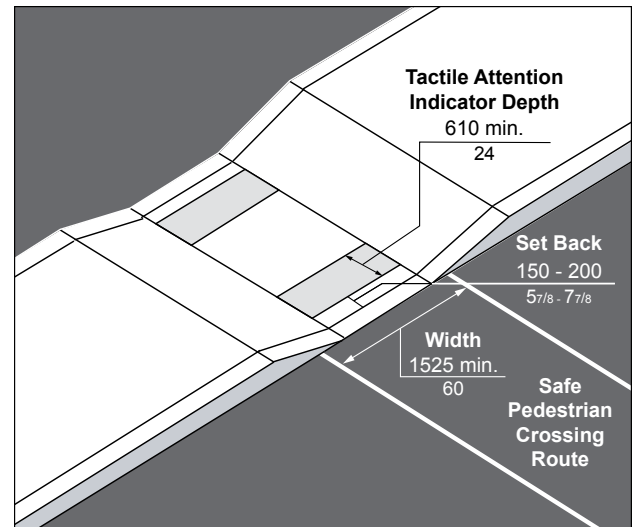


Figure 35d: Curb Ramp at Narrow Median Crossing

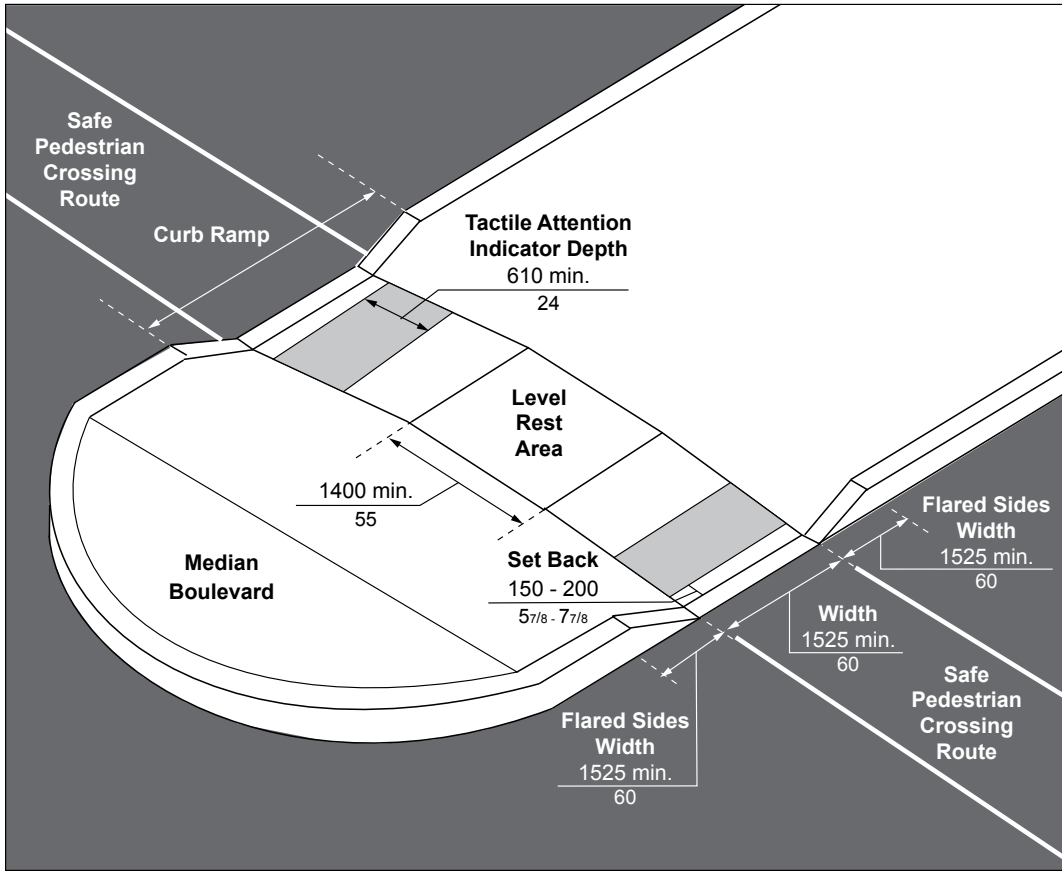


Figure 35e: Curb Ramp at Wide Median Sidewalk Crossing

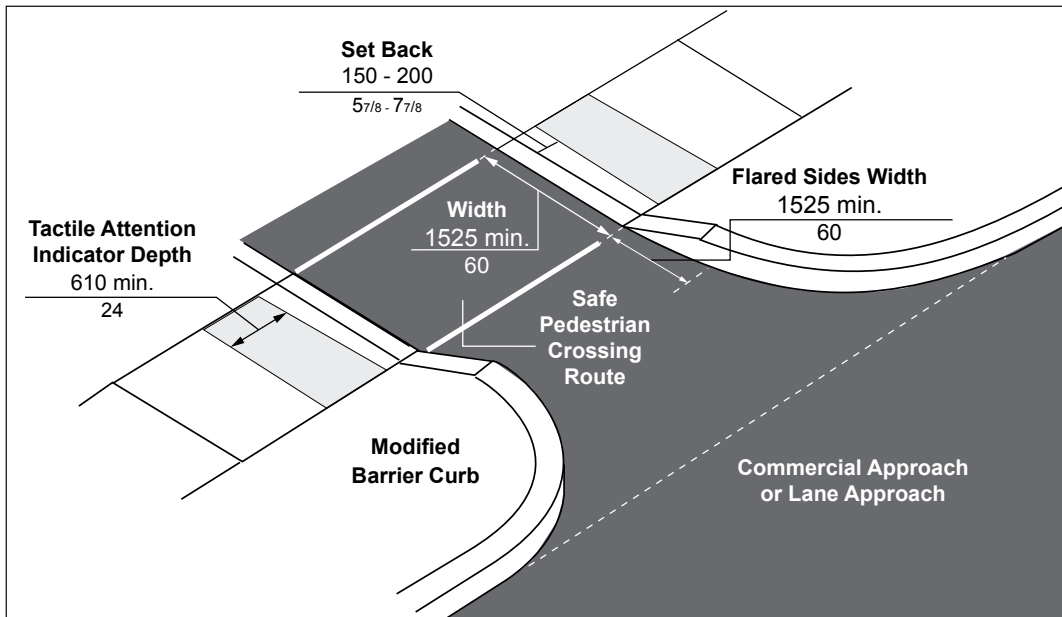


Figure 35f: Curb Ramp at Commercial or Lane Approach

Accessibility During Construction

3.5

Application

This section applies when pedestrians will be affected by the construction of new or the redevelopment of existing City-owned or leased buildings, infrastructure and elements. This includes construction within the public right-of-way, as part of the City of London's facilities.

These standards have been developed to summarize steps that need to be taken to ensure appropriate pedestrian access while construction is underway. If safety precautions are not taken and maintained, construction sites can be hazardous to pedestrians, including users with varying disabilities, particularly users with mobility, cognitive or visual disabilities.

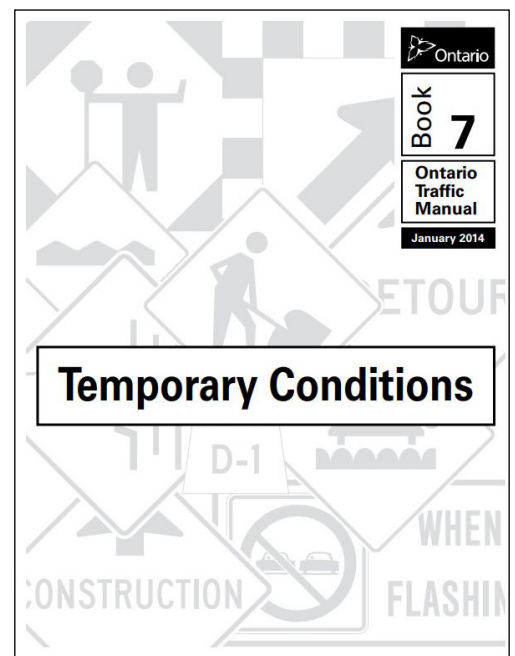
With the unique nature of each construction project and locations where they may occur, certain issues may arise which have not been covered in these standards. Each construction project requires a case by case review in order to determine suitable strategies for addressing the needs of pedestrians of all ages and abilities.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.2 Ramps
- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 3.3 Exterior Paths of Travel
- Sec. 5.8 Signage and Wayfinding

Note

For additional information, refer to Section 2.6.2, "Pedestrian Safety Considerations" of the Ontario Traffic Manual, Temporary Conditions, Book 7 (OTM, current edition).



3.5.1 Public Notifications

City to provide public notifications in advance of the type of pedestrian service disruption that is expected as a result of construction, as per AODA IASR requirements, Part IV.2, Customer Service Standards. All disruptions that affect the City's facilities will be posted on the City of London's website.

3.5.2 Design Criteria

Key accessibility issues during construction activities that impact pedestrians typically requires consideration for the following:

- a. advanced warning and guidance signs;
- b. adequate illumination and reflectors;
- c. use of temporary, accessible walkways;
- d. channeling and barricading to separate pedestrians from traffic;
- e. adequate barricading that is cane detectable to prevent pedestrians with vision loss from entering work zones; and
- f. accessible alternate pedestrian circulation routes with appropriate signage.

Note

It is recognized that there are a wide range and types of construction activities, including both short-term and long-term projects. Some barricading and pedestrian protection systems are more appropriate for certain types of construction than others and will require detailed review and consideration prior to implementation.

3.5.3 General Pedestrian Circulation

- a. provide an unobstructed accessible pedestrian route with a preferred clear width of 1830 mm (72 in), or a minimum of 1525 mm (60 in) where there are site constraints, that is stable, firm and slip resistant, with curb ramps at intersections, meeting all other applicable requirements identified in these standards for exterior common elements and pedestrian routes, including ramps;
- b. ensure that a continuous, clearly visible (e.g., high colour / tonal contrast) and cane-detectable pedestrian channelization system is provided;
- c. ensure protruding objects on accessible pedestrian circulation routes (e.g., sidewalks / walkways) do not reduce the clear width that is required (e.g., bracing, supports);
- d. ensure fencing footings are clearly visible with high colour / tonal contrast and are placed out of the clear accessible pedestrian route to prevent any potential tripping hazards;

- e. where any supports or overhead framing / bracing is used for protection (e.g., scaffolding and hoarding), ensure that it is firmly constructed and provide clear headroom at a minimum height of 2100 mm (82¾ in); and
- f. where hoardings with public viewing ports are provided, at least one viewing port should be mounted at no more than 1220 mm (48 in) on center, for users of mobility aids.



Example of typical construction fencing, City of London.

3.5.4 Location: Construction Zone / Site Barricades

Based on typical maintenance and construction activities, protective barricade and hoarding provision requires consideration at the following locations:

- a. between the accessible pedestrian circulation route and any adjacent construction site;
- b. between the alternate accessible pedestrian circulation route and any adjacent construction site;
- c. between the alternate accessible pedestrian circulation route and the vehicular way, if the alternate accessible pedestrian circulation route is diverted into the street;
- d. between the alternate accessible pedestrian circulation route and any protruding objects, drop-offs, or other hazards to pedestrians; and
- e. at the “down” curb ramp of an intersection, if the opposite “up” curb ramp is temporarily and completely blocked, and no adjacent accessible alternate pedestrian route is provided.

3.5.5 Construction Signage

Information, warning and directional signage requirements will vary based on the nature of construction activities underway and their location in relation to the existing pedestrian route network.

Generally, construction signage requirements are project specific and based on the following considerations:

- locate required signage types at both the near side and the far side of the intersection that precedes a temporarily and completely blocked pedestrian accessible route;
- where directional signage or warnings are provided, ensure placement and location prevents or minimizes any backtracking, especially if there is no safe refuge area at a corner of an intersection under construction (e.g., for some locations, this could mean locating a warning or sign at the beginning of a route, not just at the inaccessible construction area or site); and
- ensure additional directional signage is provided for alternate accessible pedestrian routes, where construction or maintenance activities obstruct an existing accessible path of travel from one site element to another (e.g., parking space to an entrance, bus stop to an entrance, drop-off to an entrance, etc.).



Examples of construction zone signage, City of London.

3.5.6 Additional Considerations

- a. barrier “Caution Tape” does not provide suitable safety or protection and cannot be used to delineate an accessible pedestrian route or act as a suitable warning. However, caution tape can potentially be used in conjunction with protective and cane detectable barricades / systems to highlight danger or act as a warning (e.g., such as a continuous A-frame system); and
- b. if drums, cones, or tubular markers are used for protection, barricades or to channelize pedestrians, ensure their placement has no gaps between the bases of the devices in order to create a continuous base / bottom. The height of each individual device is required to be a minimum of 900 mm (35½ in) to be effective as a barrier. Ensure placement is maintained and types / systems used are firmly supported to ensure they remain upright and stable.



Use of caution tape is not suitable and does not provide cane detection.



3.6

Application

Pedestrian clearways that are part of the public right-of-way, may include the following elements and / or site furniture, which can vary depending on location:

- waste and recycling receptacles;
- rest areas with seating and space for mobility aids;
- protective bollards;
- signage and mapping (e.g., informational and directional, used for exterior wayfinding);
- bicycle stands / storage; and
- mail / letter boxes.

References

All other relevant sections of these standards that apply to exterior design features and sight amenities, as part of the detailed planning, design and review process for new construction or retrofit projects.

Sec. 2.7 Rest Areas

Sec. 6.9 Balconies and Terraces

Best Practice

Ensure no A-frame signage is used along the public right of way as part of any site and related building frontages, which are a potential bumping and tripping hazard for users with vision loss.

Additional detailed information may be available, developed by the City of London (e.g., “Complete Streets” initiatives) and that may also be applicable to accessible design for site furniture.

3.6.1 Design Requirements

3.6.1.1 General

Elements, features and amenities, including the provision of site furniture can vary depending on the site context. Typical requirements include: **(Figure 36)**

- a. provision of an amenity strip with a firm and level surface, a minimum of 600 mm (23⁵/₈ in) wide, and clearly marked with a high colour / tonal contrast strip or band, a minimum of 300 mm (11³/₄ in) wide;
- b. provision, design and placement of site furniture is required to address the following:
 - i. incorporating high colour / tonal contrast;
 - ii. where applicable, have a base or lowered surface that is cane-detectable and securely mounted / fixed;
 - iii. ensure placement is consistent and does not reduce the required minimum pedestrian clearway / accessible route width of 1830 mm (72 in);
 - iv. locate off to one side of the required pedestrian clearway and accessible route, to minimize any potential obstruction to pedestrians (e.g., preference is to locate site furniture as part of an amenity strip); and
 - v. clear ground area or space of 920 mm (36 in) wide by 1525 mm (60 in) length is provided, where applicable, for either side or front approach and use, adjacent to pedestrian clearway / accessible route;
- c. where waste and recycling receptacles are provided, ensure:
 - i. size is large enough to contain the anticipated amount of waste, so that overflows do not cause a tripping or slipping hazard;
 - ii. they are securely mounted on a firm and level surface or pad and conveniently located (e.g., at main public accessible entrances);
 - iii. any operating control, lid or opening for use, are mounted between 900 to 1100 mm (35 to 43¹/₄ in) high, above the adjacent ground surface; and
 - iv. lettering provided to identify provision and type of disposal, meets all requirements for accessible signage **(Refer to Section 5.8, Signage & Wayfinding)**;
- d. ensure the efficient and thorough removal of snow and ice during winter conditions, which is essential for any related pedestrian clearway, accessible route, amenity strip, and curb ramps at intersections that may be part of a site.

Note

The pedestrian clearway refers to the portion of the sidewalk that is free of obstructions and intended for pedestrian through movement. In many cases, such as most Neighbourhood Streets, the entire sidewalk is a pedestrian clearway. In other cases, the sidewalk may include space along building frontages, patios, site furniture, and snow storage areas in addition to the pedestrian clearway. (Source: City of London, Complete Streets Design Manual, CSDM, August 2018).

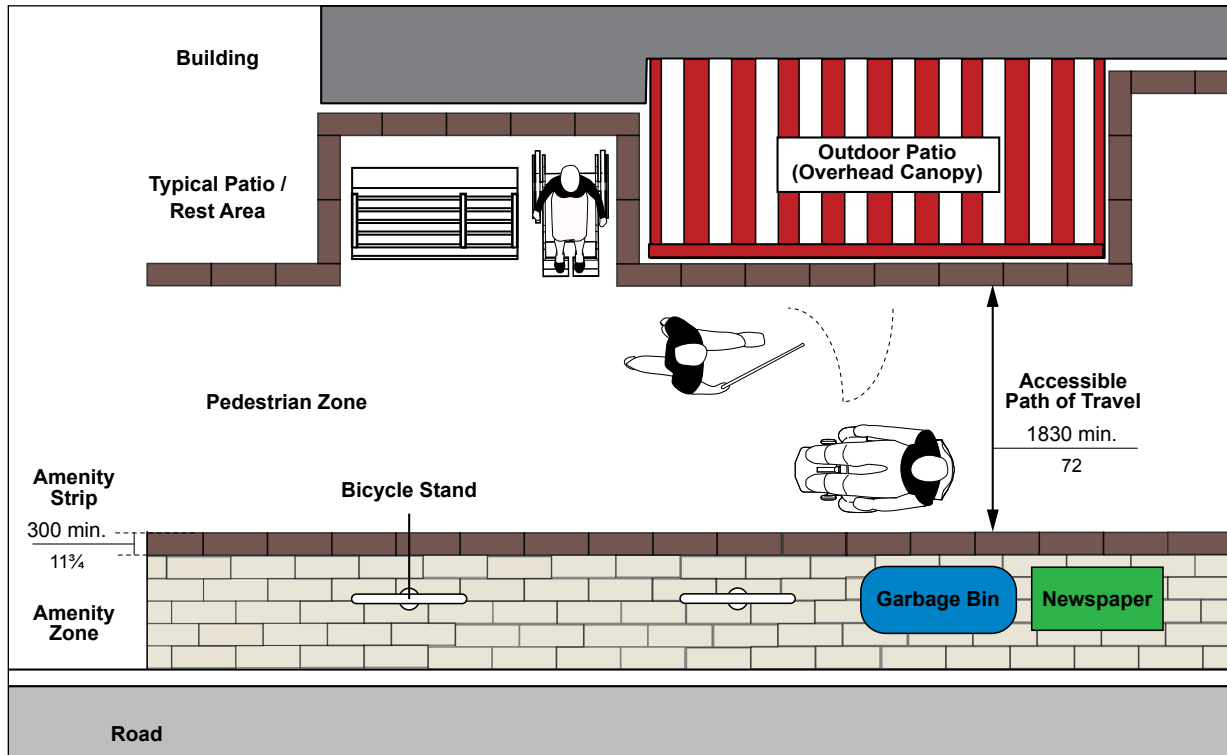
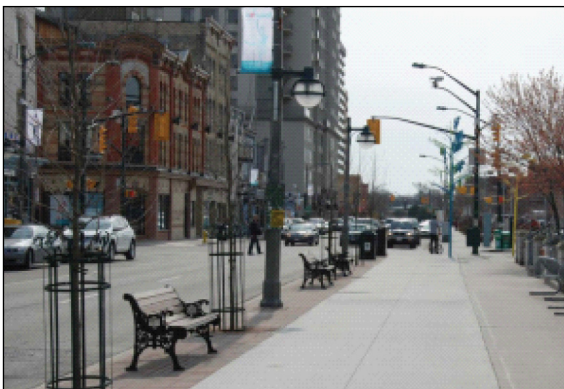


Figure 36: Streetscapes - Plan View



A variety of pedestrian amenities including seating, pedestrian-scale lighting, waste receptacles, and trees positioned adjacent to the pedestrian clearway, City of London (Source: CSDM, 2018).

Landscaping Materials and Plantings

3.7

Application

This section applies to typical materials and vegetation (e.g., trees, shrubs and plantings etc.) that are part of the design of exterior environments related to facilities.

Key considerations include:

- plants and shrubs with a variety of fragrances can provide an interesting orientation cue for persons with vision loss;
- using contrasting flowers near walkways can also be helpful as a guide; and
- raised planters can accommodate persons using mobility aids and others that may have difficulty bending, in order to enjoy or tend to plantings.

Note

Plants with thorns may constitute a hazard to pedestrians and service animals if located too close to walkways / pathways and ensure all vegetation is not poisonous.

Plants that drop large seed pods may result in potential slipping hazards, as well as difficulties for users of mobility aids.

Plantings and tree limbs that overhang accessible routes and pathways are a bumping hazard for all users, especially for users with a vision loss.

Reference

- Sec. 1.3 Space and Reach Requirements
- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.4 Guards and Handrails
- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 2.7 Rest Areas
- Sec. 2.10 Materials and Finishes
- Sec. 2.1 Texture and Colour
- Sec. 3.4 Exterior Paths of Travel
- Sec. 3.6 Street Furniture
- Sec. 6.16 Service Animal Relief Areas

Best Practice

Use landscaping techniques (e.g., low vegetation) that can act as a buffer between pedestrians and elements that are potential projections or bumping hazards (e.g., fire hydrants, gas meters and fire hose standpipes), while still allowing maintenance and safety personnel required access.

Best Practice

The use of table planters is another option, where suitable. Users of mobility aids can position at the side or at the front, where suitable knee space is provided below, allowing for a wider range of motion and overall flexibility.

Note

Raised plant beds or planters can vary in size (e.g., width), depending on surrounding context, including how any adjacent accessible routes or pathways are designed and located, as well as the ability for users to approach, use and move around them (**Refer to Section 1.3, Space and Reach Requirements**).

3.7.1 Plant Beds and Planters

3.7.1.1 General

Where plant beds or planters are provided for gardening and use by the general public, clients, customers or employees, ensure:

- a. all are designed to be accessible (preferred), as identified by the requirements in this section; or
- b. 10% minimum, but no less than one, are designed to be accessible, as identified by the requirements in this section.

3.7.1.2 Accessible

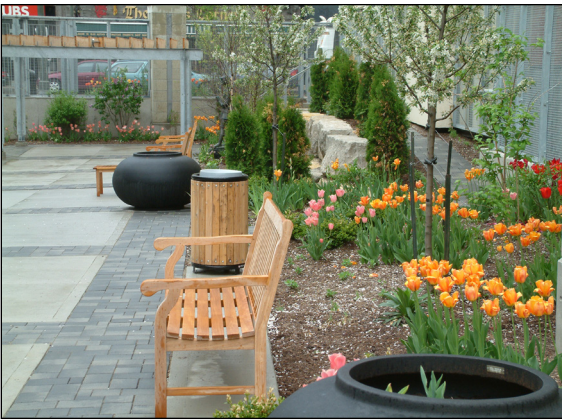
The design of typical accessible plant beds or planters includes the following features and considerations:

- a. locate as part of an accessible route, with consistent placement that does not reduce the required minimum accessible route width of 1830 mm (72 in), positioned in areas where there are no major grade or elevation changes;
- b. provide as part of a raised base, mounted 400 mm (15¾ in) to 460 mm (18⅞ in) high above the adjacent ground surface; and
- c. ensure any base or lowered edges that are located immediately adjacent to accessible routes, including tree grates, incorporate:
 - i. high colour / tonal contrast for clear visibility by all users;
 - ii. are defined with a cane-detectable curb or edge protection (e.g., at openings of tree grates), at a minimum height of 100 mm (4 in);
- d. place and locate any shrubs with thorns and sharp edges a minimum of 920 mm (36 in) away from accessible routes / pathways, as well as any rest or seating areas;
- e. ensure any tree branches along an accessible route are maintained regularly to provide a minimum overhead clearance height of 2100 mm (82¾ in) from the ground; and
- f. ensure trees / plants that drop large seed pods do not overhang or are positioned near accessible paths or walkways.

3.7.2 Guide Wires & Tree Guards

Where either permanent or temporary guide wires or tree guards are used, ensure:

- a. permanent guide wires are not located in any area used by the general public, clients, customers or employees;
- b. temporary guide wires, such as those used when planting new trees, are clearly identified using high colour / tonal contrast and are suitably placed (e.g., angled away from any adjacent accessible route or pathway to ensure they are not a projection or obstruction hazard); and
- c. tree guards are cane detectable, with high colour / tonal contrast.



Example of vegetation and plantings, positioned clear of site furniture and accessible route, with high colour / tonal contrast edging at ground surface, Central Library, City of London.

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Interior Environments

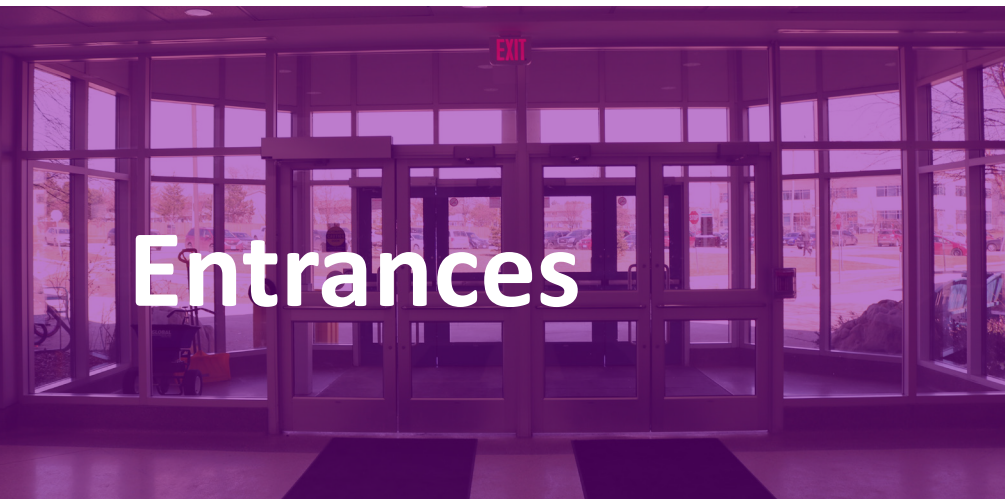
4.0

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4.1

Application

This section applies to pedestrian entrances into facilities. Entrances include all access and entry points into a facility. An entrance typically consists of several elements and includes the approach and route leading to a facility, the components of the entrance itself and the transition area between exterior and interior environments (e.g., vestibule). It may also include an interior lobby or waiting area, where applicable.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.2 Ramps
- Sec. 2.3 Stairs
- Sec. 2.4 Guards and Handrails
- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 2.7 Rest Areas
- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.2 Doors and Doorways
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.10 Service Counters
- Sec. 6.11 Waiting and Queuing Areas

Note

Where several doors are provided adjacent to each other (e.g., a bank of doors), these doors are considered a single entrance.

Best Practice

Provide 2500 mm (98½ in) clear turning space, plus the width of the door swinging into the space, at entrance vestibules.

Consider providing automatic sliding doors at highly used entrances.

Where an entrance is not accessible, provide directional and informational signage to identify location of the closest accessible entrance.

Note

Provide accessible features as required for building entrances from parking garages, including related elevator lobbies.

Ensure power door operators are provided on both doors, where a vestibule is provided.

4.1.1 Provision

- a. all entrances used by staff and / or public are required to be accessible (e.g., via level, sloped or ramped accessible routes); and
- b. locate entrance 30 m (98 ft 5 in) or less from designated accessible parking or passenger loading / drop-off zones.

4.1.2 Entrance Retrofit Situations

In a retrofit situation where it is technically infeasible to make all staff and public entrances accessible, ensure:

- a. at least 50% of all staff and public entrances are accessible and comply with this section;
- b. the primary entrances used by staff and the public are accessible; and
- c. the number of accessible entrances provided equals the number required by the Ontario Building Code.

4.1.3 Main or Primary Entrance Features

Where an entrance is designated as a main or primary accessible entrance into a facility: (**Figures 37a & 37b**)

- a. locate as part of an accessible path of travel, including exterior level landing area of 2500 mm by 2500 mm (98½ in by 98½ in) or in a retrofit situation 1700 mm by 1700 mm (67 in by 67 in);
- b. provide power door operator and mark door with the International Symbol of Accessibility;
- c. provide directional signage at strategic points to guide users from accessible parking areas, drop-off and loading zones, and site access points to the accessible entrance;
- d. ensure minimum clear door width of 950 mm (37½ in);
- e. at entrance vestibules, provide clear floor space a minimum of 1525 mm (60 in) plus the width of any door swinging into the space (e.g., whether two doors are in series or where doors do not align); and
- f. where overhead protection (e.g., canopy) at pedestrian entrance and passenger loading or drop-off zones adjacent to the entrance is provided, ensure the minimum height clearance is 2750 mm (108¼ in) or preferred 3600 mm (141¾ in).

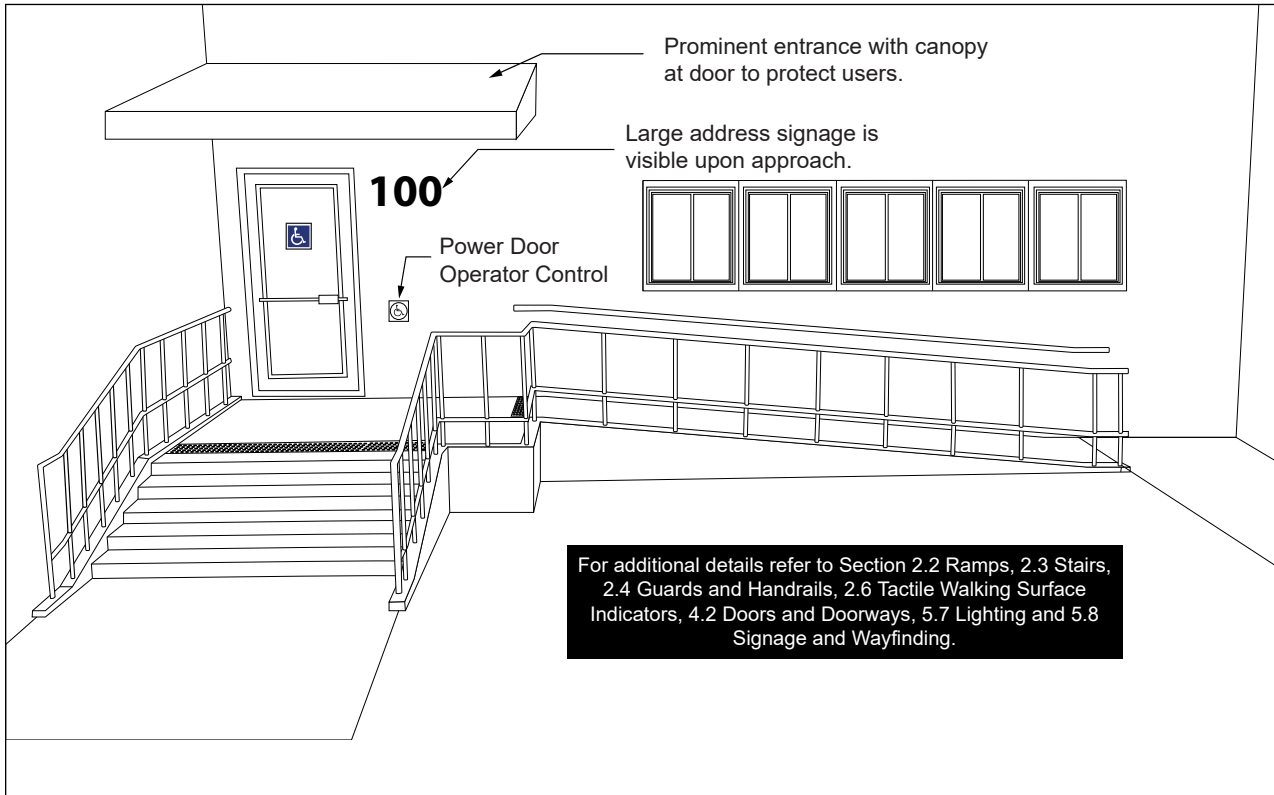


Figure 37a: Main or Primary Entrance Features

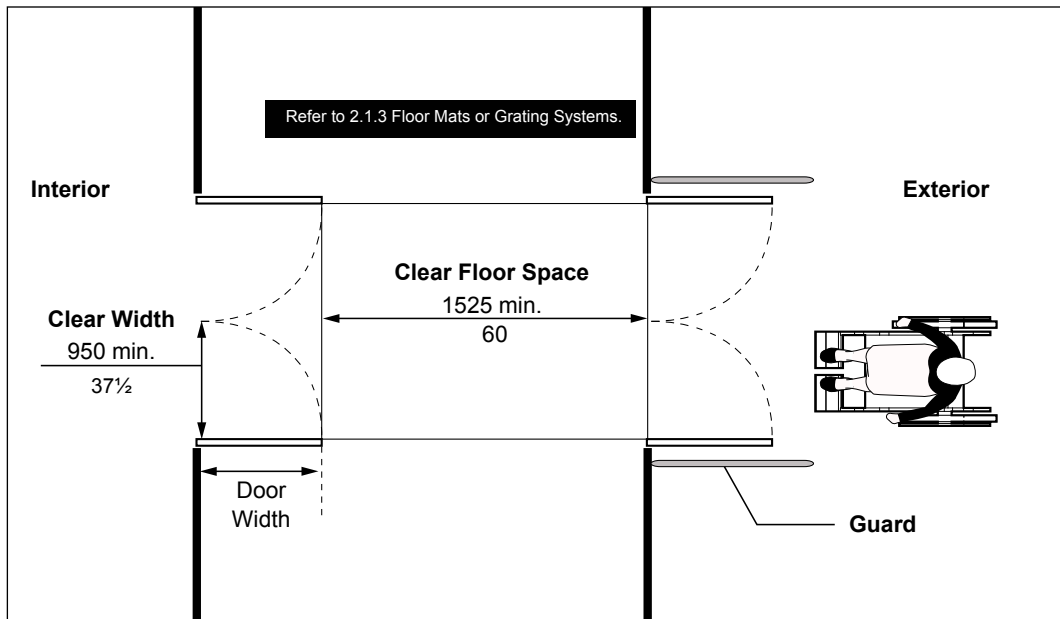


Figure 37b: Entrance Vestibule - Plan View



Doors and Doorways

4.2

Application

This section applies to all interior doors along an accessible route, intended for staff and public use, which lead into, out of and through a facility (e.g., also includes doors that are entered from or lead to exterior areas). The provision of accessible doors as part of an accessible route is an important consideration for all users of a facility.

Where doors have more than one independently operated leaf (e.g., at a bank of doors), at least one of the door leafs is required to be accessible, meeting the criteria identified in this section.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.4 Guards and Handrails
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.8 Signage and Wayfinding

Note

Additional considerations are required to address issues related to doors used for fire and life safety (e.g., use of electro-magnetic 'hold-open' devices and door closer adjustments).

Exception

Doors not requiring full user passage, such as shallow closets, may have the clear opening width reduced to 510 mm (20 in) (minimum).

Best Practice

Where permitted and where visual or acoustic privacy is not a design requirement, entrances without doors are preferred (e.g., public washrooms in large, assembly type facilities).

Note

Using off-set door hinges to provide the required clear width for some existing doors may be an option for consideration.

4.2.1 Clear Width

For doorways used for circulation along an accessible route, including swing and sliding doors: **(Figure 38)**

- provide a minimum door clear width of 950 mm (37½ in), measured when the door is open 90 degrees from the face of door (and / or exit door hardware that projects into the path of travel) and the opposite door stop;
- where there is a projection into clear opening width, ensure it is 100 mm (4 in) (maximum), no lower than 865 mm (24 in) high above floor; and
- required clear width may be reduced to 860 mm (34 in) (minimum), only in retrofit situations where it is technically infeasible.

Figure 38a: Clear Width of Typical Swing Door, Hardware Location and Use of Colour / Tonal Contrast - Plan and Elevation Views

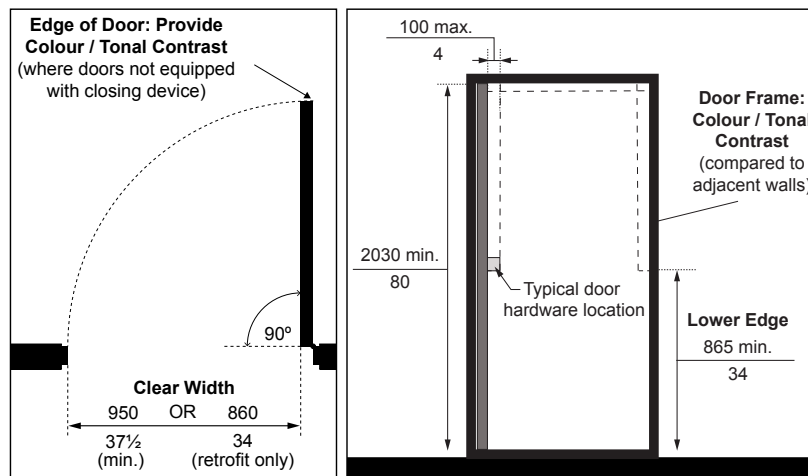
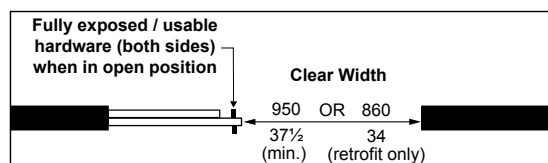


Figure 38b: Sliding Door Clear Width - Plan View



4.2.2 Opening Force and Closers

4.2.2.1 Opening Force

The maximum opening force required for push / pull is:

- 38 Newtons (8.5 pounds) for exterior hinged doors;
- 22 Newtons (5.0 pounds) for interior hinged doors; and
- 22 Newtons (5.0 pounds) for sliding or folding doors.

4.2.2.2 Closers

Adjust door closers to ensure:

- the least pressure possible is available and never greater than the opening force identified in **Subsection 4.2.2.1**; and
- a minimum sweep / closing period of 3 seconds, measured from when the door is in an open position of 70 degrees to the doorway, to when the door reaches a point 75 mm (3 in) from the closed position, measured from the leading edge of the latch side of the door.

Exception

High colour / tonal contrast is not required at service doors (e.g., electrical room, maintenance room, janitor room).

Best Practice

Install door kick plates 300 mm (11¾ in) high, measured from bottom edge of door, covering the entire width of the door, especially for high traffic areas.

Note

Knob door hardware and thumb-latch handles are not appropriate because they require tight grasping and fine finger control.

Where sliding doors are provided, ensure operating hardware is fully exposed and usable on both sides when the door is in the open position such as large D-pull hardware (Figure 38b).

Typical revolving door systems are not considered accessible entrances, recognizing the floor space within a system is limited and the speed of use is typically fast.

4.2.3 Contrast of Doors and Frames

- a. provide high colour / tonal contrast, as follows: (Figure 38)
 - i. to differentiate doors and / or door frames from the surrounding environment; and
 - ii. on the edge of door compared to the face of the door, where doors are not equipped with a closing device (e.g., to prevent any potential bumping hazard when door remains in the open position, especially for users with vision loss).

4.2.4 Thresholds

- a. provide bevel at maximum slope of 1:2 (50%), where transition is between 6 mm (¼ in) and 13 mm (½ in) high; and
- b. ensure threshold at door is not more than 13 mm (½ in) high.

4.2.5 Door Hardware

Door hardware includes, but is not limited to, handles, pulls, latches and locks, with the following features:

- a. mount between 900 mm (35½ in) and 1100 mm (43½ in) high from finished floor or ground surface;
- b. hardware must be usable with closed fist and operable with one hand;
- c. ensure tight grasping of hands, pinching of fingers or twisting of wrists are not required to operate hardware; and
- d. ensure high colour / tonal contrast hardware finishes are provided when compared to mounting surface.

4.2.6 Control Gates

Where gates are used to control pedestrian traffic for entry / exit: (Figure 39)

- a. provide accessible gate or door with a minimum clear width of 950 mm (37½ in) and lower edge that is cane detectable at a maximum of 680 mm (26½ in) high, where bottom area may be open;

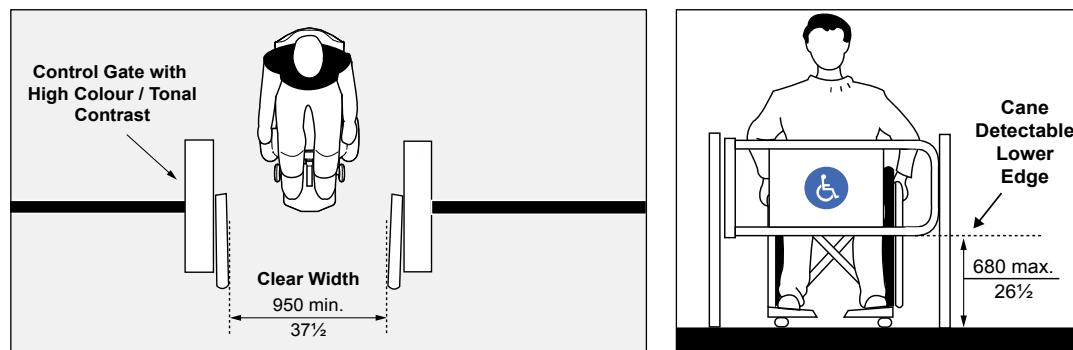


Figure 39: Accessible Control Gate - Plan and Elevation Views

- b. ensure accessible gate or door is clearly marked with the International Symbol of Accessibility; and
- c. ensure all accessible gates or doors have high colour / tonal contrast compared to surrounding environment including any post at either side of a gate, where gates are incorporated into a chain-link fencing system (e.g., compared to the fence).

Best Practice

For main entrances to larger facilities with a high-occupancy load, an automatic sliding door system is recommended to control the flow of pedestrian traffic and facilitate access for the majority of users.

Provide power door operators for high frequency doors, (e.g., large meeting / multi-purpose rooms) in new construction. Consider providing roughed in power for future power door operators at other locations.

A vertical extended power door operator allows activation from any approach and height level (**Figures 40 & 41b**).

Note

Where power-assisted doors are activated by proximity card reader devices, ensure timing of door opening is synchronized with operation of proximity device.

A vertical extended power door operator control can accommodate a wider range of users (e.g., can be operated by service animals, foot or foot rest).

4.2.7 Automatic Doors

Where automatic doors are provided, with sliding or swinging doors activated by infrared sensors:

- a. ensure sensors are suitably placed to detect users approaching; and
- b. ensure timing allows safe passage through doors.

4.2.8 Power-Assisted Doors

Power-assisted doors have two different types of operation:

- automatically activated by a motion detector / proximity scanner that scans at a lower height to allow users of mobility aids to trigger opening of the door when approaching; and
- manually activated by pushing a control.

Doors that open automatically are considered a preferred option where possible, since they do not require manual activation and address the needs of a wide range of users. This recognizes that manual power-assist controls may be difficult to locate and activate for people with limited vision, strength, manual dexterity, reach or users that may have multiple types of disabilities.

Power-assisted swing doors that are activated by pushing a control are required at the main entrance(s) and accessible washrooms of a facility.

Based on the overall design, the level of use of interior spaces and where swing doors are provided throughout a facility, power-assisted swing doors that are activated by pushing a control are also commonly provided at:

- interior doors along accessible routes and / or connecting accessible routes;
- doors into reception areas;

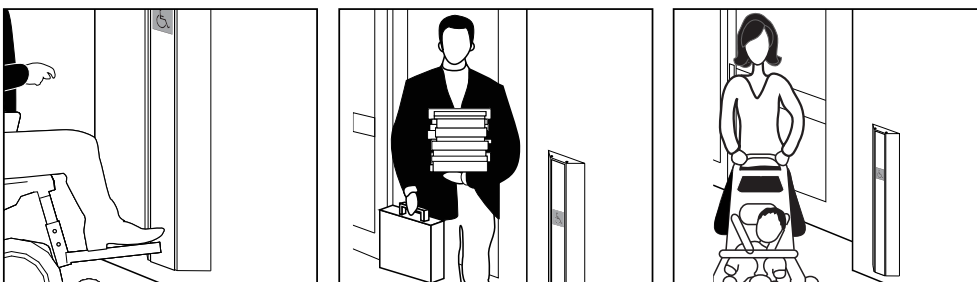


Figure 40: Example of Control for Power Door Operator Promoting Universal Use

Exception

Power door operators are not required for doors that are held-open using electromagnetic hold-open devices.

Note

Rectangular shaped power door operator control with dimensions of 50 mm (2 in) by 100 mm (4 in), may only be used for retrofit situations, where standard control sizes will not fit.

Where wireless power door operator controls are used (e.g., typically mounted on glass mullion systems if adjacent to a door), ensure batteries are maintained regularly as required.



Example of rectangular shaped power door operator control to be used for retrofit situations only, where infeasible to provide larger controls.

- doors into highly used functional spaces (e.g., accessible and universal washrooms / change rooms, larger multi-purpose rooms, meeting or board rooms); and
- doors leading to accessible exits and designated “Areas of Refuge”.

Where power-assisted swing doors activated by pushing a control are provided: **(Figures 41a, 41b & 41c)**

- mark accessible doors with the International Symbol of Accessibility and other signage (e.g., “Caution” decals to warn of door swing);
- ensure a force of no more than 66 Newtons (14 pounds) is required to stop door movement;
- ensure door remains fully open for 5 seconds (minimum);
- ensure doors take 3 seconds (minimum) to move from a closed to fully open position, when activated; and
- provide power door operator controls on both sides of doors, for use when entering or leaving, located to allow activation of the door from either direction of travel and without obstructing the path of travel, as follows:
 - mount in a clearly visible location for easy identification upon approach on the latch side of door (e.g., push / pull side);
 - ensure the dimension of the power door operator control is a minimum of 150 mm (5 $\frac{7}{8}$ in) in diameter where it is circular or a minimum of 150 mm (5 $\frac{7}{8}$ in) wide by 915 mm (36 in) long where it is a vertical extended power door operator;
 - ensure high colour / tonal contrast is provided between power door operator control and mounting surface;
 - ensure they project less than 100 mm (4 in) from mounting surfaces;
 - mark with the International Symbol of Accessibility;
 - ensure controls are operable with a closed fist;
 - mount center at height of 900 mm (35 $\frac{1}{2}$ in) to 1100 mm (43 $\frac{1}{4}$ in) from ground or floor surface;
 - where rectangular extended power door operator controls are provided, mount so that they extend from not more than 200 mm (7 $\frac{7}{8}$ in) and not less than 900 mm (35 $\frac{1}{2}$ in) high above the floor;
 - mount between a minimum of 600 mm (23 $\frac{5}{8}$ in) and a maximum of 1500 mm (59 in), on a level wall surface or separate post, beyond the door swing where the door opens towards the control; and
 - provide clear floor space, centered at power door operating controls at:
 - 920 mm (36 in) wide by 1525 mm (60 in) depth for a forward approach; and
 - 1525 mm (60 in) wide by 920 mm (36 in) depth for a side approach**(Refer to Section 5.1, Controls and Operating Mechanisms).**

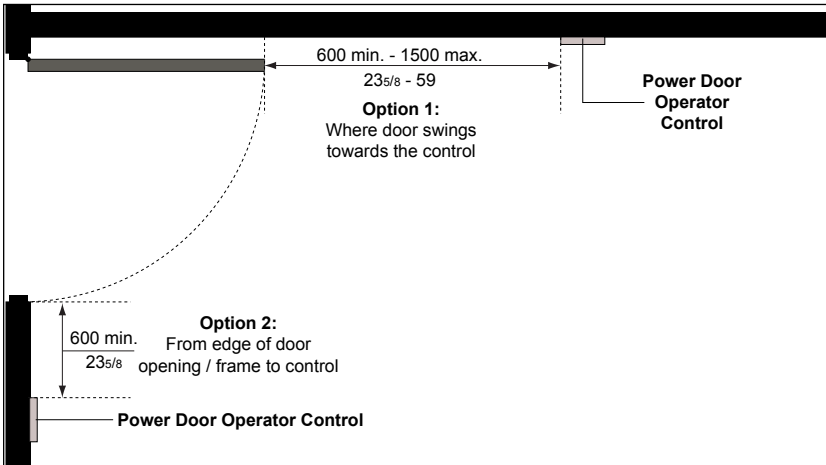


Figure 41a: Power Door Operator Control Mounting Location Options - Plan View

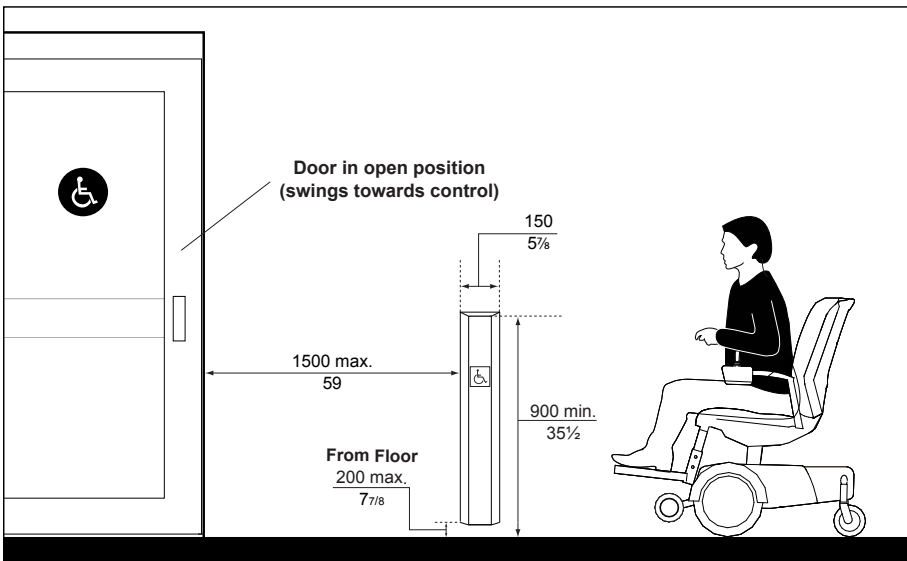


Figure 41b: Vertical Extended Power Door Operator Control - Elevation View



Example of large vertical extended power door operator control.

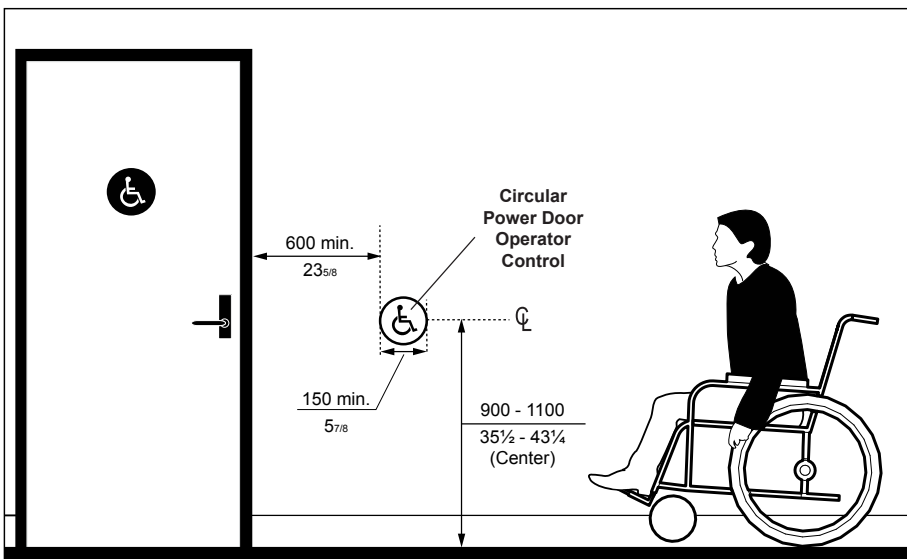


Figure 41c: Circular Power Door Operator Control - Elevation View



Example of circular power door operator control.

Best Practice

Swinging doors equipped with power door operators which are activated automatically and open into passing pedestrian traffic should also have a device (mat or other sensor) on the swing side to prevent the door from opening if someone is standing in the swing area.

Note

Provision of guards is typically required for exterior out-swinging power-assisted doors, where the door is automatically activated by a motion sensor and where the door may swing into high traffic areas.

4.2.9 Doors Swinging Into Accessible Routes

Where automatic or power-assisted doors, whether activated by a control manually or automatically by a motion sensor (e.g., typically used at higher traffic doors), swing into an accessible path of travel: **(Figures 42 & 43)**

- the provision of recessed doors is preferred; or
- for swinging doors opening into passing pedestrian traffic, provide cane detectable guards or other devices at right angles to the wall containing the door, with the lower rail surface mounted at a maximum 680 mm (26½ in) high from ground or floor surface, extending a minimum of 300 mm (11¾ in) beyond the door swing, on both sides of doors.

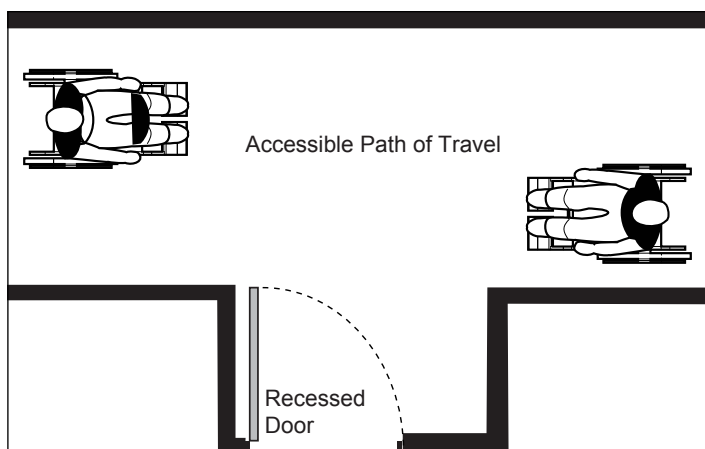


Figure 42: Recessed Door - Plan View

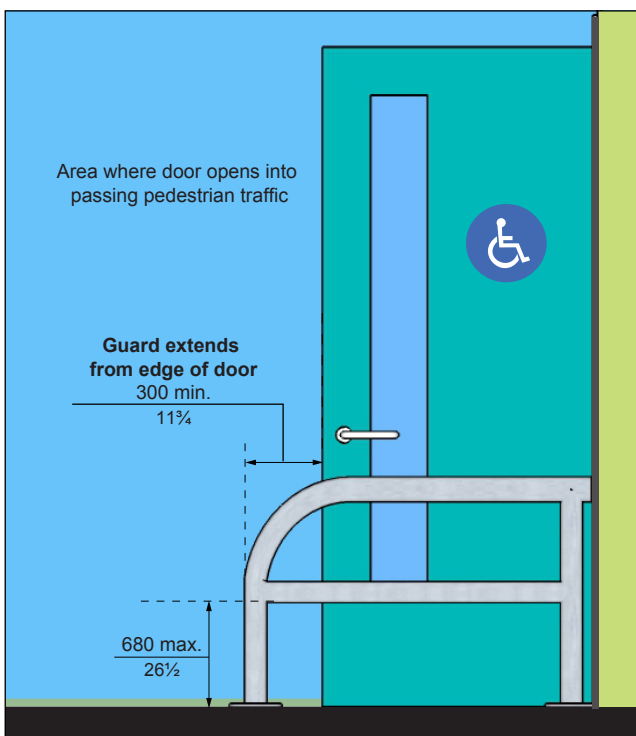


Figure 43: Guard at Out-swinging Door - Elevation View

4.2.10 Approach Clearances at Doors

The floor space requirements at swing and sliding doors are dependent on how doors are approached (e.g., side or front) and on which side an individual approaches a door (push or pull sides).

Unless door is automatic or equipped with a power door operator, clear and level floor space requirements for approach at different types of doors, are based on the size of door and on door swing (e.g., push / pull space on both sides of latch).

Clear and level floor space requirements for approach at different types of doors (both sides) are summarized in **Table 6** with corresponding diagrams referenced.

Table 6: Minimum Clearance Spaces at Doors

Context	Floor Space Required in mm (in)		
	Depth (min.)	Width (min.)	Space Beside Latch
Swing Door - Front Approach (Figure 44c)			
Pull side	1525 (60)	1700 (67)	600 (23¾)
Push side	1370 (54)	1250 (49¼)	300 (11¾)
Sliding Door (Figure 44d)			
Front approach	1370 (54)	1550 (61)	300 (11¾)
Side approach	1370 (54)	2150 (84¾)	600 (23¾)
Swing Door - Hinge Side Approach (Figure 44e)			
Pull side	2500 (98½)	2500 (98½)	600 (23¾)
Push side	1370 (54)	1830 (72)	600 (23¾)
Swing Door - Latch Side Approach (Figure 44f)			
Pull side	1370 (54)	1600 (63)	600 (23¾)
Push side	1370 (54)	1525 (60)	600 (23¾)
Folding Door			
Front approach	1220 (48)	n/a	n/a
Side approach	1220 (48)	n/a	n/a
Swing Door, Recessed - Front Approach (Figure 44a and b)			
Pull side	1525 (60)	n/a	600 (23¾)
Push side	1220 (48)	n/a	300 (11¾)
Doorways Without Doors			
Front approach	1220 (48)	n/a	n/a
Side approach	1065 (42)	n/a	n/a

Note

Ensure that there are no obstructions at the required clear and level floor space beside the latch, for the full height of the door.

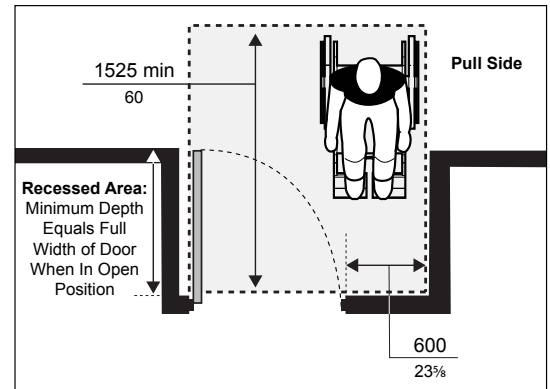


Figure 44a: Pull Side Approach at Recessed Swing Door - Plan View

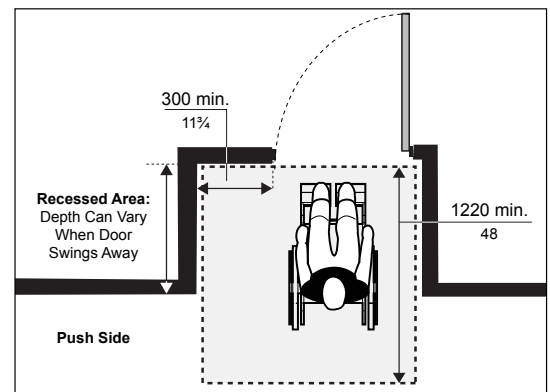


Figure 44b: Push Side Approach at Recessed Swing Door - Plan View

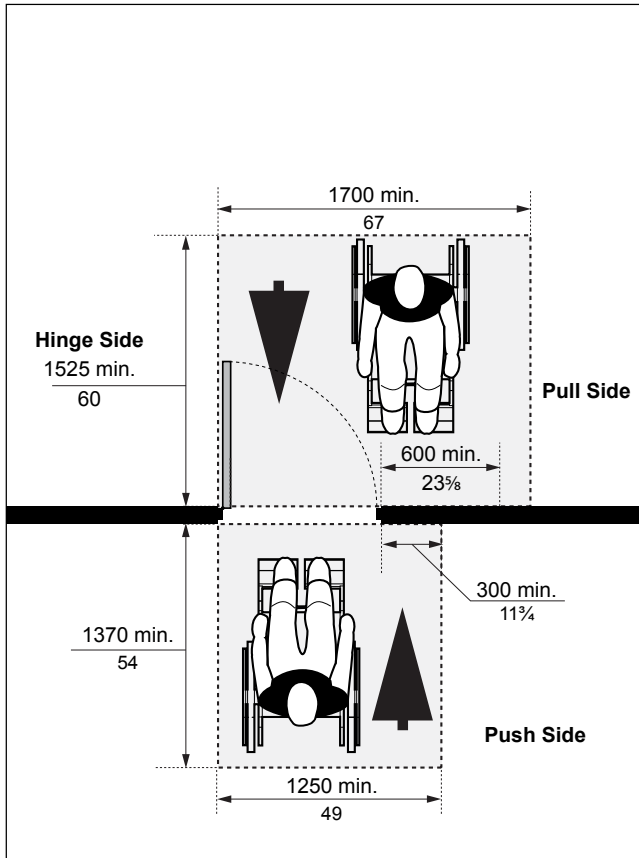


Figure 44c: Front Approach at Swing Door (Hinge Side)

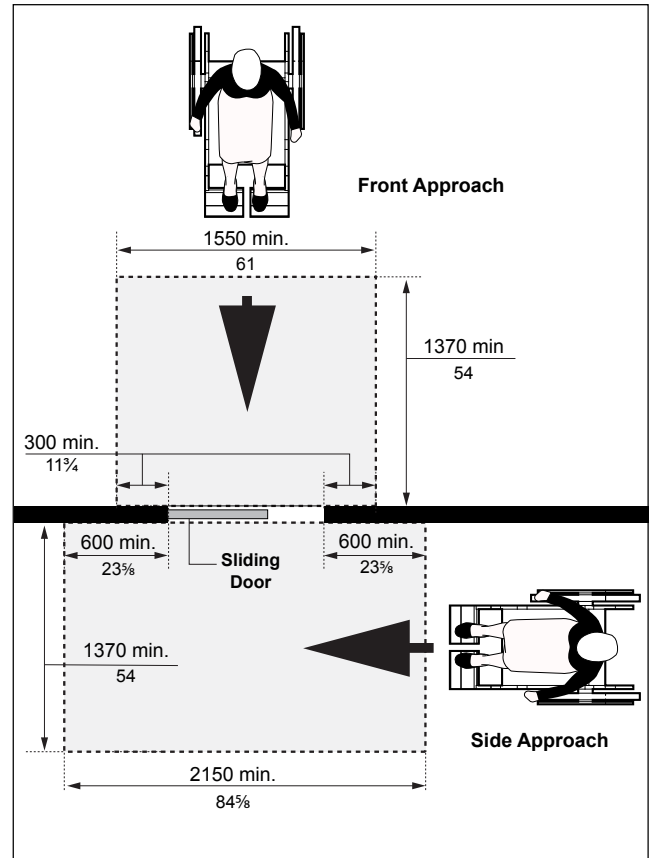


Figure 44d: Front and Side Approach at Sliding Door - Plan View

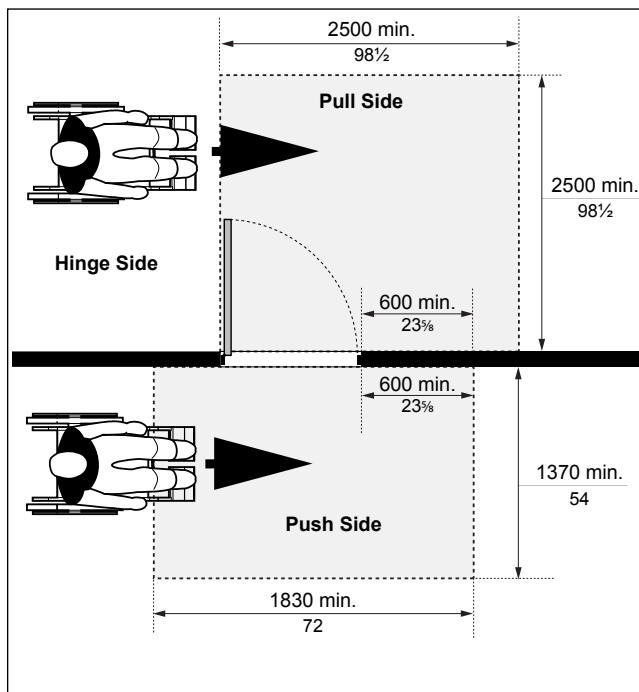


Figure 44e: Side Approach at Swing Door (Hinge Side)

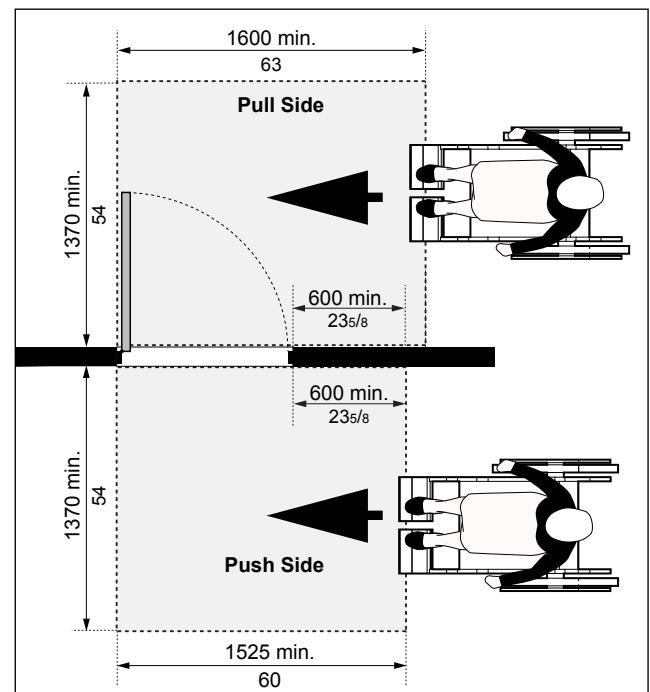


Figure 44f: Side Approach at Swing Door (Latch Side)

4.2.11 Doors in Series

Where doors in series form a vestibule: (Figures 45a & 45b)

- a. provide a distance between two doors in series a minimum of 1525 mm (60 in), plus the width of any door swinging into the space;
- b. where the doors into the vestibule are not aligned, provide a clear turning diameter a minimum of 1525 mm (60 in) within the vestibule clear of any door swing; and
- c. arrange vestibule to allow the movement of users of mobility aids between doors.

Best Practice

Provide additional space for doors in series with doors operating independently in order to avoid a “wind tunnel effect”.

Ensure the design of vestibules provides enhanced clear floor space and a minimum clear turning space of 2500 mm (98 ½ in) for users of mobility aids where the vestibule may be used as a waiting area at main entrances, for example.

Note

Users of mobility aids must be able to move forward through a vestibule without the risk of being stuck between the two doors. Ensure power door operators are provided on both sides of both doors.

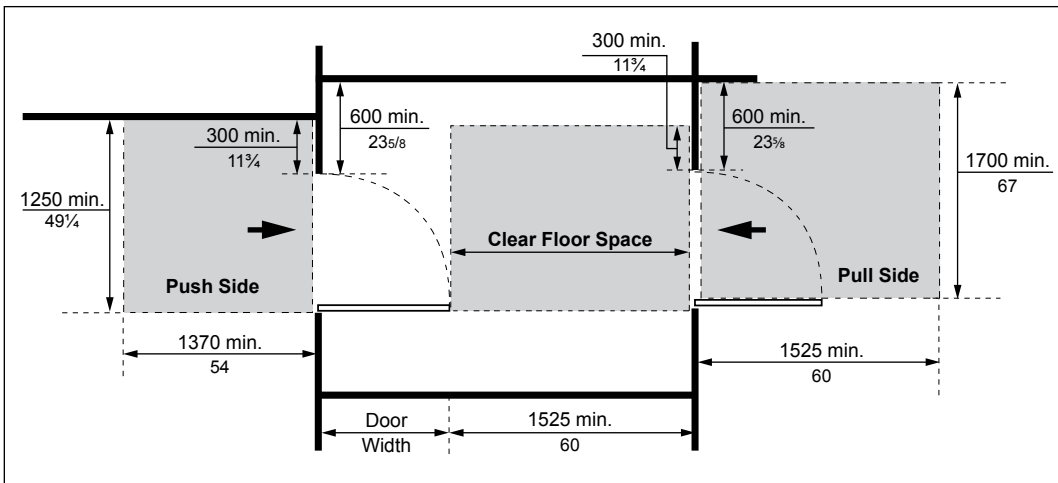


Figure 45a: Doors in Series Where Doors are Aligned - Plan View

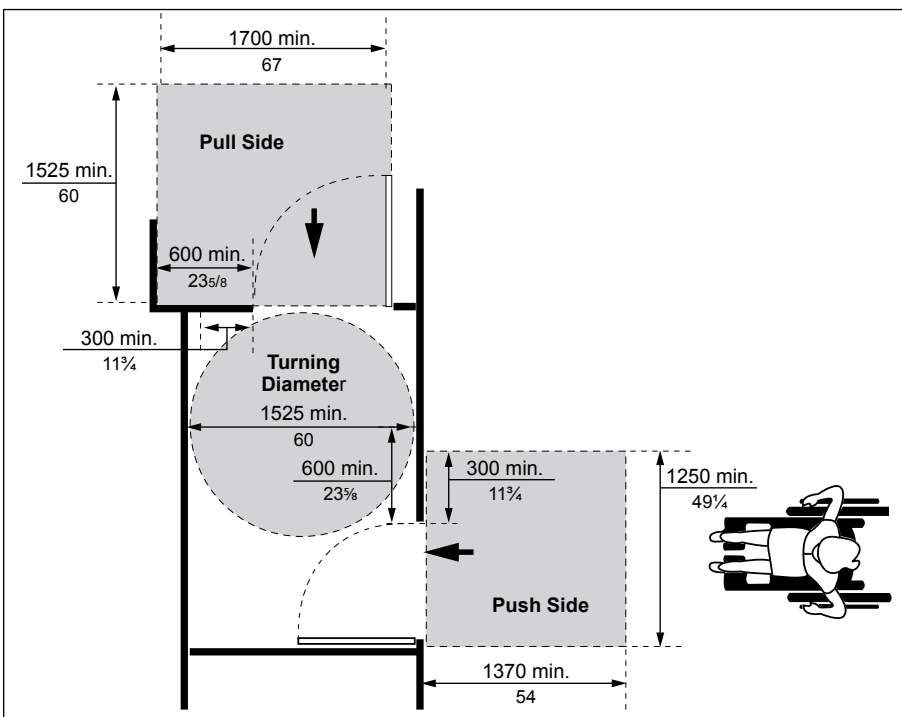


Figure 45b: Doors in Series Where Doors are not Aligned - Plan View

Best Practice

Frameless and fully glazed doors should not be used.

Where there is extensive glazing, provide a strip at a lower level, centered between 850 mm to 1000 mm (33 in to 39½ in) high above finished floor level.

Note

Special designs can be used (e.g., logo or symbol) as long as they do not reduce the opacity, width and high colour / tonal contrast of the strip when compared with the background.

4.2.12 Glazed Doors or Doors with Sidelights

For glazed doors or doors with sidelights: (Figures 46a & 46b)

- provide a high colour / tonal contrast between door frame and mounting surface or wall to ensure that when door is in the open position, persons with vision loss can identify edges upon approach;
- mark the edges of fully glazed doors (e.g., tempered glass without a frame) with a high colour / tonal contrast (e.g., exposed edges to be identified with a vertical safety strip, applied to cap the ends of any exposed glass panel); and
- provide a continuous opaque and high colour / tonal contrast strip, decal or logo on fully glazed doors:
 - a minimum of 50 mm (2 in) wide;
 - mount at eye level, centered between 1350 mm (54 in) and 1525 mm (60 in) high from floor level; and
 - where decals are used (e.g., square, round or other specialized design such as a logo), ensure minimum spacing of 150 mm (5½ in) from center to center of each decal, with solid component of decals having high colour / tonal contrast for enhanced visibility, especially for users with a vision loss.

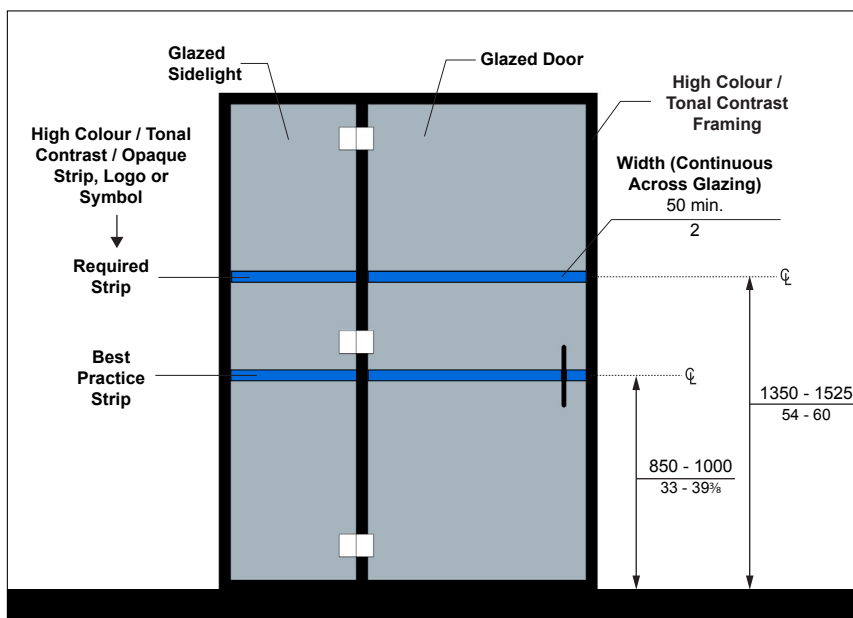


Figure 46a: Glazed Doors and Sidelights - Elevation View

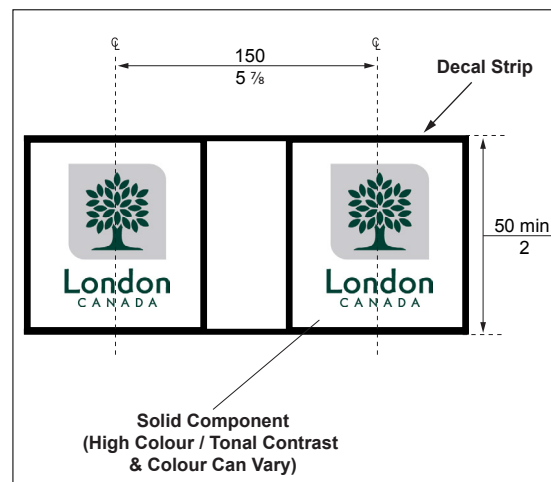


Figure 46b: Spacing For Decal Strip of Specialized Design (e.g., Logo)

4.2.13 Vision Panels

Where provided, ensure: **(Figure 47)**

- a. a minimum width of 75 mm (3 in); and
- b. lower edge is mounted at a maximum height of 760 mm (30 in) with side edge a maximum of 250 mm (9⁷/₈ in) from latch side of the door.

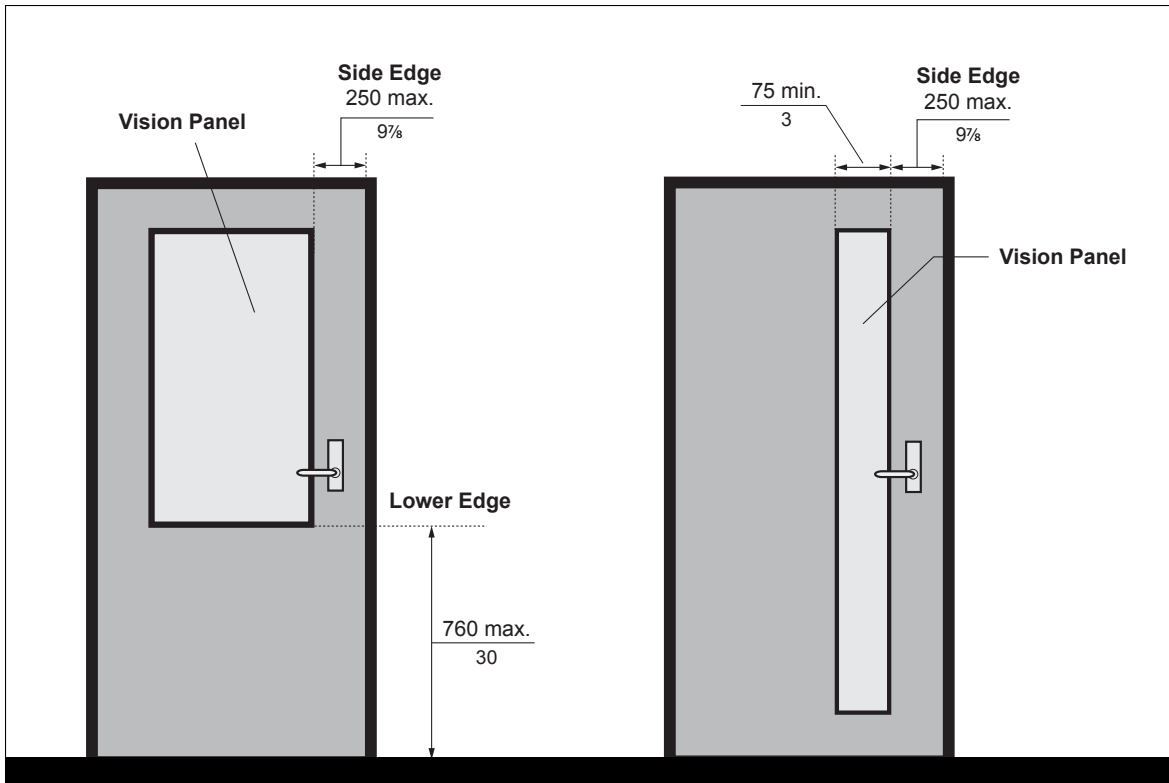


Figure 47: Vision Panels - Elevation View



Interior Accessible Routes

4.3

Application

This section applies to accessible routes or paths of travel for pedestrians within a facility to provide access to elements, rooms or other occupiable spaces. Typical accessible routes are identified as corridors, hallways and other pedestrian circulation paths. These include connections between buildings, unless identified as exceptions.

All access to occupiable spaces to be accessible and conform to this section.

Where there is an elevation change within a path of travel, accessible routes may include ramps, sloped walkways and independently operated elevating devices as permitted (e.g., passenger elevators or lifts).

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.2 Ramps
- Sec. 2.4 Guards and Handrails
- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 2.7 Rest Areas
- Sec. 2.10 Materials and Finishes
- Sec. 2.11 Texture and Colour
- Sec. 5.4 Acoustics
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Exception

An accessible route or path of travel is not required in the following areas:

- Service rooms;
- Elevator machine rooms or other equipment, including service corridors to these rooms;
- Service spaces;
- Janitors' rooms;
- Crawl spaces and attics or roof spaces;
- Into high-hazard industrial occupancies;
- To portions of a floor area with fixed seats in an assembly occupancy, where these portions are not part of the accessible path of travel to spaces designated for wheelchair use, seats designated for adaptable seating, or spaces for the storage of wheelchairs and mobility assistive devices;
- To suites of residential occupancy that are in storeys other than the entrance storey and that have all entrance doors at floor levels that are not required to have an accessible path of travel;
- On the inside of a suite of residential occupancy; and
- To portions of a floor area that are not at the same level as the entry level, provided amenities and uses provided on any raised or sunken level are accessible on the entry level by means of an accessible path of travel.

4.3.1 General Features

- ensure floor surfaces are stable, firm and slip-resistant;
- provide signage and wayfinding cues along interior accessible routes, including entrances and exits, to provide information and guidance for all users based on the type of facility (**Refer to Section 5.8, Signage & Wayfinding**);
- provide headroom clearance throughout interior accessible routes at:
 - a minimum of 2100 mm (82¾ in); or
 - provide a guardrail or other protective barrier with its leading edge at or below 680 mm (26½ in) from the finished floor surface, where headroom clearance is less 2100 mm (82¾ in);
- design public corridors to facilitate wayfinding by using architectural treatments and elements that can be used to differentiate main corridors from secondary corridors (e.g., use of different floor materials, colour schemes, etc.); and
- ensure lighting level is evenly distributed throughout, at a minimum of 50 lux (5 ft. candles) (**Refer to Section 5.7, Lighting**).



Example of tactile floor surface to guide users with vision loss (Best Practice).



Where a structural column / support may be within an accessible route, a colour contrasted floor surface at the base helps identify its location to prevent a potential bumping hazard.

Best Practice

Consider using texture and architectural treatments to enhance wayfinding.

Install convex mirrors at hallway intersections along an accessible route where the line of sight is obstructed.

Note

Architectural treatments may include the selection of products or materials, and other design techniques to improve aural experience in a space. The sound transmission depends on the reflection characteristics of finished material.

Best Practice

Avoid any projections (e.g., structural columns and furnishings) along clear width of circulation corridors.

Exception

Minimum clear width of an accessible route can be reduced as described in other sections of this document:

- at doors / doorways;
- at stairs; and
- entry to elevating devices.

4.3.2 Clear Width

For interior accessible routes, excluding where additional maneuvering space and clear width is required (e.g., between fixed or freestanding objects such as furnishings, doorways or other fixtures that project into the accessible route and that are cane detectable), provide: (**Figures 48a, 48b, 48c & 49a, 49b**)

- minimum clear width of 1830 mm (72 in) for primary accessible routes or higher pedestrian traffic areas and to allow two users of mobility aids to pass each other;
- in lower pedestrian traffic areas, minimum clear width of:
 - 1370 mm (54 in) for single mobility aid and single person to pass each other; and
 - 1100 mm (43¾ in) for single mobility aid (e.g., low level of pedestrian traffic is expected);

Note

Where an obstacle is greater than 1220 mm (48 in) wide, cutting the corners of the obstacle will provide additional manoeuvring space (Figure 49b).

- c. where an accessible route has a clear width less than 1830 mm (72 in), provide an unobstructed passing space of not less than 1830 mm (72 in) width and 1830 mm long (72 in), located not more than 30 m (98 ft 5 in) apart;
- d. where clear width is reduced to a minimum of 950 mm (37½ in) for short indentations up to a maximum of 610 mm (24 in), provide a minimum clear width of 1100 mm (43¼ in) beyond indentation and ensure indentations or reduced clear width is not repeated in a series;

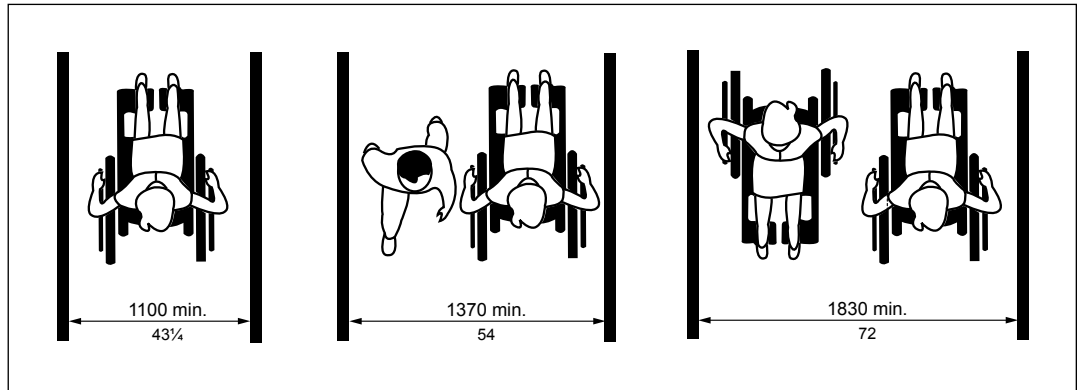


Figure 48a: Clear Width (Typical)

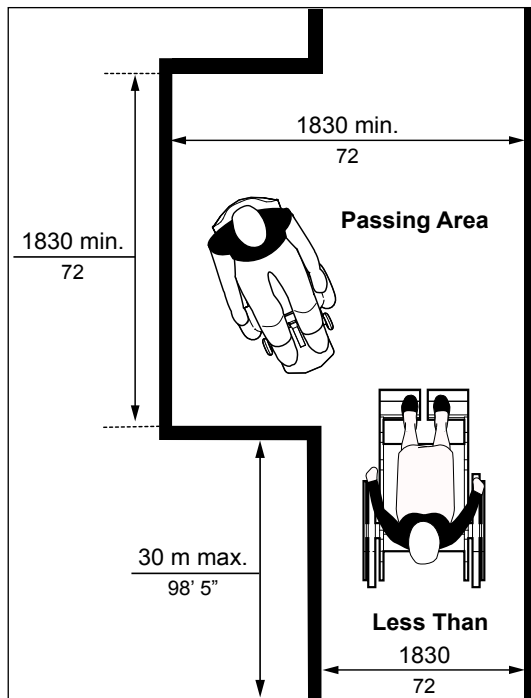


Figure 48b: Required Passing Area for Routes Greater than 30 m (98 ft 5 in) if Width is less than 1830 mm (72 in)

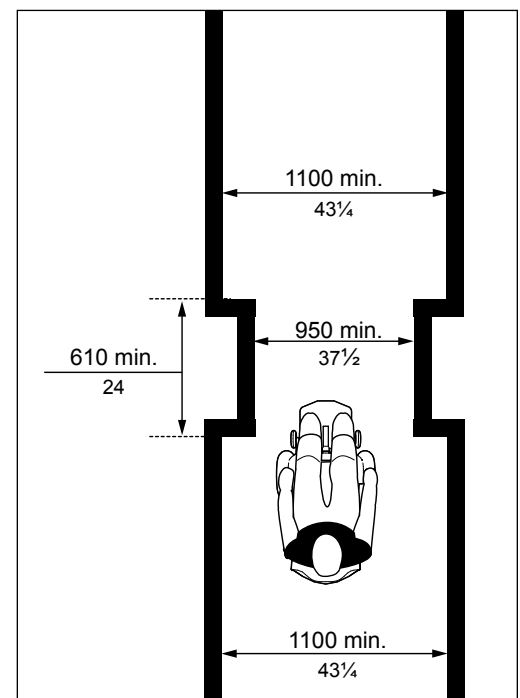


Figure 48c: Permitted Reduced Clear Width

- e. where an accessible route makes a 180 degree turn around an obstacle that is less than 1220 mm (48 in) wide, ensure clear width a minimum of 1100 mm (43¼ in) is provided, when approaching and leaving the turn, and a minimum of 1220 mm (48 in) at the turn; and
- f. where an accessible route makes a 180 degree turn around an obstacle that is greater than 1220 mm (48 in) wide, ensure clear width a minimum of 1100 mm (43¼ in) is provided, when approaching, entering and leaving the turn.

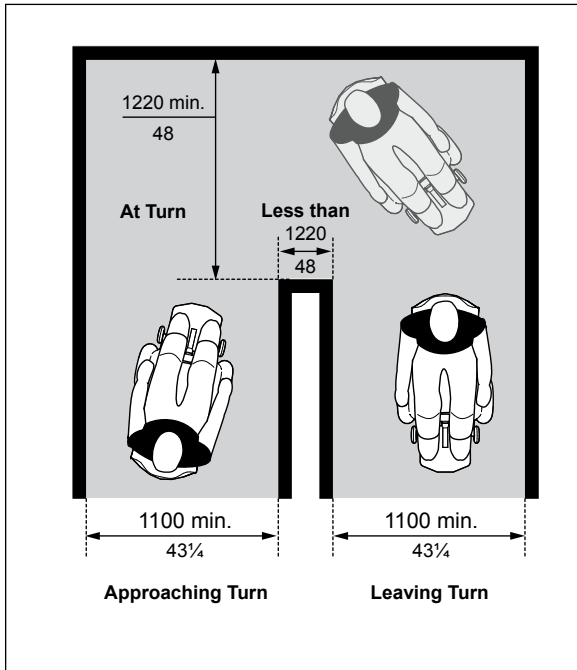


Figure 49a: 180 Degree Turn (Typical)

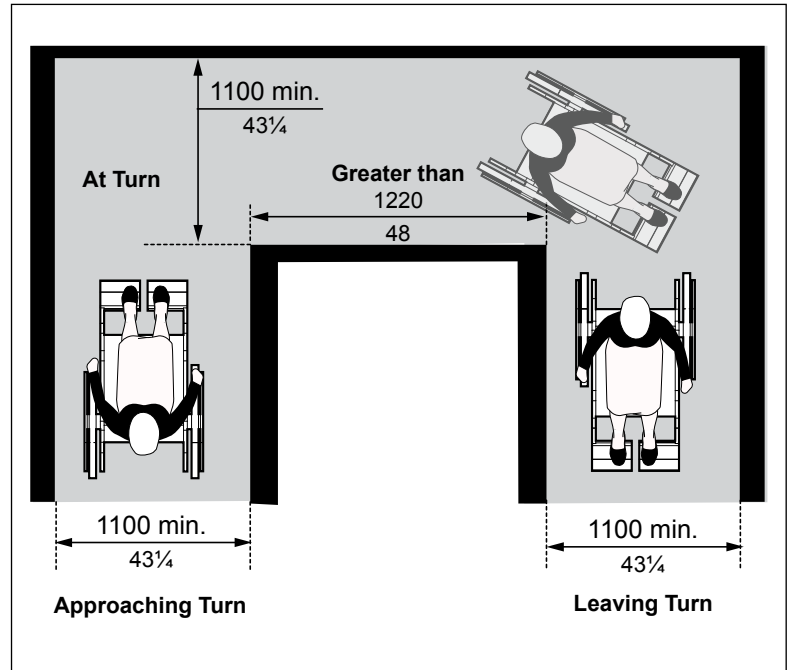


Figure 49b: 180 Degree Turn Around Obstacle Greater than 1220 mm (48 in)

Best Practice

Avoid level changes between an accessible route and any adjacent surface.

4.3.3 Running and Cross Slopes

For running and cross slopes: (Figures 50 & 51)

4.3.3.1 Running Slope

- provide a maximum gradient of 1:20 (5%); and
- where cross slope exceeds 1:20 (5%), ensure route is designed as a ramp.

4.3.3.2 Cross Slope

- provide a maximum cross slope of 1:50 (2%).

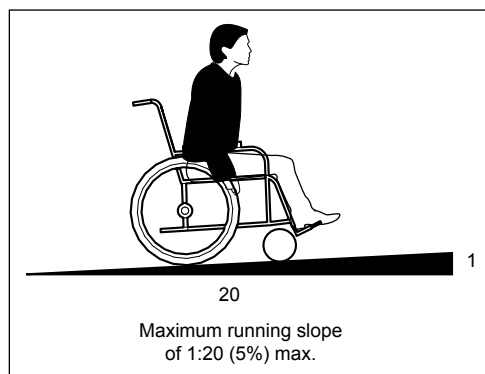


Figure 50: Running Slope

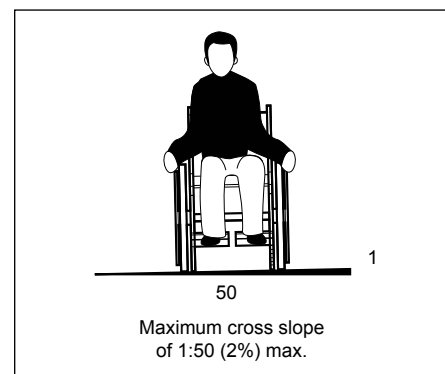


Figure 51: Cross Slope

4.3.4 Changes in Level

Where edges of an accessible route are not level with any adjacent surface, except at stairs, elevated platforms / performance areas, or loading docks:

- provide a high colour / tonal contrast marking on the edge where the change in level is less than 200 mm ($7\frac{7}{8}$ in);
- where the change in level is between 200 mm ($7\frac{7}{8}$ in) and 600 mm ($23\frac{5}{8}$ in), provide a high colour / tonal contrast curb or other barrier protection, a minimum of 100 mm (4 in) high; and
- where the change in level is greater than 600 mm ($23\frac{5}{8}$ in), provide guards (**Refer to Section 2.4, Guards and Handrails**).



Elevating Devices

4.4

Application

This section applies to elevating devices used to provide access between levels within a facility. Elevating devices include, but are not limited to:

- elevators;
- platform lifts;
- inclined lifts;
- moving walkways; and
- escalators.

All new passenger elevators, lifts, moving walkways and escalators provided in multi-storey facilities must comply with the current Ontario Building Code and other applicable requirements identified in the most up-to-date versions of:

- CAN / CSA B44: Safety Code for Elevators and Escalators (Appendix E);
- CAN / CSA B355: Lifts for Persons with Physical Disabilities; and
- CAN / CSA B651: Accessible Design for the Built Environment.

Best Practice

Limited use / limited application (LU/LA) elevators are also not recommended for new construction due to the limited size of interior platform and other operating features. For existing facilities where LU/LA elevators are being upgraded, refer to applicable CSA standards.

Note

Freight elevators are not required to comply with this section, unless the only elevators provided are used as combination passenger and freight elevators for use by the public and employees.

When retrofitting elevating devices at existing facilities, the City will review options in detail, on a case by case basis, recognizing there may be other factors to consider, including physical or structural constraints.

Exception

Elevator access is not required:

- in elevator pits, elevator penthouses, mechanical rooms, piping or equipment catwalks;
- when accessible ramps in compliance with **Section 2.2 Ramps** are used in lieu of an elevator;
- to levels of fire halls and ambulance stations not served by grade-level entry, which do not contain public use facilities; and
- when platform lifts (wheelchair lifts) in compliance with **clause 4.4.2** of this section and applicable Provincial Codes are used in lieu of an elevator, only under the following conditions:
 - › to provide an accessible route to a performing area in an assembly occupancy;
 - › to comply with wheelchair viewing position line-of-sight and dispersion requirements of **Section 6.1 Assembly Areas**;
 - › to provide access to incidental occupied spaces and rooms that are not open to the general public and which house no more than five persons, including, but not limited to, equipment control rooms and projection booths; and
 - › to provide access to raised judges' benches, clerks' stations, speakers' platforms, jury boxes and witness stands or to depressed areas, such as the well of a court.

Best Practice

Provide clear floor space of 2500 mm by 2500 mm (98½ in by 98½ in) in front of hall buttons at elevator lobbies.

Note

Refer to current edition of CSA standards for detailed criteria.

4.4.1 Elevators

One accessible passenger elevator, provided on an accessible route and complying with this section is required to serve each level, including mezzanines, in all multi-storey facilities, unless exempted. If more than one elevator is provided, each passenger elevator is required to comply with this section.

Key design features for passenger elevators are summarized as follows:

4.4.1.1 Elevator Lobby

As part of the design of elevator lobbies, provide the following: **(Figure 52)**

- hall buttons, with visual indicators to identify when car call has been registered (e.g., light on) and answered (e.g., light off), mounted between 895 mm to 945 mm (35 in to 37 in) from floor, measured to centerline of button;
- clear floor space in front of hall buttons a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth;
- hall lanterns with the centerline of the fixture at a minimum of 1830 mm (72 in) above the floor;
- floor designation signage, with colour / tonal contrast from mounting surface on both sides of elevator door jamb, mounted at 1525 mm (60 in) center, above finished floor, with character height at 50 mm (2 in), raised Arabic numerals at 0.75 mm (⅛ in) from surface, and braille text below;
- visual and audible signals at each hoistway entrance to indicate which car is answering a call and its direction of travel. Audible signals to sound once for the “up” direction and twice for the “down” direction.



Elevator Door Jamb: Example of Tactile / braille floor designation signage.

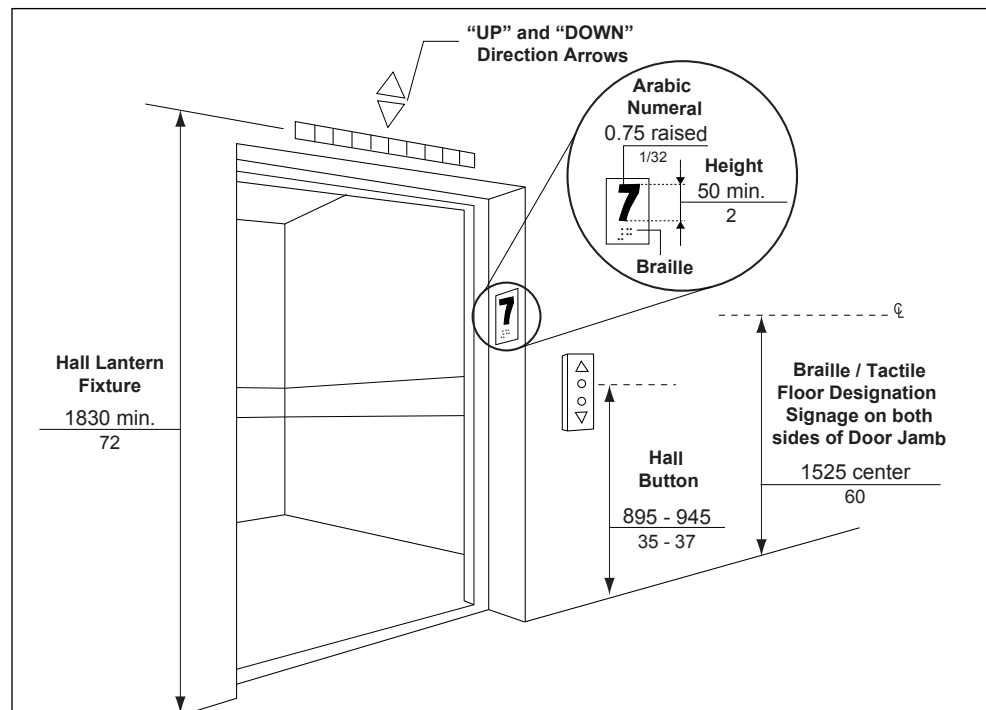


Figure 52: Elevator Lobby - Key Features

4.4.1.2 Door Features

- a. ensure power-operated, horizontally sliding car and landing doors opened and closed by automatic means are provided;
- b. provide minimum door clear width at 950 mm (37½ in);
- c. equip doors with a door re-opening device that automatically stops and reopens the car door and landing door if the door becomes obstructed by an object or person;
- d. ensure reopening device is capable of sensing an object or person in the path of a closing door at 125 mm +/- 25 mm (5 in +/- 1 in) and 735 mm +/- 25 mm (29 in +/- 1 in) above the floor without requiring contact for activation and door reopening devices to remain effective for a period of 20 seconds (minimum);
- e. ensure doors remain fully open for 8 seconds (minimum), unless timing is reduced by activating the car door “close” push button;
- f. equip cars with leveling system that automatically stops and maintains position at floor landings within a tolerance of 13 mm (½ in) under rated loading to zero loading conditions; and
- g. ensure high colour / tonal contrast is provided between elevator door and surrounding environment, especially between the car sill and adjacent floor surfaces.

Best Practice

In high-use public facilities, increase minimum elevator cab width to 2030 mm (80 in) and minimum door clear width at 1067 mm (42 in).

4.4.1.3 Interior Car Dimensions

For interior elevator car: (Figure 53)

- a. provide minimum elevator cab dimensions of 1525 mm (60 in) depth by 1725 mm (68 in) width; and
- b. alternatively, provide minimum elevator cab dimension and door clear width as identified in Table 7 below.

Table 7: Minimum Dimensions for Elevator Car and Door Clear Width

All dimensions are in millimeters (mm).

Door Location	Door Clear Width	Inside Car (Side to Side)	Inside Car (Back Wall to Front Return)	Inside Car (Back Wall to Inside Face of Door)
Centered	1065 (42)	2030 (80)	1295 (51)	1370 (54)
Side (Off-Center)	915 (36)	1725 (68)	1295 (51)	1370 (54)
Any	915 (36)	1370 (54)	2030 (80)	2030 (80)
Any	915 (36)	1525 (60)	1525 (60)	1525 (60)
Minimum Dimension of LU / LA (limited use / limited application) elevators				
Any	815 (32)	1065 (42)	1370 (54)	Not Specified

Source: Adapted from Annex E of CSA-B651-12, “Elevator Requirements for Persons with Physical Disabilities”.



View of an accessible elevator and typical features in lobby, City of London

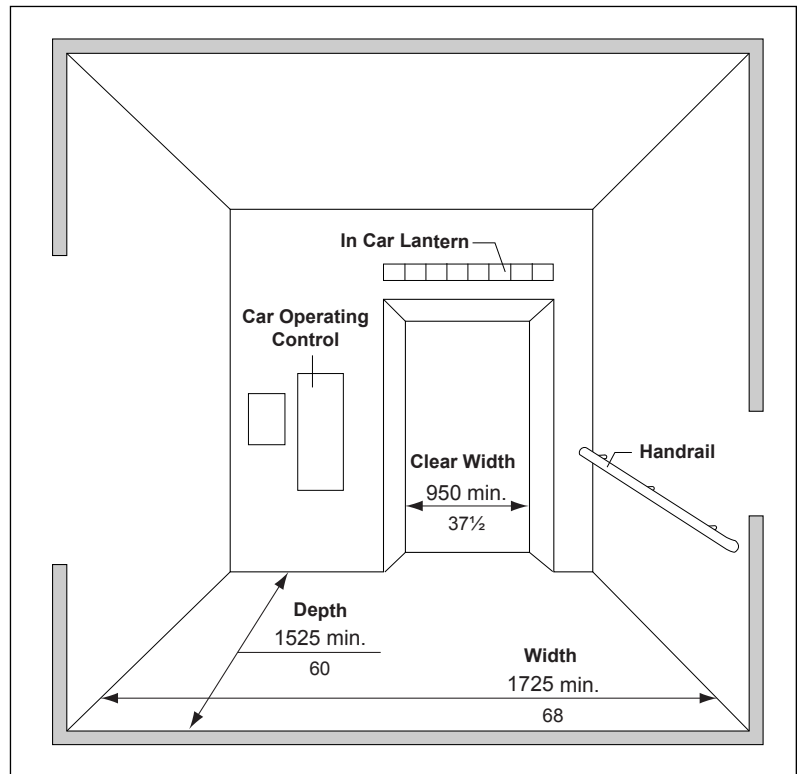


Figure 53: Elevator Car Features

4.4.1.4 Car Controls

For elevator car controls, provide: **(Figures 54a & 54b)**

- a. car operating control push buttons 19 mm ($\frac{3}{4}$ in) in size, raised, flush or recessed, with car control panel readily accessible for users of mobility aids upon entering elevator;
- b. controls are mounted at:
 - i. a minimum of 890 mm (39 in) high to the centerline of the lowest controls;
 - ii. a maximum of 1200 mm (47 in) high, to centerline of the highest controls; and
 - iii. a maximum of 1370 mm (54 in) high, to centerline of the highest controls for cars with more than 16 openings only, where parallel approach to controls is also provided for users of mobility aids;
- c. visual and momentary audible indicators to show when each call is registered, with visual indicators extinguishing when each call is answered;
- d. Grade 2 Braille characters and raised characters, numbers and symbols, placed immediately to the left of the buttons that they apply to; and
- e. Arabic numbers and standard tactile symbols that are 16 mm ($\frac{5}{8}$ in) high and raised 0.75 mm ($\frac{1}{32}$ in) from surface.

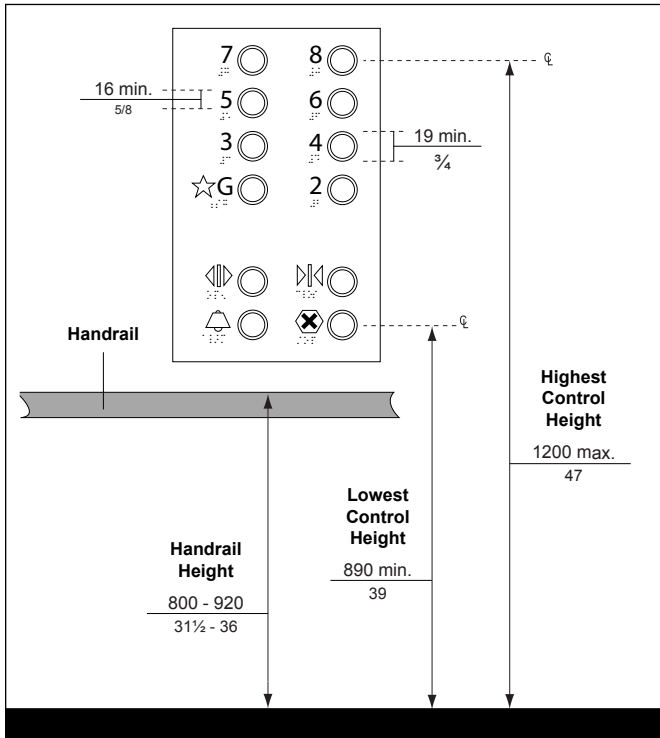


Figure 54a: Elevator Car Control Panel and Handrail

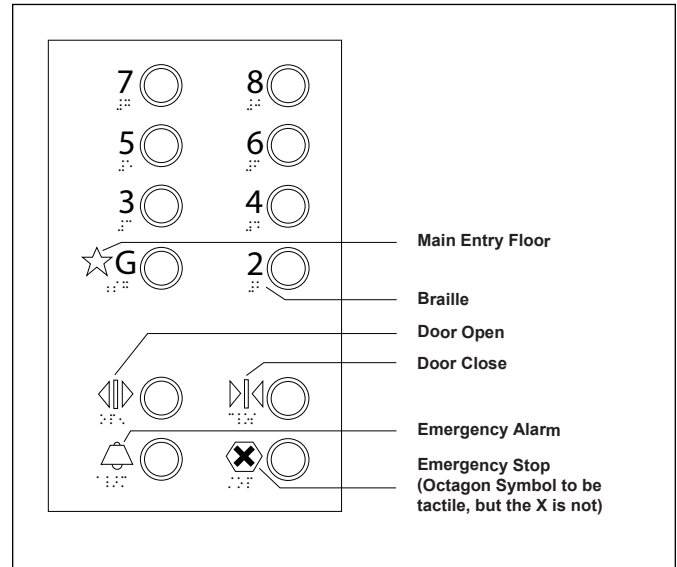


Figure 54b: Standard Tactile Symbols

4.4.1.5 Emergency Car Controls

For elevator emergency car controls: (Figure 54a)

- provide a two-way communication system for emergencies, with operating controls mounted and grouped together at the bottom of the control panel, with the centerline of the emergency alarm and stop buttons mounted at a minimum of 890 mm (35 in) high and a maximum of 1200 mm (47 in) high above floor;
- ensure communication system includes accessible features (e.g., push button operation), with visual indicator identifying when the system has been activated and the emergency call has been received (e.g., to identify “help is on the way” for users with hearing loss); and
- ensure operating instructions are provided with braille and tactile features and if communication system is located in a closed compartment, provide accessible door opening and hardware features.

4.4.1.6 Handrails

For elevator car handrails: (Figure 54a)

- provide continuous handrails on all non-access walls, mounted with top grasping surfaces at 800 mm to 920 mm (31½ in to 36 in) high above floor; and
- ensure a clearance of 35 mm and 45 mm (1½ in and 1¾ in) is provided between handrails and wall.

Exception

Mirrors are not required for flow-through type elevator design.

4.4.1.7 Car Position Indicators

- a. provide audible and visual car floor location indicators to identify the floor location of the car;
- b. locate visible indicators above the car control panel or above the door, with numerals a maximum height of 16 mm ($\frac{5}{8}$ in);
- c. ensure corresponding character illuminates, to indicate a car passing a floor and when a car stops at a floor, served by the elevator; and
- d. provide audible indicator, with signal between 10 to 80 decibals above ambient (dBA), measured at the annunciator, with automatic verbal announcement of the floor at which the car is about to stop, completed prior to the initiation of the door opening and with a frequency between 300 to 3,000 hertz (Hz).

4.4.1.8 Mirrors

- a. mount mirror with the bottom edge at a minimum height of 2000 mm ($78\frac{3}{4}$ in) , within elevator cab as a finish material, on the wall opposite the door; and
- b. where the dimension of the elevator cab is less than 1500 mm (59 in) in any direction, install an angled mirror with the bottom edge at a minimum height of 2000 mm ($78\frac{3}{4}$ in), on the wall opposite the door, to assist users of mobility aids (e.g., who may need to back out).

4.4.1.9 Additional Considerations

- a. ensure floor surfaces are stable, firm, and slip-resistant for users of mobility aids, with both floor and car panel surfaces designed to minimize glare;
- b. provide matting or carpet pile height of 13 mm ($\frac{1}{2}$ in) maximum, where used; and
- c. ensure lighting level in elevator cars and at controls is 100 lux (minimum), measured at the floor level, and that it is at least equivalent to the lighting level as the adjacent elevator lobbies (**Refer to Section 5.7, Lighting for additional requirements**).

4.4.2 Platform Lifts

For retrofitting existing environments, platform lifts that facilitate unassisted entry, operation, and exit from the lift to be provided, with the following additional requirements: **(Figures 55 & 56)**

- ensure they are located along an accessible route;
- provide signage to clearly identify platform lift; and
- ensure compliance with CSA standard CAN / CSA B355 (latest edition) and other applicable sections of these standards, including doors to platform and all related controls and operating mechanisms.

4.4.2.1 Platform Size and Design Features

- ensure surface is non-slip, with dimension of 890 mm by 1525 mm (35 in by 60 in);
- incorporate safety wheel-guards or other protection along all exposed edges;
- provide an emergency call system, linked to a monitored location within the facility, with two-way communication ability and ensure that the highest operable portion is mounted at a maximum of 1200 mm (47 in) from the floor of the platform; and
- ensure operating instructions are provided with braille and tactile features and if communication system is located in a closed compartment, provide accessible door opening and hardware features.

Best Practice

Platform lifts are not recommended in new construction due to limited size of platforms and weight restriction which typically does not accommodate larger mobility aids.

Whenever possible, grading or integrated elevator access to be incorporated in order to avoid the provision and use of platform lifts.

Additionally, If there are no suitable alternatives, platform lift design to be selected that allows the spatial requirement of larger mobility devices such as scooters and power wheelchairs.

Note

Platform lifts are only allowed where it is technically infeasible to install an elevator, LU/LA (Limited Use/ Limited Application) elevating device or other accessible means of a change of level. Lifts that require key access and / or an attendant to operate are not permitted.

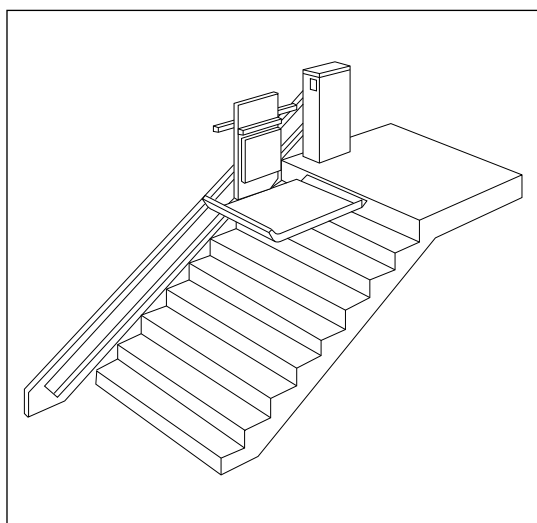


Figure 55: Inclined Platform Stair-Lift

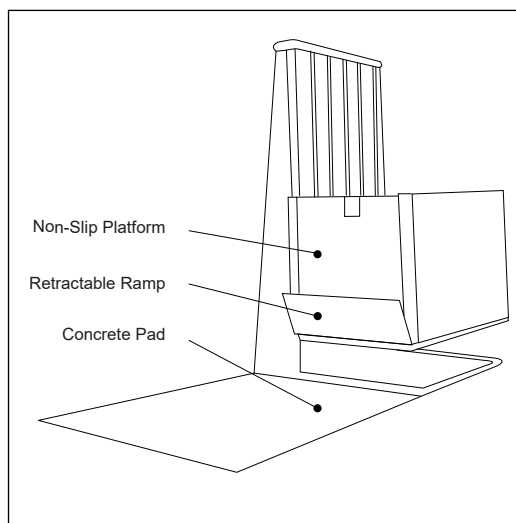


Figure 56: Vertical Platform Lift

Note

The CNIB advises not to use Tactile Walking Surface Indicators (TWSI's) at the head or foot of escalators or moving walkways because these devices are reversible. The presence of TWSI's may cause congestion at the exit of an escalator or moving walkway resulting in a potential safety hazard.

4.4.3 Escalators and Moving Walkways

- a. ensure that where escalators are provided, an alternate accessible route (e.g., ramp or elevator) is also provided in the same vicinity as the escalator;
- b. in a building in which an escalator or inclined moving walkway provides access to any floor level above or below the entrance floor level, provide an interior accessible path of travel to that floor level;
- c. ensure the route from the escalator or inclined moving walkway to the accessible path of travel is clearly indicated by appropriate signs; and
- d. in a building in which a moving walkway provides access between areas on the same floor level, provide an accessible path of travel between the areas served by the walkway.

4.4.3.1 Design Features

4.4.3.1.1 Surfaces, Treads & Risers

Ensure the surfaces, treads and risers of escalators and moving walkways:

- a. are non-slip, non-reflective material (e.g., matte finish to minimize reflected glare);
- b. have top nosings and edges (both horizontal and vertical edges) of escalator steps with high tonal / colour contrasted markings that runs the full width of the step / surface, 50 mm (2 in) depth (maximum); and
- c. have the comb plate (e.g., surface closest to the escalator or the moving walkway, both as you step on and step off) marked with a high colour / tonal contrasted marking that runs the full width of the step / surface, 50 mm (2 in) depth (maximum).

4.4.3.1.2 Lighting

- a. ensure lighting level over escalators and moving walkways is a minimum of 200 lux (20 foot candles), and evenly distributed, from a low-glare light source and especially at the beginning and end of escalators and moving walkways (**Refer to Section 5.7, Lighting for additional requirements**).

4.4.3.1.3 Additional Considerations

- a. consideration for provision of a low-level audible warning indicator, marking both ends of a moving walkway. The intent is to provide an audible cue for users with a vision loss, to hear the warning from 920 mm (36 in) before the transition between the moving walkway and the floor. Any audible warning indicators should be adjustable for environmental noise such as crowds;
- b. where there is an accessible route of travel adjacent to or underneath escalators or moving walkways that are on an incline, ensure protective barriers are in place (e.g., architectural detailing / millwork, planting or seating walls, guardrails or other fixed furniture) that can be detected by people who use long canes or guide dogs to prevent potential bumping hazards, especially for users with vision loss; and
- c. when out of service or during maintenance / repair work, ensure suitable barricades or other protective measures are in place at the beginning and end of escalators or moving walkways, detectable by long cane users. Accessible and suitably placed signage is required to indicate that the escalator or moving walkway is out of service.

Note

Further information is available in **Section 2.5 Overhanging and Protruding Objects**.

Washrooms



4.5

Application

This section applies to washroom facilities and elements within a site and facility including, but not limited to:

- multiple-occupancy washrooms;
- universal washrooms; and
- change rooms with washroom features.

Refer to **Table 8** and **Table 9** in **sub-section 4.5.1, Provision and Locations** for minimum number of Universal Washrooms and Accessible Water Closet Stalls or Enclosures to be provided in a building in which washrooms are required as per subsection 3.7.4 of the Ontario Building Code.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 4.2 Doors and Doorways
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.6 Fire and Life Safety Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Note

If retrofitting multiple occupancy washrooms with accessible water closet stalls or enclosures is not possible, identifying additional space for providing a universal washroom is recommended.

Universal washrooms allow the greatest flexibility, including larger floor space for people who require assistance and may be accompanied by a caregiver or companion, as well as to accommodate larger mobility aids such as power wheelchairs and scooters.

4.5.1 Provision and Locations

- a. provide universal washrooms, as identified in **Table 8**;
- b. provide the minimum number of accessible water closet stalls or enclosures, as identified in **Table 9**;
- c. locate centrally within a facility along an accessible route, within a maximum of 45 m (147 ft 8 in) of regular washrooms; and
- d. where washrooms are not accessible, provide directional signage to indicate the location of the nearest accessible washroom on the same floor.

Table 8: Minimum Number of Universal Washrooms per Building

Number of Storeys in Building	Minimum number of Universal Washrooms per Building
1-3	1
4 - 6	2
Over 6	3, plus 1 for each additional increment of 3 storeys in excess of 6 storeys

Table 9: Minimum Number of Water Closet Stalls or Enclosures Required to be Accessible

Number of Water Closets per Washroom	Minimum Number of Accessible Water Closet Stalls or Enclosures per Washroom
1-3	0, where a universal washroom is provided on the same floor level within 45 m (147 ft 8 in) of the washroom, or 1, where a universal washroom is not provided on the same floor level within 45 m (147 ft 8 in) of the washroom
4 - 9	1
10 - 16	2
17 - 20	3
21 -30	4
Over 30	5, plus 1 for each additional increment of 10 water closets per washroom in excess of 30 water closets per washroom

4.5.2 Multiple Occupancy Washrooms

For multiple occupancy washrooms with accessible water closet stalls or enclosures: (**Figure 57**)

- a. identify clearly with signage, indicating male or female where applicable, with other accessibility features (e.g., braille, tactile, International Symbol of Accessibility);
- b. where doors are provided at washroom entrance, provide a minimum clear width of 950 mm (37½ in), when the door is in the open position and equip with power door operators;
- c. ensure lighting level is evenly distributed, at a minimum of 200 lux (20 ft. candles) (**Refer to Section 5.7, Lighting**);

Best Practice

Provide at least one universal washroom on every occupied floor of a facility.

Note

Where one water closet is required for males and one water closet is required for females, the following may be provided:

(1) one universal washroom; and

(2) one washroom containing one water closet to be used by both sexes provided the door to the room can be locked from the inside.

Best Practice

Wherever possible, consider the use of privacy walls or specialized configuration of entrance vestibules to avoid the need for doors and power door operators. Where entrances are door-less, provide identification signage on both sides of the entrance openings.

Where provided, ensure any drains are installed away from any accessible route / path of travel.

Best Practice

Consider providing a larger clear turning diameter of 1700 mm (67 in) or greater inside washroom circulation area.

Note

In a storey that is not required to have an accessible path of travel, ensure at least one ambulatory water closet is provided.

- ensure minimum clearance of 1700 mm (67 in) between the inside face of an in-swinging entrance door and the outside face of an adjacent water closet stall;
- ensure minimum clearance of 1525 mm (60 in) between outside wall of stall and any wall-mounted fixtures or other obstructions;
- provide a minimum clear floor space 1600 mm wide (63 in) by 1525 mm depth (60 in), in front of the accessible water closet stall, which can be reduced to a minimum of 1525 mm by 1525 mm (60 in by 60 in) in a retrofit condition;
- ensure a minimum clear turning diameter of 1525 mm (60 in) is provided inside washroom circulation area, with a maximum of 500 mm (19 $\frac{5}{8}$ in) permitted under the lavatory to allow users of mobility aids to make a 180° turn;
- ensure floor surfaces are firm, stable and slip-resistant, with a maximum slope of 1:50 (2%);
- provide accessible lavatories with washroom amenities, as identified in this section;
- provide accessible water closet stalls with suitable clear floor space, as identified in this section; and
- install audible and visual fire alarm system.

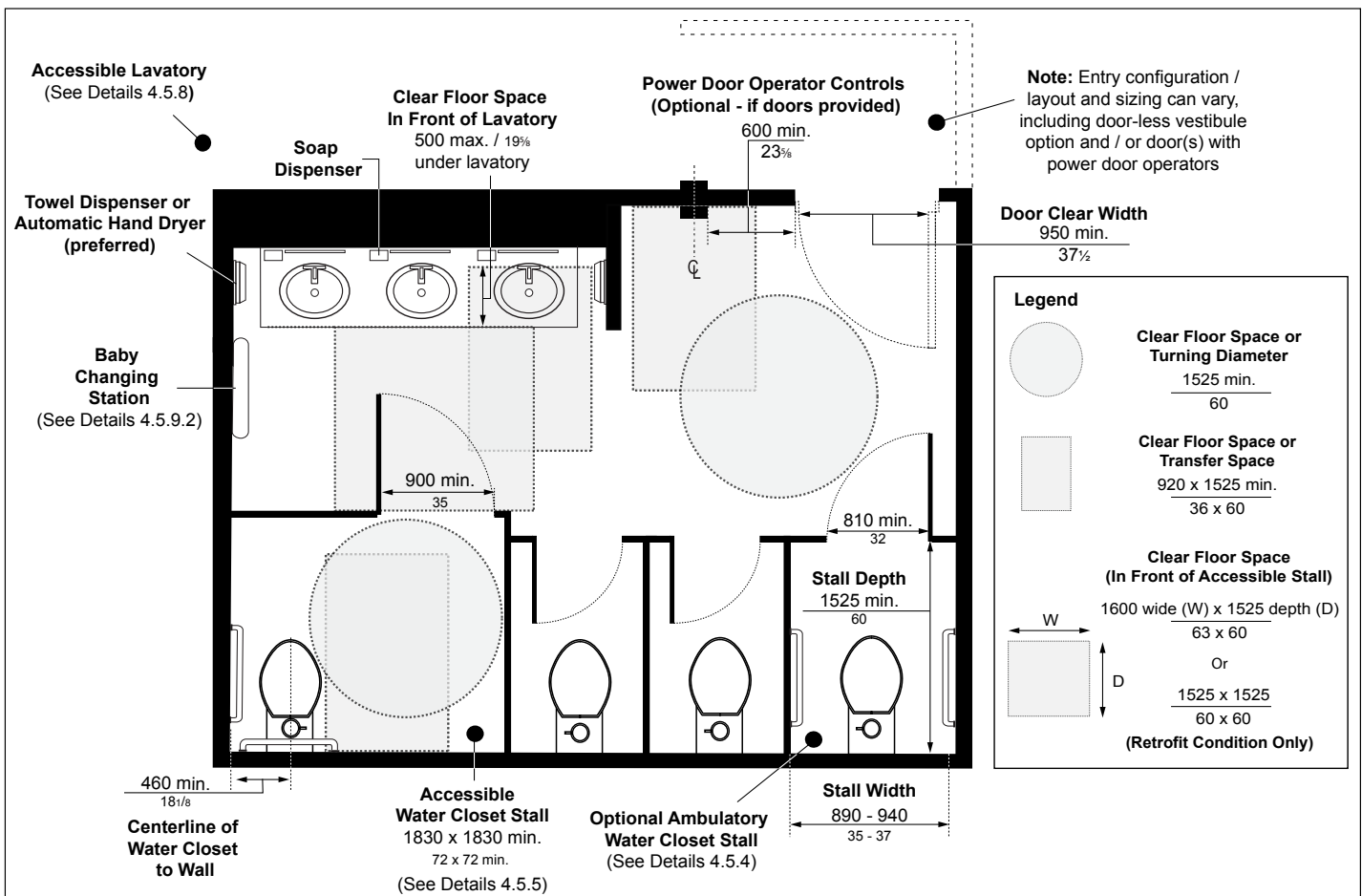


Figure 57: Example of Multiple Occupancy Washroom Layout and Typical Amenities (Conceptual - Layouts Can Vary)

4.5.3 Universal Washrooms

Where universal washrooms are provided: **(Figure 58)**

- a. locate in the same vicinity as other washrooms (e.g., Male & Female multiple occupancy washrooms) along the shortest accessible route;
- b. identify clearly with signage, including unisex pictogram (e.g., Male & Female) and the International Symbol of Accessibility;
- c. provide accessible entrance door:
 - i. with minimum clear width of 950 mm (37½ in), when the door is in an open position;
 - ii. equip with power door operator, coordinated with an automatic locking system (e.g., “push to lock” control), with visual indicator on exterior side that identifies occupied or unoccupied;
 - iii. provide locking mechanism that can be locked from the inside and released from the outside, in case of emergency; and
 - iv. mount accessible latch operating and locking mechanisms 900 mm to 1000 mm (35½ in to 39 ¾ in) above floor, that are operable using a closed fist and does not require fine finger control, tight grasping, pinching or twisting of the wrist, with a maximum force of 22.2 Newtons (5 pounds);
- d. ensure internal dimension between walls is no less than 1700 mm (67 in) and provide a minimum clear turning diameter of 2500 mm (98½ in), clear of all fixtures inside the universal washroom;
- e. ensure floor surface is firm, stable and slip-resistant;
- f. provide one accessible lavatory with other washroom amenities including but not limited to mirror, soap dispenser, paper towel dispenser, automatic hand dryer (preferred), and toilet paper dispenser as identified in this section;
- g. provide one accessible water closet with required clear transfer space of 920 mm (36 in) wide by 1525 mm (60 in) depth and suitable rear and side grab bars (e.g., horizontal, L-shaped and fold-down grab bars) as identified in this section;
- h. provide motion sensor for automatic illumination of interior;
- i. ensure lighting level is evenly distributed, at a minimum of 200 lux (20 ft. candles) **(Refer to Section 5.7, Lighting)**;
- j. install audible and visual fire alarm systems;
- k. provide a minimum clear floor space 810 mm (32 in) wide by 1830 mm (72 in) long in each universal washroom for an adult-size change table;
- l. where the clear floor space provided for an adult-size change table is adjacent to a wall, ensure reinforcement is installed in the wall to permit the future installation of the change table;
- m. where an adult-size change table is installed, ensure a minimum clear floor space of 920 mm (36 in) wide by 1830 mm (72 in) long, parallel to the long side of the adult-size change table;
- n. where installed, ensure baby changing stations and / or adult-size change tables adhere to the requirements identified in **sub-sections 4.5.9.1 & 4.5.9.2**;

Best Practice

Provide both a hand dryer and a paper towel dispenser, where space is available.

Provide a fold-down grab bar mounted on the transfer side of the water closet for additional support.

Where provided, ensure any drains are installed away from any accessible route / path of travel.

Note

An emergency call system with a cancellation feature to turn off the alarm when it is accidentally activated is preferred.

In a retrofit situation where providing the required turning space is technically infeasible, the turning space may be reduced to not less than 2130 mm (84 in).

- o. provide a shelf as identified in **sub-section 4.5.8.1**; and
- p. provide an emergency call system with the following features:
 - i. consists of visual and audible signal devices both inside and outside of the washroom that are activated by a push control device inside the washroom;
 - ii. includes an emergency sign that contains the words “IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE” in letters at least 25 mm (1 in) high with a 5 mm stroke and that is posted above the emergency button; and
 - iii. where facilities have the capacity and where staff is available, ensure the call system is linked to a display panel at a reception / information counter or to a centrally monitored station (e.g., security desk);
- q. install at least one coat hook mounted at 1200 mm (47 in) (maximum) high from floor, on a side wall and projecting 50 mm (2 in) (maximum) from mounting surface.

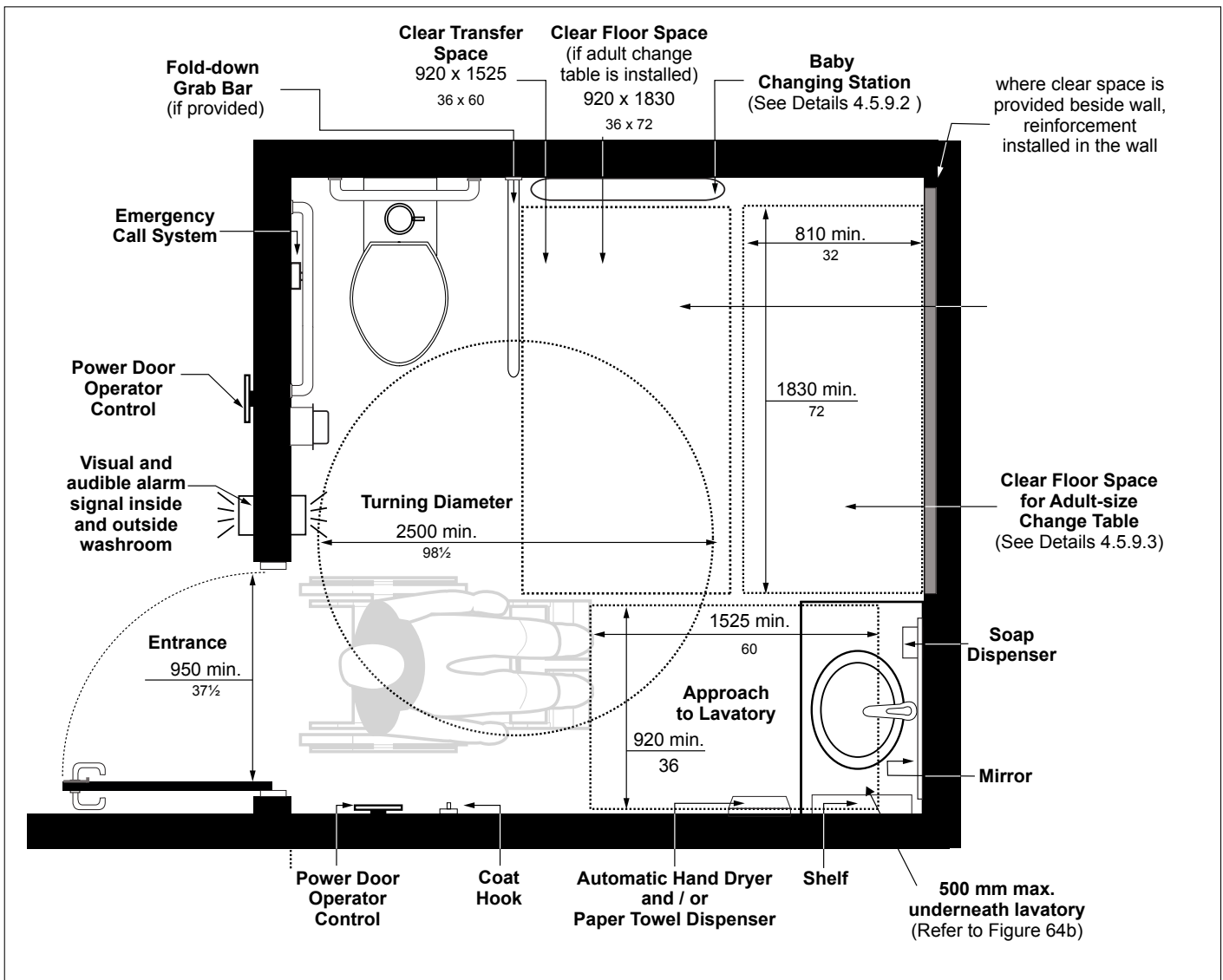


Figure 58: Example of Universal Washroom Layout and Typical Amenities (Conceptual - Layouts Can Vary)

Note

Ambulatory water closet stalls can be identified with a sign that includes a pictogram or symbol of a person with a cane.

4.5.4 Ambulatory Water Closet Stalls or Enclosures

Where ambulatory water closet stalls or enclosures are provided for users with limited mobility who do not use wheeled mobility aids (e.g., canes or crutches): **(Figure 57)**

- a. ensure minimum depth of 1525 mm (60 in), with a width between 890 mm to 940 mm (35 in to 37 in);
- b. provide a door:
 - i. with minimum clear width of 810 mm (32 in);
 - ii. that swings outward, unless the minimum dimensions of the stall identified above are not located within the door swing;
 - iii. with spring-type or gravity hinges so that the door closes automatically;
 - iv. capable of being latched from the inside and released from the outside in case of an emergency;
 - v. with a door pull on both sides of the door, near the latch side of the door, located at a height not less than 900 mm (35½ in) and not more than 1000 mm (39¾ in) above the finished floor; and
 - vi. with all accessible hardware and latching mechanisms operable with a closed fist and without tight grasping, pinching of fingers or twisting of wrist, with a maximum force of 22.2 Newtons (5 pounds);
- c. equip with a water closet centered between the partition walls;
- d. install L-shaped grab bars, as identified in this section, on each side of the water closet;
- e. provide a sign on the door that indicates that the stall is suitable for users who may require grab bar assistance; and
- f. install at least one coat hook mounted at a maximum of 1200 mm (47 in) high from floor, on a side wall and projecting a maximum 50 mm (2 in) from mounting surface.

4.5.5 Accessible Water Closet Stalls or Enclosures

Where accessible water closet stalls or enclosures are provided in multiple occupancy washrooms: **(Figures 59 & 60)**

- a. mark with the International Symbol of Accessibility and ensure doors and partitions have a high colour / tonal contrast from surroundings;
- b. provide a minimum clear turning diameter of 1525 mm (60 in), with overall stall size at a minimum of 1830 mm by 1830 mm (72 in by 72 in); and
- c. install at least one coat hook mounted at a maximum of 1200 mm (47 in) high from floor, on a side wall and projecting a maximum of 50 mm (2 in) from mounting surface.

Best Practice

Provide a larger accessible stall that includes a lavatory inside with required amenities and floor space clearances.

Provide clear turning diameter of 1830 mm (72 in) or larger.

Note

In a retrofit situation where it's technically infeasible to provide the required clear width opening for the accessible stall door, the clear width opening may be reduced to a minimum of 860 mm (34 in).

Best Practice

Wall hung water closets are preferred because they provide additional space at toe level.

Automatic flush controls are recommended for accessible water closets (e.g., sensor activated).

Note

The clear transfer space must be free of any obstruction (e.g., garbage receptacles or baby change tables), excluding sanitary napkin disposal units (**Refer to 4.5.9**). Clear transfer space is measured from the side surface of the water closet or tank (e.g., whichever protrudes most) to the stall partition / wall, or side of any adjacent vanity / obstruction, if applicable.

4.5.5.1 Stall Doors

For accessible stall doors, ensure: (**Figures 59 & 60**)

- a. when door is in an open position, minimum clear width of 900 mm (35½ in) is provided;
- b. the door is aligned with water closet transfer space (e.g., door is positioned on opposite side of water closet);
- c. door swings outward, unless a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) long is provided within the stall or enclosure, clear of door swing, to permit the door to be closed inside without interfering with the mobility device;
- d. door is self-closing with spring-type or gravity hinges, so that when at rest, the door remains open a maximum 50 mm (2 in) beyond the jamb;
- e. accessible door hardware is provided, including locking mechanisms, with stall capable of being locked from the inside by a control that is operable with a closed fist and does not require fine finger control, tight grasping, pinching or twisting of the wrist with a maximum force of 22.2 Newtons (5 pounds);
- f. door can be released from the outside in case of emergency; and
- g. provide D-type door pulls on both sides of the door as follows:
 - i. ensure high colour / tonal contrast with mounting surface;
 - ii. provide minimum length of 140 mm (5½ in), with grasping depth between 30 mm to 50 mm (1¼ in to 2 in); and
 - iii. mount on the vertical centerline of the door, located at a height between 800 mm (31½ in) and 1000 mm (39¾ in) above the finished floor.

4.5.6 Water Closets

For accessible / ambulatory water closets: (**Figures 59, 60, 61 & 62**)

- a. mount seat between 430 mm and 485 mm (16⅞ in and 19⅞ in) high from floor;
- b. install water closet as follows: (Note: Not applicable to 4.5.4 Ambulatory Water Closet Stalls or Enclosures)
 - i. the centerline of water closet from any adjacent side wall is between 460 mm and 480 mm (18⅞ in and 18⅞ in) and unobstructed transfer space a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth is provided on the other side of the water closet; or
 - ii. a clear transfer space a minimum of 920 mm (36 in) wide and 1525 mm (60 in) depth is provided on each side of the water closet;
- c. provide a back support where there is no seat cover / lid or tank, and where there is a tank, ensure tank lid is securely attached;
- d. ensure seat is secured;
- e. provide internal extension guards that will not allow the seat to slide;

- f. mount toilet paper dispenser:
 - i. on the side wall closest to the water closet, below the grab bar;
 - ii. with bottom edge at 600 mm to 800 mm (23 $\frac{5}{8}$ in to 31 $\frac{1}{2}$ in) high from floor; and
 - iii. with the closest edge of the dispenser in line with front edge or a maximum of 300 mm (11 $\frac{3}{4}$ in) from the front edge of the water closet seat;
- g. provide automatic, lever or other type of flushing control (e.g., push button control) that:
 - i. is located between 500 mm and 900 mm (19 $\frac{5}{8}$ in and 35 $\frac{1}{2}$ in) above the finished floor;
 - ii. is located on and operable from the transfer side; and
 - iii. is operable using a closed fist and does not require fine finger control, tight grasping, pinching or twisting of the wrist, with a maximum force of 22.2 Newtons (5 pounds);
- h. install at least one coat hook mounted at a maximum of 1200 mm (47 in) high from floor, on a side wall and projecting a maximum of 50 mm (2 in) from mounting surface.

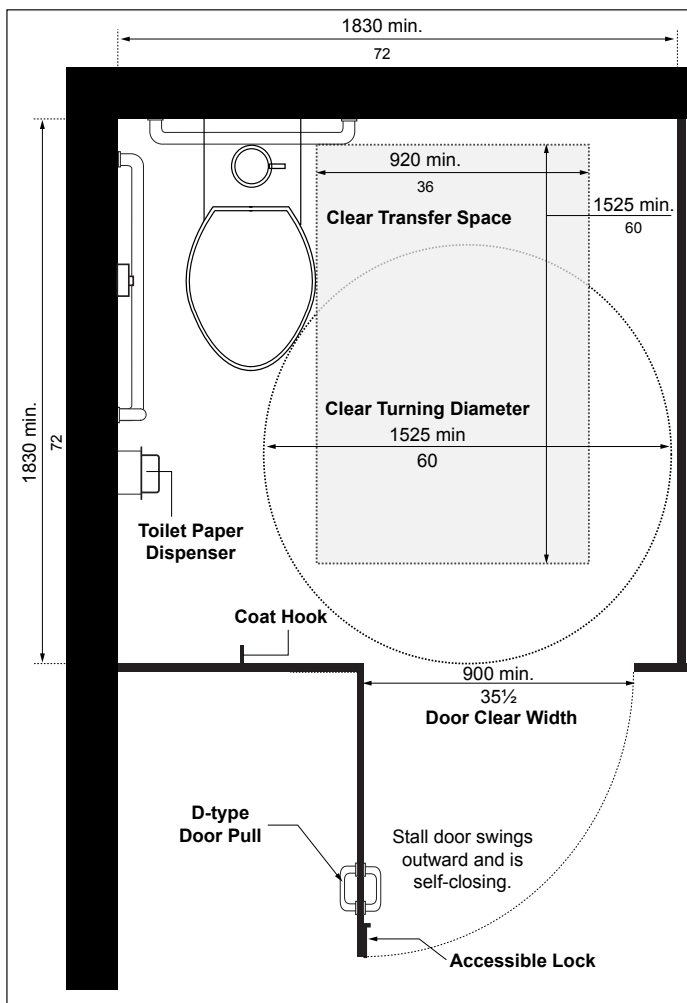


Figure 59: Accessible Water Closet Stall - Space Requirements

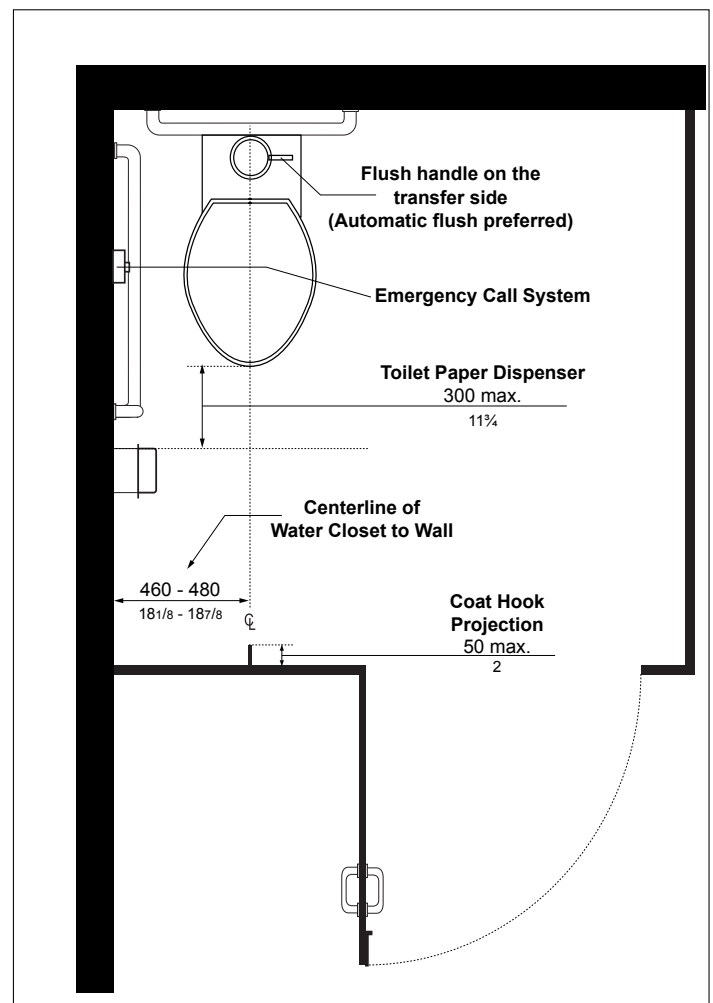


Figure 60: Accessible Water Closet Stall Features

Best Practice

Space of 100 mm (4 in) is recommended between grab bar and toilet paper dispenser.

Where large toilet paper dispensers are used, ensure they are suitably mounted and do not obstruct the use of the adjacent grab bar.

Note

Grab bars with knurled finish are not acceptable for use.

Fold-down grab bar is permitted to encroach into the turning space or clear transfer space.

4.5.7 Grab Bars

Where grab bars are provided ensure: **(Figures 61 & 62)**

- surface is non-abrasive and slip-resistant (e.g., peened finish);
- a high colour / tonal contrast is provided between grab bar and mounting surfaces;
- grasping surface is circular in shape, with diameter between 30 mm and 40 mm ($1\frac{3}{16}$ in and $1\frac{9}{16}$ in);
- clear space a minimum of 38 mm ($1\frac{3}{16}$ in) and a maximum 50 mm (2 in) is provided between mounting surface and the inside surface of the grab bar;
- it is mounted securely to withstand a force of 1.3 Kilonewtons (300 pounds) applied in all directions; and
- grab bar does not rotate within its fittings.

4.5.7.1 Horizontal Grab Bars

- ensure minimum length of 600 mm ($23\frac{5}{8}$ in);
- mount between 840 mm and 920 mm (33 in to 36 in) high from floor level, centered behind water closet; and
- where water closet has a water tank, mount bottom edge of grab bar a minimum of 150 mm (6 in) above the tank.

4.5.7.2 L-shaped Grab Bars

- ensure minimum length of 760 mm (30 in) for both vertical and horizontal components, with a minimum clearance from toilet paper dispenser to any grab bar component of 60 mm ($2\frac{3}{8}$ in);
- mount vertical component a maximum of 150 mm (6 in) from front edge of water closet; and
- mount horizontal component a maximum of 750 mm ($29\frac{1}{2}$ in) high above floor.

4.5.7.3 Fold-Down Grab Bars

Where fold-down grab bars are provided: **(Figures 63a & 63b)**

- mount on the wall behind the water closet;
- locate on transfer space side;
- ensure minimum length of 760 mm (30 in);
- mount between 390 mm and 410 mm ($15\frac{1}{2}$ in and $16\frac{1}{4}$ in) from centerline of water closet;
- mount with the horizontal component at a maximum of 750 mm ($29\frac{1}{2}$ in) high from floor level;
- ensure force required to pull down grab bar is a maximum of 22.2 Newtons (5.0 pounds); and
- where transfer space is provided on both sides of the water closet, provide a fold-down grab bar on each side.

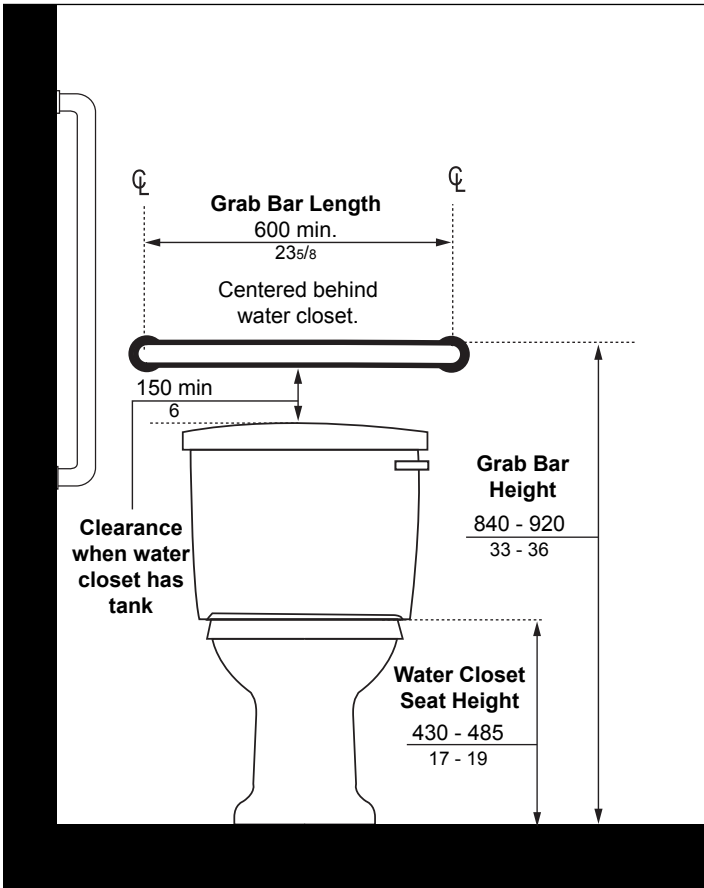


Figure 61: Horizontal Grab Bar and Seat Height (Water Closet with Water Tank)

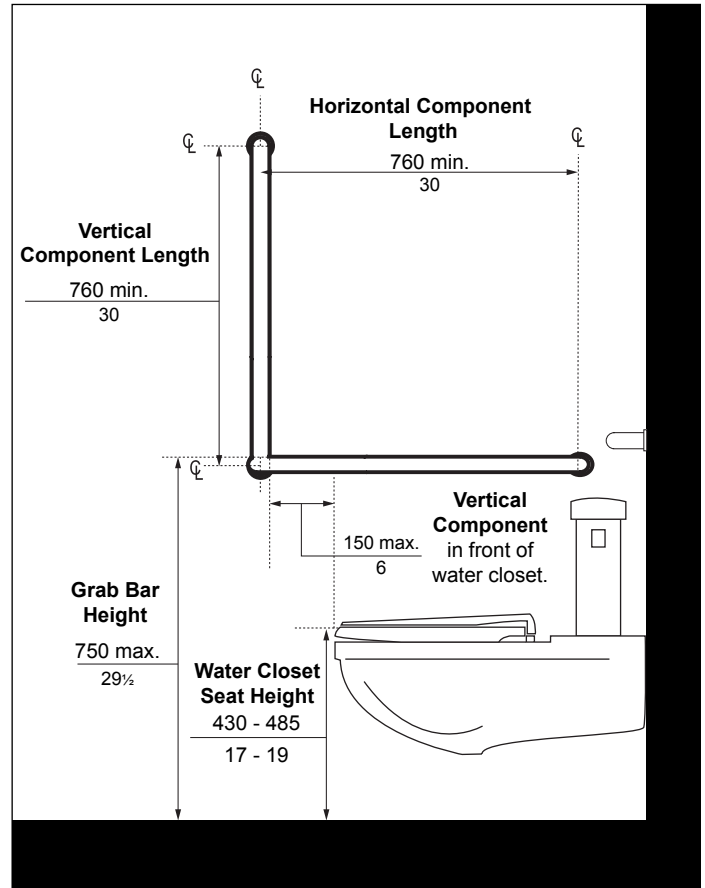


Figure 62: L-shaped Grab Bar and Seat Height (Wall Hung Water Closet with Flush Valve)

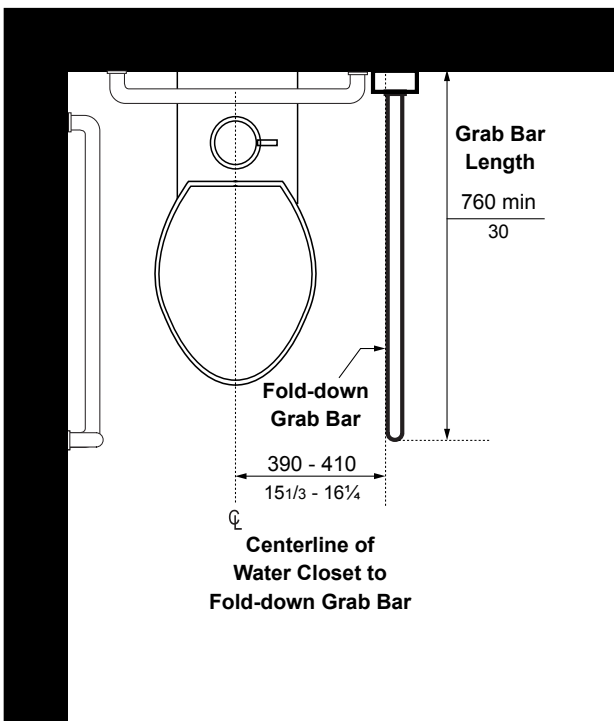


Figure 63a: Fold-down Grab Bar - Plan View

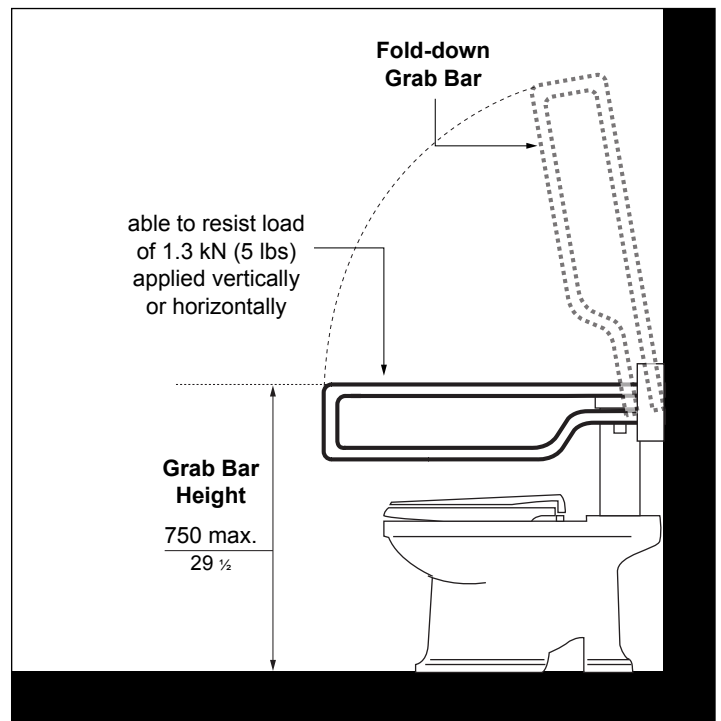


Figure 63b: Fold-down Grab Bar - Elevation View

Best Practice

Automatic faucet control is preferred or a single lever faucet handle, 75 mm (3 in) long (minimum).

An offset trap and drain below accessible lavatories enhances required clearances and knee space available.

4.5.8 Lavatories

Provision of at least one accessible lavatory is required in each accessible washroom facility as follows: **(Figures 64a & 64b)**

- a. ensure centerline of lavatory is a minimum of 460 mm (18 $\frac{1}{8}$ in) from adjacent side wall;
- b. ensure top surface is continuous, with a high colour / tonal contrast, compared to adjacent wall surfaces;
- c. mount top surface of lavatory at 820 to 865 mm (32 $\frac{1}{4}$ to 34 in) high above floor;
- d. provide clearances underneath lavatory no less than:
 - i. 920 mm (36 in) wide, centered on lavatory;
 - ii. 735 mm (29 in) high at front edge;
 - iii. 685 mm (27 in) high at 200 mm (8 $\frac{1}{8}$ in) back from front edge; and
 - iv. 350 mm (13 $\frac{3}{4}$ in) high, over the distance from a point 280 mm (11 in) to a point 430 mm (16 $\frac{7}{8}$ in) back from the front edge, for toe space clearance;
- e. provide automatic control or lever-type faucet without spring loading, located so that the distance from the centerline of the faucet is 485 mm (19 in) (maximum) depth, measured from edge of a basin or to the front edge of a vanity;
- f. mount soap dispenser at a maximum of 1100 mm (43 $\frac{1}{4}$ in) above the finished floor, within 500 mm (19 $\frac{5}{8}$ in) from the front edge of the lavatory, with an automatic control (preferred) or with a manual control, operable using a closed fist and with a force of 22.2 Newtons (5.0 pounds) or less;
- g. provide a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth, centered on the lavatory, with a maximum depth of 500 mm (19 $\frac{5}{8}$ in) permitted under the lavatory;
- h. provide an automatic hand dryer (preferred) or manually operated towel dispenser, located at a maximum of 610 mm (24 in), measured horizontally, from the edge of the lavatory;
- i. ensure water temperature is controlled to a maximum of 43 Degrees Celsius; and
- j. ensure water pipes are covered or insulated below lavatories.

4.5.8.1 Shelves

Where shelves are provided: **(Figure 64b)**

- a. mount at a maximum of 1100 mm (43 $\frac{1}{4}$ in) high above floor and installed in a location where it will not create a hazard;
- b. ensure shelves do not project more than 100 mm (4 in) from mounting surface along an accessible path of travel; and
- c. where provided at a lavatory, mount at a maximum 200 mm (7 $\frac{7}{8}$ in) high above top surface of lavatory.

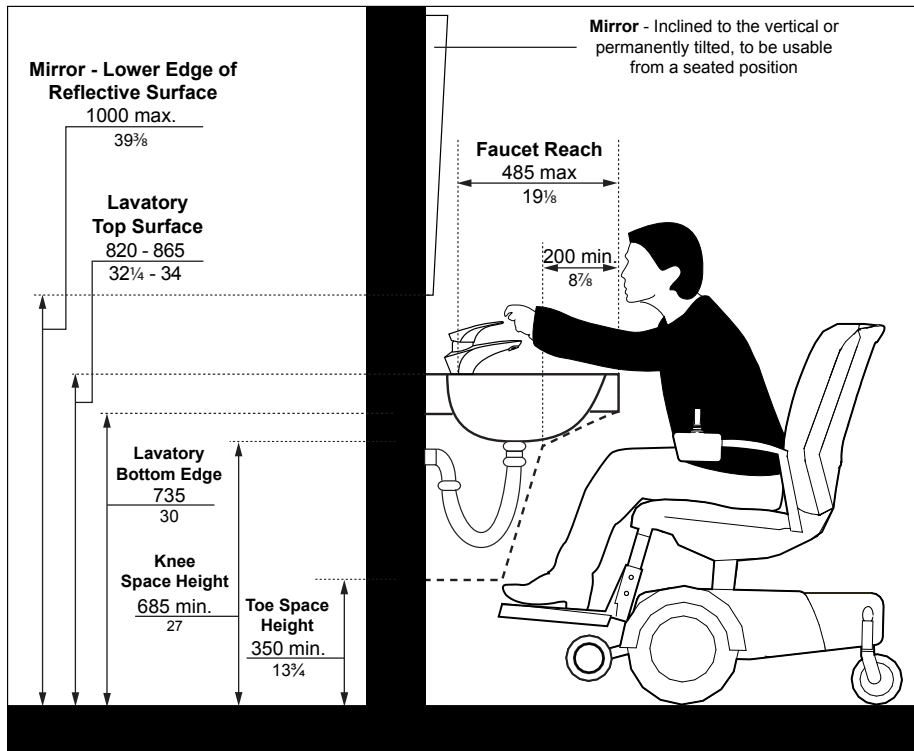


Figure 64a: Lavatories - Section View

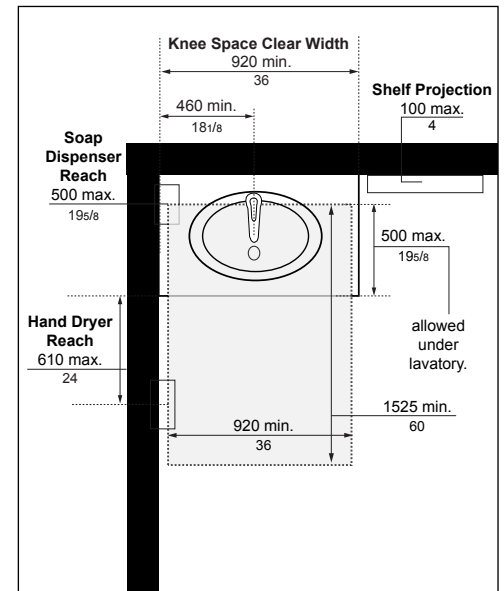


Figure 64b: Lavatories - Plan View

4.5.9 Washroom Amenities

Washroom amenities include, but are not limited to: vending equipment, hand dryers, paper towel dispensers, soap dispensers, waste receptacles, sanitary napkin dispenser / disposal units, mirrors, changing stations and tables. Where washroom amenities are provided: **(Figures 64b & 65)**

- ensure wall mounted amenities are recessed (preferred) or do not project more than 100 mm (4 in) from any wall along an accessible path of travel or within the required clear transfer space of the toilet (e.g., sanitary napkin disposal units);
- provide high colour / tonal contrast between amenities and mounting surfaces;
- ensure any operating controls are mounted between 900 mm and 1100 mm (35½ in and 43¼ in) high above floor, are automatic / push button type or are operable with a closed fist / one hand, without requiring tight grasping, pinching or twisting of the wrist and with a maximum force of 22.2 Newtons (5 pounds);
- ensure the dispensing height of washroom amenities is between 900 mm and 1100 mm (35½ in and 43¼ in);
- where amenities are mounted at lavatories (e.g., hand dryers, paper towel dispensers, soap dispensers), install at a maximum of 1100 mm (43¼ in) high, between 500 mm to 610 mm (19½ in to 24 in) measured horizontally from the edge of the lavatory;

Best Practice

Automatic controls are preferred as they are easy to operate by a wider range of users and have improved hygienic performance.

Best Practice

A single full length mirror can accommodate a greater number of people, including children. In order for mirrors to be usable by people who are ambulatory and people who use wheeled mobility devices, ensure the top edge of mirrors is 1880 mm (74 in) (minimum) from the floor or ground.

Where tilted mirrors are provided, ensure they are permanently tilted for use at all times from a seated position, by children or users of shorter stature.



Example of typical surface mounted or recessed sanitary napkin disposal units, used by the City of London.

- f. provide minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth, for side and frontal approaches; and
- g. for sanitary napkin disposal units:
 - i. locate unit in the clear transfer space at the side of the water closet, to allow frontal approach and use by users of mobility aids and / or for reach and use when seated on the water closet; and
 - ii. mount operating component (e.g., push handle for lid) of unit between 400 mm and 610 mm (15¾ in and 24 in).

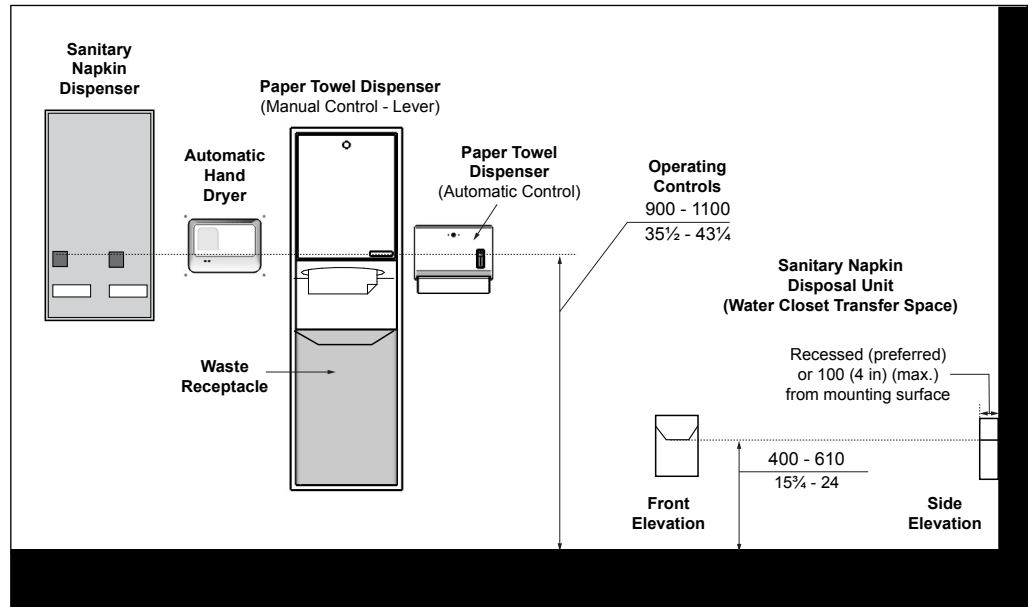


Figure 65: Typical Washroom Amenities - Mounting Heights For Operating Controls, Dispensers and Receptacles

4.5.9.1 Mirrors

For mirrors provided at accessible lavatories: **(Figure 64a)**

- a. mount with the bottom edge of the reflecting surface at a maximum of 1000 mm (39¾ in) high above floor or inclined to the vertical to be usable from a seated position;
- b. ensure lighting level over mirrors does not create reflected glare; and
- c. where full length mirrors are provided, ensure they are not installed where they will reflect path of travel and cause confusion for users.

4.5.9.2 Baby Changing Stations

Where baby changing stations (e.g., which can also be referred to as a baby changing table) are provided: **(Figure 66a)**

- where provided, ensure at least one is accessible for users with disabilities, with unit placed in a location that does not obstruct adjacent paths of travel when in use and positioned in close proximity to a lavatory and waste receptacle;
- ensure a minimum clear floor space of 920 mm (36 in) by 1525 mm (60 in) for either forward or side approaches;
- ensure the required floor clearance for changing station does not overlap with floor clearances of other fixtures, when the changing station is folded up;
- mount with the highest edge or component of the station between 730 mm and 865 mm (28¾ in and 34 in);
- ensure minimum knee clearance of 685 mm high (27 in) and 480 mm (18⅞ in) depth is provided;
- where a folding-type changing station is provided, ensure a maximum projection from wall of 100 mm (4 in) when in folded position and located along accessible path of travel; and
- where a folding-type changing station is provided, ensure operating control is:
 - mounted between 900 mm and 1100 mm (35½ in and 43¼ in) high; and
 - operable with a closed fist and without tight grasping, pinching of fingers or twisting of wrist, with a maximum force of 22.2 Newtons (5 pounds).

Best Practice

Ensure baby changing stations are not located in accessible water closet stalls, especially in high use washrooms.

Universal washrooms designed with larger floor space are more suitable to accommodate changing stations, tables and other attendant care amenities (e.g., shelving).

Note

Baby changing stations can be fixed or the folding type.

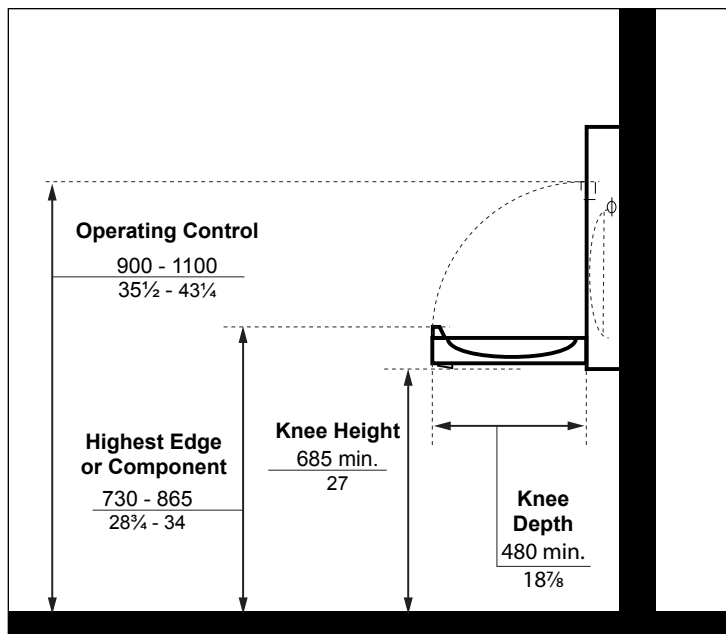


Figure 66a: Folding Baby Changing Station - Section View



Example of a typical baby changing station, City of London.

Best Practice

Public facilities such as community and recreation centers, should provide an adult-size change table in each universal washroom.

Note

Adult-size change tables located in universal washrooms are of benefit to many individuals, and may be used as changing stations or tables. They allow persons with limited balance or strength to sit and allow persons with disabilities to lie down and be changed with the assistance of an attendant.

Adult-size change tables are also useful in change rooms, where people are expected to change clothing.

4.5.9.3 Adult-size Change Tables

Where an adult-size change table is installed in a universal washroom: (Figures 58, 66b & 66c)

- a. provide a change table surface that is a minimum of 810 mm (32 in) wide by 1830 mm (72 in) length with a minimum clear floor space of 920 mm (36 in) wide by 1830 mm (75 in) length, parallel to the long side of the table;
- b. when fully loaded, ensure the surface height above the floor is adjustable (e.g., automatic preferred) from between 450 mm and 500 mm (17¾ in and 19⅝ in) at the low range to between 850 mm and 900 mm (33½ in and 35½ in) at the high range;
- c. where a fold-down change table is provided:
 - i. install so that it does not encroach into the clear transfer space required adjacent to the water closet when positioned for use;
 - ii. ensure operating mechanisms (e.g., latches, handles and pulls) are mounted between 900 mm to 1100 mm (35½ in to 43¼ in) high; and
 - iii. ensure automatic / manual operating mechanisms are operable with a closed fist and without tight grasping, pinching of fingers or twisting of wrist, with a maximum force of 22.2 Newtons (5 pounds);
- d. ensure changing tables can support a minimum load of 1.33 Kilonewtons (300 pounds), with required wall reinforcements;
- e. provide a high colour / tonal contrast between change table surface and adjacent mounting surface; and
- f. ensure change table surfaces are free of sharp edges or abrasive materials, and are easy to clean.

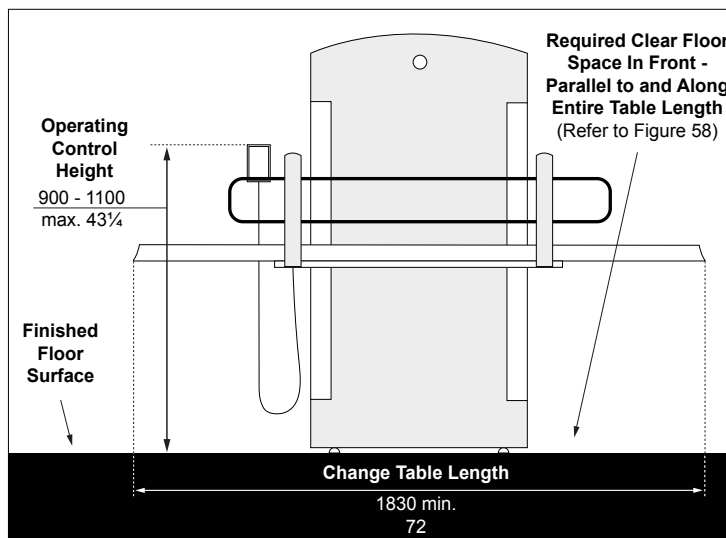


Figure 66b: Adult-size Change Table - Front Elevation View

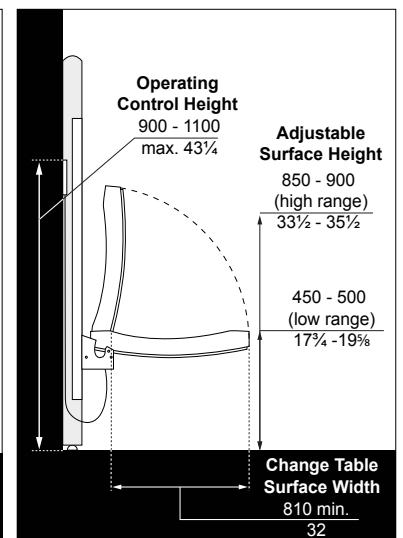


Figure 66c: Adult-size Change Table - Side Elevation View

4.5.10 Urinals

Where more than one urinal is provided in men's multiple occupancy washrooms, provide at least one accessible urinal, as follows: **(Figure 67a & 67b)**

- locate within accessible path of travel with no step in front of the urinal;
- mount urinal on wall with the lower rim located at a maximum height of 430 mm (16 $\frac{7}{8}$ in) above floor, or provide a floor mounted urinal with the rim level with the floor level;
- ensure the upper rim is no lower than 860 mm (34 in) high above floor;
- ensure a minimum depth of 345 mm (13 $\frac{5}{8}$ in), measured from the outer face of the urinal rim to the back of the fixture;
- ensure urinal has high colour / tonal contrast compared with back wall;
- provide lever, automatic, or other flush control operable with a closed fist, without tight grasping, pinching or twisting of the wrist (e.g., push button control) and with a force of no more than 22.2 Newtons (5.0 pounds), mounted between 900 mm to 1100 mm (35 $\frac{1}{2}$ in and 43 $\frac{3}{4}$ in) high above floor;
- provide a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth that is perpendicular to, and centered on the urinal and is unobstructed by privacy screens for front approach;

Note

Placement of privacy screens is dependent on where grab bars are installed.

Vertical markers are used to identify centerline of urinal for users with vision loss.

Various elements may be used as a centerline indicator, such as exposed piping, architectural features (e.g., raised ceramic tiles), etc.

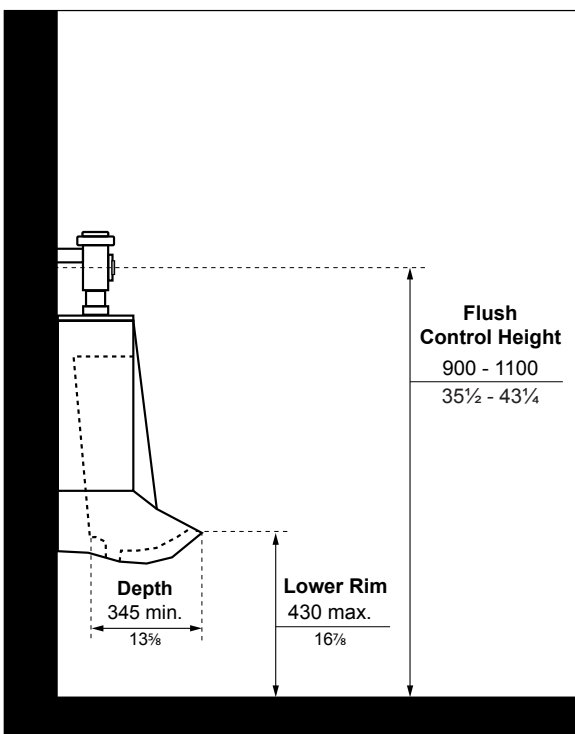


Figure 67a: Urinals - Side Elevation View

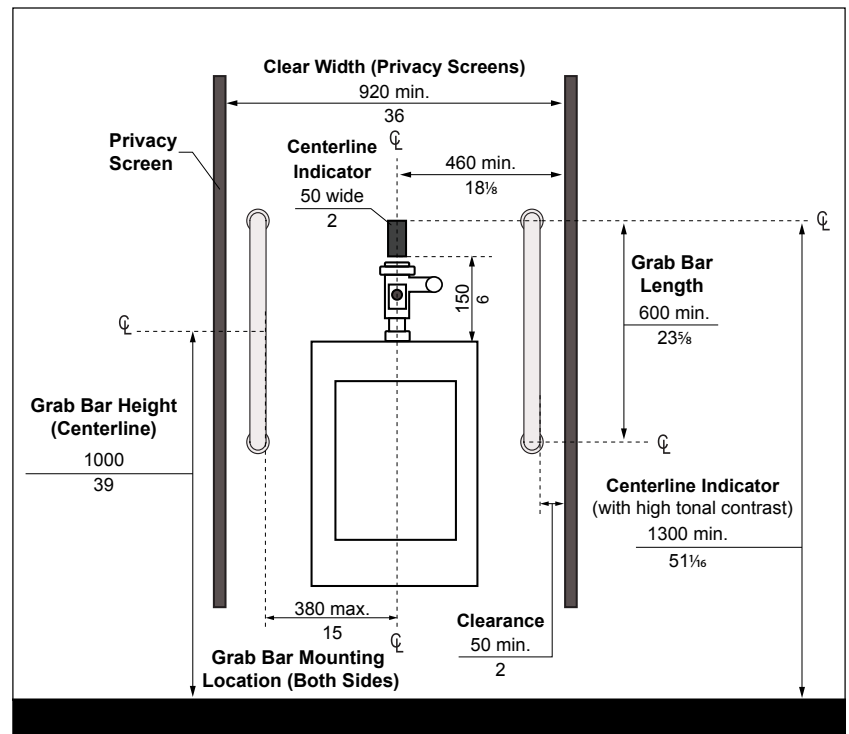


Figure 67b: Urinals - Front Elevation View

- h. provide grab bars, on each side of urinal:
 - i. mounted vertically, with centerline at a maximum of 1000 mm (39 $\frac{3}{8}$ in) high above floor;
 - ii. mounted at a maximum of 380 mm (15 in) from centerline of urinal;
 - iii. with a minimum length of 600 mm (23 $\frac{5}{8}$ in); and
 - iv. with high colour / tonal contrast compared to back wall;
- i. install centerline indicator for all urinals:
 - i. centered above the urinal 50 mm (2 in) wide (maximum);
 - ii. extending a minimum of 1300 mm (51 $\frac{1}{16}$ in) above floor but never less than 150 mm (6 in) above the upper urinal rim;
 - iii. ensure indicator has high colour / tonal contrast compared with back wall and raised a minimum of 3 mm ($\frac{1}{8}$ in); and
 - iv. where more than one urinal is provided in a washroom, provide a centerline indicator at each urinal;
- j. where privacy screens are provided:
 - i. provide a minimum clearance of 920 mm (36 in) between screens;
 - ii. ensure a clearance of 50 mm (2 in) from the grab bars; and
 - iii. ensure high colour / tonal contrast between screens and surrounding surfaces, as well as the vertical outer edges.



Showers

4.6

Application

This section applies to accessible showers provided in all facilities, typically referred to as roll-in shower stalls.

Reference

- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.7 Lighting

Best Practice

Where additional space is available, provide an accessible drying area, adjacent to the shower area with bench and grab bars (Figure 69).

Note

Where enclosure screens or curtains are provided, ensure mounting provisions do not obstruct the shower controls, required clear floor space at entry and the transfer from mobility aids to the shower seat.

4.6.1 Provision

- a. provide at least one accessible shower stall where a group of showers are provided in a facility, as identified in **Table 10** below:

Table 10: Minimum Number of Accessible Showers

Number of Showers provided in a Group	Minimum number of Accessible Showers required
1-7	1
Over 7	1, plus 1 for each additional increment of 7 showers in a group

4.6.2 Design and Layout

For accessible shower stalls, provide: (Figure 68)

- a. interior floor space a minimum of 1525 mm (60 in) wide by 920 mm (36 in) depth;
- b. additional clear floor space a minimum of 1525 mm (60 in) wide by 920 mm (36 in) depth at shower entrance;
- c. a covered trench drain that is suitably located, based on the overall design of the stall and drainage requirements (e.g., preference is for water to drain away from user as much as possible, including consideration for additional drain(s) in drying area during detailed design);
- d. level entry or a beveled threshold, 13 mm (½ in) high (maximum);
- e. a floor surface that is slip-resistant; and
- f. a lighting level that is evenly distributed for all areas, at a minimum of 200 lux (20 ft. candles) (Refer to Section 5.7, Lighting).

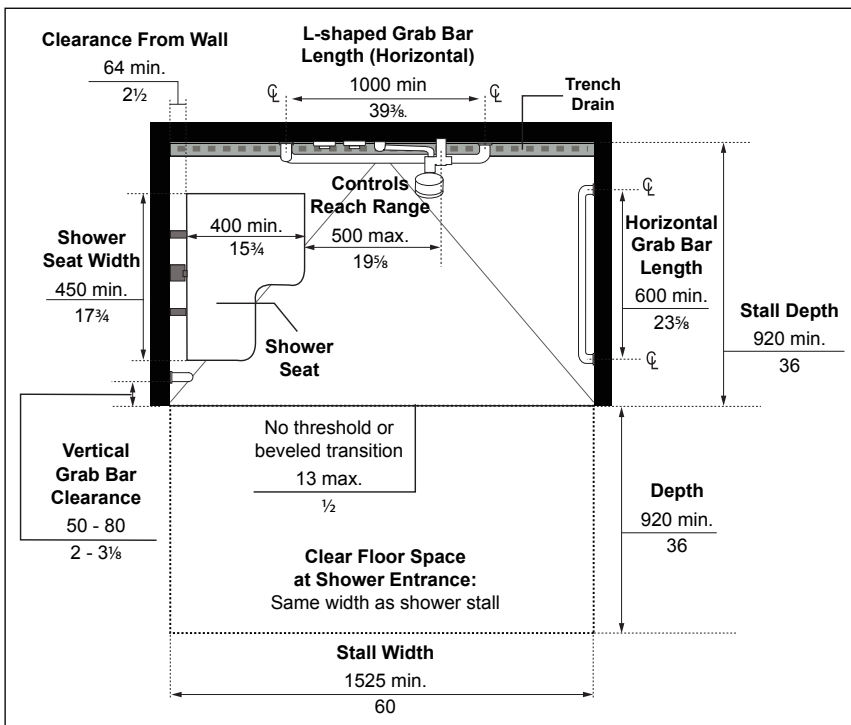


Figure 68: Accessible Shower Stall Design and Layout - Plan View

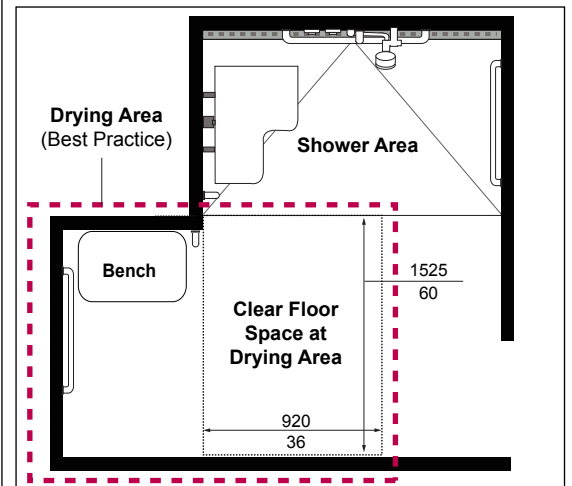


Figure 69: Drying Area - Plan View (Best Practice)

4.6.3 Controls and Accessories

4.6.3.1 General

For general features related to shower controls and accessories, provide: **(Figure 68)**

- lever type or automatic controls that can be operated with a closed fist and with a force of not more than 22.2 Newtons (5 pounds), mounted at 1000 mm (39³/₈ in) high above floor;
- locate all shower controls, including shower head, a maximum of 500 mm (19⁵/₈ in) from the front edge of the seat;
- a pressure equalizing or thermostatic mixing valve to control water pressure and avoid scalding, mounted at a maximum of 1000 mm (39³/₈ in) high above finished floor; and
- fully recessed soap holders, mounted between 900 mm and 1100 mm (35¹/₂ in and 43¹/₄ in), reachable from a seated position.

4.6.3.2 Shower Head

For shower heads, provide: **(Figure 70)**

- a hand-held shower head with a flexible hose at a minimum length of 1800 mm (70⁷/₈ in);
- vertical support used to mount shower head that allows operation as a fixed shower head, adjustable to a maximum height of 1200 mm (47 in) above floor and reachable from a seated position; and
- a vertical support and shower head placement that does not obstruct the use of grab bars.

4.6.3.3 Shower Seat

Provide a fixed shower seat or where a hinged seat is provided, ensure it is not spring-loaded, with seat mounted as follows: **(Figures 68 & 70)**

- securely, capable of holding a minimum load of 1.3 Kilonewtons (300 pounds) and located on the same side wall as the vertical grab bar;
- between 460 mm and 480 mm (18³/₈ in and 18⁷/₈ in) high above the finished floor, with the front edge of the seat located within 500 mm (19⁵/₈ in) from the shower head and controls; and
- with a smooth and slip-resistant surface, with no rough edges, a minimum of 450 mm (17³/₄ in) wide by 400 mm (15³/₄ in) depth with rear edge 64 mm (2¹/₂ in) from wall and with high colour / tonal contrast compared to surroundings.

Best Practice

Water-resistant and padded seat surfaces are recommended.

Note

EXCEPTION: The use of two fixed-height shower heads with the capability of adjusting the direction of water flow is permitted instead of a hand-held shower head with flexible hose in facilities that may be subject to vandalism.

The higher shower head to be mounted at 1825 mm (72 in) high.

The lower shower head to be mounted at 1400 mm (55¹/₈ in) high.

A valve to direct water between the two shower heads, to be mounted / located adjacent to the shower control / mixing valve, as identified in this section.

4.6.4 Grab Bars

- a. ensure grasping surface is non-abrasive, slip-resistant and provide a high colour / tonal contrast compared with mounting surface;
- b. provide circular profile, with diameter between 30 mm and 40 mm (1³/₁₆ in and 1⁹/₁₆ in);
- c. ensure a minimum clear space of 50 mm (2 in) between mounting surface and grab bar, as well as between ends of grab bars and any adjacent wall;
- d. mount securely to withstand a force of 1.3 Kilonewtons (300 pounds) applied in all directions; and
- e. ensure grab bars do not obstruct the use of the shower controls or accessories.

4.6.4.1 Vertical Grab Bar

- a. provide a vertical grab bar, with a minimum length of 1000 mm (39³/₈ in) and mounted as follows: **(Figures 68 & 70)**
 - i. on the side wall adjacent to shower seat, with a clearance between 50 mm and 80 mm (2 in and 3¹/₈ in) from the adjacent clear floor space; and
 - ii. with bottom edge between 600 mm and 650 mm (23⁵/₈ in and 25¹/₂ in) high above floor to provide additional support when entering / exiting or when transferring to the seat.

4.6.4.2 L-Shaped Grab Bar

- a. mount on wall opposite to shower entrance between the shower head and shower controls, with: **(Figures 68 & 70)**
 - i. horizontal component a minimum length of 1000 mm (39³/₈ in), mounted between 750 mm and 870 mm (29¹/₂ in and 34¹/₄ in) high above the finished floor; and
 - ii. vertical component a minimum length of 760 mm (30 in), mounted between 400 mm and 500 mm (15³/₄ in and 19⁵/₈ in) from the side wall on which the vertical grab bar is mounted.

4.6.4.3 Horizontal Grab Bar

- a. mount on the side wall opposite from the shower seat, with: **(Figures 68 & 70)**
 - i. a minimum length of 600 mm (23⁵/₈ in); and
 - ii. mounting height at 850 mm (33¹/₂ in) above finished floor.

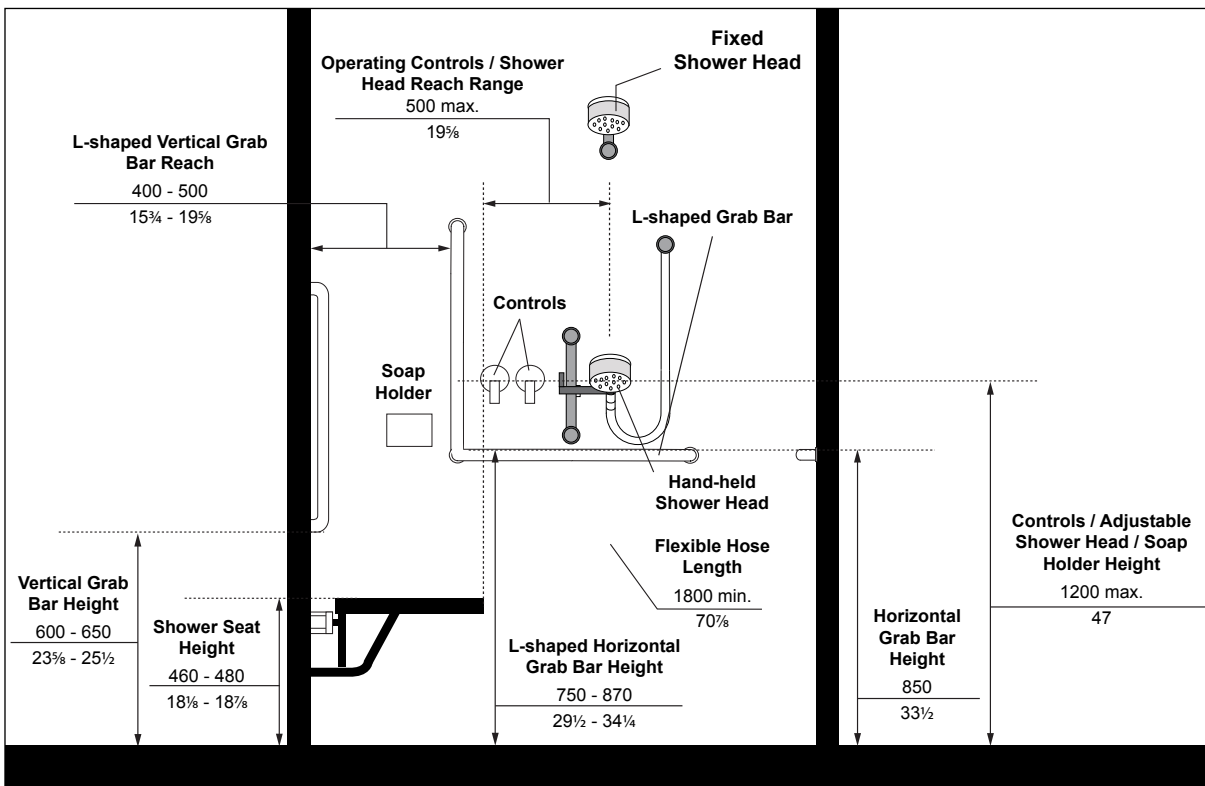


Figure 70a: Accessible Shower Stall Design and Layout (Typical) - Section View

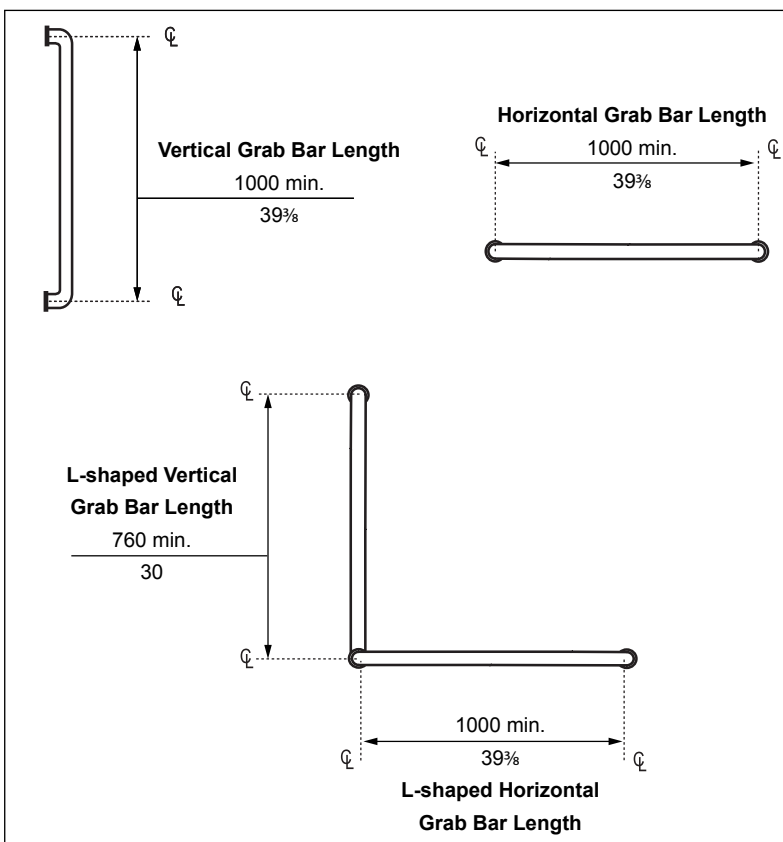


Figure 70b: Accessible Shower Grab Bar Dimensions

Bathtubs

4.7

Application

This section applies to accessible bathtubs provided in all facilities, which typically include long term care residences.

Reference

- Sec. 4.5 Washrooms
- Sec. 4.5.7 Grab Bars
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.7 Lighting

Note

Additional requirements not addressed in this section may include considerations for the provision of portable or fixed transfer lifts to meet the needs of diverse users, for assistance positioning into or out of a bathtub. Other accommodations (e.g., using operating controls when seated in the bathtub) may also be required if bathtubs cannot be used independently, recognizing diverse types of disabilities.

4.7.1 Provision

Where bathtubs are provided: **(Figure 71)**

- ensure all bathtubs are accessible and designed as per this section; and
- ensure at least 10% but never less than one bathtub is accessible, in each bathing facility where they are provided in a retrofit situation where it is technically infeasible to have all bathtubs accessible.

4.7.2 Design and Layout

- ensure bathtub is a minimum of 1525 mm (60 in) in length and located in a room with a clear floor space not less than 1525 mm (60 in) in diameter;
- provide clear floor space a minimum of 920 mm (36 in) wide by a minimum 1525 mm (60 in) long, extending along the full length of the bathtub to allow access into and out of the bathtub, with no tracks mounted on the bathtub rim;
- ensure bottom of bathtub surface and adjacent clear floor space surface are slip-resistant; and
- provide illumination of all areas that is evenly distributed at a minimum 200 lux, as required **(Refer to Section 5.7, Lighting)**.

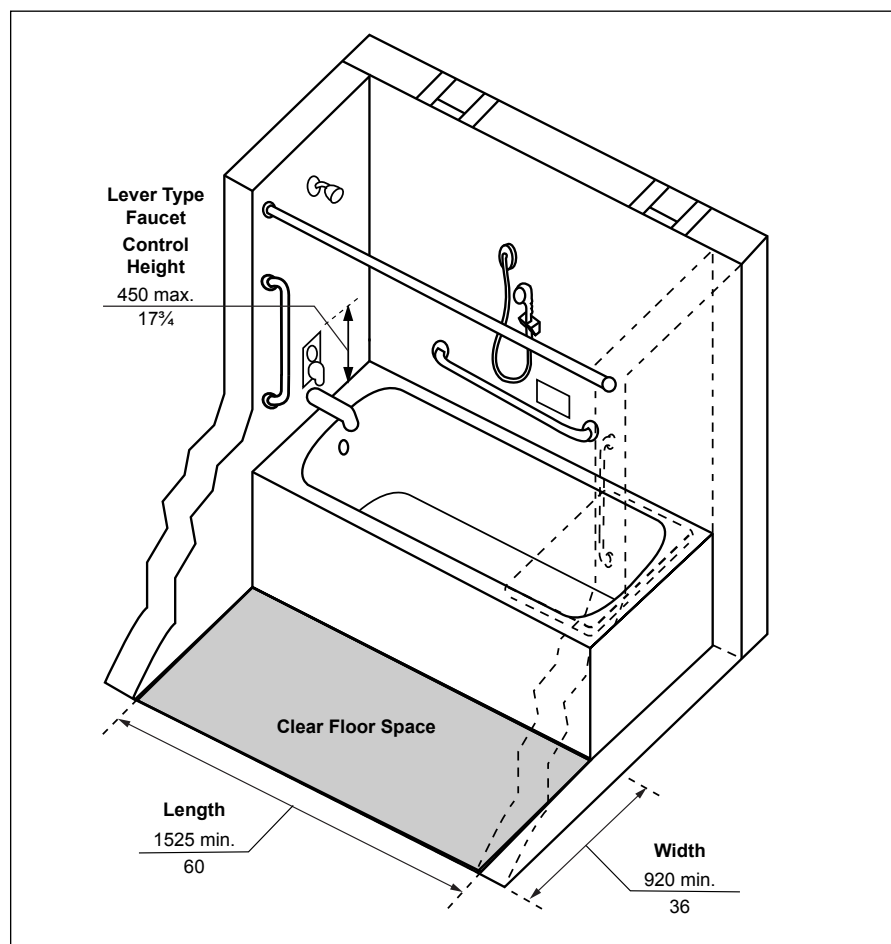


Figure 71: Bathtub Design and Layout - Plan View

Note

A regular shower head to be provided in addition to accessible shower head control (e.g., typical mounting position and height, at foot of bathtub for standing users).

Use of operating controls are subject to limitations in hand strength, dexterity and reach.

Refer to **Section 4.5.7, Grab Bars**, for additional details.

Grab bars are not required for free-standing bathtubs.

4.7.3 Controls and Accessories

4.7.3.1 Faucets and Other Controls

For bathtub controls: (**Figures 71 & 72**)

- provide lever type or automatically operable controls that are not spring-loaded;
- locate at the foot end of the bathtub, on the centerline of the bathtub or between the centerline of the bathtub and the exterior edge of the bathtub rim (e.g., the adjacent clear floor space);
- mount at a maximum of 450 mm (17¾ in) high above the bathtub rim;
- ensure they can be operated with a closed fist and with a maximum force of 22.2 Newtons (5.0 pounds);
- provide a pressure equalizing or thermostatic mixing valve to control water pressure and avoid scalding; and
- provide a fully recessed soap holder, that can be reached from a seated position, 50 mm to 60 mm (2 in to 2½ in) above the horizontal component of the horizontal grab bar.

4.7.3.2 Shower Head

Provide a hand-held shower head: (**Figure 71**)

- with a flexible hose a minimum of 1800 mm (70⅞ in) long;
- ensure vertical support used to mount shower head allows operation as a fixed shower head, adjustable to a maximum of 1200 mm (47 in) high above floor and reachable from a seated position; and
- ensure the vertical support and shower head placement does not obstruct the use of grab bars.

4.7.4 Grab Bars

Unless the bathtub is free-standing, three (3) grab bars are required as identified in this section: (**Figure 72**)

4.7.4.1 Vertical Grab Bar

- ensure a minimum length of 1220 mm (48 in);
- mount at each end of the bathtub, a maximum 150 mm (6 in) from the outer edge of the bathtub rim / clear floor space, measured horizontally; and
- mount between 80 mm and 280 mm (3⅞ in and 11 in) above the bathtub rim.

4.7.4.2 Horizontal Grab Bar

- a. ensure a minimum length of 1220 mm (48 in); and
- b. mount on back wall, extending horizontally along the length of the bathtub, between 80 mm and 280 mm ($3\frac{1}{8}$ in and 11 in) high above the bath tub rim.

4.7.5 Enclosures

Where applicable, ensure any bathtub enclosures:

- a. do not obstruct controls;
- b. do not interfere with a person transferring from a mobility aid; and
- c. are not installed on the bathtub rim (e.g., sliding doors or tracks).

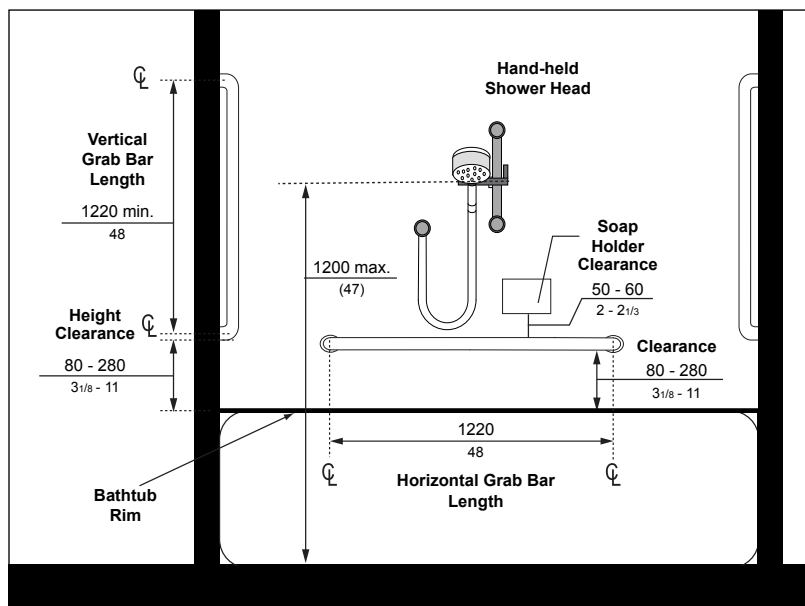


Figure 72: Bathtub Design - Section View

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Systems, Controls and Communications

5.0

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Controls and Operating Mechanisms



5.1

Application

This section applies to typical interior and exterior controls and operating mechanisms provided for public and staff use, throughout accessible routes and spaces.

Examples of typical controls and operating mechanisms related to interior and exterior environments include, but are not limited to:

- entrance call buttons or intercoms;
- emergency call systems related to parking areas;
- light switches;
- wall outlets / duplexes;
- fire or other alarm system controls (e.g., washroom emergency alarms);
- thermostats;
- door hardware; and
- plumbing fixture hardware (e.g., faucets and water closet flush controls).

Controls related to product and dispensing machines, such as food and beverage vending equipment, payment stations for parking and ticketing devices, touch screen devices for information and self-service kiosks and other activation devices are also required to be accessible.

Best Practice

Multiple forms of audible, visual and tactile cues to indicate operating controls, benefits the widest range of users with varying disabilities (e.g., sensory / visual / cognitive).

Depending on the type of control, Braille can also be provided.

Align controls at the same height, where possible.

5.1.1 Design Features

Ensure accessible controls and operating mechanisms address the following: (Figures 73 & 74)

- a. are usable with closed fist and operable with one hand;
- b. do not require tight grasping, pinching of the fingers, or twisting of the wrist;
- c. can be used with a maximum force of 22 Newtons (5 pounds);
- d. where push-button type controls are provided, button surface has a minimum diameter of 13 mm (½ in) and is not recessed;
- e. ensure controls are visible from a distance, based on use of high colour / tonal contrast between operable parts and adjacent mounting surface;
- f. can be illuminated to a minimum level of 100 lux (10 ft. candles);
- g. mount controls and operating mechanisms:
 - i. no lower than 400 mm (15¾ in) high for all controls;
 - ii. a maximum of 1200 mm (47 in) high for thermostat and manual fire alarm pull;
 - iii. between 900 mm and 1100 mm (35½ in and 43¾ in) high (centered) for all other controls and operating mechanisms; and
 - iv. extending a maximum of 200 mm (7¾ in) and a minimum of 900 mm (35½ in) high above the floor for vertical extended power door operators;
- h. locate in prominent and obvious locations, for easy identification, adjacent to and centered on either the length or width of the required minimum clear floor space, as identified in this section.

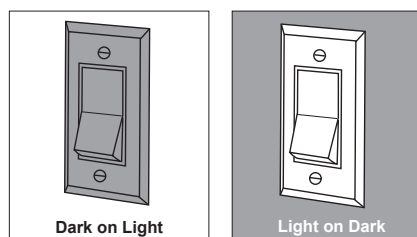


Figure 73: Colour / Tonal Contrast Between Background and Control

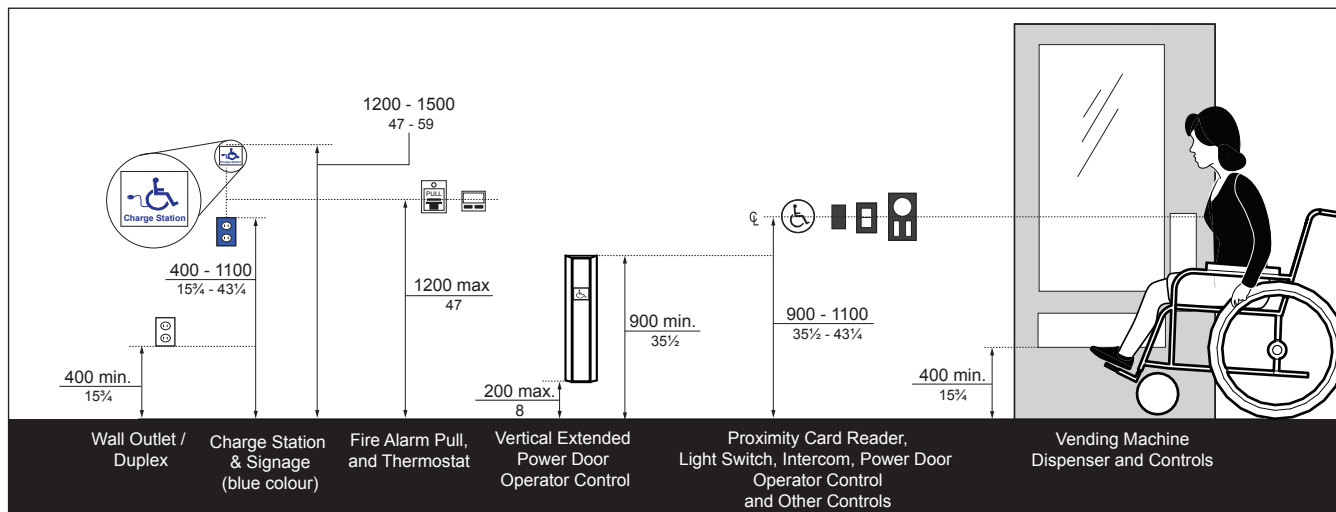


Figure 74: Control Mounting Heights - Elevation View

Best Practice

Provide clear floor space or ground surface with turning diameter of 2500 mm (98½ in), to allow both side and frontal approach for larger wheeled mobility aids such as powered scooters and wheelchairs.

Note

The clear floor space in front of controls and operating mechanisms may overlap the adjacent interior accessible route.

5.1.2 Floor Space and Reach Requirements

5.1.2.1 Floor Space Requirements

- provide a minimum clear floor space, centered at operating controls and mechanisms at:
 - 920 mm (36 in) wide by 1525 mm (60 in) depth for a forward approach; and
 - 1525 mm (60 in) wide by 920 mm (36 in) depth for a side approach.

5.1.2.2 Reach Requirements:

For both a forward and side approach, ensure the following mounting heights of controls and operating mechanisms for suitable reach (e.g., either touch or grasp) are provided: **(Figures 75a & b)**

- where there is no obstruction in front of controls and operating mechanisms:
 - no lower than 400 mm (15¾ in);
 - at maximum 1200 mm (47 in) high for thermostat and fire alarm pull controls; and
 - no higher than 1100 mm (43¼ in) for other controls and operating mechanisms;
- where there is an obstruction which allows for a touch reach over a 610 mm (24 in) deep obstruction or a grasp reach over a 510 mm (20 in) deep obstruction:
 - for forward approach, maximum height at 1100 mm (43¼ in); and
 - for side approach, with obstruction at a maximum height of 865 mm (34 in), maximum height at 1170 mm (46 in).

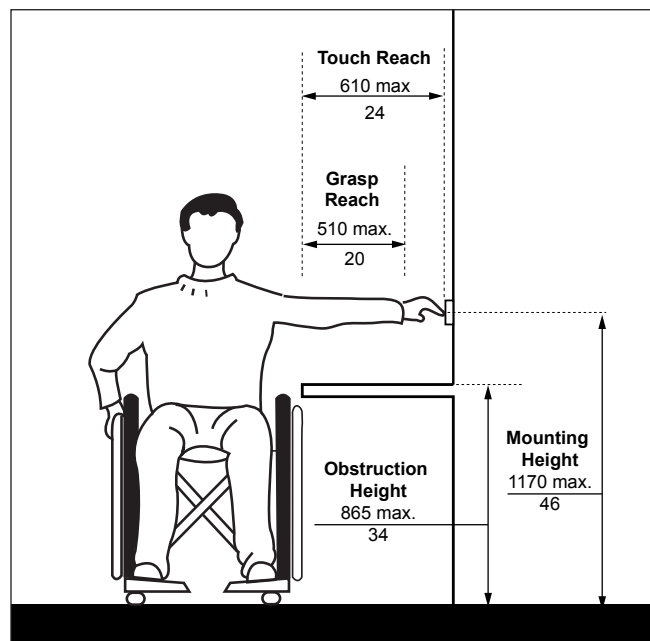
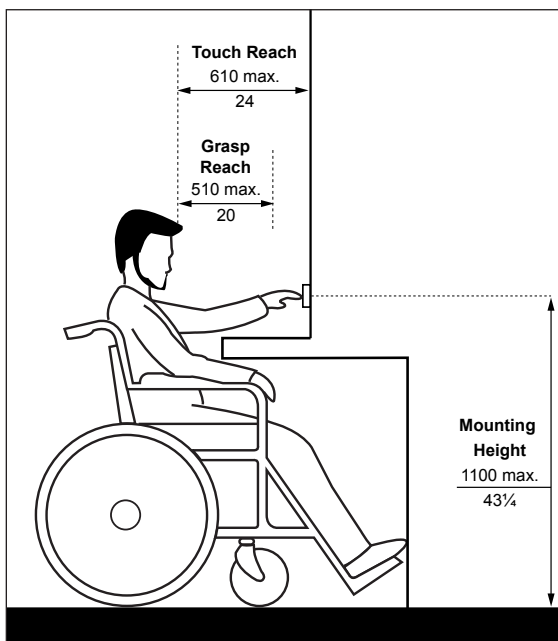


Figure 75a: Maximum Mounting Height for an Obstructed Forward Approach and Reach

Figure 75b: Maximum Mounting Height for an Obstructed Side Approach and Reach

Note

Additional identification and / or directional signage (e.g., overhead) may be used, depending on the facility/site context to assist users with identifying the provision and location of charge stations.

Refer to Section 5.8 for detailed requirements related to Signage & Wayfinding.

5.1.3 Charge Stations

Where charge stations are provided for users of powered wheeled mobility devices, ensure: **(Figure 74)**

- a. charge receptacles are mounted between 400 mm (15¾ in) to 1100 mm (43¾ in) high and are visible from a distance, based on use of high colour / tonal contrast, including a distinct blue coloured receptacle compared to adjacent mounting surface; and
- b. charge stations are marked with identification signage, with:
 - i. required pictogram, consisting of a blue coloured mobility device and charge receptacle graphic, on a high colour / tonal contrasted background; and
 - ii. mounting height at 1200 mm to 1500 mm (47 in to 59 in) high, centered above receptacle and finished floor surface.



Example of Charge Station Signage,
City of London.

Assistive Listening Systems



5.2

Application

This section applies to assistive listening systems, required in assembly areas, including but not limited to classrooms, auditoriums, meeting rooms and theatres:

- with a floor area of 100 square metres or occupancy of fifty (50) or more fixed seats;
- where audible communication is integral to the use of the space; and
- where audio amplification devices are used.

Induction loops, infrared systems and FM radio frequency systems are considered acceptable types of assistive listening systems for persons with hearing loss.

Wireless sound transmission systems, such as FM, infrared or magnetic induction loop, improve sound reception for the hard of hearing by providing amplification which can be adjusted by each user while blocking out unwanted background noise.

These systems transmit a signal that is picked by special receivers available for use by people with a hearing disability, whether or not they use a hearing aid.

The transmitter can be jacked into an existing public address system amplifier or used independently with microphones. The induction loop system requires users to sit in the area circumscribed by the loop. Although installation of the loop is relatively simple, the installer should be knowledgeable about these systems if proper functioning is to be achieved. FM or infrared systems can be designed to broadcast signals which cover the entire room and therefore, do not restrict seating to any one area. Portable systems are available (e.g., FM type), however, they are best suited for small audiences. Generally, the systems installed in auditoriums, theatres and similar places of assembly are not easily portable, as they are installed in auditoriums by a sound technician and form an integral part of the public address system of the room or building.

Reference

- Sec. 5.8 Signage and Wayfinding
- Sec. 6.1 Assembly Areas

Note

Some facilities such as courtrooms may have unique requirements and specifications, and require a detailed review prior to implementation.

Hard wired systems (where a jack is provided at a particular seat) will not meet the requirements in this section unless adequate provisions are made to accommodate persons with hearing aids.

In choosing the most appropriate system, a number of factors must be taken into account. This includes cost, installation and maintenance, suitability to the audience, ease of operation and the need for privacy. Information on designers and suppliers of these systems may be obtained from organizations such as the Canadian Hearing Society.

Note

Where infrared assistive listening systems are used, ensure that no overhead incandescent lights cancel out the infrared signal at the receiver.

Receiver Hearing Aid Compatibility:

Receivers should be hearing-aid compatible and should interface with telecoils in hearing aids through the provision of neck loops.



Example of International Symbol of Hearing Loss to identify the provision of assistive listening system, with T-coil compatibility.

5.2.1 Design Features

For assistive listening systems, whether permanent or portable, ensure:

- system usability encompasses the entire floor area;
- system provides personal amplification control;
- system performs with or without the use of hearing aids; and
- signage is provided with the International Symbol For Hearing Loss pictogram to identify the availability of the assistive listening systems, marked with a 'T', where T-coil usage is available. **(Refer to Section 5.8, Signage and Wayfinding)**

5.2.2 Assistive Listening Systems

5.2.2.1 Permanent Assistive Listening Systems

Where permanent assistive listening systems are provided, ensure:

- the minimum number of required receivers is equal to 4% of the total number of seats, but never less than two;
- the minimum number of required receivers to be hearing aid compatible is 25% of the total number of receivers that are provided, but never less than one;
- seats are located within a 15 m (50 ft.) viewing distance of the stage or playing area, as well as positioned to have a complete view of the stage or playing area, at facilities with individual fixed seats that are served; and
- are located dimmer switches and other controls that incorporate transformer coils where they do not interfere with the audio induction loop, where an induction loop system is installed.

5.2.2.2 Portable Assistive Listening Systems

- provide at least one portable assistive listening system, with a minimum of two receivers included, for facilities with assembly spaces on multiple floor levels (e.g., this provides enhanced flexibility for the systems to be available and used at different locations); and
- ensure portable assistive listening systems include hearing aid compatibility.

Public Address Systems



5.3

Application

This section applies to public address (P.A.) systems installed within a facility as well as exterior areas, including P.A. systems that provide information to the public and staff.

Reference

- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 5.4 Acoustics

Note

To prevent confusion, ensure paging systems for use by staff or other key personnel are discreet and low in volume, sounding at devices or locations where staff are expected to be located.

5.3.1 Design Features

- a. ensure sound level is above ambient background noise without distortion or feedback;
- b. consider zoning public address systems so that information can be directed to key locations only, to minimize background noise in other areas of the building; and
- c. mount speakers without projecting into or obstructing accessible routes and above head-level to provide effective sound coverage in required areas such as:
 - i. corridors;
 - ii. assembly and meeting rooms;
 - iii. recreational facilities;
 - iv. entertainment and educational facilities; and
 - v. common use areas located in institutional settings.



Acoustics

Application

This section applies to the acoustic environment within a facility, which can either enhance or hinder a user's experience. Auditory cues along circulation routes in large open spaces and dedicated areas can serve as wayfinding cues, especially for people with vision loss.

5.4

Reference

Sec. 5.3 Public Address Systems

Best Practice

As identified by Gallaudet University, as part of the concept of designing "DeafSpace" and specific to acoustics:

"Deaf individuals experience many different kinds and degrees of hearing levels. Many use assistive devices such as hearing aids or cochlear implants to enhance sound.

No matter the level of hearing, many deaf people do sense sound in a way that can be a major distraction, especially for individuals with assistive hearing devices.

Reverberation caused by sound waves reflected by hard building surfaces can be especially distracting, even painful, for individuals using assistive devices. Spaces should be designed to reduce reverberation and other sources of background noise."

(Source: Gallaudet University, Campus Design & Planning, DeafSpace).

Best Practice

Flooring materials that can assist with dampening sound include carpet, cork, vinyl and rubber.

Additionally, acoustic ceiling tiles and upholstered furniture absorb sound and dampen reflected sound, emphasizing that it is important to create a suitable balance of sound absorption and sound reflective materials, based on the overall design and type of space. (Adapted from the CNIB's "Clearing Our Path" resource, current edition).

Note

Hard floor surfaces allow footsteps to be heard by persons with a vision loss, but too much additional noise may add confusion for persons with a hearing loss or other type of sensory disability (e.g., autism).

In general, domed shaped ceilings may distort sound.

5.4.1 Design Features

To achieve a suitable acoustical environment, which can provide additional wayfinding cues for persons with vision and / or hearing loss:

- a. integrate the use of sound-reflective or sound absorbent / dampening materials to differentiate essential sounds from general background sounds and to address the specific acoustic requirements of each type of unique space;
- b. select floor, wall and ceiling finishes to ensure that occasional noise is not unintentionally amplified (e.g., avoid hard floor surfaces such as marble and terrazzo);
- c. design ceiling shapes so that echoes do not occur;
- d. minimize all background noise (e.g., fans, mechanical systems, air conditioners and diffusers) in meeting rooms and assembly areas where spoken word is key to understanding proceedings; and
- e. install a permanent inductive loop or similar assistive listening system for high use buildings and areas, especially where the surrounding environment may be noisy (**Refer to Section 5.2, Assistive Listening Systems**).



Security Systems

5.5

Application

This section applies to typical security systems (e.g., proximity card readers, alarm systems, etc.), which are used to provide and limit access to areas of a facility.

Reference

- Sec. 4.2 Doors and Doorways
- Sec. 5.1 Controls and Operating Mechanisms

Note

Designers are required to coordinate security system provisions and installations with specialists in this field as part of detailed review and design, to ensure the requirements of this section are met.

Best Practice

Proximity card reader systems are preferred at secured entry / exit areas to accommodate diverse users.

5.5.1 Design Features

Where users control independent entry or exiting to secured areas of facilities: (Figure 76)

- a. locate controls between 900 mm to 1100 mm (35½ in to 43¼ in) from the floor;
- b. mount controls at least 600 mm (23¾ in) clear of the arc of any door swing;
- c. where electronic keypads or push button systems are provided, ensure buttons are raised from surface, mounted on surface with high colour / tonal contrast and have raised numerals or letters to assist users with vision loss;
- d. ensure both audible and visual indicators are provided to alert users when access has been granted or denied;
- e. where proximity card reader systems (e.g., swipe cards) are used at doors equipped with power door operators, ensure activation of both systems is synchronized; and
- f. provide high colour / tonal contrast on system controls, compared to mounting surface.

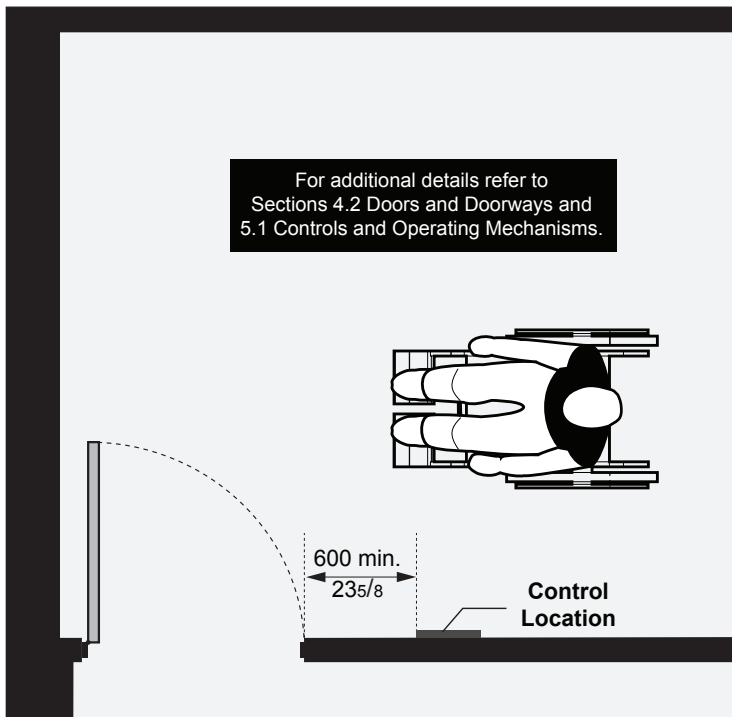
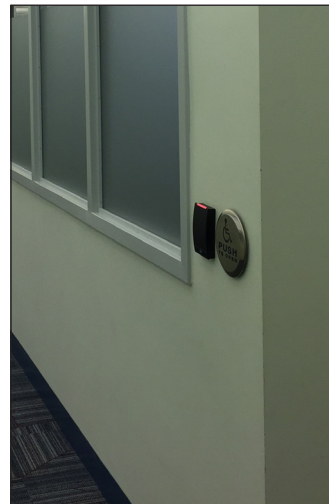


Figure 76: Proximity Card Reader Location - Plan View



Example of proximity card reader system with high colour / tonal contrast compared to mounting surface for enhanced visibility, City of London.



Example of proximity card reader system with visual indicator, City of London.

Fire and Life Safety Systems

5.6

Application

This section applies to fire and life safety systems, addressing the needs of people with varying disabilities, in emergency situations. Key components of typical fire and life safety systems include, but are not limited to:

- evacuation plans;
- alarm signals (both audible and visual);
- areas of refuge; and
- emergency exits.

Reference

- Sec. 4.2 Doors and Doorways
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.8 Signage and Wayfinding

Best Practice

Fire and life safety systems are especially important in facilities providing specialized services or programs to seniors and persons with disabilities, groups that may be at greater risk and that may require additional assistance or accommodation to evacuate a facility.

Note

The information in this section is provided as an additional resource to support other code and fire / life safety requirements that may be mandatory, including requirements of the Ontario Fire and Building Codes.



Example of combined visual and audible alarm signals. Public facilities should have both visual and audible fire alarm systems strategically located.

Best Practice

Where appropriate, consider installation of a fire fighter's elevator that can be operated by fire department personnel during emergencies.

Consider providing photoluminescent signage (i.e., visible in dark or smoke-filled environments), in addition to regulatory exit signage, throughout exit stairs and at strategic locations along exit routes to assist with evacuation. Additional review may be required to coordinate with Building and Fire Code requirements.

5.6.1 Fire Safety and Evacuation Plans

- a. provide a fire and life safety evacuation plan that addresses the needs of users with varying disabilities, with key considerations as follows: **(Figure 77)**
 - i. for facilities with floors above or below grade, develop a fire safety and evacuation plan, indicating in detail the preferred evacuation strategies for persons with disabilities (e.g., that supports a "Buddy System" where staff can help co-workers with disabilities evacuate);
 - ii. ensure the base of evacuation plans are posted no higher than 1200 mm (47 in) from the floor;
 - iii. ensure evacuation plans incorporate a font size of 14 point (minimum);
 - iv. ensure evacuation plans are available in alternate formats; and
 - v. provide signage to identify evacuation plans.

5.6.2 Fire Alarms and Safety Controls

- a. mount controls and operating mechanisms: **(Figure 77)**
 - i. between 900 mm (35½ in) and 1100 mm (43¼ in) from floor for emergency / life safety controls and operating mechanisms such as fire extinguishers, first aid kits and defibrillators; and
 - ii. at maximum of 1200 mm (47 in) high from floor for a manual fire alarm pull station.

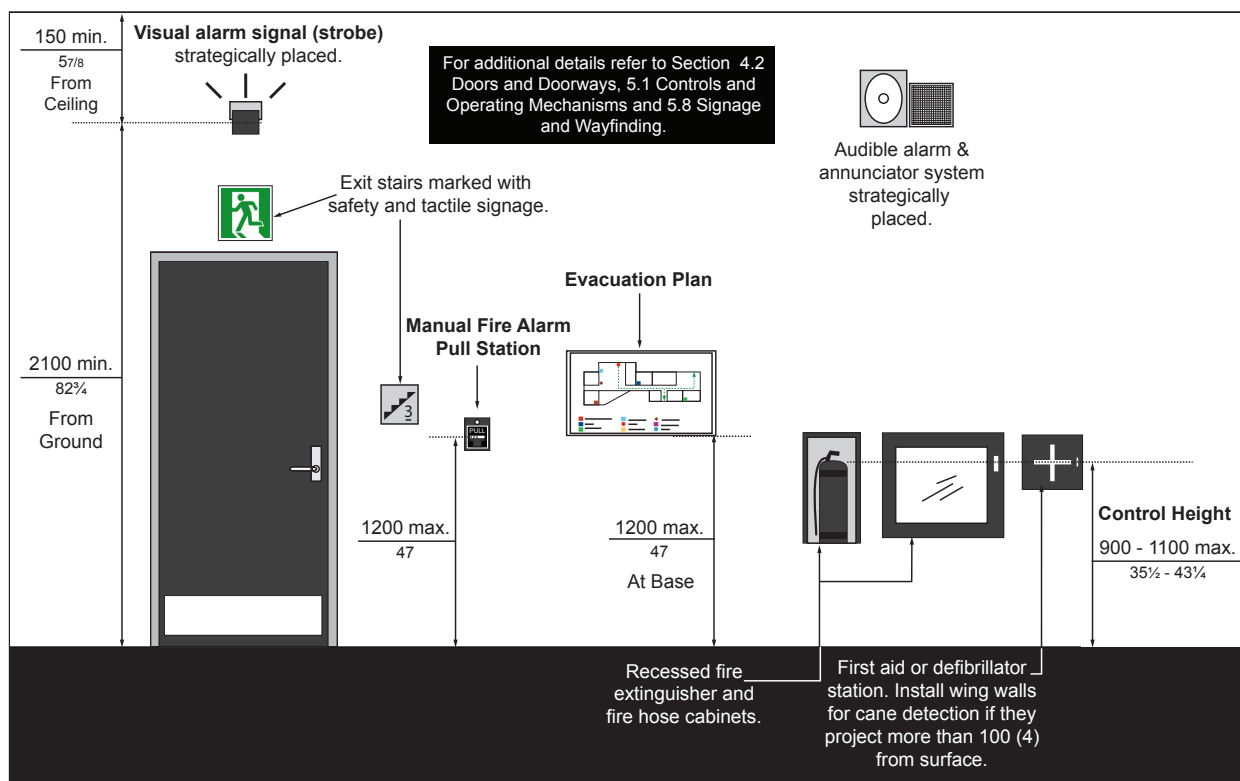


Figure 77: Fire Safety and Evacuation Features - Elevation View

- b. ensure any manual fire alarm pull station is:
 - i. located so as to be adjacent to and centered on either the length or the width of a minimum clear floor space of 920 mm (36 in) by 1525 mm (60 in), and
 - ii. operable using one hand, without requiring tight grasping, pinching with fingers or twisting of the wrist, and with a force of not more than 22.2 Newtons (5 pounds).

Best Practice

For existing facilities where fire alarm systems cannot be upgraded, consider the provision of portable, vibrating pager systems for users with vision and hearing loss.

For public facilities, install visual alarm signals in common use areas including, central lobbies, corridors, main assembly areas (e.g., auditoriums, conference rooms and cafeterias) and places where a person with hearing loss may alone (e.g., universal washroom or individual work space).

To reduce the likelihood of triggering an epileptic seizure or other photosensitive reaction from multiple unsynchronized visual strobe lights, ensure the flash rate is less than 2 Hertz.

Note

Optimal visual alarm signal placement requires formal study for unique environments, including multi-purpose facilities, libraries, convention or meeting rooms and other facility types to ensure signals are visible from all required areas.

5.6.3 Visual Alarm Signals

5.6.3.1 Provision

Provision of visual fire alarm signals (e.g., strobes) to be determined as follows:

- a. for any building or portion of a building intended for use primarily by persons with hearing loss;
- b. for public corridors and all general use areas such as lobbies, offices, meeting rooms and all washrooms, including universal / single use washrooms and change rooms; and
- c. for any mechanical rooms where there is a concern with noise levels.

5.6.3.2 Design Features

Where visual alarm signals are provided for users with hearing loss: **(Figure 77)**

- a. integrate visual alarm signals with required audible fire alarm system, including during retrofit projects where feasible;
- b. mount appliance at a minimum 2100 mm (82¾ in) above the floor level within the space or 150 mm (5⅞ in) below the ceiling, whichever is lower;
- c. where visual alarm signals are provided in any common space, public corridor, hallway, lobby or room, ensure they are placed no more than 15 m apart, on the horizontal plane;
- d. install visual alarm signals so that the signal from at least one device is visible throughout the floor area or portion of it in which they are installed; and
- e. ensure light and flashing features are based on the following criteria:
 - i. use a xenon strobe type or equivalent for light or lamp fixture;
 - ii. ensure clear or nominal white colour (e.g., unfiltered or clear filtered white light);
 - iii. provide maximum pulse duration of 0.2 seconds, with a maximum duty cycle of 40 percent;
 - iv. ensure the intensity of the visual alarm signal is significantly brighter than the ambient light and raises the overall light level sharply, but not so intense as to be unsafe for direct viewing;

Best Practice

Provide emergency electrical power to ensure adequate emergency lighting levels for the use of elevators and key operating components or other systems during a power outage. Provide in all major areas of the facility, along all paths of travel to exits and in all designated areas of refuge.

Note

Stairwells and elevator lobbies are typically used for areas of refuge, if properly designed with all required features and floor space to accommodate mobility aids. Detailed review and design is required for provisions in any type of facility, existing or new.

The provision of additional spaces for accommodating mobility aids in an area of refuge is determined by facility occupancy and level of use.

- v. ensure a flash intensity of 75 candela (minimum) with a flash rate between 1 Hertz (minimum) and 3 Hertz (maximum); and
- vi. synchronize visual alarms that are located in the same proximity to flash at the same time.

5.6.4 Areas of Refuge

5.6.4.1 Provision

Areas of refuge to be provided as identified in **Table 11**, based on occupant load:

Table 11: Provision of Area of Refuge Spaces

Occupant load of the floor area served by the area of refuge	Minimum number of area of refuge spaces
1 to 400	2
Over 400	3 plus 1 for each additional increment of 200 persons in excess of 400 persons

5.6.4.2 Design Features

Where an area of refuge is included as a component of a facility's fire safety and evacuation plan for persons with disabilities: **(Figure 78)**

- a. locate on an accessible route, which is served by an exit or fire fighter's elevator;
- b. locate clear of any adjacent door swing and away from pedestrian exit route(s);
- c. ensure areas of refuge are easy to identify and are designated with signage (e.g., large print, tactile features stating 'Area of Refuge' and marked with the International Symbol of Accessibility);
- d. ensure a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth, for each area of refuge space that is provided, with an adjacent minimum clear turning circle of 1525 mm (60 in) diameter, or preferred 2500 mm (98½ in), where space is available in a stairwell or a separate room that is used to accommodate users of mobility aids;
- e. provide protective enclosure for a minimum of one-hour;
- f. provide a two-way, accessible communication system supported by the facility's backup generator and for use between each area of refuge and the building's designated annunciator / fire control panel;
- g. ensure communication system is marked with signage and includes both audible and visual notification devices to indicate "help is on the way"; and
- h. provide separate emergency lighting and ventilation systems supported by a backup generator.

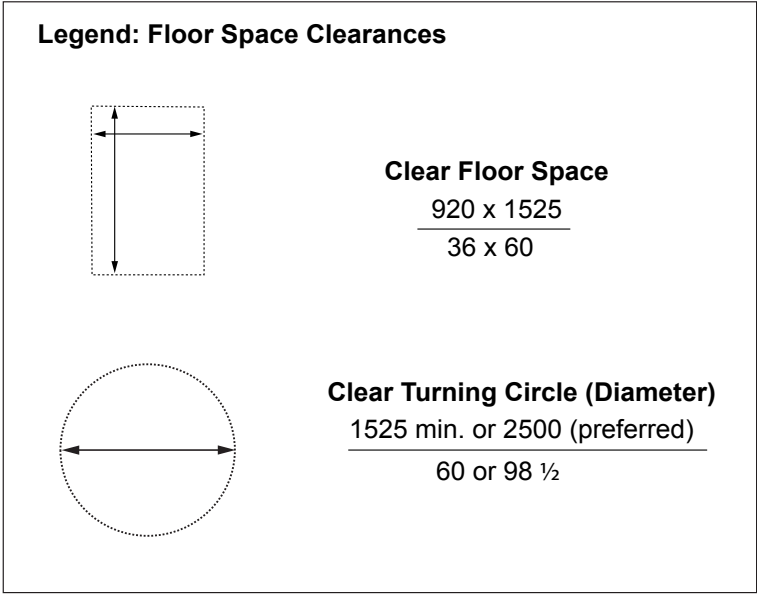
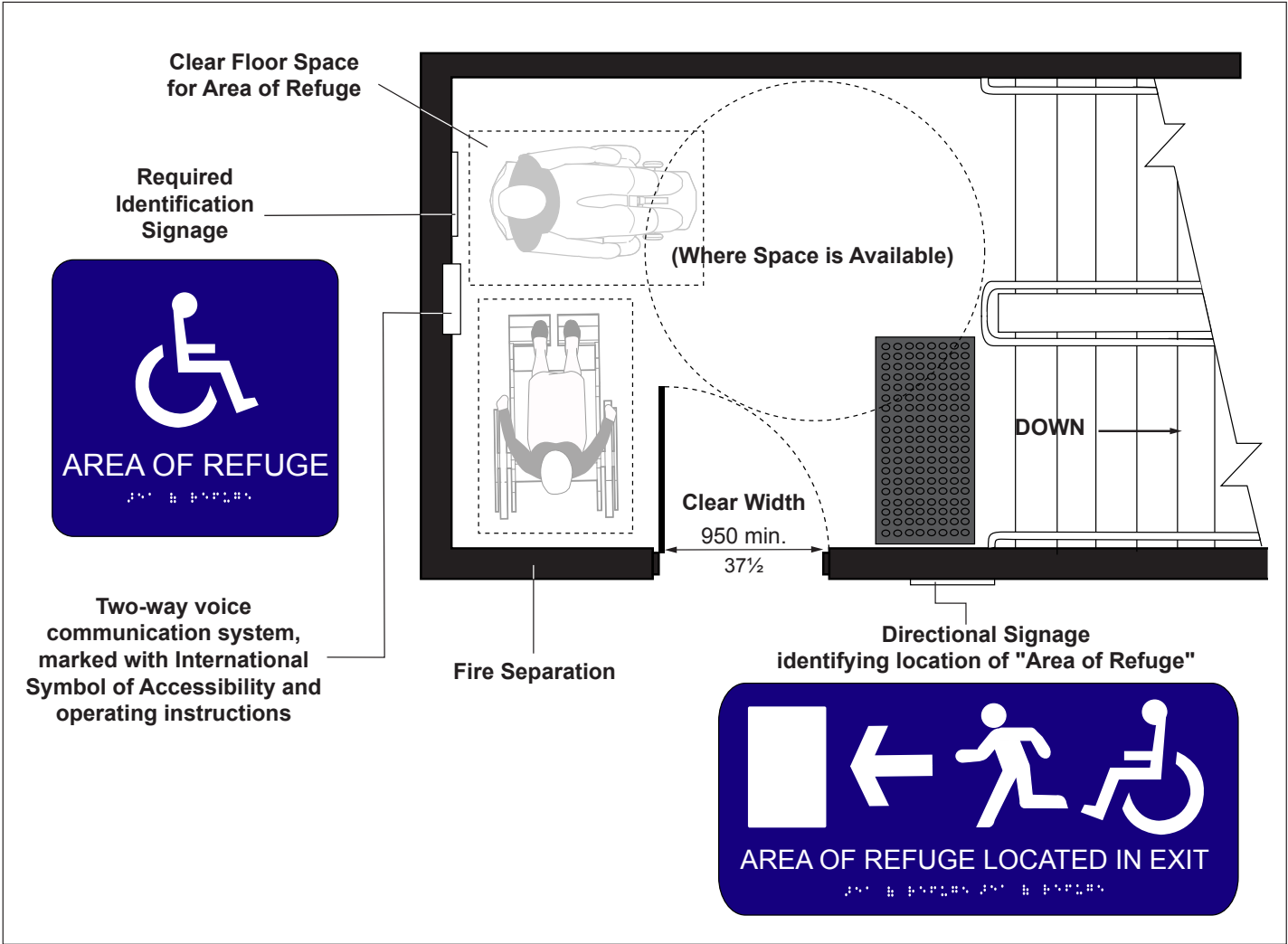


Figure 78: Example of an Area of Refuge within Exit Stair

Lighting

5.7

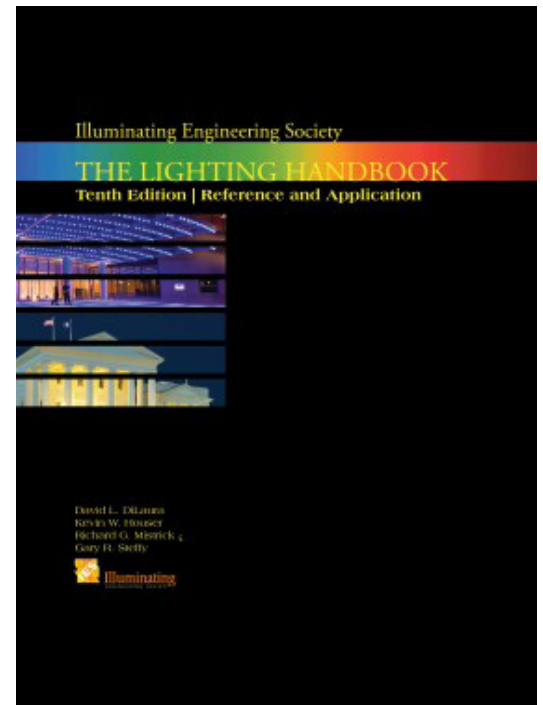
Application

This section addresses lighting requirements for both interior and exterior environments.

For measuring lighting levels (e.g., lux), a digital light metre is typically used to verify the overall performance of the site and facility lighting system as a whole.



Example of digital light metre for measuring lighting levels (Source: Extech).



Note

For additional information on lighting requirements, refer to the Illuminating Engineering Society's "The Lighting Handbook", (current edition).

5.7.1 Lighting Level Requirements

For lighting level requirements for interior and exterior environments:

- ensure enhanced lighting levels beyond IESNA requirements (e.g., CNIB) for elements in both interior and exterior environments are provided, as summarized in **Table 12**; and
- provide the highest lighting level (lux) where identified in **Table 12** (e.g., highlighted in bold).

Table 12: Lighting Requirements for Exterior and Interior Environments

Typical Elements, Features and Locations	Lighting Level (lux)				
	IESNA (2011)	CNIB (2009)	CSA (2018)	OBC (2012)	Other Best Practice
	Min. / Avg.	Enhanced (+ 25 - 50%)	Min.	Min.	Min.
Common Elements (both Exterior & Interior)					
Ramps	50 (avg.)	62.5 - 75	50	50	-
Stairs	50 (avg.)	62.5 - 75	50	50	100
Rest Areas	50 (avg.)	62.5 - 75	50	-	-
Signage	-	200	200	-	-
Exterior Environments					
Surface Parking: Accessible & Limited Mobility / Caregivers Spaces	10 (min.)	12.5 - 15	-	-	30
Parking Garage	10 (min.)	12.5 - 15	-	-	30
Passenger Loading Zone	-	-	-	-	30
Exterior Circulation Routes (e.g., sidewalks)	10 (avg.)	12.5 - 15	50	-	-
Main Entrance	-	-	-	-	100
Interior Environments					
Public Corridors	50 (avg.)	62.5 - 75	-	50	-
Elevator Lobby	100 (avg.)	125 - 150	-	-	200
Elevator Cabs	50 (avg.)	62.5 - 75	100	-	-
Emergency Lighting (Accessible Routes, Stairs, Ramps or Areas of Refuge)	-	-	-	-	50 - 100
Reception	150 (avg.)	187.5 - 225	-	-	-
Lobbies / Waiting Areas	100 (min.)	125 - 150	-	-	-
Service Counters	150 (avg.)	187.5 - 225	-	-	-
Kiosks	200 (avg.)	250 - 300	200	-	-
Operating Controls and Mechanisms	-	-	100 - 200 where reading is required 50 - 100 where control has own illumination or is backlit	-	-

Best Practice

The Canadian National Institute for the Blind (CNIB) recommends increasing IESNA suggested lighting levels by a range of 25 to 50 percent to address the accessibility needs of people with vision loss.

For emergency lighting, preferred lighting level of 10 lux (1 foot candle) minimum is required at exits, exit stairs or other paths of travel, measured at the walking surface.

City to refer to additional lighting standards / requirements for other specialized facilities that may not be identified in **Table 10**, including Long Term Care Facilities and Courtrooms (e.g., other Provincial standards or best practices may be in effect or need additional review / consultation as part of detailed design).

Note

Sources include:

- IESNA: Illuminating Engineering Society of North America, 2011.
- CNIB: Canadian National Institute for the Blind, Clearing Our Path, 2009.
- CSA: Canadian Standards Association B651 Accessible Design for the Built Environment, 2018.
- OBC: Ontario Building Code, 2012.

Best Practice

When entering buildings, eyes may require a few moments to adjust from a brighter exterior environment to a darker interior or vice versa. For people with vision loss, the adjustment time may be longer. Consider transitional lighting options (e.g., higher artificial lighting levels near the entrance in daylight and lower levels after dark).

Note

Variations in lighting levels can be confusing to many older adults, people with cognitive disabilities and people with vision loss.

Table 12: Lighting Requirements for Exterior and Interior Environments (Continued)

Typical Elements, Features and Locations	Lighting Level (lux)				
	IESNA (2011)	CNIB (2009)	CSA (2018)	OBC (2012)	Other Best Practice
	Min. / Avg.	Enhanced (+ 25 - 50%)	Min.	Min.	Min.
Washrooms					
General	50 (avg.)	62.5 - 75	-	200	-
Fixtures	150 (avg.)	187.5 - 225	-	200	-
Shower Stall / Room	100 (avg.)	125 - 150	-	200	-
Special Rooms & Facilities					
General Assembly	100 (avg.)	125 - 150	-	-	-
Multi-purpose Rooms	300 (avg.)	375 - 450	-	-	-
Offices - Workstation	300 (avg.)	375 - 450	-	-	-
Library Stack & Shelving	-	-	-	-	200
Library Study Area Carrel	-	-	-	-	300
Cafeteria, Food Court or Kitchen and Kitchenette - Cashier / Food Displays	200 (avg.)	250 - 300	-	-	-
Cafeteria, Food Court or Kitchen and Kitchenette - Seating and Circulation	150 (avg.)	187.5 - 225	-	-	-
Change Room	-	-	-	300	-
Elevated Stages / Platforms					100 (at floor level / darkest point)

5.7.2 Exterior Lighting

- ensure lighting sources and design provides consistent and even distribution of illumination levels and are located at or beside all ramps, steps and stairs, to illuminate and identify surfaces, treads, risers, nosings and handrails;
- ensure all lighting over pedestrian routes is evenly distributed and provides a reasonable colour spectrum while minimizing any shadows casted;
- provide supplementary lighting to highlight all wayfinding signage, as required;
- ensure lighting fixtures or posts are mounted away from accessible routes / paths of travel;
- ensure low-level lighting fixtures are mounted high enough to clear normal snow accumulation heights; and
- ensure overhead light fixtures are mounted with minimum clear headroom of 2100 mm (83 in).

5.7.3 Interior Lighting

- a. provide occupancy sensors or accessible controls (e.g., usable with closed fist, rocker-style) for all frequently used spaces that are not centrally controlled (e.g., washrooms, meeting rooms, offices, assembly areas, etc.), as well as controls that have the capability of adjusting lighting levels (e.g., dimmer switches) **(Refer to Section 5.1, Controls and Operating Mechanisms)**;
- b. use natural light wherever possible to illuminate entrances, corridors and key workspaces, however, avoid designs that results in direct glare reflected from flooring or work surfaces;
- c. integrate sources of both artificial and natural lighting to provide comfortable, evenly distributed light at working surfaces and throughout circulation routes that minimizes pools of light as well as areas of shadow;
- d. ensure lighting design provides consistent and even distribution of illumination levels and allows an illumination quality that is as close to a full spectrum as possible to aid in identifying edges and colour / tonal contrasted surfaces which are used as wayfinding cues (this ensures the warm end of the spectrum provides appropriate colour definition);
- e. ensure any leading edge of stairs, steps, ramps or escalators are evenly lit;
- f. ensure sources of light (natural or artificial) are not positioned at the ends of corridors or behind people at reception areas or counters; and
- g. provide enhanced lighting options at lecterns, podiums, stages or other speaker locations, when other adjacent space lighting is capable of being dimmed or lowered, to facilitate the ability of lip-reading and viewing sign language interpreters for users with hearing loss.

5.7.4 Additional Considerations: Issues Related to Glare

- a. select lighting sources, materials and finishes that do not reflect glare, including implementing strategies to control natural lighting sources wherever possible;
- b. ensure floor surface finishes such as vinyl, terrazzo and ceramic tile, mosaics or other materials have a matte or satin finish;
- c. provide matte or satin wall finishes (e.g., paint, vinyl coverings, stone, marble, wood, plastic or laminate, etc.) to prevent and minimize glare;
- d. provide curtains, blinds, screens or other strategies to shield bright, natural lighting sources, especially where direct sunlight may cause glare;
- e. select light fixtures that prevent or minimize any potential for direct glare (e.g., with diffusers, lenses, or recessed light sources); and
- f. where surface mounted fluorescent ceiling lights are used (e.g., in corridors), it is generally recommended that they have darkened sides (e.g., wrap-around lenses are not recommended) and that they are positioned at right angles to the path of travel. The use of recessed non-fluorescent lighting fixtures is preferred and recommended where possible.

Best Practice

Avoid the use of light fixtures with multiple pinpoints of high intensity illumination. They may add an unnecessary source of glare and leave an after image on the retina of people with vision loss.

Do not use high gloss finishes in order to prevent glare.

Note

Monolithic floor surfaces, such as stone, granite, marble or terrazzo in a matte or honed finish, minimize any potential for reflected glare.

High intensity light sources such as quartz, halogen or other pinpoint sources (e.g., chandeliers) can produce reflected points of glare on shiny surfaces.



Example of suitable lighting level in City of London office environment with working and flooring surfaces that minimize reflective glare.

Signage and Wayfinding

Universal Washroom



5.8

Application

This section applies to signage and wayfinding strategies, where provided in exterior and interior environments and for signs that provide direction to, or information about, functional spaces.

Recognizing that signage programs and wayfinding strategies are customized based on facility types and use of space, the information and criteria in this section is provided as a starting point.

There are three (3) key types of signage:

- **regulatory signs**, which include prohibition signs denoting an order forbidding an action, and mandatory signs which denote an order requiring an action;
- **warning signs**, such as caution and danger signs denoting a potential hazard and a definite hazard; and
- **identification signs**, which include rooms, titles, names or numbers that are provided for general orientation or specific information, such as washrooms, routes of egress, stairwells, doorways or offices.

Reference

- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 4.2 Doors and Doorways
- Sec. 5.7 Lighting
- Sec. 5.9 Self-service Kiosks

Exception

Facility directories and all other signs that are temporary are not required to comply with the requirements in this section.

5.8.1 Signage

5.8.1.1 Design Features

- a. ensure signage surfaces have matte, eggshell or non-glare finish;
- b. ensure signage is of uniform design and positioned / mounted to avoid any shadow areas and glare;
- c. provide high colour / tonal contrast between signage and mounting surfaces;
- d. where used to give the same type of information within the same facility, ensure signage is consistently shaped, coloured and positioned;
- e. provide signage with the International Symbol of Accessibility to designate the following accessible spaces or elements as accessible: **(Figure 79)**
 - i. parking spaces, designated as reserved for individuals with disabilities;
 - ii. accessible passenger-loading zones;
 - iii. accessible ramps located on an accessible path of travel serving an accessible building entrance;
 - iv. accessible entrances when not all are accessible. Entrances that are not accessible must have directional signage to indicate the accessible path of travel to the nearest accessible entrance;
 - v. accessible washroom, change room and bathing / shower facilities;
 - vi. accessible elevators and other elevating devices;
 - vii. accessible means of egress; and
 - viii. accessible areas of refuge;
- f. ensure lighting level is evenly distributed, at a minimum of 200 lux (20 ft. candles) and provided at all accessible signage locations as required **(Refer to Section 5.7, Lighting)**.



Figure 79: Examples of International Symbols of Accessibility and Pictogram for Limited Mobility / Caregiver Parking Space

Best Practice

Avoid using vertical wording and electronic scrolling signage. Where scrolling signage has to be used, ensure characters and symbols move slowly across the screen.

Keep information on signage short and simple.

Using a combination of lower case and upper case lettering is easier to read than using all upper case lettering. The “shape” of the text or message is more legible and creates its own image for familiarity.

Avoid very fine type and very thick type font.

Note

Consistent locations include height considerations for overhead or wall-mounted signs, as well as uniform placement of identification signs for facilities and services.

Nearsighted persons might have to approach much closer to read a sign than persons with average visual acuity. Signs at eye level allow persons to get closer to the sign.

Note

Some factors affecting ease with which text can be distinguished from its background include shadows cast by lighting sources, surface glare, and the uniformity of the text and background colours and textures.

Where illuminated signage is provided, avoid using red, blue or green LEDs on a black background as they are unreadable for most people with vision loss.

5.8.1.2 Character Features and Sizes

For text characters, ensure: **(Figure 80)**

- text characters (e.g., letter or number) are a combination of upper and lower case, sans serif font type and have Arabic numerals;
- a width to height ratio between 3:5 and 1:1;
- a stroke width to height ratio between 1:5 and 1:10;
- ensure characters are not italic, oblique, script, highly decorative or of other unusual forms;
- use of high colour / tonal contrast between text characters and background surface (e.g., light characters on dark background or dark characters on light background);
- the minimum character height is provided as per viewing distance as identified in **Table 13**; and
- use of an uppercase "X" for character measurement.

Table 13: Character Height Relative to Viewing Distance

Minimum Character Height mm (in)	Maximum Viewing Distance mm (in)
300 (12)	9000 (354)
250 (10)	7500 (295)
200 (8)	6,000 (236)
150 (6)	4,600 (181)
100 (4)	2,500 (98)
75 (3)	2,300 (91)
50 (2)	1,500 (59)
25 (1)	750 (30)

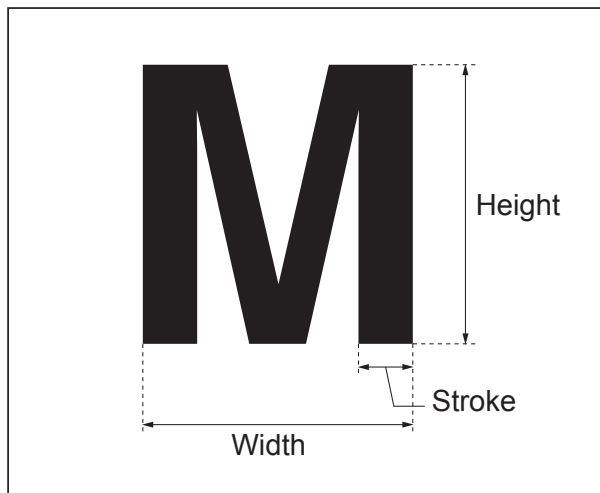


Figure 80: Character Features and Sizes. Example of dark character on light background

5.8.1.3 Pictograms and Symbols

Pictograms and symbols are used to complement text information and to identify important accessible facility features, elements or services, including information desks, public washrooms, and elevators. Where pictograms are used:

(Figures 79, 81 & 83)

- ensure pictogram has a field height (i.e., border dimension) a minimum of 150 mm (6 in);
- provide text descriptors and braille directly below the pictogram field and not in the pictogram field;
- provide high colour / tonal contrast between the pictogram and the field;
- use the International Symbol of Accessibility to identify accessible facility features, spaces, elements and amenities; and
- use recognized, standardized or international symbols for pictograms identifying accessibility features or other key building elements (e.g., washrooms and elevators) to facilitate wayfinding for all users.

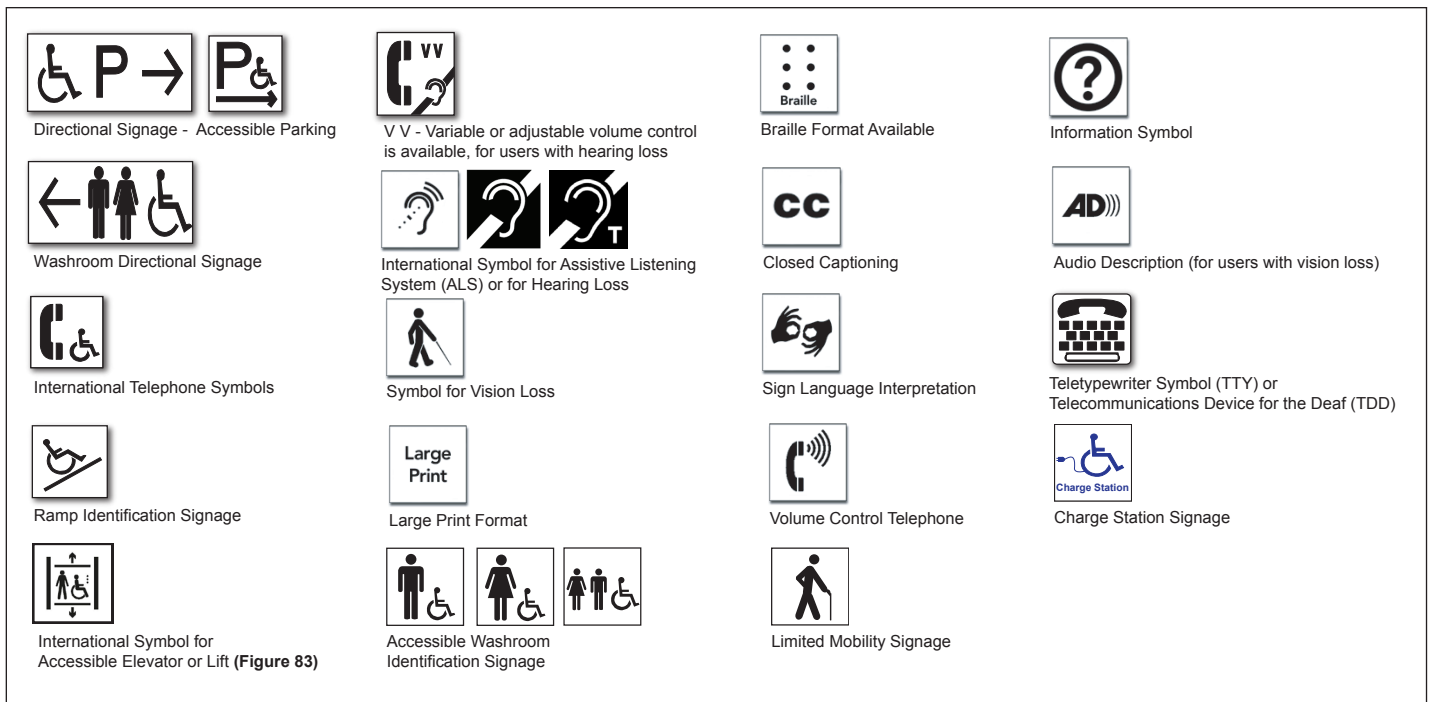


Figure 81: Example of Typical Pictograms and Symbols

5.8.1.4 Braille

Where braille is provided on signage:

- ensure it is uncontracted braille (Grade 1);
- ensure braille dots have a domed or rounded shape;
- locate immediately below the corresponding text (e.g., room numbers, names) and / or pictogram; and
- where text is multi-lined, place braille below the entire text.

Best Practice

For detailed requirements related to braille, refer to the most current editions of:

- CNIB: “Clearing our Path”; and
- Braille Literacy Canada: “Accessible Signage Guidelines”.

Best Practice

In larger and complex buildings, such as recreation centers, provide tactile maps on each floor, close to the major point of arrival to the floor (e.g., elevator lobby) to assist with wayfinding for users with vision loss (**Figure 84**).

Note

Braille or tactile features are only required for signs that can be reached and touched to identify permanent rooms and spaces. These features are not required for overhead or suspended signage (e.g., directional information).

Avoid mounting signage directly on external glazing where possible as it may reduce visibility and legibility of text.

5.8.2 Tactile Signage

Signage with tactile features (e.g., braille, raised characters / text, symbols or pictograms) are designed to be read by touch. Where a wall-mounted tactile sign is provided on a path of travel or floor that is not required to be accessible as per the Ontario Building Code, ensure design features and requirements of this section are also provided.

5.8.2.1 Design Features

Where tactile characters are provided for accessible signage identifying permanent rooms or spaces: (**Figure 83**)

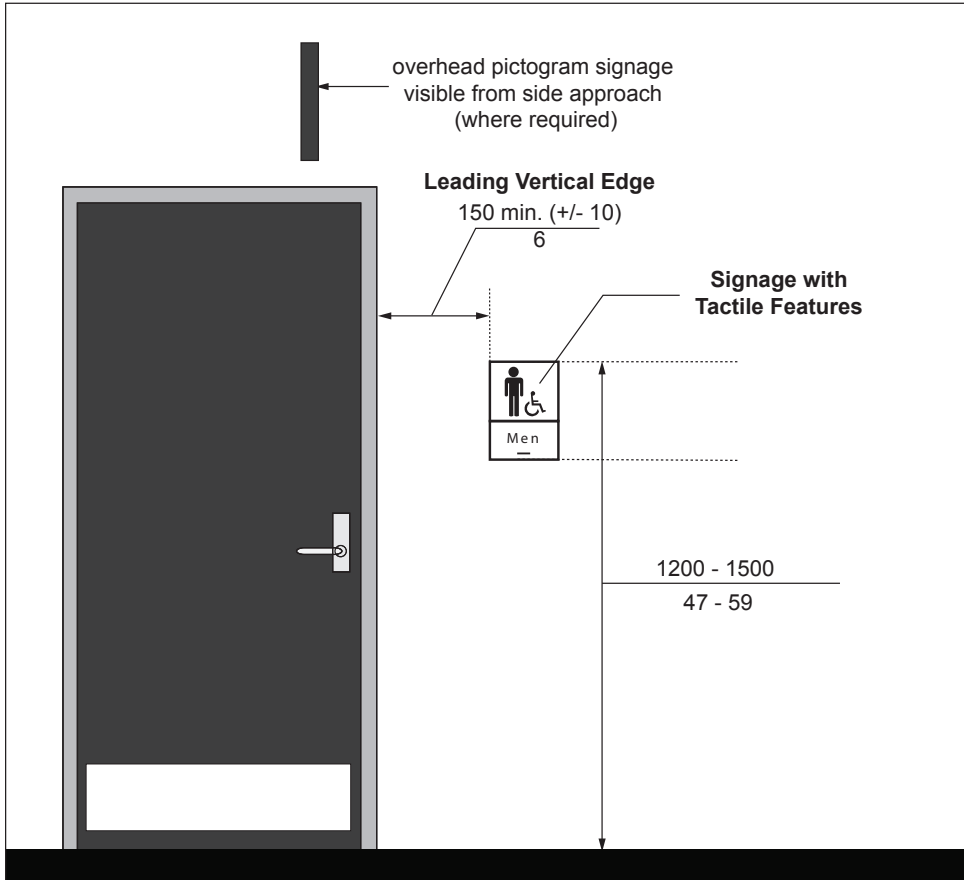
- a. ensure text characters (e.g., letter or number) and pictograms (where provided) are raised between 0.8 mm to 1.5 mm ($\frac{1}{32}$ in to $\frac{1}{16}$ in) above the surface;
- b. ensure the edges of the text characters are gently rounded (i.e., no sharp edges);
- c. provide high colour / tonal contrast between the tactile characters and the background surface;
- d. ensure all raised text characters, pictograms or symbols are accompanied by equivalent description in braille;
- e. where a pictogram is provided, ensure they are 150 mm (6 in) (minimum) high; and
- f. for text characters (e.g. letter or number):
 - i. ensure they are sans serif font and Arabic numerals;
 - ii. ensure height of characters are between 16 mm and 50 mm ($\frac{5}{8}$ in and 2 in); and
 - iii. ensure text is entirely in upper case lettering, where text is intended to be read by touch only, as it is easier to read by touch, compared to a combination of upper and lower case letters.

5.8.2.2 Mounting Locations

Where wall-mounted signage with tactile features is provided: (**Figure 82**)

- a. mount between 1200 mm (47 in) and 1500 mm (59 in) high above finished floor (e.g., includes position / location of characters, symbols or pictograms);
- b. where provided at a door, install consistently on the wall beside the latch edge of door, with leading vertical edge of sign 150 mm (6 in) +/- 10 mm ($\frac{3}{8}$ in) from the door frame;
- c. where provided at double doors with one active leaf, mount signage to the right of the right hand door;
- d. where there is no wall space at the latch side of a single door or on the right side of a double door, install signage on nearest adjacent wall;
- e. install to allow users to approach within 100 mm (4 in) of sign location, clear of any door swing or protruding objects;

- f. mount so that a minimum clear floor space of 455 mm by 455 mm (18 in by 18 in) (minimum), centered on the tactile characters is provided beyond the arc of any door swing between the closed position and the 45 degree open position; and
- g. ensure a clear wall area of 75 mm (3 in) wide (minimum) around the sign is provided.



Example of accessible signage to identify accessible washroom, City of London.

Figure 82: Mounting Location of Signage with Tactile Features - Elevation View

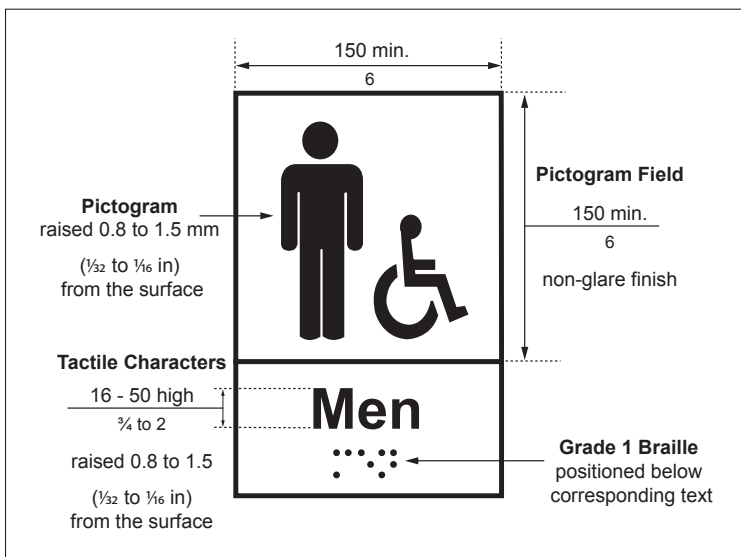


Figure 83: Signage with Tactile Features

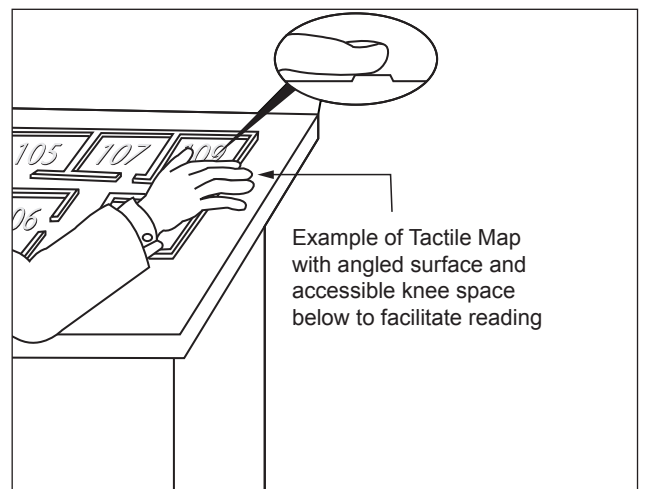


Figure 84: Tactile Map (Best Practice)

Best Practice

Control the use of temporary signage, which can render other relevant and accessible signage ineffective, through management procedures / protocols. Temporary signage typically uses improper language, materials and text sizes.

Mount signs so that they face the direction of travel as they are easiest to notice and read for people who might have limitation moving their head or have reduced peripheral vision.

5.8.3 Wayfinding Principles

- where facilities or amenities are not accessible, provide directional signage indicating the location of accessible facilities / amenities, including public washrooms;
- ensure consistent design, strategic placement and ideal mounting heights at key decision-making points along accessible routes for all signage;
- provide high colour / tonal contrast between signage and mounting surfaces for full visibility;
- ensure there is no information overload or cluttering of signage to avoid confusion; and
- avoid placing suspended signs against a light source to ensure full visibility (e.g., at the end of corridors which have windows, glass doors or window walls).



Example of directional signage in a lobby for wayfinding, City of London.

Self-service Kiosks



5.9

Application

This section applies to self-service kiosks, which are interactive electronic terminals, such as point-of-sale devices that staff or the public may use to access one or more services independently.

Examples of where self-service kiosks are used include, but not limited to the following:

- paying parking fees;
- validating tickets;
- providing information (e.g., such as interactive building directories and maps);
- checking in / registering for appointments; and
- purchasing goods or services.

When procuring or acquiring self-service kiosks, ensure compliance with the most up-to-date version of:

- CAN / CSA B651.2: Accessible Design for Self-service Interactive Devices.

Reference

- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.8 Signage and Wayfinding

Best Practice

Refer to the most current versions of:

1. CNIB, “Clear Print Accessibility Guidelines”; and
2. The Association of Registered Graphic Designers of Ontario (RGD Ontario), “AccessAbility: A Practical Handbook on Accessible Graphic Design”.



Best Practice

Provide a clear floor space or ground surface with turning diameter of 2500 mm (98½ in), to allow both side and front approach or turning around by users of larger wheeled mobility aids, such as powered scooters and wheelchairs.

Provide display panels or screens with an automatically adjustable mount, to allow use at different heights for diverse users.

5.9.1 Design and Layout

Where self-service kiosks are provided, ensure:

- a. they are located adjacent to an accessible route, recessed or with a leading edge that is cane detectable at a maximum of 680 mm (26¾ in) high, if they protrude into an accessible route;
- b. that if only one self-service kiosk is provided, it accommodates both seated and standing users with either frontal or side approach for use of any operating controls or display screens;
- c. accessible kiosks are identified with the International Symbol of Accessibility;
- d. there are no sharp edges; and
- e. mounting / placement is secured firmly and is stable, when free-standing.

5.9.2 Clear Floor Space Requirements and Knee and Toe Clearances

- a. provide a clear floor space in front of self-service kiosks of: **(Figure 76)**
 - i. a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth for forward approach; and
 - ii. a minimum of 1525 mm (60 in) wide by 920 mm (36 in) depth for side approach;
- b. where self-service kiosks are designed with knee space clearance, ensure the knee space clearance is minimum of 760 mm (30 in) wide by 480 mm (18⅞ in) depth by 680 mm (26¾ in) high; and
- c. where toe clearances are provided, ensure the minimum toe height is 350 mm (13¾ in) above the finished floor.

5.9.3 Display Panels and Screens

For display panels and screens: **(Figure 85)**

- a. locate display panels / screens free from obstructions above or around panels / screens;
- b. position display panels / screens to minimize glare and reflections;
- c. where display panels or screens are inclined and cannot be read from 750 mm (29½ in) away:
 - i. ensure suitable knee and toe clearances are provided underneath self-service kiosks to allow users of mobility aids to approach screens, as identified in this section; and
 - ii. ensure the top of the panel is a maximum of 1380 mm (54⅞ in) high above the floor;
- d. where self-service kiosks with vertical display panels or screens are provided, ensure the text or information provided on the panels or screens is located between 750 mm (29½ in) and 1750 mm (68⅞ in) high.

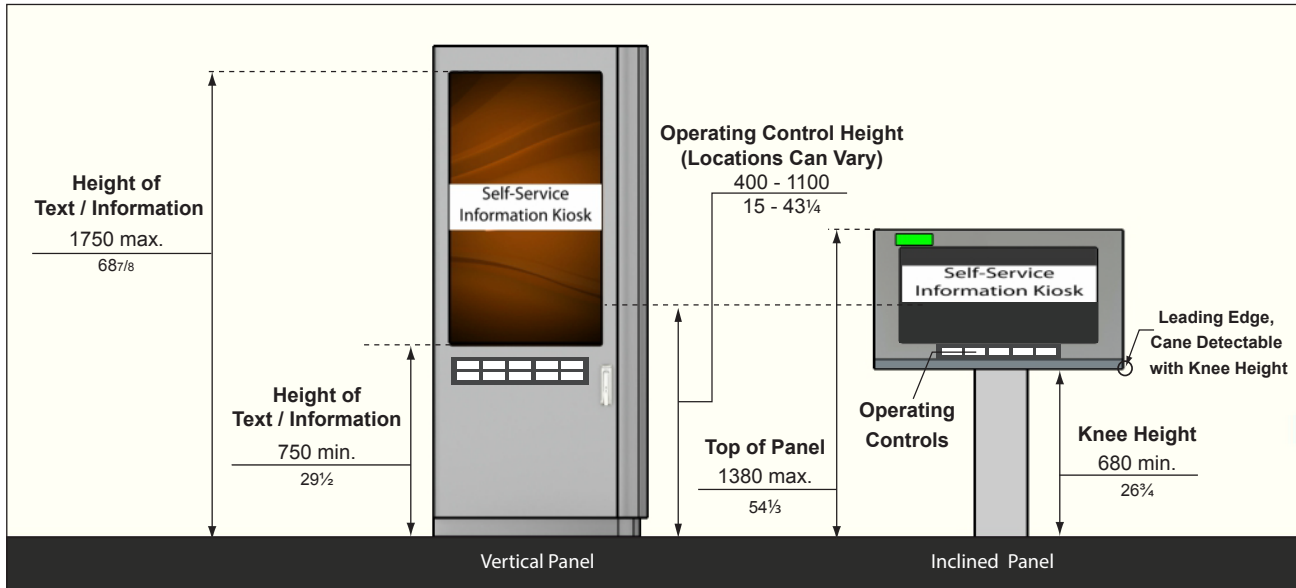


Figure 85: Self-service Kiosks - Elevation View



Examples of self-service kiosks with different accessibility features.

5.9.4 Operating Controls

For operating controls, recognizing provision and locations can vary significantly based on the type of kiosk: **(Figure 85)**

- a. mount operating controls or input and output components between 400 mm (15 in) and 1100 mm (43³/₄ in) high above floor level; and
- b. ensure controls are operable with one hand, without using tight grasp, pinching, or twisting of the wrist, requiring a maximum operating force of 22 Newtons (5 pounds).

Best Practice

Self-service kiosks that use touch-screen technology are very difficult or impossible to use for people with vision loss.

This is a technical and structural barrier that can have a significant impact for people trying to make purchases independently and securely using a touch-screen kiosk. When determining what accessibility features can be included in the design or purchase of a kiosk, ensure to include an alternate (non-visual) way to use it, such as a tactile keyboard and audio instructions.

5.9.5 Other Accessibility Features

Accessibility features for self-service kiosks vary based on the type of services provided. Key accessibility features to consider when procuring or acquiring self-service kiosks include the following:

- a. ensure high colour / tonal contrast is provided between characters and the background on display panels / screens;
- b. ensure display panels / screens are positioned to provide sufficient brightness to overcome ambient conditions;
- c. where insertion slots for notes, coins, or other media are provided as part of self-service kiosks, ensure a high colour / tonal contrast is provided with adjacent surface or a lead-through indicator light is provided for slot location assistance;
- d. where visual information is integral to the use of self-service kiosks, provide an alternative mode of operation and information retrieval (e.g., audio output with information displayed on screen conveyed in spoken form);
- e. where audio information and instructions are provided:
 - i. equip with headset jacks with adjustable volume controls for users with hearing loss; and
 - ii. ensure headset jack receptacles are identified with a tactile symbol;
- f. where touch screen displays are provided:
 - i. ensure they are usable with items such as prosthetic limb or stylus; and
 - ii. provide audible and visible feedback to indicate that the screen has been touched;
- g. where users are required to complete tasks, ensure the time allowed for completion is adjustable;
- h. provide specialized keypads or keyboards (e.g., tactile keyboards); and
- i. where a biometric component is incorporated as part of the self-service kiosk, provide an alternative identification method (e.g., non-biometric).

Windows



5.10

Application

This section applies to windows, glazed screens, vision panels in doors, and fully glazed sidelights, intended for viewing or that are required for ventilation.

Reference

- Sec. 4.2 Doors and Doorways
- Sec. 5.1 Controls and Operating Mechanisms

Note

Accessibility requirements are applicable to windows that are intended for use by facility occupants, staff or public.

Best Practice

Floor space with turning diameter of 2500 mm (98½ in) is preferred to accommodate larger mobility aids.

Where there is extensive glazing, or use of etched or patterned glass, provide decals or a strip at a lower level, between 850 to 1000 mm (33½ to 39¾ in) high above finished floor level.

At locations where frameless glass panels are used, cap any exposed ends or edges with a high colour / tonal contrasted vertical safety stripe, to enhance visibility.

5.10.1 Design Features

For windows, glazed screens and vision panels, designed for the purpose of viewing: **(Figure 86)**

- a. provide clear floor space a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth for forward approach and a minimum of 1525 mm (60 in) wide by 920 mm (36 in) depth for side approach by users of mobility aids;
- b. locate bottom sill height no more than 760 mm (30 in) above the finished floor;
- c. where ventilation or operating controls are provided, mount between 400 mm and 1100 mm (15¾ in and 43¾ in) above the finished floor to be reachable from a seated position and ensure controls are usable with one hand and not require fine finger control, tight grasping, pinching of fingers, or twisting of the wrist during use;
- d. do not locate any horizontal structure (e.g., mullion or other visual obstruction) between 900 mm and 1300 mm (35½ in and 51 in) above the floor; and
- e. where wall systems include extensive use of glazing, etched or patterned glass, provide horizontal marking strips:
 - i. 50 mm (2 in) in height, extending full width of glazed area, mounted between 1350 mm and 1500 mm (53 in and 59 in) above finished floor; and
 - ii. ensure high colour / tonal contrast is provided for users with vision loss.

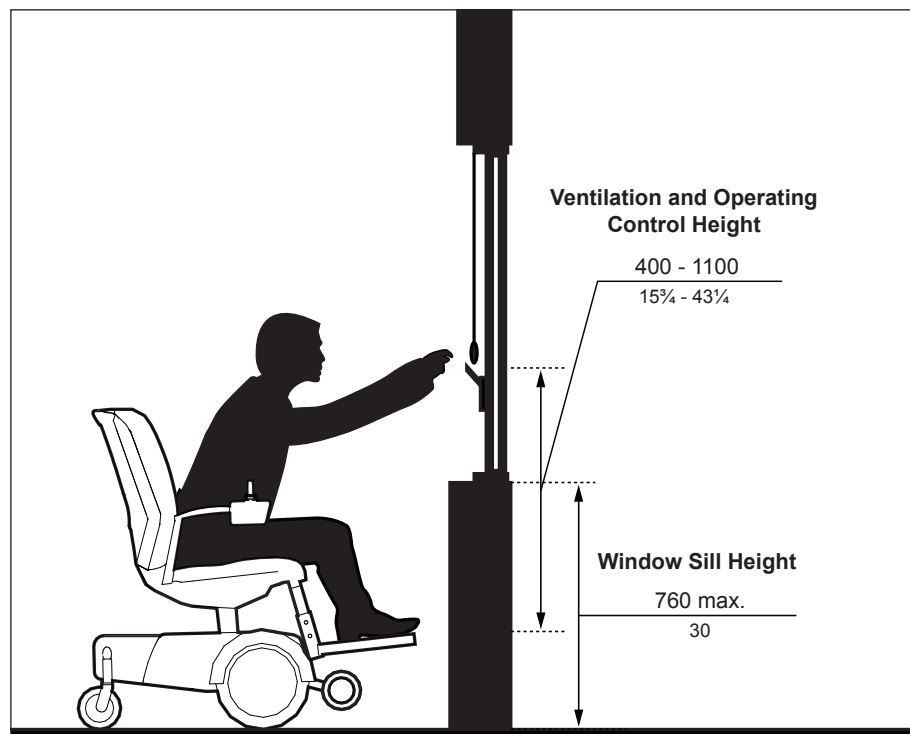


Figure 86: Window Design Features - Elevation View

Special Facilities and Spaces

6.0

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6.1

Application

This section applies to assembly areas in both interior and exterior environments. Common assembly areas, where accessible seating spaces are required are identified in **Table 14**.

Table 14: Common Assembly Areas

Civic	Entertainment / Cultural	Educational	Sports
Council Chamber	Theatre	Lecture Hall	Arena
Public Meeting or Hearing Room	Places of Worship	Classroom	Stadium
Auditorium	Performing Arts Center	Conference / Symposium Room	Gymnasia
Multi-purpose Room (e.g., Community or Recreation Centers)	Museum	Stage / Podium	Grandstand Stage

Reference

- Sec. 2.4 Guards and Handrails
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.12 Elevated Platforms or Stages

Best Practice

When designing assembly areas, consider the needs of those experiencing hyper-sensitivities or hypo-sensitivities, especially where there is expected to be large groups of people, or increased activity in the space. Integrating sensory design strategies is recommended. Sensory design means designing spaces that respect sensitivities related to hearing, taste, smell and touch but also sensations that extend from senses such as temperature, vibration and pressure. Sensory design strategies can address the needs of diverse users of all ages and abilities including people with autism, developmental / intellectual disabilities, dementia or brain injury, for example.

These solutions may include:

- Ensuring that there is enough room to step away from a line or entranceway if required;
- Separate quiet spaces or transition areas (for a family or individual to retreat or withdraw from a line or chaotic situation to a calmer environment when required);
- Snoezelen rooms or snoezelen equipment (e.g., these spaces may consist of specialized lighting, decorations, music, aromatherapy, calming toys, books and other types of sensory or tactile equipment to allow options for relaxing or stimulating experiences, depending on individual needs); and
- Dimmer lighting.

Best Practice

In assembly areas, where lighting is dimmed (e.g., theatres or performing arts center), ensure steps and accessible routes are illuminated (e.g., marked with lighting strips) to assist with identification.

Adaptable seating, with armrests that flip up and down at the end of aisle seats, provides assistance to persons transferring from mobility aids.

Note

Persons using mobility aids usually sit higher than persons in standard seating and accessible seating spaces should be located to ensure that when they are occupied, the views of others that may be seated behind them are not obstructed.

Companion seating to be calculated in addition to the required number of accessible seating spaces.

6.1.1 Design and Layout

- ensure lighting level is evenly distributed at a minimum of 150 lux (15 ft. candles), throughout all accessible routes and accessible seating spaces (**Refer to Section 5.7, Lighting**);
- ensure a consistent accessible route / path of travel at a minimum of 1100 mm (43¼ in) clear width, or preferred 1830 mm (72 in), with required turning spaces, throughout circulation areas (**Refer to Section 4.3, Interior Accessible Routes**);
- provide accessible seating options for users of mobility aids;
- provide assistive listening systems, designed for the type of venue and audience;
- ensure all audio-visual equipment, features, controls and related technology are usable by all participants and staff, where provided, including the provision of instructions and guidance in alternative formats; and
- designate accessible seating spaces and adaptable seating with the International Symbol of Accessibility (ISA) signage (**Refer to Section 5.8, Signage and Wayfinding**).

6.1.2 Accessible and Adaptable Seating

6.1.2.1 Provision

Where fixed seating is available in assembly occupancies:

- provide accessible seating spaces for users of mobility aids and adaptable seating based on total number of fixed seats, as identified in **Table 15**:

Table 15: Accessible and Adaptable Seating Requirements in Assembly Areas

Total Number of Fixed Seats	Minimum Number of Accessible Seats	Minimum Number of Adaptable Seating
Up to 20	2	1
21 to 40	2	2
41 to 60	2	3
61 to 80	2	4
81 to 100	3	5
Over 100	3% of seating capacity	the greater of 5 seats or 5% of the aisle seating capacity

6.1.2.2 Accessible Seating Spaces

Where accessible seating spaces are provided: **(Figures 87, 88 & 89)**

- install directional signage in prominent locations to identify location of accessible seating spaces;
- locate spaces adjoining an accessible path of travel, without infringing on egress from any row of seating;
- provide at least one fixed companion seat adjacent to accessible seating spaces and within the same row, ensuring shoulder alignment for users sitting beside each other;
- for front, rear or side approaches, ensure a minimum clear floor space at each accessible seating space is 920 mm (36 in) wide by 1525 mm (60 in) depth;
- ensure at least two accessible seating spaces are provided side by side, with a minimum clear turning circle of 1525 mm (60 in) diameter, or preferred 2500 mm (98½ in), in front or behind accessible seating spaces;
- locate accessible seating spaces as part of the designated / overall seating plan, provide a choice of viewing location and ensure there is a clear view of the event taking place;
- where accessible seating spaces are provided on an elevated platform, ensure sight lines are:
 - comparable to those for all viewing positions;
 - not reduced or obstructed by standing members of the audience; and
 - free of any obstructions (e.g., any barriers, handrails, guardrails or columns);
- ensure accessible seating spaces are positioned so that they do not obstruct sight lines of other users either sitting or standing.

Best Practice

An increased riser height for accessible seating spaces ensures suitable sight lines and comparable views when users in front are in a standing position.



Designated Accessible Seating Area, City of London.

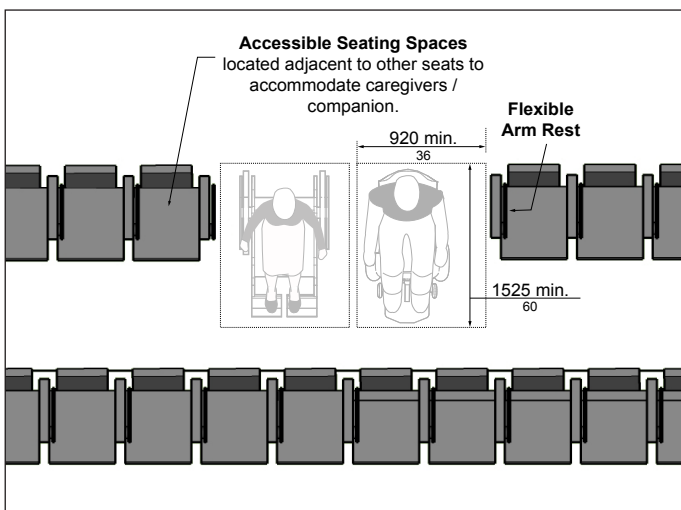


Figure 87: Accessible Seating Space Dimensions

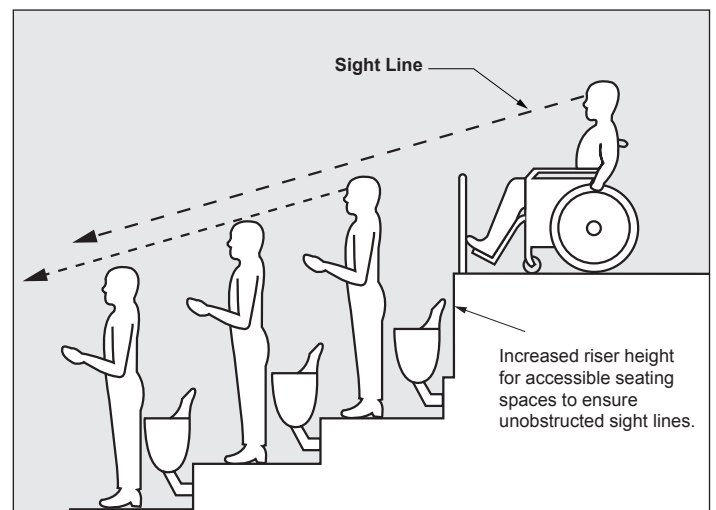


Figure 88: Sight Lines

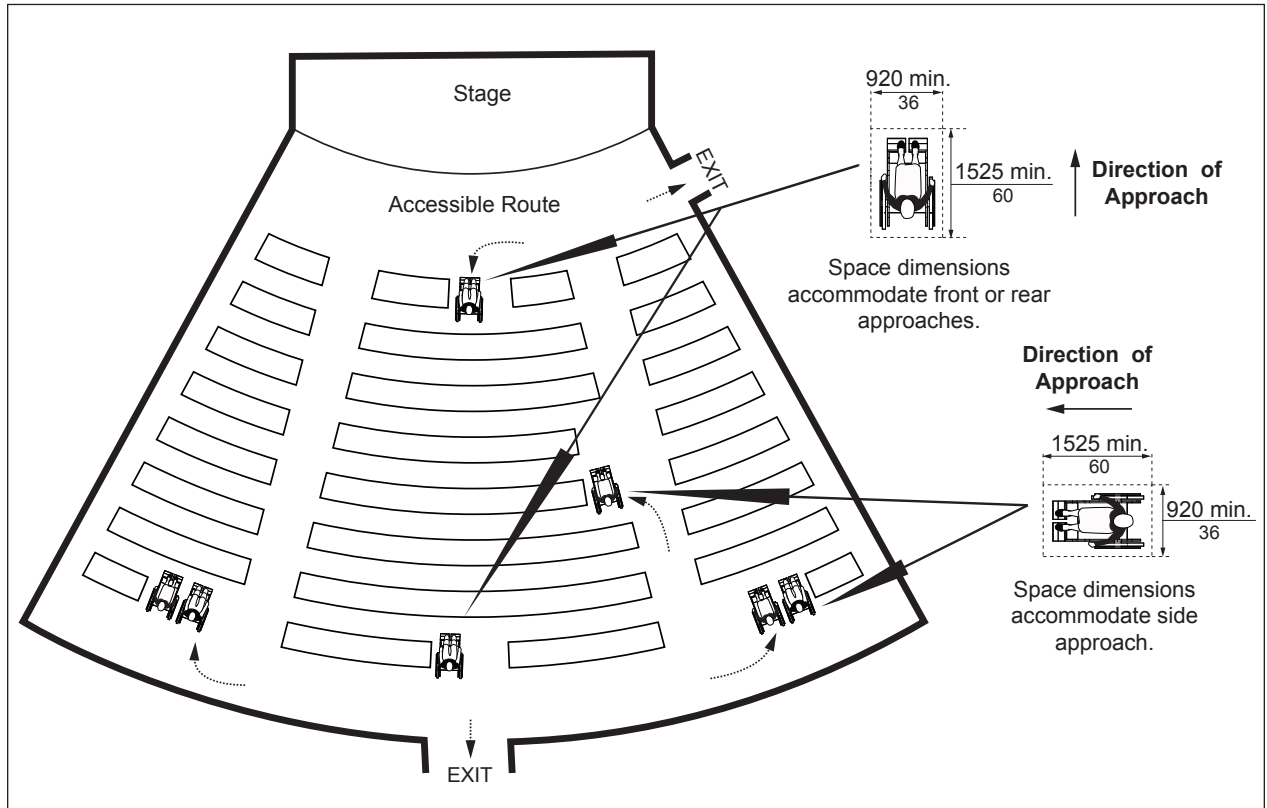


Figure 89: Accessible Seating Plan - Example of Viewing Positions

6.1.2.3 Adaptable Seating

For designated adaptable seating: **(Figure 87)**

- provide a minimum one adaptable seat adjacent to every accessible seating space;
- locate adjacent to an accessible route without infringing on egress from any row of seating or any aisle requirements;
- equip with a movable or removable armrest on the side of the seat adjoining the accessible route; and
- locate, as part of the designated seating plan, and provide a choice of viewing location with a clear view of the event taking place.

6.1.2.4 Storage for Mobility Aids

- ensure at least one (1) storage space where less than 200 fixed seats are provided and a minimum of two (2) storage spaces, where more than 200 fixed seats are provided;
- provide a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth for each space; and
- locate storage space (e.g., can be in a separate room or alcove, away from any adjacent accessible route) on the same level and in close proximity to the accessible seating spaces and seats designated as adaptable seating.



Meeting and Multi-purpose Rooms

6.2

Application

This section applies to highly-used and large meeting or multi-purpose rooms used by public and staff within a facility.

Note

Meeting rooms are intended to be flexible (e.g., with movable seating) in order to accommodate a wide range of uses, group sizes (e.g., dependent upon overall size of space) and the needs and preferences of the widest range of participants as possible. With movable seating available at all times for small and large meeting rooms, the intent is that a minimum of 2 accessible seating spaces can be made available, one on each side of a table for smaller spaces. For larger spaces, accessible seating spaces are expected to be available on all sides of a table. When a meeting room is not in use, seats are to be removed from accessible seating spaces and placed to ensure the accessible path of travel throughout the room is not obstructed.

Some facilities may limit uses due to the classification and type of building, but maximum flexibility is expected to be built into the design to accommodate any changing needs of occupants over time.

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Best Practice

The procurement of furniture and equipment for different types of meeting and multi-purpose rooms should ensure that maximum flexibility and accessible options are always available.

Best Practice

Entrances to large and highly used meeting or multi-purpose rooms to be equipped with power door operators.

Additional clear floor space of 2500 mm by 2500 mm (98½ in by 98½ in) within the room is recommended where space is available.

Movable tables and seating are recommended as they allow flexibility and accommodations to be made.

Note

For larger multi-purpose meeting rooms, consider ways to allow easy and logical subdivision of the room (e.g., partitioning using automatic movable walls, that provide acoustic and visual barriers).

6.2.1 Design and Layout

Typical features for accessible meeting rooms include: **(Figure 90)**

- a. locate on an accessible path of travel;
- b. identify meeting / multi-purpose room locations with appropriate signage (e.g., braille / tactile) **(Refer to Section 5.8, Signage and Wayfinding)**;
- c. ensure a consistent accessible route / path of travel a minimum of 1100 mm (43¼ in) clear width, or preferred 1830 mm (72 in), with required turning space, throughout circulation areas **(Refer to Section 4.3, Interior Accessible Routes)**;
- d. provide a minimum clear turning circle of 1525 mm (60 in) diameter, or preferred 2500 mm (98½ in), adjacent to the main entrance;
- e. provide accessible tables and work surfaces with suitable knee clearances and seating, as identified in related sections of these standards;
- f. provide an assistive listening system (type to be determined based on use of space / occupancy), identified with signage and the International Symbol for Hearing Loss;
- g. where a servery area / related millwork and any wall-mounted posting or writing surfaces are provided, ensure minimum clear floor space is 920 mm (36 in) wide by 1525 mm (60 in) depth, for both forward and side approaches, for at least one section of the millwork;
- h. mount any posting, display or writing surfaces (e.g., white boards or smart screens) with bottom edge at a maximum of 1000 mm (39¾ in) high;
- i. ensure all audio-visual equipment, features, controls and related technology are usable by all participants and staff, where applicable, including the provision of instructions and guidance in alternative formats;
- j. provide an accessible phone / teleconference system, including a portable microphone (e.g., flexible, goose-neck style), a cordless microphone or a personal voice amplification system, usable and available for each accessible seating position (or alternate systems/options for equivalent use); and
- k. ensure lighting level is evenly distributed at a minimum of 375 lux (37.5 ft. candles) at work surfaces and any additional task lighting based on user's needs **(Refer to Section 5.7, Lighting)**.

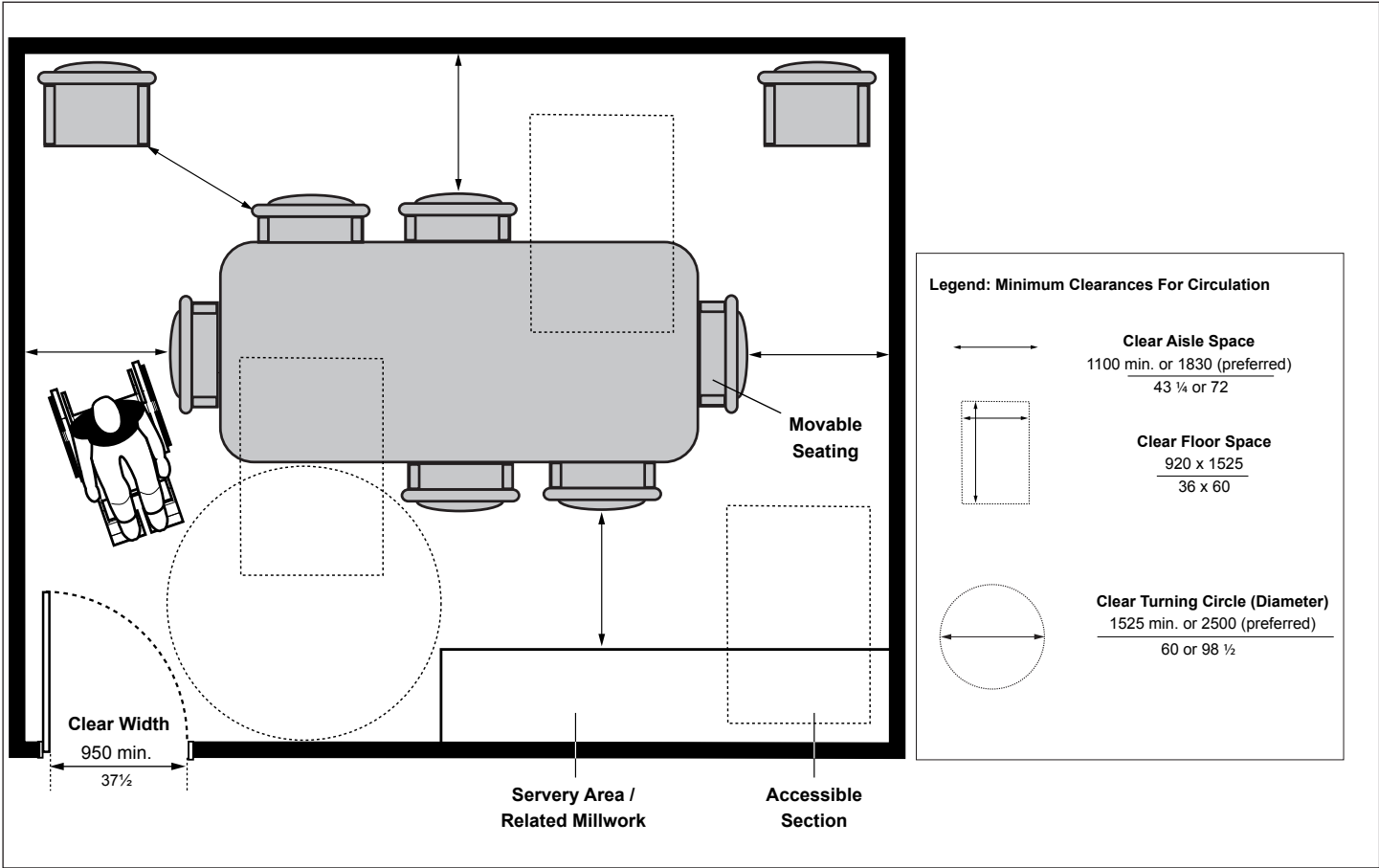


Figure 90: Meeting Room Design and Layout

A photograph of the Museum London entrance, featuring a large sign with the text 'MUSEUM LONDON' and a paved walkway leading to the building. The image is overlaid with a teal gradient.

Cultural and Art Facilities

6.3

Application

This section applies to cultural and art facilities which include, but are not limited to: art galleries, concert halls, theatres, museums and heritage sites.

Recognizing there are unique circumstances and challenges related to improving accessibility of heritage sites and facilities, additional considerations beyond architectural and physical design are often required.

These can include staff training and awareness, additional use of technology and implementation of facility-specific management policies and practices.

Reference

- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.1 Entrances
- Sec. 4.2 Doors and Doorways
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

6.3.1 Design and Layout

- a. ensure a consistent accessible route / path of travel a minimum of 1100 mm (43¼ in) clear width, or preferred 1830 mm (72 in), with required turning spaces, throughout circulation areas (**Refer to Section 4.3, Interior Accessible Routes**);
- b. where exhibits or displays follow a specific order, ensure circulation route is intuitive;
- c. provide an accessible floor plan or map to facilitate wayfinding;
- d. provide assistive listening systems in large assembly, meeting or performance areas; and
- e. where exhibits and displays are provided:
 - i. mount top surface of display cases at a maximum of 920 mm (36 in) high from floor;
 - ii. provide minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth for both forward and side approaches in front of exhibits;
 - iii. provide a high colour / tonal contrast between the items exhibited and adjacent background;
 - iv. eliminate or minimize glare that may be reflected from display surfaces or covers;
 - v. where interactive displays are provided, ensure controls and operating mechanisms are mounted at a maximum height of 1100 mm high (43¼ in) from floor (**Refer to Section 5.9, Self-service Kiosks**); and
 - vi. ensure lighting level is evenly distributed at a maximum of 200 lux (20 ft. candles), at display labels for reading and other viewing areas (**Refer to Section 5.7, Lighting**).

Best Practice

Provide line drawings and photographs that complement any labels or text, to aid in comprehension for those with reading difficulties.

Provide exhibits and display labels in alternative formats (e.g., braille or audio).

Refer to the Ontario Historical Society’s “Accessible Heritage: An Accessible Toolkit for Ontario’s Heritage Organizations and Institutions (current edition).”



Example of clear interior floor space for cultural / arts facility, City of London.



Interactive and tactile displays provide an alternative format to experience a space / exhibit.



Cafeteria and Dining Facilities

6.4

Application

This section applies to elements unique to cafeterias and dining facilities. Typical considerations include:

- serving line and seating areas with lower sightlines, reachable surfaces and displays for users of mobility aids;
- clear aisle and floor space for overall circulation; and
- independent access.

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 6.10 Service Counters
- Sec. 6.11 Waiting and Queuing Areas

Note

Providing accessible customer service is especially important for this type of environment.

6.4.1 Design and Layout

- a. ensure a consistent accessible route / path of travel at a minimum clear width of 1100 mm (43¾ in), or preferred 1830 mm (72 in), with required turning spaces, throughout circulation areas, including displays, service lanes, service or payment counters, as well as between and around any fixed tables or seating / dining areas (**Refer to Section 4.3, Interior Accessible Routes**); and
- b. where the layout of cafeteria amenities is dispersed, ensure a minimum clear floor space in front of food displays, condiment counters and dispensing equipment as follows:
 - i. 920 mm wide by 1525 mm depth (36 in by 60 in), for a forward approach; or
 - ii. 1525 mm wide by 920 mm depth (60 in by 36 in) for a side approach.

Best Practice

Provide clear floor space with turning diameter of 2500 mm (98½ in), to allow enhanced maneuverability, as well as both side and frontal approach of larger wheeled mobility aids such as powered scooters and wheelchairs.

6.4.2 Food Displays and Service Lanes

Where self-service food displays are provided: (**Figures 91a & 91b**)

- a. ensure minimum clear aisle width between tray slide and separating rail is 1100 mm (43¾ in), or preferred 1830 mm (72 in);
- b. provide tray slides mounted between 730 mm and 865 mm (28¾ in and 34 in) high above floor;
- c. ensure at least 50% of shelves are mounted 400 mm to 1370 mm (15¾ in to 54 in) high for unobstructed side approach; and
- d. ensure maximum side reach of 500 mm (19⅝ in) depth.

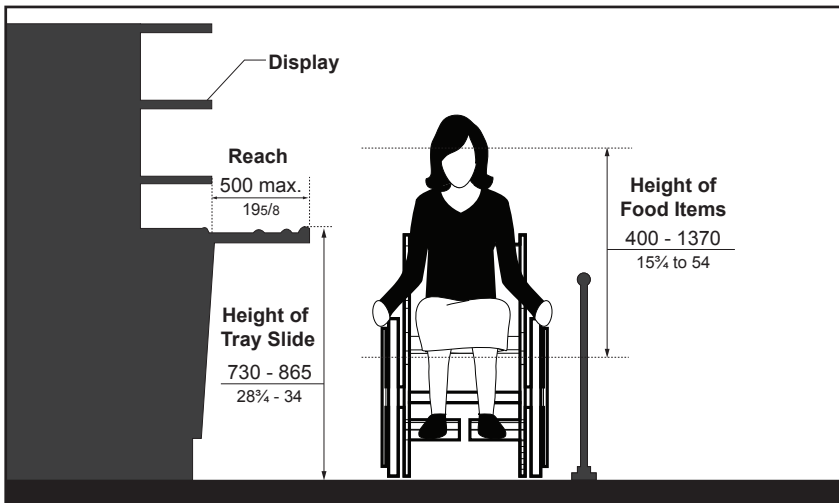


Figure 91a: Food Displays and Tray Slides - Section View

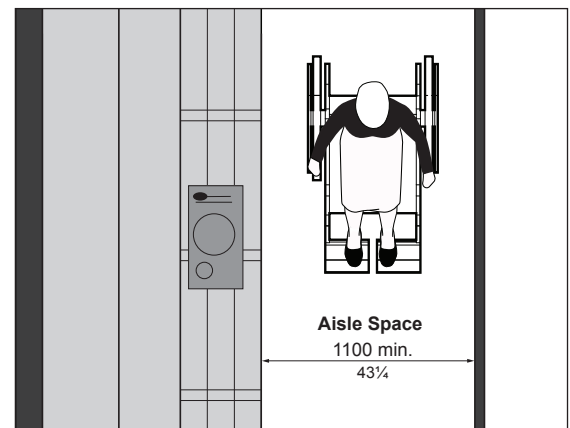


Figure 91b: Clear Aisle Width - Plan View

Best Practice

Refer to the AODA Customer Service Standards, Ontario Regulation 429 / 07.

Flexible seating and tables allow easier accommodations for all users. However, where provided, regular maintenance is required to ensure suitable placement and to ensure seats or tables that are temporarily moved do not obstruct accessible routes and floor space clearances.

6.4.3 Service and Payment Counter

Where required, ensure at least one accessible service counter is provided, with: **(Refer to additional requirements, Section 6.10 Service Counters):**

- a. a minimum clear floor space of:
 - i. 920 mm wide by 1525 mm depth (36 in by 60 in), for a forward approach; or
 - ii. 1525 mm wide by 920 mm depth (60 in by 36 in) for a side approach; and
- b. staff that are visible from a seated position, to assist users if required.

6.4.4 Dining and Seating Areas

- a. ensure all dining and seating areas are accessible, or a minimum of 20% of the total are accessible, with a range of seating / eating areas for users of mobility aids;
- b. provide dining tables with clear knee space underneath table, as identified in relevant sections of these standards; and
- c. provide informational and directional signage identifying accessible amenities, marked with the International Symbol of Accessibility.



Accessible route to dining and eating area, with flexible seating, City of London.



View of accessible route and amenities, as part of a cafeteria's food and service area, City of London.



Designated accessible seating, City of London.



6.5

Application

This section applies to common-use kitchens and kitchenettes, for public and staff, typically available as amenities in public facilities, such as office environments and community centers, where multi-purpose activity rooms are provided.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.7 Lighting

Best Practice

A turning circle of 2500 mm (98½ in) is preferred for users of larger mobility aids, including powered scooters and wheelchairs.

6.5.1 Design and Layout

- ensure floor surface is slip-resistant and has a non-glare finish;
- provide a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth, for either a forward or side approach by users of mobility aids, directly in front of kitchen amenities and appliances, and to the one side where drawers or doors open;
- ensure all controls and operating mechanisms are mounted no higher than 1100 mm (43¼ in) from floor; and
- ensure lighting level is evenly distributed and provided as required, with task lighting options (e.g., under cabinet / above counter) also available **(Refer to Section 5.7, Lighting)**.

6.5.1.1 Pass-through or Galley Kitchens

For kitchens where counters, appliances or cabinets are on two opposing sides or opposite a parallel wall: **(Figure 92)**

- provide a minimum clear width of 1100 mm (43¼ in), or preferred 1830 mm (72 in), between all opposing base cabinets, countertops or walls within kitchen work areas; and
- ensure two doorways or openings are provided, with one at each end and with a minimum clear width of 950 mm (37½ in).

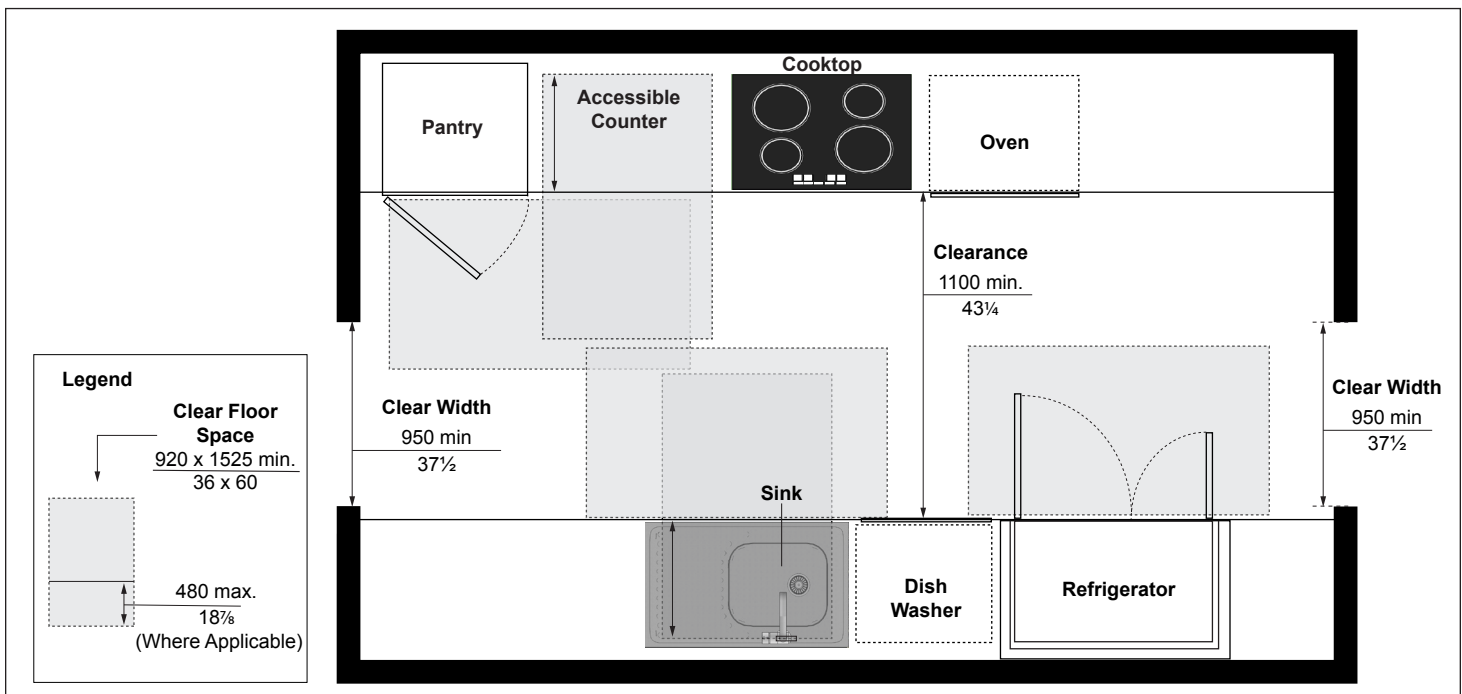


Figure 92: Pass-Through or Galley Kitchen - Plan View

6.5.1.2 U-shaped Kitchens

Where kitchens are enclosed on three continuous sides: **(Figure 93)**

- a. provide a clear turning circle of 2500 mm (98½ in) diameter between all opposing base cabinets, countertops or walls within kitchen work areas, or in a retrofit condition where providing this space is technically infeasible, this space may be reduced to 2130 mm (83⅞ in); and
- b. ensure minimum entrance / exit clear width is at least 950 mm (37½ in).

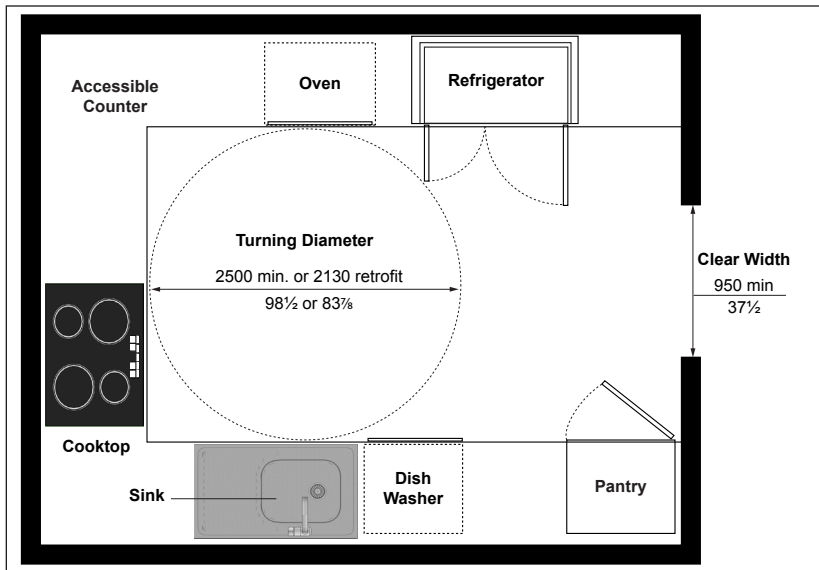


Figure 93: U-Shaped Kitchen - Plan View

6.5.1.3 L-shaped Kitchens

Where kitchens are L-shaped: **(Figure 94)**

- a. provide a minimum clear width of 1100 mm (43¼ in), or preferred 1830 mm (72 in), between all opposing base cabinets, countertops or walls within kitchen work areas.



Figure 94: L-Shaped Kitchen - Plan View

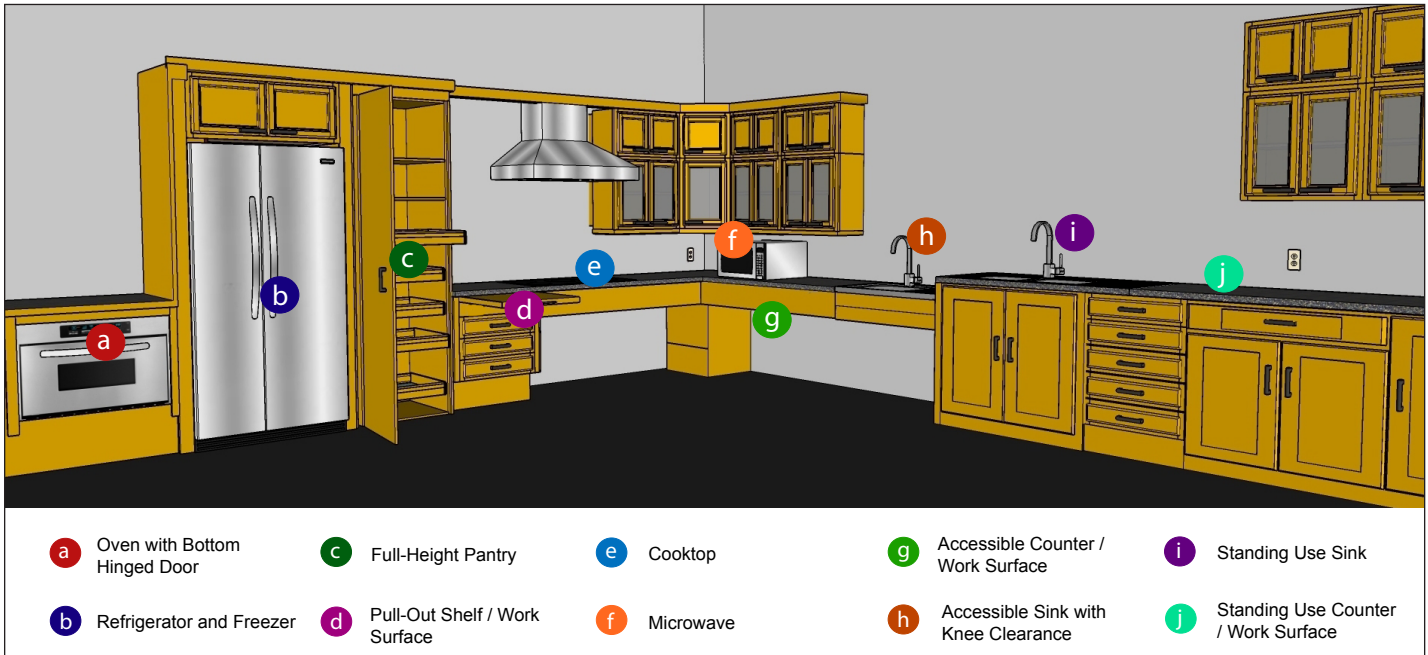


Figure 95: Example of Kitchen with Typical Amenities and Appliances

Best Practice

Colour / tonal contrasted front edges on the counters help define the user space.

Provide a portable, accessible side counter unit for frequently used appliances and related amenities. This can also be an option for existing facilities.

An additional pull-out workboard below the standard counter surface is recommended.

Continuous countertops are recommended.

Note

Where kitchen islands are provided, consider providing lowered counter with knee clearance.

6.5.2 Counters and Work Surfaces

For accessible food preparation counters and work surfaces: **(Figure 96)**

- a. provide a high colour / tonal contrast between all cabinets, countertops, appliances and adjacent wall surfaces;
- b. ensure there are no sharp or abrasive surfaces underneath counter and work surfaces or as part of front edges of counters (e.g., rounded edges are recommended);
- c. ensure at least one (1) counter / work surface is accessible with:
 - i. dimension a minimum of 760 mm (30 in) wide by 600 mm (23⁵/₈ in) depth;
 - ii. top surface between 730 mm (28³/₄ in) and 865 mm (34 in) high;
 - iii. a centered knee clearance at a minimum of least 480 mm (18⁷/₈ in) depth, 760 mm (30 in) wide and 685 mm (27 in) high;
 - iv. a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth, which may extend a maximum of 480 mm (18⁷/₈ in) underneath the counter / work surface; and
 - v. electrical outlets installed at the side or front.

6.5.3 Kitchen Storage

Kitchen storage includes but is not limited to shelves, storage cabinets and drawers. Where provided: **(Figures 96 & 97)**

- a. ensure at least one (1) storage unit shelf surface is a maximum of 1100 mm (43¾ in) high from floor where it is mounted above a counter / work surface and that at least 50% of all shelf space is accessible;
- b. provide accessible cabinet door hardware (e.g., D-type door pull) mounted:
 - i. no higher than 1100 mm (43¾ in) from floor; and
 - ii. close to the bottom for upper cabinets and close to the top for base cabinets;
- c. ensure a minimum toe space of 150 mm (6 in) depth by 230 mm (9 in) high is provided at base cabinets, where provided.

Best Practice

For kitchen storage, provide shelving above the counter and drawers or pull-out shelves below the counters.

Full-height storage cabinets provide a good range of accessible storage, which is particularly useful in accessible kitchens, recognizing the amount of base storage is reduced by the knee clearance provisions.

Full extension drawers and shelves provide storage space that is easy to reach and use.

“Lazy Susan” trays also provide accessible storage.

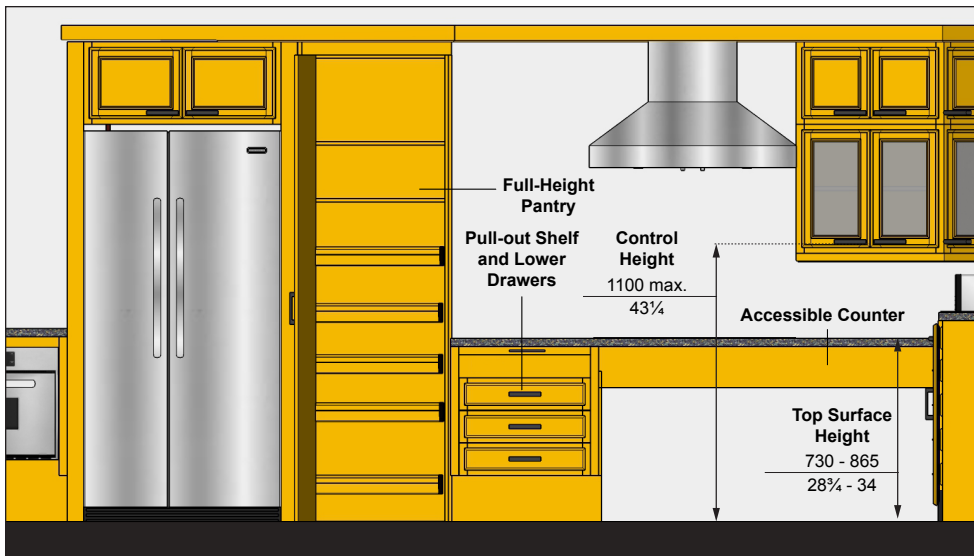


Figure 96: Kitchen Storage - Elevation View

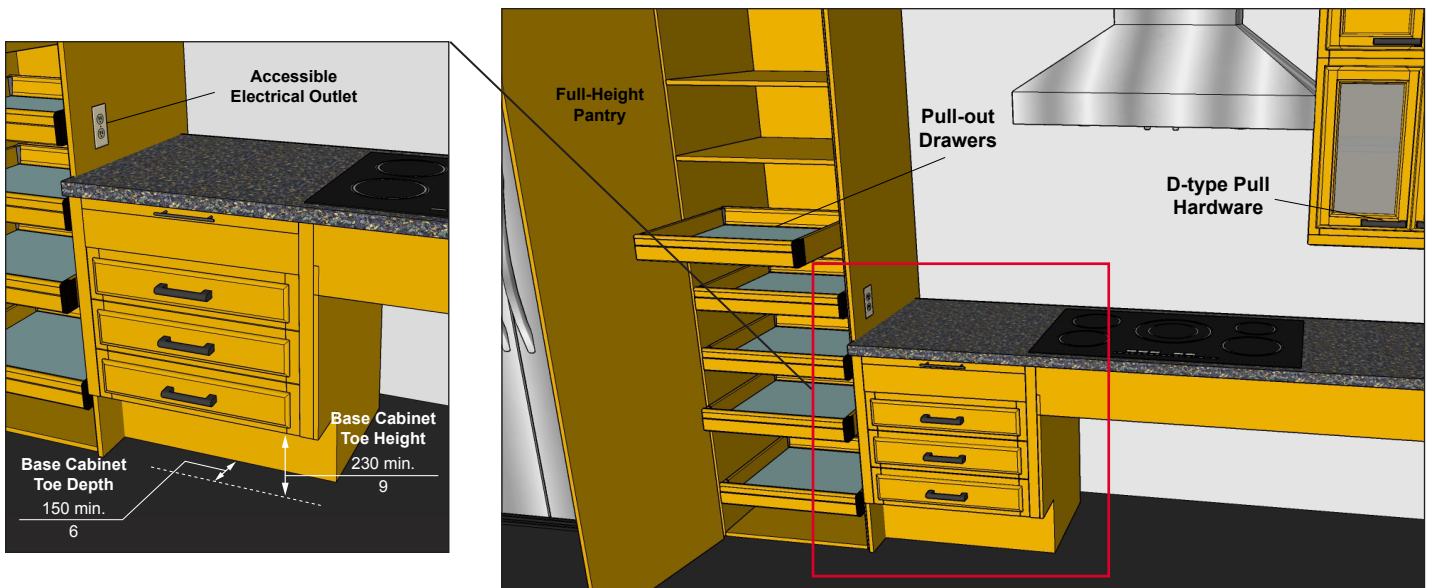


Figure 97: Kitchen Storage

Best Practice

Faucets with a flexible hose attachment benefit a wider range of users.

6.5.4 Sinks

Where accessible sinks are provided: **(Figures 98 & 99)**

- install sink with its centerline at a minimum of 460 mm (18 $\frac{1}{8}$ in) from a side wall;
- ensure the rim height of sink is located between 810 mm to 860 mm (31 $\frac{7}{8}$ in to 34 in) high above floor;
- provide a minimum clear floor space in front at 920 mm (36 in) wide by 1525 mm (60 in) depth, which may extend a maximum of 480 mm (18 $\frac{7}{8}$ in) underneath;
- provide knee clearance centered on the sink a minimum of 920 mm (36 in) wide by 685 mm (27 in) high by 200 mm (7 $\frac{7}{8}$ in) depth, with toe space clearance a minimum of 230 mm (9 in) high by 230 mm (9 in) depth;
- provide automatic faucet or lever-type controls that can be operated with a closed fist **(Refer to Section 5.1, Controls and Operating Mechanisms)**;
- ensure no sharp or abrasive surfaces underneath;
- ensure hot water and drain pipes underneath sink are offset to the rear and do not obstruct the knee clearance; and
- where hot water and drain pipes about the knee clearance, ensure pipes are insulated or covered to protect users.

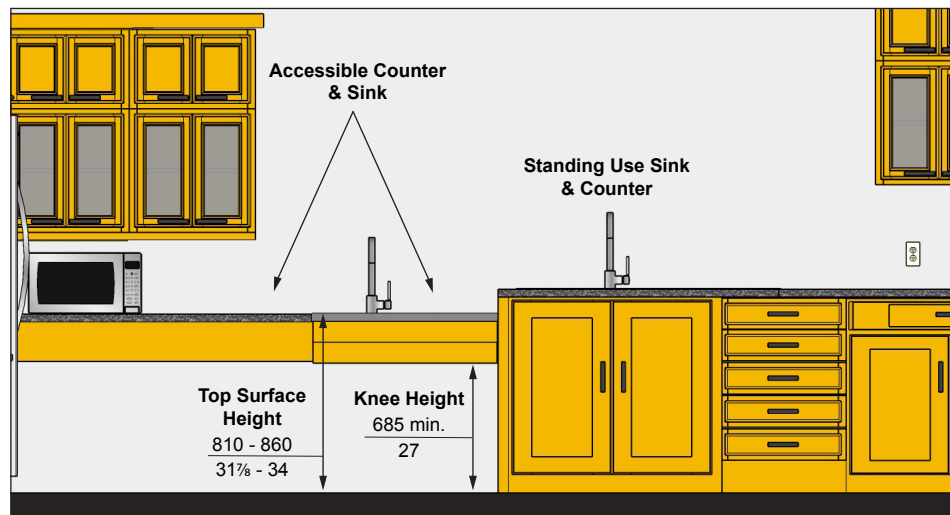


Figure 98: Sink - Elevation View

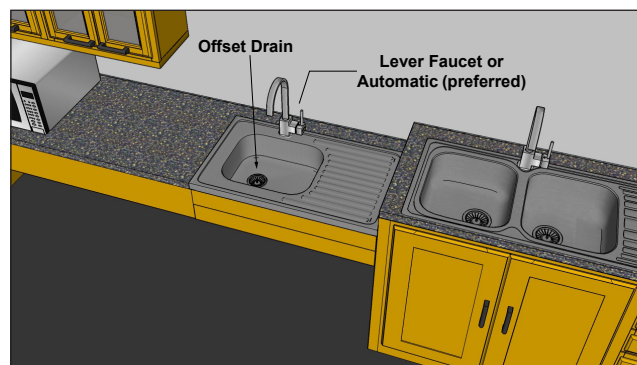


Figure 99: Accessible Sink with Offset Drain

6.5.5 Kitchen Appliances

Kitchen appliances include but are not limited to cooktops / ranges, microwaves, ovens, refrigerators and freezers (Figure 95).

6.5.5.1 Cooktops or Ranges

Where accessible cooktops or ranges are provided: (Figures 100 & 101)

- use appliance models where controls are located away from the burners (e.g., do not require reaching across heating surface to operate);
- provide a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth, centered and which may extend up to 480 mm (18 $\frac{3}{8}$ in) underneath the cooktop;
- ensure top surface height is located between 810 mm and 860 mm (31 $\frac{7}{8}$ in and 34 in) from the floor;
- provide a knee clearance centered on the cooktop of a minimum of 920 mm (36 in) wide by 685 mm (27 in) high by 200 mm (7 $\frac{7}{8}$ in) depth, with additional toe clearance of a minimum of 230 mm (9 in) depth by 230 mm (9 in) high;
- provide insulation or other protection on the underside of cooktops where there is knee clearance to prevent abrasions, burns or electric shock; and
- provide a work surface on each side and at the same height as the cooktop:
 - with a minimum width of 400 mm (15 $\frac{3}{4}$ in); and
 - ensure surface is heat resistant.

Best Practice

Consider using induction cooktops (e.g., where there is no flame, surface does not heat up when activated and only the cookware gets heated), which can provide enhanced safety and accessibility, especially for users with vision loss. Portable units are also available to supplement any existing appliances.

Note

In facilities with children's programs, cooktops / ranges or ovens to be equipped with a safety switch to de-activate appliance controls.

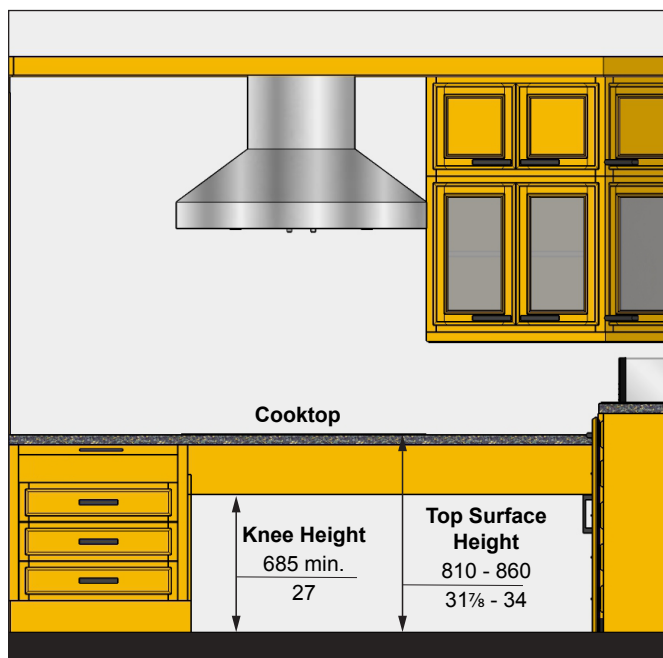


Figure 100: Cooktop - Elevation View

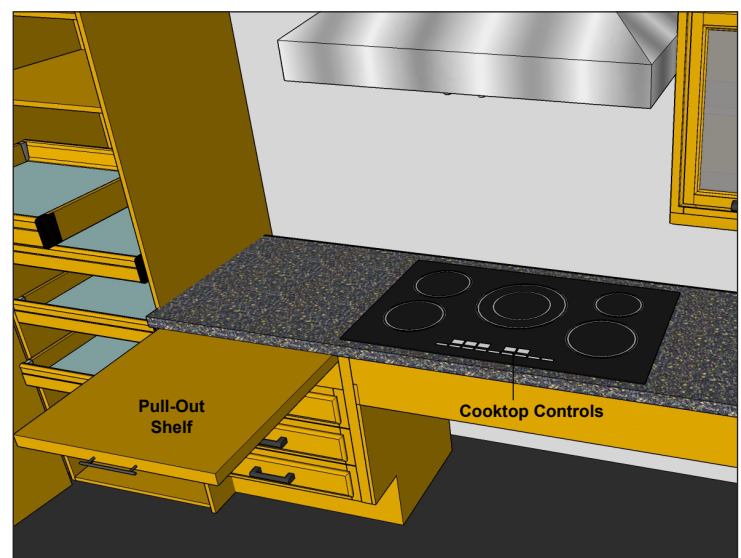


Figure 101: Cooktop with Operating Controls at Front

Best Practice

Lowered wall ovens with a side-opening door are recommended.

Roll-out shelves or drawers improve access to the refrigerator contents.

Note

Models with freezers at the bottom are recommended, if an over-and-under refrigerator type is provided.

Additionally, floor space should be provided to pull up to the refrigerator / freezer in a mobility aid. This allows opening and closing of the door and ensures space to open the door.

Recessed, door mounted ice and water dispensers are convenient for many users.

6.5.5.2 Ovens and Microwaves

Where provided: **(Figure 95)**

- a. ensure oven operating controls are located on the front panels;
- b. where ovens with side-hinged doors are provided:
 - i. provide heat resistant accessible work surfaces with knee space below, adjacent to the latch side of oven door; or
 - ii. incorporate a heat resistant pull-out shelf that pulls out a minimum of 250 mm (9 $\frac{7}{8}$ in) below the oven;
- c. where ovens with bottom-hinged doors are provided, provide an accessible work surface on one side of the door; and
- d. where microwave ovens are provided, mount at counter height and close to the front edge of the counter.

6.5.5.3 Refrigerators and Freezers

Where accessible refrigerators and freezers are provided: **(Figure 102)**

- a. provide a self-defrosting freezer;
- b. provide a vertical side-by-side type refrigerator / freezer or where an over-and-under type refrigerator is used, ensure the freezer shelf space is a maximum of 1100 mm (43 $\frac{1}{4}$ in) high from the floor; and
- c. provide clear floor space in front of refrigerators / freezers a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth, positioned for parallel approach immediately adjacent to the refrigerator / freezer, with the centerline of the clear floor space offset a maximum of 610 mm (24 in) from the front face.

6.5.5.4 Dishwashers

Where accessible dishwashers are provided: **(Figure 102)**

- a. provide a minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth at both sides of the door, when in the open position; and
- b. ensure that the door opening does not obstruct any required clear floor spaces for using all adjacent appliances or accessible sinks.

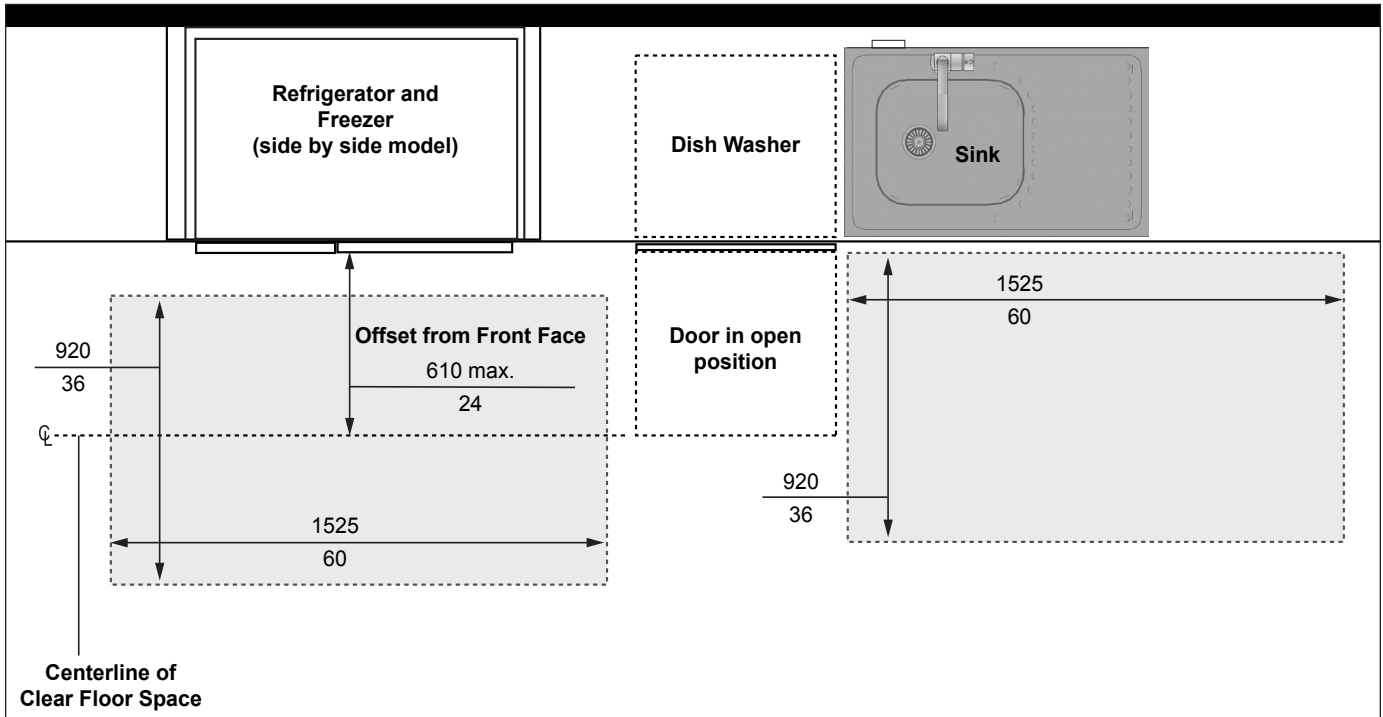


Figure 102: Clear Floor Space at Accessible Refrigerator / Freezer and Dishwasher



Libraries

6.6

Application

This section applies to libraries or a designated room in a facility that is used for the same purpose.

It is recognized that libraries have unique space requirements in order to accommodate book stacks and reference materials at both high and low shelving heights. Shelving heights in collection areas with book stacks is unrestricted where City staff are available to assist users when requested. Ensure staff availability is coordinated as part of a formal accessible customer service policy, practice or procedure that is in place for all library facilities.

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
 - Sec. 4.3 Interior Accessible Routes
 - Sec. 5.1 Controls and Operating Mechanisms
 - Sec. 5.7 Lighting
 - Sec. 5.8 Signage and Wayfinding
 - Sec. 6.10 Service Counters
 - Sec. 6.11 Waiting and Queuing Areas
- Refer to AODA Customer Service Standard, Ontario Regulation 429 / 07.

6.6.1 Design and Layout

For typical library design features and layout: (Figures 103, 104 & 105)

- provide a consistent accessible path of travel a minimum of 1100 mm (43¼ in) wide throughout spaces for circulation, or preferred 1830 mm (72 in) wide;
- provide a minimum clear turning circle of 1525 mm (60 in) diameter, or preferred 2500 mm (98 ½ in), for approach, maneuverability and turning by users of mobility aids, at key features such as service counters, study carrel areas and computer workstations;
- where required, provide security gates with a minimum clear width of 950 mm (37½ in);
- provide at least one accessible service counter at circulation, information or self-service checkout areas (**Refer to Section 6.10, Service Counters**);
- where computer workstations / catalogue desks are provided, ensure all are accessible or 50% (minimum);
- ensure acoustic quality is free of unnecessary background noise;
- provide informational and directional signage where any services or amenities for users with disabilities are available on different floor levels (e.g., Information or Customer Service Desks);
- ensure library staff are provided with disability awareness / sensitivity training; and
- ensure lighting level is evenly distributed, at a minimum of: (**Refer to Section 5.7, Lighting**)
 - 300 lux (30 ft. candles), at any study carrel, work or reading surface; and
 - 200 lux (20 ft. candles), at book stacks, with illumination directly over the aisle space, at a nominal working height of 920 mm (36 in.)

Best Practice

Clear width of 1830 mm (72 in) is preferred at main circulation routes in order to accommodate higher volumes of traffic.

Where space is available, clear floor space of 2500 mm (98½ in) is recommended to allow users of mobility aids to make a 180° turn within the aisle configuration.

Provide alternative formats for key resources based on user requests and through development of partnerships with other organizations (e.g., CNIB, Canadian Hearing Society). This includes considerations related to the availability of Audio Books on CD-ROM for users with low literacy or who have a vision loss, as well as Closed Captioning options for any audio / visual media, for users with hearing loss.

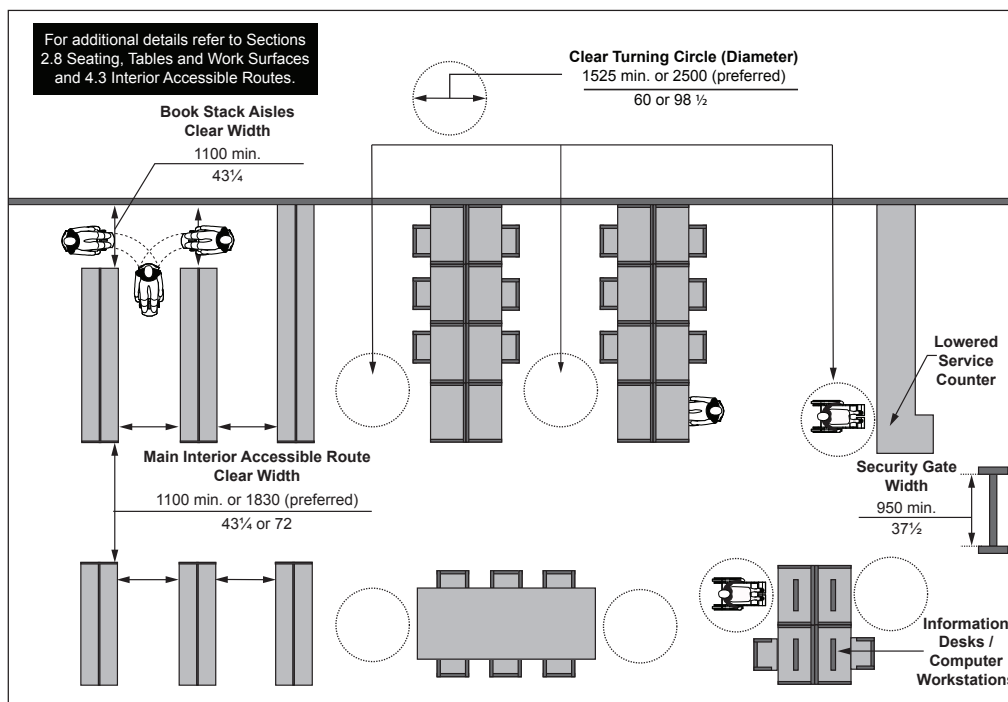


Figure 103: Library Design and Layout - Plan View

Best Practice

Where more frequently used or referenced materials are provided, such as newspapers, periodicals, pamphlets and community brochures for example, a mounting height between 400 mm and 1100 mm (15¾ in and 43¼ in) high is required to accommodate the reach ranges of diverse users, including small children, seniors and users of mobility aids.

Ensure accessible workstations have height adjustable surface and are equipped with adaptive technology (e.g., flexible mouse control and scrolling feature). Ensure at least one accessible workstation has specialized equipment for users with vision loss (e.g., screen reader software, scanner and CCTV magnifiers).

6.6.2 Book Drop Slots

Where book drop slots are provided: **(Figure 104)**

- locate on an accessible path of travel;
- provide a minimum clear turning circle of 2500 mm (98 ½ in) diameter in front, or 1525 mm by 1525 mm (60 in by 60 in) clear floor or ground space in a retrofit condition, where it is technically infeasible to provide the required clear turning circle;
- ensure a high colour / tonal contrast between drop slot and mounting surface;
- locate slot between 900 mm and 1100 mm (35 in and 43 ¼ in) above the floor or ground; and
- ensure slot controls are usable with a closed fist and operable with one hand.

6.6.3 Book Stacks or Carousels

For book stacks or carousels: **(Figure 105)**

- provide an accessible path of travel with a minimum width of 1100 mm (43 ¼ in) between aisles or 1830 mm (72 in) preferred;
- ensure library policy is in place to provide assistance for users to access items that are too high or too low; and
- ensure large print collection and heavier materials are placed on lower shelves for easy access.

6.6.4 Reading Lounges and Study Areas

For reading lounges and study areas that consist of seating and study carrels / work surfaces: **(Figure 105)**

- provide a variety of flexible seating options;
- ensure a high colour / tonal contrast is provided between furniture and their surroundings;
- ensure all study tables, study carrels and work surfaces provide suitable knee and toe clearances with at least 10%, and a minimum of one of each surface type fully accessible (**Refer to Section 2.8, Seating, Tables and Work Surfaces**); and
- incorporate an electric outlet.

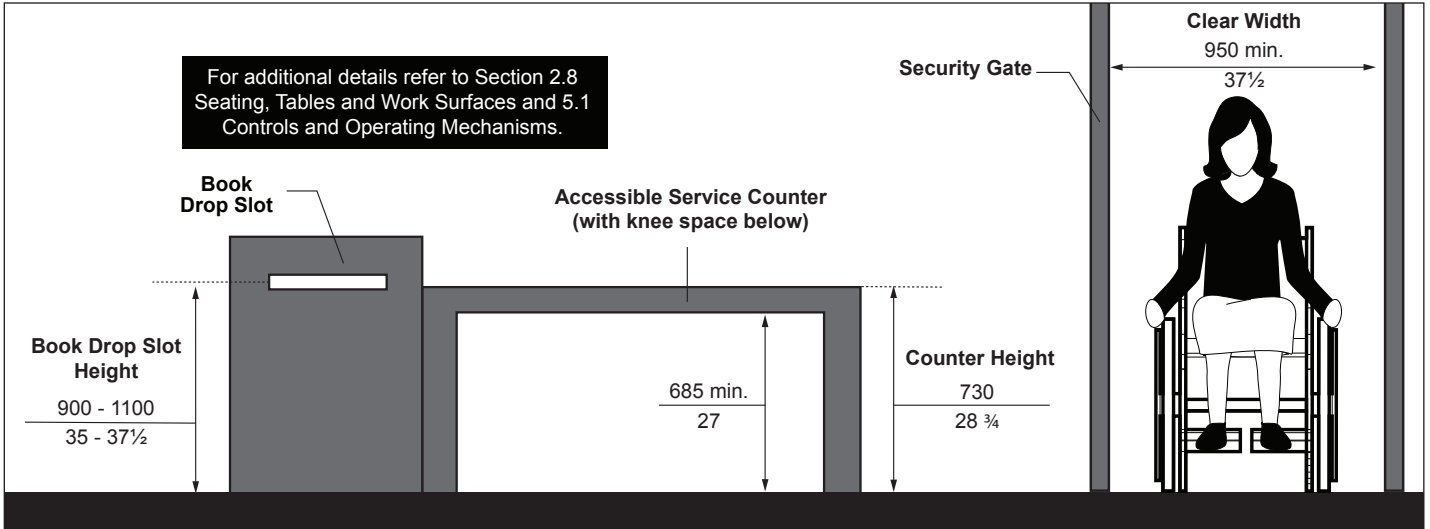


Figure 104: Library Security Gate, Service Counter and Book Drop Slot

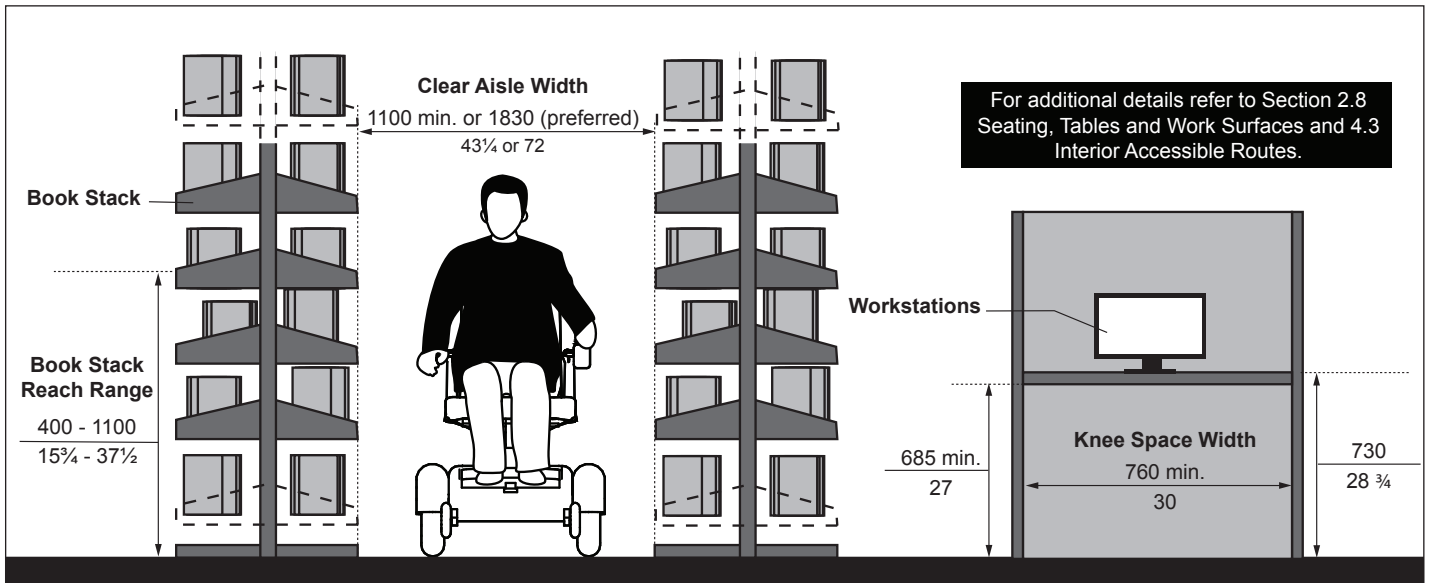


Figure 105: Book Stacks and Workstations (Typical)



Recreational and Community Facilities

6.7

Application

This section applies to recreational and community facilities, whether indoor or outdoor, used by spectators, participants, volunteers, coaching staff and facility employees. Recreational and community facilities include, but are not limited to:

- courts (e.g., basketball, volleyball, tennis);
- fields (e.g., baseball, soccer, football);
- arenas (e.g., ice pad, skating rinks);
- aquatic facilities (e.g., swimming pools, spas, wading pools, splash pads, saunas);
- gymnasiums; and
- exercise and fitness facilities.

Criteria in this section requires detailed review and application based on the type of facility, level of use and number of features or elements provided (e.g., total number of change rooms).

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.2 Ramps
- Sec. 2.3 Stairs
- Sec. 2.4 Guards and Handrails
- Sec. 2.7 Tactile Walking Surface Indicators
- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.1 Assembly Areas
- Sec. 6.8 Change Rooms

6.7.1 Design and Layout

The design and layout of recreational and community facilities, typically consists of the following elements. As part of detailed design, ensure direct accessible routes are provided to connect all key components and spaces, including from: **(Refer to Section 4.3, Interior Accessible Routes)**

- i. any main entrance lobby to change rooms;
- ii. change rooms to any pool deck, ice surface or exercise / fitness rooms; and
- iii. viewing areas to public washrooms or any other amenities (e.g., gymnasium, auditorium, performer areas, meeting rooms etc.).

6.7.1.1 Change Rooms

- a. for each type of recreational facility (e.g., arena, pool, gymnasium etc.), provide a minimum of one accessible change room, or 50% of the total provided is preferred, with at least one universal change room or stall integrated, for each type of use in each cluster, to accommodate parents with children, companions or care givers of the opposite sex **(Refer to Section 6.8, Change Rooms)**.

6.7.1.2 Viewing Areas

- a. provide level accessible seating spaces to accommodate users of mobility aids **(Refer to Section 6.1, Assembly Areas)**; and
- b. integrate assistive listening systems as required, with the type of system dependent on the type of venue and seating capacity **(Refer to Section 5.2, Assistive Listening Systems)**.

6.7.2 Arenas

For access to ice pads and skating rinks in arenas:

- a. locate on an accessible path of travel;
- b. provide access panels to ice surface with clear width of at least 950 mm (37½ in); and
- c. provide level or beveled threshold access to ice surface.

6.7.3 Exercise and Fitness Facilities

- a. ensure accessibility features are provided, if available, for at least one of each type of equipment or machine; and
- b. provide a minimum clear floor space of 920 mm by 1525 mm (36 in by 60 in) for either a front or side approach on one side of exercise equipment to allow transfer for users of mobility aids.

Best Practice

Refer to the Canadian Recreation Facilities Council (CRFC) “Sledge Hockey Accessibility: Design Guidelines for Arenas”, as recognized by Hockey Canada (current edition).

Where space is available, provide a clear turning circle of 2500 mm (98½ in) for transfer to exercise equipment.

Best Practice

Provide an area for mobility aids or assistive devices to be stored so they do not obstruct circulation around pool deck.

Where possible, provide sloped entry or ramp with running slope of no more than 1:20 (5%).

Note

Extensions are not required on bottom landing as they can be a bumping hazard for swimmers.

For new construction, ensure sloped entry or ramp is provided. Transfer lifts are permitted as an option for existing facilities that cannot be retrofitted to provide a sloped entry or ramp.

6.7.4 Aquatic Facilities

For aquatic facilities, ensure a direct, accessible route is provided from any lobby with the following features or amenities: **(Figure 106)**

- a. ensure pool deck perimeter surfaces are firm, stable and slip-resistant, with a matte finish provided that is non-abrasive and easy to clean;
- b. ensure deck surface has running or cross-slope gradient no steeper than 1:50 (2%) for drainage of water;
- c. provide recessed drainage tiles with openings no greater than 13 mm (½ in) wide;
- d. provide an accessible path of travel around the perimeter of pool deck at a minimum width of 1100 mm (43¼ in) or preferred 1830 mm (72 in);
- e. provide tactile attention indicators (TAI) 610 mm (24 in) wide to clearly delineate the perimeter of the pool deck and locate where any area contiguous to the pool deck may be confused with the deck;
- f. provide high colour / tonal contrast on pool lane markers, related tie-off devices, starter blocks and any other permanent or temporary equipment (e.g., life-guard chairs, diving boards or platforms, safety equipment);
- g. ensure safety equipment and other accessories are stored properly in order to prevent any potential tripping or bumping hazard;
- h. where diving boards or platforms are provided, ensure they are clearly marked and protected with an overhead clearance of 2100 mm (82¾ in) or suitable guard protection; and
- i. where pool-depth indicator markings are provided, ensure that the depth-indicator markings, as well as the 'SHALLOW AREA' and 'DEEP AREA' markings, have a high colour / tonal contrast and that there is sufficient sizing of lettering / numbering for high visibility (e.g., as required by applicable Health Protection and Promotion Act Regulations).

6.7.4.1 Entry and Exit Point

Provide at least one accessible entry and exit point:

- a. located away from any designated swimming lanes.

6.7.4.2 Sloped Entry or Ramp

Where either a sloped entry or ramp is provided, ensure: **(Figure 106)**

- a. running slope is no more than 1:12 (8.33%);
- b. handrails are mounted between 865 mm and 965 mm (34 in and 38 in) high from surface, extending at top landing only;
- c. the minimum clear width between handrails is 1100 mm (43¼ in);

- d. a top and bottom landing of at least 1670 mm by 1670 mm (65¾ in by 65¾ in) is provided;
- e. a curb or other means to prevent a wheelchair from falling off the side is provided;
- f. provision of an anti-slip surface finish, capable of being kept clean and sanitary;
- g. water depth at the bottom of the ramp is a minimum of 600 mm (23⅝ in) and a maximum of 900 mm (35½ in);
- h. provision of a hard-surfaced area capable of accommodating a movable barrier separating the area from the deck, and is a minimum of 750 mm (29½ in) wide that is contiguous to the entire length of the part of the submerged ramp that pierces any part of the deck;
- i. the finishes in the submerged portions of the ramps and curbs are different in colour or shade from each other and from that of the pool walls and bottom;
- j. Where the ramp is not submerged:
 - i. provide a landing at the bottom of the ramp that is at least 450 mm and 550 mm (17¾ in and 21¾ in) below the top of the wall;
 - ii. ensure width at the top of the wall between the pool and ramp of 250 mm and 300 mm (10 in and 11¾ in);
 - iii. ensure water depth at the landing is clearly marked in figures at least 100 mm (4 in) high on the top of the wall;
 - iv. ensure a running slope of 1:12 (maximum); and
 - v. equip with a floor drain at the lowest point;
- k. where the ramp is submerged:
 - i. provide a maximum running slope of 1:9; and
 - ii. provide a water resistant wheelchair at each facility for use in transferring into the water (e.g., may also be used for shower facilities).

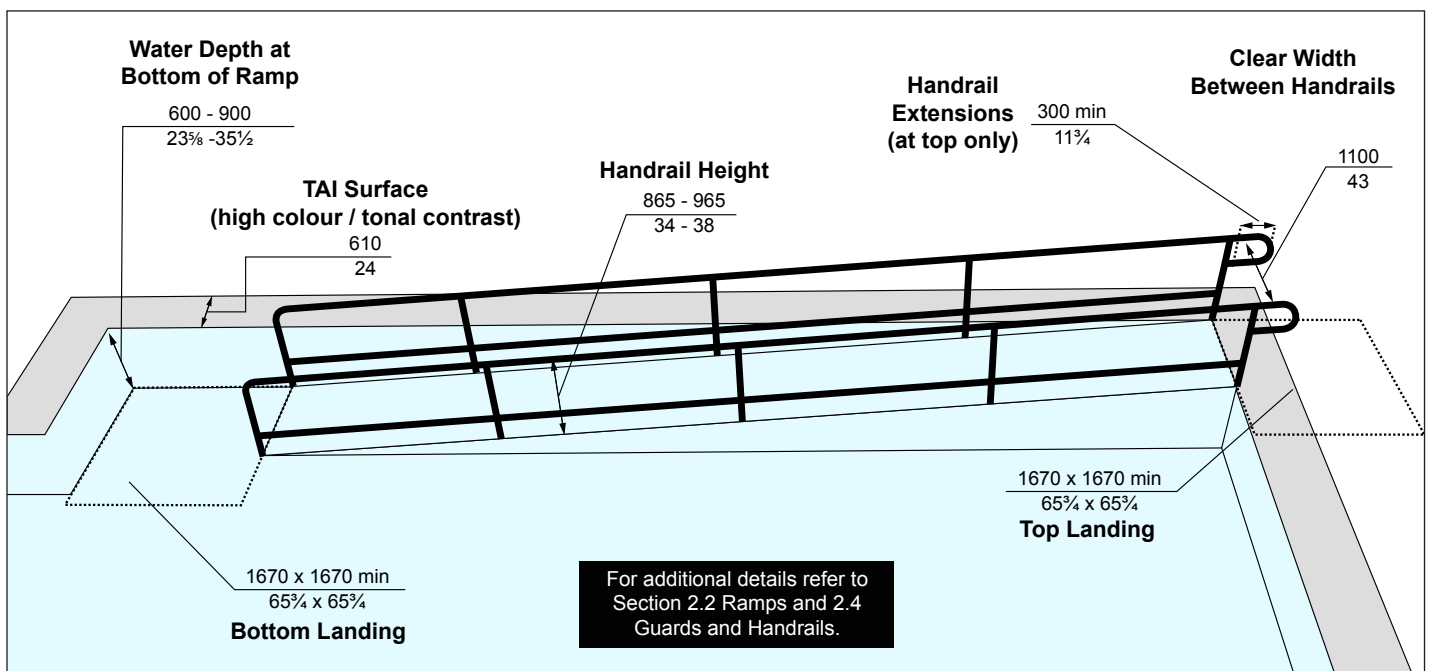


Figure 106: Sloped Entry or Ramp to Swimming Pool

6.7.4.3 Transfer Systems

For existing facilities without ramps, provision of a fixed transfer lift is required to support diverse user needs. Transfer lifts can be used as a means of assisted entry and exit point where an accessible entry / exit point can't be provided.

6.7.4.4 Transfer Lifts

- a. locate transfer lifts on an accessible path of travel and in shallow end, where water level does not exceed 1200 mm (47 in) high;
- b. ensure the centerline of the seat for the transfer lift is located over the deck and at a minimum of 400 mm (15¾ in) from the edge of the pool when in the raised position;
- c. ensure seat is firm with suitable padding, with a minimum width of 400 mm;
- d. provide a clear deck space, located parallel with the seat for the pool lift and on the side of the seat opposite the water (e.g., transfer side of the lift), a minimum of 920 mm (36 in) wide, extending forward a minimum of 1525 mm (60 in) in length, from a line located 305 mm (12 in) behind the rear edge of the seat;
- e. ensure lift is designed:
 - i. to be operable without assistance from both the deck and water; and
 - ii. when in use, its controls and operating mechanisms are unobstructed, mounted no higher than 1100 mm (43¾ in) from pool deck or water surface and / or are activated via remote control.
- f. ensure lifts have a minimum weight capacity of 135 kilograms (300 pounds) and capable of sustaining a static load of at least 1.5 times the rated load.



Example of pool transfer lift, City of London.

6.7.4.5 Steps

Where steps are provided into the pool:

- a. mark both riser and tread with a high colour / tonal contrasted strip of at least 50 mm (2 in) wide; and
- b. provide handrails on both sides of the steps with:
 - i. high colour / tonal contrast; and
 - ii. extensions at least 300 mm (11¾ in) beyond the pool edge.

6.7.5 Therapeutic Pools / Spas

6.7.5.1 General

- a. ensure water temperature is heated to between 33-34 Degrees Celsius (92 - 94 Degrees Fahrenheit);

- b. ensure temperature or other controls (e.g., submerged water jets) comply with applicable accessible operating control requirements, as identified in other sections of these standards;
- c. provide therapy pool with exercise portion between 1050 mm and 1200 mm (41 in and 47 in) depth;
- d. provide submerged benches, as identified in other sections of these standards;
- e. incorporate exercise bars (below water level) into the design of a therapy pool;
- f. ensure the slope of the bottom of any portion of a public spa does not exceed 1:12 (8.33%);
- g. ensure the maximum depth of water to a seat or bench in a public spa is 600 mm (23⁵/₈ in); and
- h. provide at least one accessible access point, via an accessible ramp or transfer wall, as identified in this section.

Exception

Where the public spa has an area of less than 6 square metres, and has no interior dimension of more than 2500 mm (98½ in), one section of the pool deck that does not exceed 25% of the perimeter may have a minimum clear deck space of not more than 300 mm (11⁵/₈ in).

6.7.5.2 Deck Features

Any public spa provided to be surrounded by a hard-surfaced deck with:

- a. minimum clear deck space width of 1830 mm (72 in), at the main entrance point; and
- b. minimum clear deck space width of 1100 mm (43¼ in), on all sides.

6.7.5.3 Steps

Where a set of steps is provided for entry into and egress from a public spa, ensure steps are designed with:

- a. required handrails;
- b. a non-slip surface; and
- c. a high colour / tonal contrasted band, integrated along the entire juncture of the side and top of the edges.

6.7.5.4 Transfer Walls

Where transfer walls are provided, ensure:

- a. height of 405 mm to 485 mm (16 in to 19 in) above pool deck;
- b. depth between 300 mm and 400 mm (11¾ in and 15¾ in);
- c. slip-resistant surface with rounded edges;
- d. minimum of one grab bar is provided:
 - i. that is slip-resistant, mounted perpendicular to pool and extending the full depth of transfer wall;
 - ii. located between 100 mm and 150 mm (4 in and 5⁷/₈ in) above transfer wall;

- iii. with a clearance of at least 610 mm (24 in) on both sides;
 - iv. with a high colour / tonal contrast provided between grab bar and mounting surface; and
 - v. with a grasping surface that is circular in shape and has a diameter between 30 mm and 40 mm ($1\frac{3}{16}$ in);
- e. provision of adjacent clear deck area for lateral transfer to the transfer wall that:
- i. is outside of and adjacent to the accessible route;
 - ii. has no obstructions at side of transfer wall;
 - iii. has clear space of 900 mm ($35\frac{1}{2}$ in) by 2200 mm ($86\frac{5}{8}$ in); and
 - iv. has a slope a minimum of 2% at base of transfer wall surface;
- f. provision of adjacent clear deck area centered on the grab bar where one grab bar is provided, or centered on the clear space between grab bars where more than one grab bar is provided.

6.7.6 Emergency Systems

6.7.6.1 Communications

At least one emergency telephone to be provided:

- a. with direct connection to emergency services; and
- b. installed within 30 m (98 ft. 5 in) of a public spa.

6.7.6.2 Safety Control

All pumps provided in a public spa to be equipped with a safety control:

- a. capable of being deactivated by an emergency stop button that is clearly labeled and visible, located in close proximity and readily accessible within 15 m (49 ft. $2\frac{1}{2}$ in.) of persons using the public spa; and
- b. that is separate from the timing device, activates an audible and visual signal when used, and is identified with emergency signage.



Change Rooms

6.8

Application

This section applies to change rooms, which may also be referred to as dressing / locker rooms or fitting areas, used by the public or staff. These spaces share common elements and design features. Typically, change rooms are provided in arenas, pools, fitness centers and related recreation / community centers.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.2 Doors and Doorways
- Sec. 4.3 Interior Accessible Routes
- Sec. 4.5 Washrooms
- Sec. 4.6 Showers
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Note

The provision of universal change rooms or stalls as part of change rooms and related areas is dependent upon the type of facility. For a pool facility, often a combination of shared and private spaces are provided for change areas, which often also integrate washroom and shower facilities as part of the overall design. The total number of universal change rooms or stalls should be identified based on the size and occupancy of each facility and the required fixture counts for washrooms and showers.

Note

In a retrofit situation, 10% of change rooms, and never less than one, should be universal, for each type of other regular change room facility that is provided.

6.8.1 Provision and Location

For universal change rooms or stalls that are intended for private use in addition to other public or staff change rooms that may be available:

- a. provide at least one universal change room or stall for each type of other regular change room facility that is provided (e.g., Male, Female); and
- b. ensure universal change rooms or stalls are located along an accessible route.

6.8.2 Design and Layout

- a. where doors are provided at the change room entrance, provide a minimum clear width of 950 mm (37½ in) and equip with power door operators;
- b. provide a consistent accessible path of travel a minimum of 1100 mm (43¼ in) clear width, or preferred 1830 mm (72 in), with required turning spaces, throughout circulation areas (**Refer to Section 4.3, Interior Accessible Routes**);
- c. ensure a minimum clear turning diameter of 2500 mm (98½ in) is provided inside change room circulation area for users of mobility aids;
- d. ensure the floor surface is firm, level and slip-resistant, with required drainage integrated where applicable;
- e. where washroom facilities are provided as part of a change room, provide accessible design requirements, as identified in **Section 4.5, Washrooms**;
- f. where shower facilities are provided as part of a change room, provide accessible design requirements, as identified in **Section 4.6, Showers**;
- g. provide an emergency call system with the following features:
 - i. includes an emergency sign containing the words “IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE” in letters at least 25 mm (1 in) high with a 5 mm stroke, that is posted above the emergency button;
 - ii. consists of visual and audible signal devices both inside and outside of the change room that are activated by a control device inside the change room; and
 - iii. where facilities have the capacity and where staff is available, ensure the call system is linked to a display panel at a reception / information counter or to a centrally monitored station (e.g., security desk).

6.8.3 Change Room Amenities

Change room amenities typically include, but are not limited to benches, lockers, showers and washrooms.

6.8.3.1 Permanent Benches

Where permanent benches are provided:

- a. provide seat height of 480 mm to 520 mm (18 $\frac{7}{8}$ in to 20 $\frac{1}{2}$ in) above finished floor to allow users of mobility aids to transfer;
- b. ensure seat depth between 510 mm to 610 mm (20 in to 24 in), with back support, unless seat surface is permanently positioned against a wall; and
- c. provide high colour / tonal contrast finishes to assist with distinguishing bench surfaces from surroundings.



Example of a universal washroom integrated as part of an accessible change room, City of London.

6.8.3.2 Lockers

Where lockers are provided inside change rooms:

- a. ensure a minimum of 10% of the total number of lockers but never less than one is designated as accessible;
- b. identify accessible lockers clearly with signage (e.g., International Symbol of Accessibility);
- c. provide a minimum clear floor space in front of accessible lockers:
 - i. 920 mm wide by 1525 mm depth (36 in by 60 in), for a forward approach;
 - ii. 1525 mm wide by 920 mm depth (60 in by 36 in) for a side approach; and
 - iii. ensure any fixed benches do not overlap this clear space;
- d. mount at least one shelf between 400 mm and 1200 mm (15 $\frac{3}{4}$ in and 47 $\frac{1}{4}$ in) high above finished floor;
- e. ensure locking mechanism is mounted between 900 mm and 1100 mm (35 $\frac{1}{2}$ in and 43 $\frac{3}{4}$ in) high above floor; and
- f. ensure identification / number signage for all lockers:
 - i. is mounted no higher than 1525 mm (60 in) (center);
 - ii. provides lettering or number print size between 13 mm and 19 mm ($\frac{1}{2}$ and $\frac{3}{4}$) high, with either raised or recessed lettering; and
 - iii. provides a high colour / tonal contrast with the background.

Note

A universal change room stall is typically constructed using partitions, similar to accessible washroom stalls or enclosures, compared to a universal change room, consisting of structural walls.

6.8.4 Universal Change Rooms or Stalls

Where universal change rooms or stalls are provided:

(**Figures 107a, 107b and 107c**)

- a. identify clearly with signage (e.g., International Symbol of Accessibility);
- b. provide a minimum clear turning diameter of 2500 mm (98½ in) inside of the change room or stall;
- c. ensure floor surface is firm, level and slip-resistant, preventing accumulation of any standing water where required for any expected wet areas / conditions (e.g., showers, swimming pools etc.);
- d. provide an entrance door or stall door with required accessible door hardware, as identified in other sections of these standards, as well as: (**Refer to Section 4.5, Washrooms**)
 - i. a minimum clear width of 950 mm (37½ in), when door is in an open position;
 - ii. a locking mechanism that can be locked from the inside and released from the outside, in case of emergency;
 - iii. gravity hinges in the case of a stall door, so that door closes automatically, where the door swings outwards; and
 - iv. a power door operator, where an entrance door is required for a private universal change room;
- e. provide a fixed change bench:
 - i. a minimum of 1830 mm (72 in) length by 810 mm (32 in) width / depth;
 - ii. mounted with top surface between 450 mm and 500 mm (17¾ in and 19⅝ in);
 - iii. with clear floor space in front, at a minimum of 920 mm (36 in) wide the full length of the bench, for either a forward or parallel transfer;
 - iv. designed to carry a minimum load of 1.33 kilonewtons (300 pounds); and
 - v. with a high colour / tonal contrasted surface compared to surroundings, that is slip resistant to prevent water accumulation, where required in wet areas / conditions;
- f. provide one L-shaped grab bar as follows:
 - i. installed at one end of the bench with the vertical component a minimum of 150 mm (6 in) from front edge and a minimum clearance of 150 mm (6 in) above the bench seat; and
 - ii. with additional specifications, as identified in **Section 4.5.7, Grab Bars**;
- g. provide a motion sensor for automatic illumination of the interior, with a lighting level that is evenly distributed at a minimum of 300 lux (30 ft. candles) (**Refer to Section 5.7, Lighting**); and
- h. include a full length mirror, a minimum of 460 mm (18⅝ in) wide by 1370 mm (54 in) high, with lower edge mounted at a maximum of 175 mm (6⅞ in) above finished floor, for seated or standing users.

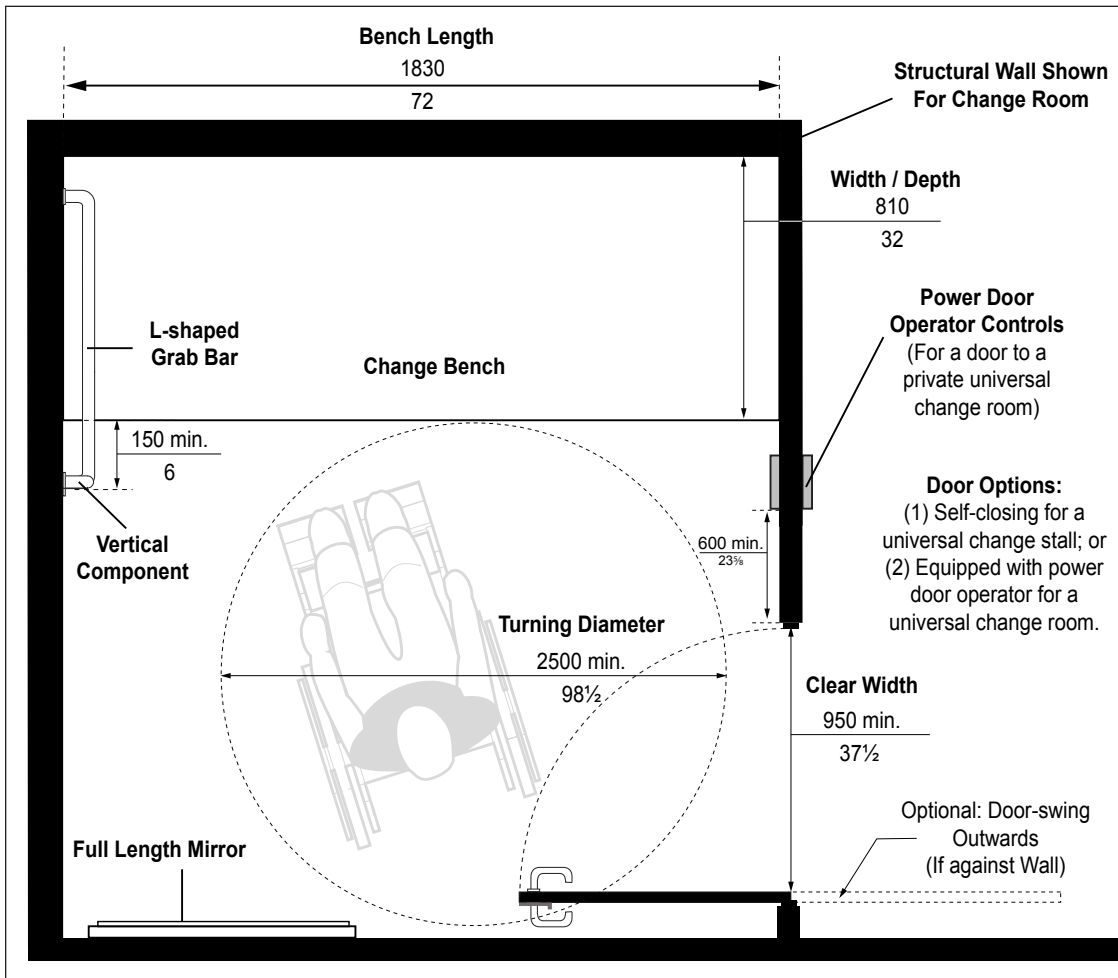


Figure 107a: Universal Change Room or Stall (Conceptual Layout Only - Wall Types Vary) - Plan View

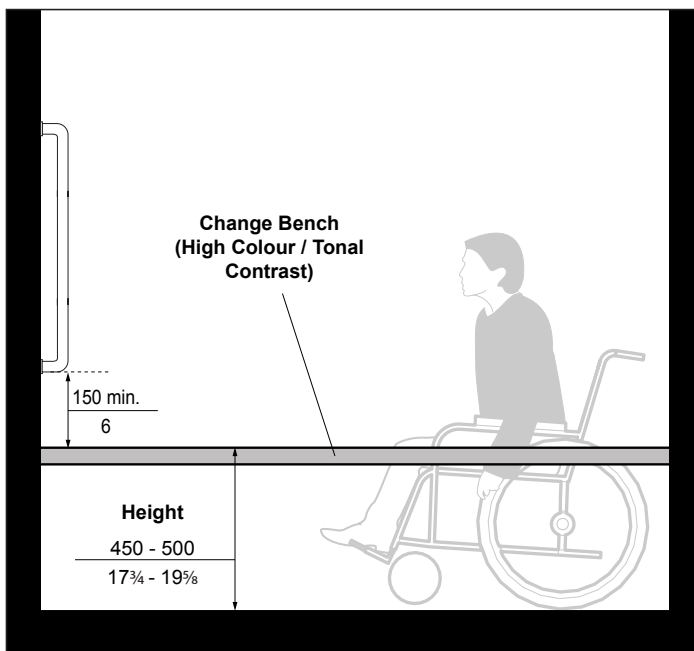


Figure 107b: Universal Change Room or Stall - Change Bench Height and Grab Bar Dimensions - Front Elevation

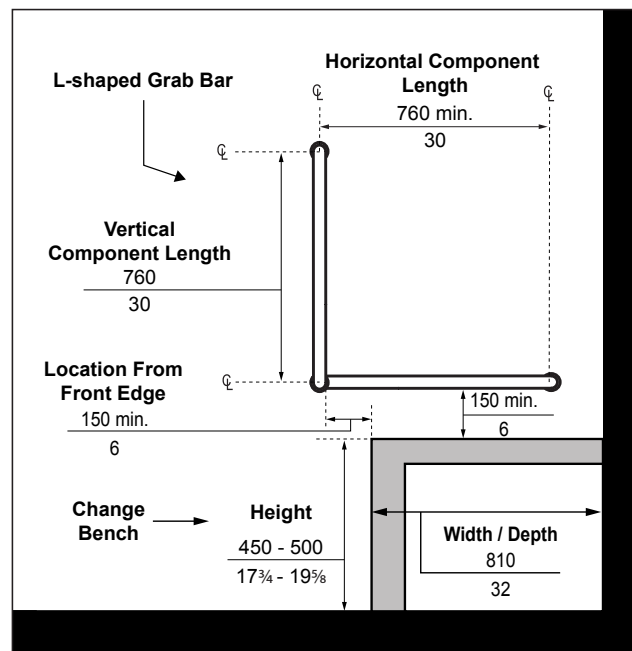


Figure 107c: Universal Change Room or Stall - Change Bench Height and Grab Bar Dimensions - Side Elevation



Balconies and Terraces

6.9

Application

This section addresses spaces that may be used for recreation as part of public facilities, such as common use areas including balconies, porches, terraces and patios used by the general public, staff or other visitors.

Reference

- Sec. 2.1 Ground and Floor Surfaces
- Sec. 2.4 Guards and Handrails
- Sec. 3.3 Exterior Paths of Travel
- Sec. 4.2 Doors and Doorways

Exception

This section does not address balconies and terraces within private residences.

6.9.1 Design and Layout

Where an accessible balcony, porch, terrace or patio is provided: **(Figure 108)**

- locate on an accessible path of travel;
- ensure ground or floor surfaces are firm and slip-resistant, with maximum gradient of 1:50 (2%) to permit drainage;
- provide minimum depth of 2500 mm (98½ in) or for a retrofit condition where this depth is technically infeasible, provide a minimum depth of 1525 mm (60 in);
- ensure threshold is beveled at a maximum slope of 1:2 (50%), where transition is between 6 mm to 13 mm (¼ in and ½ in);
- ensure door stops and door sweeps do not prevent maneuverability;
- where doors open directly into a path of travel, provide colour / tonal contrasted (e.g., compared to ground / floor surface) and cane detectable guards or other protective barriers (e.g., a side wall or rail system) located perpendicular to the door; and
- where guards are provided, and where elevation change is 600 mm (23½ in) or higher, design to facilitate visibility from a seated position.

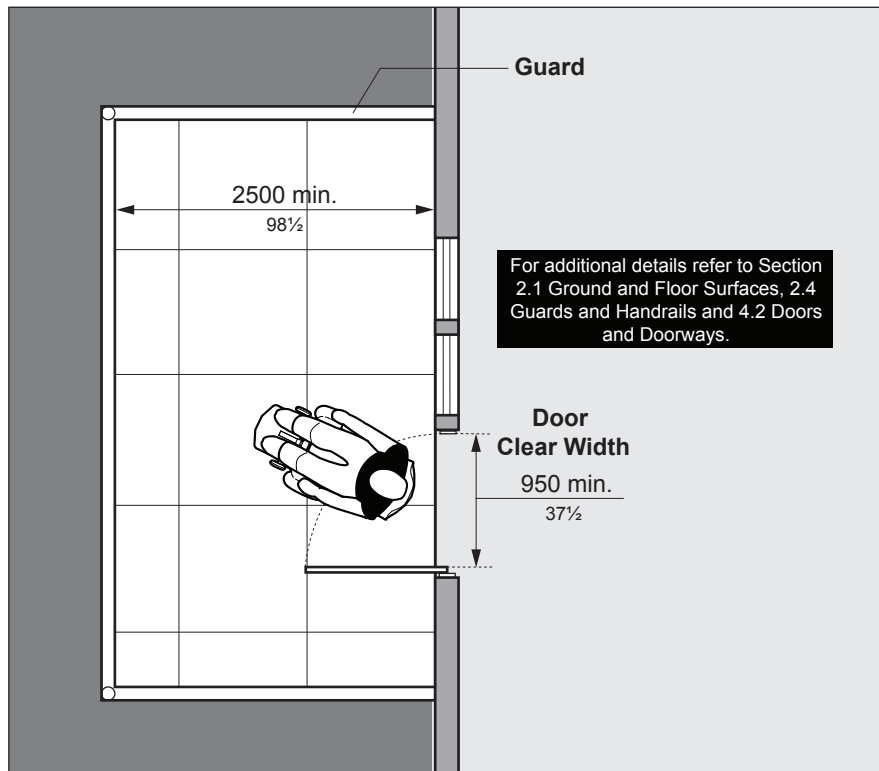


Figure 108: Balcony, Porch, Terrace or Patio - Plan View

Best Practice

Provide a power door operator, especially for highly used areas.

Detailed design and review is recommended for consideration of other features and amenities to integrate such as seating or table options and protection from the elements (e.g., sun, wind and rain).

Note

Where spacers for drainage are provided, on ground surface, ensure maximum width of 6 mm (¼ in) between each.

Guards at balconies and terraces may consist of vertical pickets or glass.

Where large expanses of glazing is used, provide required markings to increase visibility, as identified in these standards.



Service Counters

6.10

Application

This section applies to service counters used by both the public and staff, whether the services are obtained in a facility or outdoors (e.g., concession stand). Service counters may include, but are not limited to:

- reception desks;
- check-out counters;
- teller counters;
- security counters;
- information desks or kiosks; and
- food service counters / concession stands.

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding

Note

A variety of service counter applications are provided in the built environment, with numerous options for accessible design.

6.10.1 Provision

For accessible service counters: (Figures 109, 110 & 111)

- where a single queuing line serves a single or multiple counters, ensure each service counter is accessible; and
- where there are multiple queuing lines and service counters, ensure at least one (1) service counter is accessible for each type of service provided.

6.10.2 Design and Layout

Where provided: (Figures 109, 110 & 111)

- locate on an accessible path of travel;
- where there is a single or there are multiple queuing lines and service counters, provide signage (e.g., International Symbol of Accessibility) to clearly identify the accessible service counter(s);
- provide clear floor space in front of service counters for users of mobility aids at a minimum of 920 mm (36 in) wide by 1525 mm (60 in) depth, where a maximum of 480 mm (18 $\frac{3}{8}$ in) may be below counter, for either a front or side approach;
- ensure service counter surface provides a high colour / tonal contrast compared with adjacent surfaces to identify counter when approaching;
- ensure lighting level is evenly distributed at top surface of counter, at a minimum of 500 lux (50 ft. candles) (Refer to Section 5.7, Lighting); and
- provide a lowered counter usable from a seated position:
 - with top surface at a minimum of 920 mm (36 in) wide and mounted between 730 mm and 865 mm (28 $\frac{3}{4}$ in and 34 in) high above floor;

Best Practice

Ensure sources of light (natural or artificial) are not positioned directly behind service counters as they place people in silhouettes, which is a problem for people who lip read and people with vision loss.

Where service counters are accessible on both sides for public and staff use, width of counter surface should allow seating positions to be diagonal from each other to allow suitable reach across counter for transactions.

Ensure accessible service counter surfaces are not used as storage space.

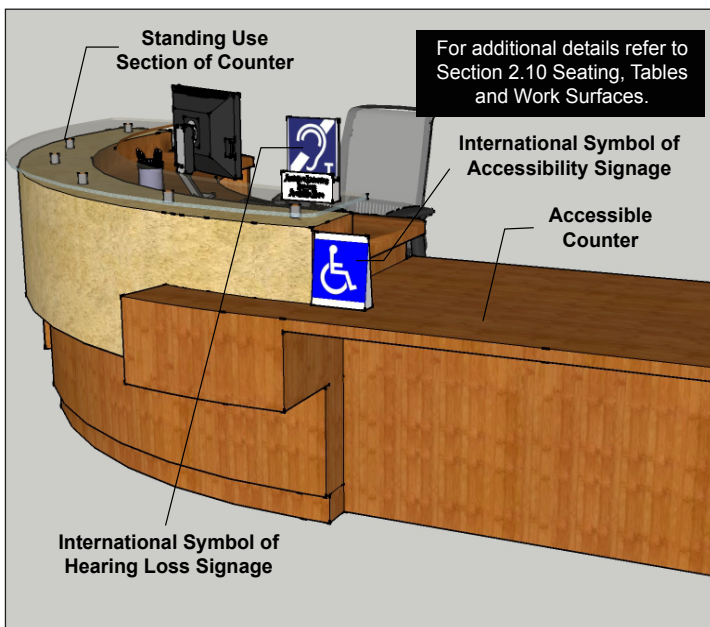


Figure 109: Example of Accessible Service Counter



Figure 110: Dimensions of Accessible Service Counter

- ii. ensure a clear knee space under the counter a minimum of 480 mm (18⁷/₈ in) depth by 920 mm (36 in) wide by 685 mm (27 in) high; and
- iii. ensure maximum forward grasp or touch reach range, between 510 mm (20 in) and 610 mm (24 in) depth, across top surface where interaction is required (**Refer to Section 1.3, Space and Reach Requirements**).

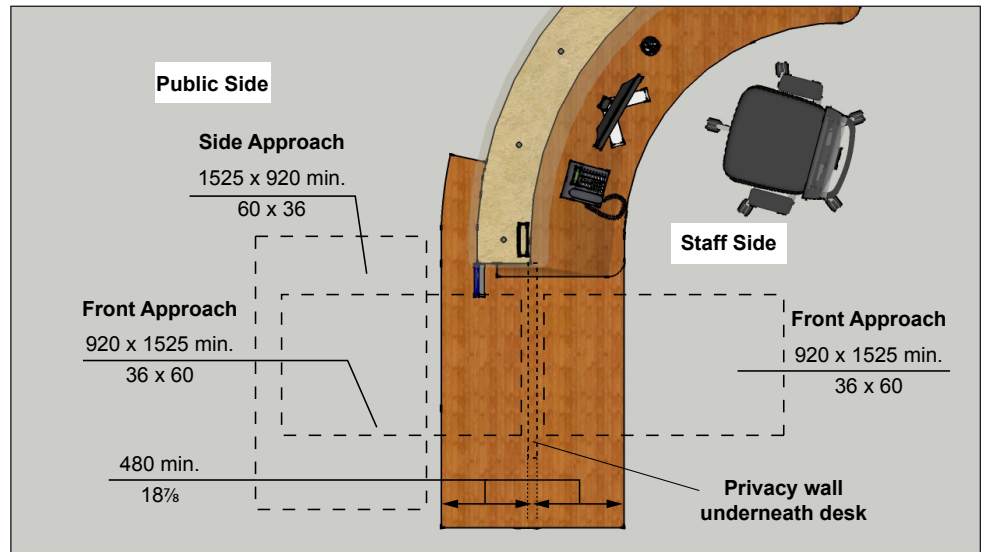


Figure 111: Clear Floor Space Requirements at Accessible Service Counters - Plan View

Best Practice

Provide disability awareness / sensitivity training for staff where communication systems are provided to ensure proper use and interaction with customers with disabilities.

6.10.3 Communication Systems

Where communication systems are provided at service counters:

- a. ensure counter areas are well-lit to assist staff and visitors with hearing loss who may communicate by lip reading;
- b. where speaking ports are provided, provide at least one speaking port with open portion centered at a maximum 1000 mm (39³/₈ in) high above finished floor;
- c. where no staff person is available, provide an information phone or call bell with information signage, with controls mounted between 900 mm to 1100 mm (35¹/₂ in to 43³/₄ in) high;
- d. integrate TTY service or alternate devices for visitors who are Deaf, deafened or hard of hearing;
- e. provide at least one assistive listening system and ensure signage with International Symbol for Hearing Loss is provided to indicate device is available for use;
- f. where staff communicate from an enclosed counter behind glass, ensure the glazing does not reflect glare. Where appropriate, install sliding windows that open fully to allow communication, whether verbal, through lip reading or use of sign language; and
- g. where required, provide additional visual and auditory signals to indicate when service is available and at what location.



Waiting and Queuing Areas

6.11

Application

This section applies to waiting and queuing areas in both interior and exterior environments.

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.1 Entrances
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.1 Assembly Areas
- Sec. 6.10 Service Counters

Best Practice

Provide companion seating immediately adjacent to the accessible seating spaces.

Provide a tactile floor plan / directional map to assist users with vision loss with wayfinding throughout complex facilities.

Provide a range of seating options such as wider seats.

Note

Clear floor space for designated accessible seating spaces must be positioned to allow shoulder alignment for the user of a mobility aid and person in adjacent seat.

6.11.1 Waiting Areas

Where waiting areas are provided: (**Figure 112**)

- position the waiting area so that it is clearly visible when entering the facility;
- provide directional and informational signage to identify and guide users to waiting areas, where they may not be clearly visible when entering a facility;
- ensure a lowered counter with suitable knee clearance for users of mobility aids is provided, where there is a service counter (**Refer to Section 6.10, Service Counters**);
- where fixed seating is provided, ensure at least 3% of the seating is accessible but in no case fewer than one accessible seating space;
- where accessible seating is provided:
 - provide a minimum clear floor space of 920 mm (36 in) wide and 1525 mm (60 in) depth, adjacent to fixed seating / waiting area and away from the main path of travel, for users of mobility aids to position themselves (e.g., shoulder alignment with adjacent users), their equipment, a service animal, or maneuver throughout the space;
 - locate adjacent and connected to an accessible path of travel;
 - provide a variety of seating options, including back and arm supports for various users; and
 - ensure accessible seating is integrated with the overall layout of other seating that is provided;
- provide a building directory for large facilities, especially where no rooms are assigned; and
- where lower coffee or telephone tables are provided adjacent to seating / waiting areas, ensure the top surface is a minimum of 510 mm (20 in) high, for reach from a seated position.

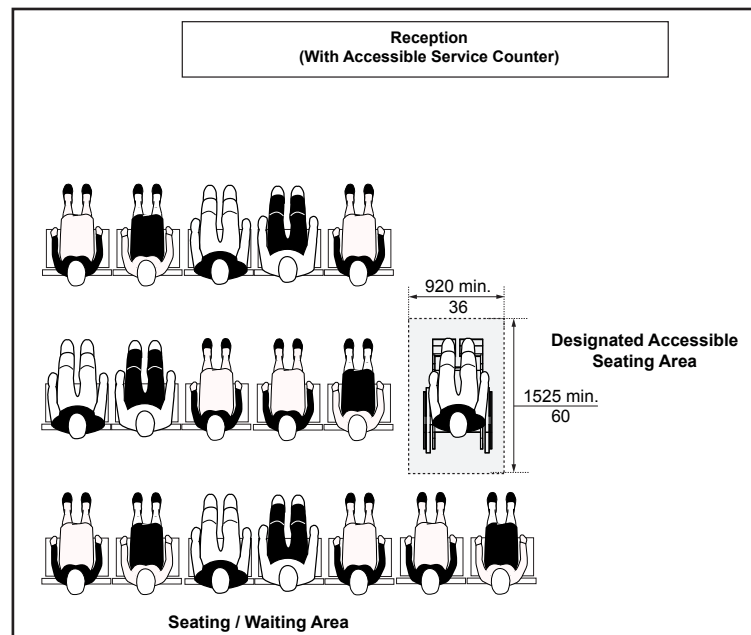


Figure 112: Waiting Area - Plan View

6.11.2 Queuing Areas

Where queuing areas are provided to streamline pedestrian movement:
(Figure 113)

- locate on an accessible path of travel; and
- provide directional and informational signage to identify location of queuing area entry.

6.11.2.1 Fixed Queuing Guides

When providing fixed / permanent queuing guides: (Figure 113)

- ensure minimum clear width of 1100 mm (43¾ in) between guides, laid out in parallel, logical lines and with the floor / ground consisting of a tactile directional indicator surface (TDI), as identified in other sections of these standards;
- provide a minimum clear floor space of 1700 mm by 1700 mm (67 in by 67 in), or preferred 2500 mm by 2500 mm (98½ in by 98½ in), where queuing guides change direction and where they begin and end;
- ensure lower edges or the base of guides are cane-detectable, mounted at or below 680 mm (26¾ in) from floor, with supports that are firmly mounted with rigid rails that can be used to assist with balance or stability;
- provide a high colour / tonal contrast between guide surfaces and adjacent surroundings (e.g., for enhanced visibility); and
- ensure guides have a glare-free finish.

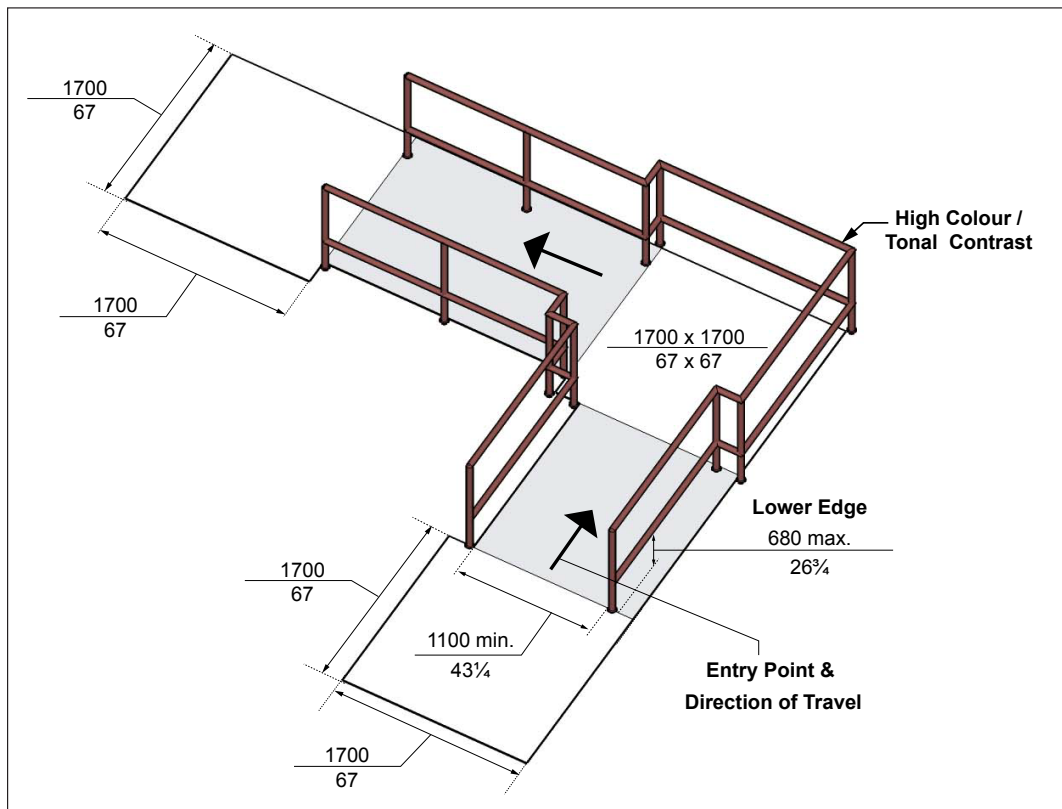


Figure 113: Fixed Queuing Guides

Best Practice

Consider including rest areas with accessible seating along the queuing system, where queues are longer than 10 metres (32 ft 9 in). Additionally, provide a rest area at the end of the queuing system for people to wait for companions who are queuing.

Note

Rope or flexible banding is not recommended for permanent queuing systems because they are more difficult to detect with a long cane and are unstable. When temporary queuing guides are provided, ensure they are cane detectable, stable and where floor slots / pockets are used to receive supports, ensure they are level with floor finish and have an integral cover to prevent any potential tripping hazards.



Elevated Platforms or Stages

6.12

Application

This section applies to elevated platforms or stages for both interior and exterior environments, provided for use by the general public, clients, customers or staff. Stages are typically provided in auditoriums, theatres and lecture halls used for performances and presentations.

Reference

- Sec. 2.2 Ramps
- Sec. 2.3 Stairs
- Sec. 2.4 Guards and Handrails
- Sec. 2.6 Tactile Walking Surface Indicators
- Sec. 5.2 Assistive Listening Systems

Best Practice

Providing both stair and ramp access increases the flexibility for the use of stages by people with varying disabilities.

Note

Other considerations may include accessibility features for podiums and electronic equipment (e.g., microphone systems), that are provided.

6.12.1 Design and Layout

For elevated platforms or stages: (Figure 114)

- a. locate on an accessible path of travel sized to accommodate all types of mobility aids including powered wheelchairs and scooters, with both stair and ramp access that are designed based on other requirements identified in these standards (e.g., can vary based on whether exterior or interior design context);
- b. ensure at least one accessible route is provided to both audience seating and backstage areas for public or staff use via a sloped walkway (preferred), ramp or lift;
- c. where stairs and steps are included in the design, ensure handrails and edge protection are provided as required;
- d. provide minimum lighting of 100 lux (10 foot candles) at platform or stage level and at the darkest point, including provision of secondary task lighting sources that can be used as required (Refer to Section 5.7, Lighting); and
- e. provide a tactile attention indicator (TAI), where the change in level is 250 mm (9⁷/₈ in) or greater and where there is no guard protection:
 - i. positioned parallel to, flush with and extending the full width of any open edges of the platform or stage; and
 - ii. with a minimum depth of 610 mm (24 in) and a maximum depth of 920 mm (36 in).

Best Practice

Lighting level of 200 lux (20 foot-candles) is recommended. This is beneficial for users who lip read or use Sign Language Interpretation.

Provide space for sign language interpreters and captioning on elevated platforms or stages.

Note

Where no setback is provided, an increased depth of the TAI surface is recommended to provide greater certainty of detection and a longer stopping distance.

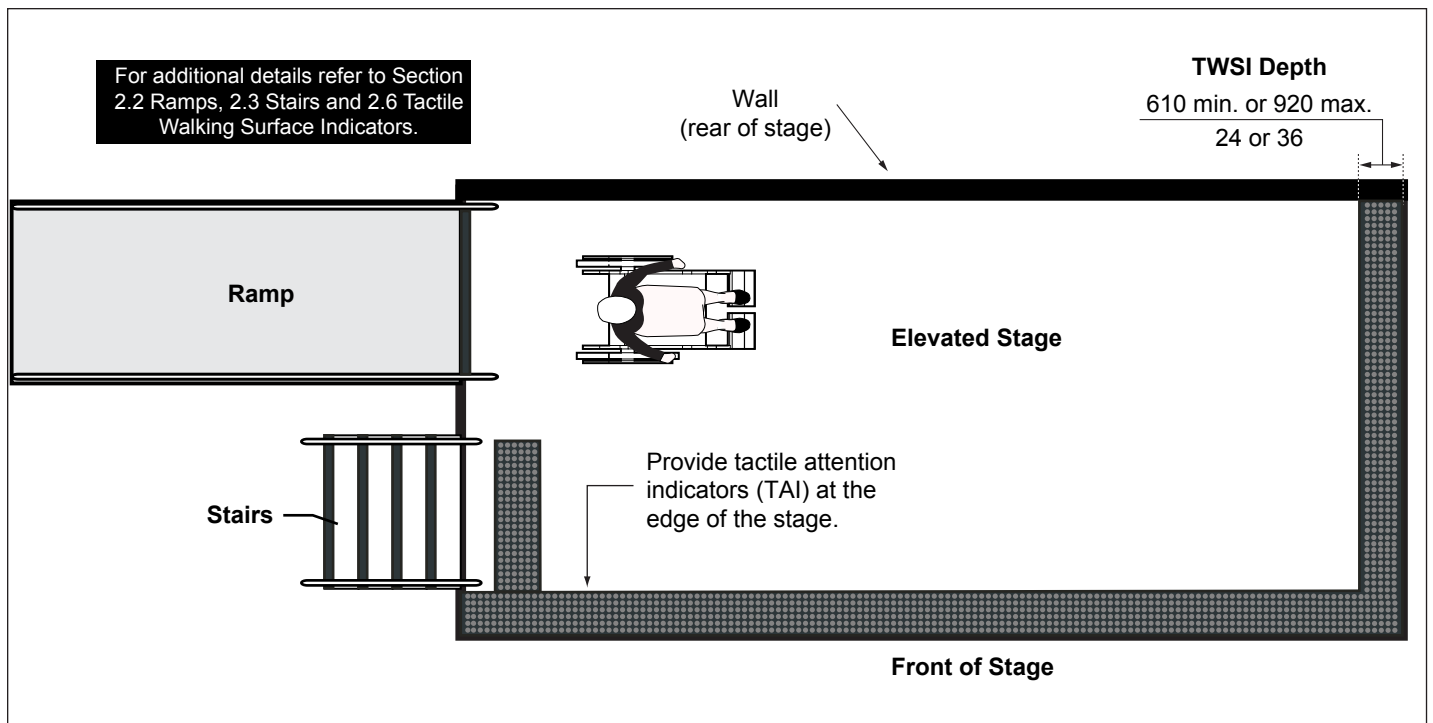


Figure 114: Elevated Platform or Stage - Plan View

A photograph of a modern office environment with desks, chairs, and partitions, overlaid with a teal tint. The text 'Office Environments' is written in white over the image.

Office Environments

6.13

Application

This section applies to accessible offices and related accessible work areas or workstations that are provided for staff, visitors and used for public services / programs. Offices and related work areas typically include, but are not limited to:

- office systems furniture (e.g., modular partitions that separate work areas);
- private offices;
- printing equipment and supply rooms; and
- storage rooms or related millwork (e.g., cabinetry).

Generally, detailed design and review is required to identify the overall provision of accessible workstations and / or offices that need to be provided for staff, visitor or public use, based on the size of the facility (e.g., total occupancy) and the types of services or programs that are offered.

Reference

- Sec. 2.10 Seating, Tables and Work Surfaces
- Sec. 4.2 Doors and Doorways
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.4 Acoustics
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.2 Meeting and Multi-purpose Rooms

Best Practice

Adaptive equipment for work stations and any assistive listening systems / devices to be provided for staff based on formal requests for accommodations.

Examples of accommodations may include:

- Telephone equipment, visual alarms and prevention of background noise for users with hearing loss;
- Accessible workstations and adaptive equipment for diverse users, including adjustable height work surfaces or desks, with required knee and toe space clearances below;
- Accessible seating options, with adjustable height, armrests and back support;
- Suitable floor and circulation space for users of larger wheeled mobility aids, such as power wheelchairs and scooters; and
- Task lighting for diverse users, and the provision of blinds for any adjacent glazing, allowing the ability to control and prevent glare from natural lighting sources (e.g., which may be reflected off of flooring or other surfaces), for users with vision loss.

6.13.1 Design and Layout

Typical features for accessible offices and related work areas include: **(Figure 115)**

- a. provide accessible identification signage (e.g., tactile / braille);
- b. ensure a consistent accessible route, aisle space and path of travel is provided, a minimum of 1100 mm (43¼ in) clear width, or 1830 mm (72 in) (preferred), with required turning spaces, throughout circulation areas **(Refer to Section 4.3, Interior Accessible Routes)**;
- c. ensure all doors within offices and common-use work areas have a minimum clear width of 950 mm (37½ in); and
- d. ensure acoustic environment is free of background noise.

6.13.2 Common-Use Work Areas

For accessible work and common activity areas: **(Figure 115)**

- a. ensure the clear width of the entry is a minimum of 950 mm (37½ in);
- b. provide an accessible work surface (e.g., height-adjustable), with knee and toe space clearances below, as identified in other sections of these standards and / or based on staff requests for accommodations (e.g., customized to individual needs);
- c. provide a minimum clear turning circle of 1525 mm (60 in) diameter adjacent to accessible work area (e.g., surface or desk);
- d. provide minimum clear turning circle of 2500 mm (98½ in) diameter for all common activity areas (e.g., at equipment / storage or work) and at key locations for turning around;
- e. ensure lighting, cabinet and storage unit controls are mounted no more than 1100 mm (43¼ in) high from floor; and
- f. provide minimum clear floor space of 920 mm (36 in) wide by 1525 mm (60 in) depth in front of office systems furniture (e.g., modular partitions that separate work areas) and adjacent to any storage equipment (e.g., related millwork / cabinetry), storage for forward approach and 1525 mm (60 in) wide by 920 mm (36 in) depth for side approach.

Note

Suitable aisle spaces are to be maintained along routes leading to accessible workstations and work areas.

Accessible routes and clear aisle spaces require ongoing maintenance that connect all primary activity elements within office and work areas, to prevent temporary barriers to accessibility (e.g., placement of equipment or other items that reduce clear width or may be potential tripping hazards).



City of London Office: Example of required clear entry width into accessible workstation (e.g., with flexible / adaptable systems furniture).

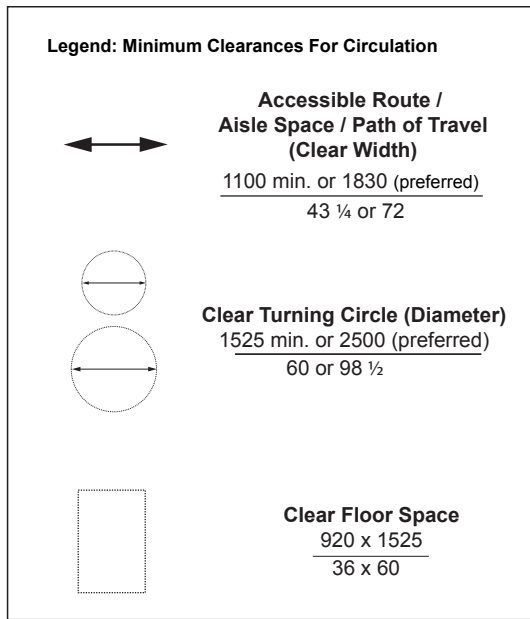
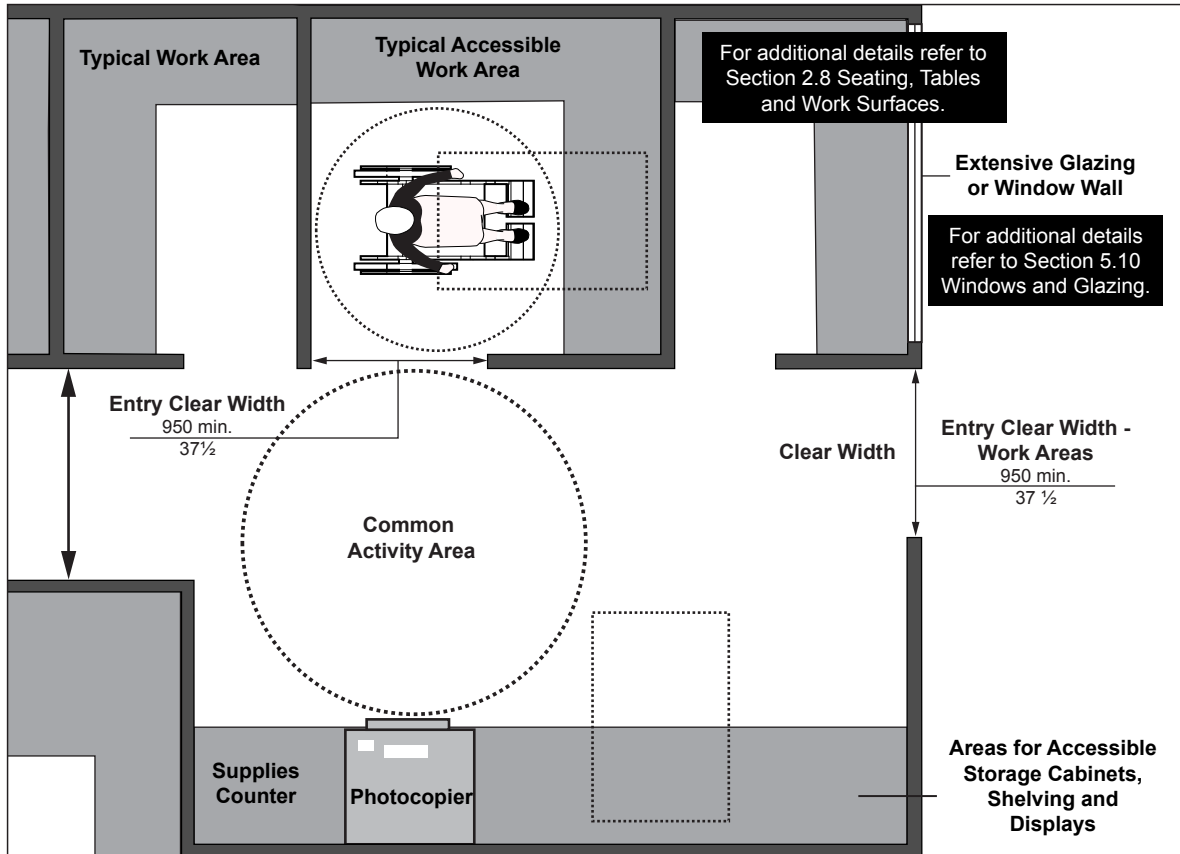


Figure 115: Common-Use Work Areas - Plan View



Training and Teaching Spaces

6.14

Application

This section applies to all areas of training and teaching spaces where users with disabilities may be students, staff or volunteers, including where they are provided in classroom portables.

Typical areas that require accessibility features include:

- public, visitor, student and staff amenities in common use areas, such as waiting / queuing areas, service counters, lounges and washrooms; and
- common spaces and elements specifically used by staff or students, such as classrooms, meeting rooms, demonstration and work areas with kitchens and related amenities (e.g., appliances for preparation and cooking).

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.1 Assembly Areas
- Sec. 6.5 Kitchens and Kitchenettes
- Sec. 6.13 Office Environments

Best Practice

Additional detailed accessibility standards may be available and are typically prepared by other organizations that represent the educational sector and that may also be applicable to training and teaching spaces.

Individual staff with a disability may require additional accommodations beyond those identified within this section. Typical accommodations include the ability to enter and move freely throughout the space, as well as use the various built-in elements within (i.e. blackboards, whiteboards, computer work stations, switches, benches, sinks, etc.).

Note

Additionally, staff, teachers, students or volunteers with varying types of disabilities frequently use learning aids and other assistive devices that require a power supply. The provision of additional electrical outlets throughout training and teaching spaces will enhance the use of such equipment.

Fixtures, fittings, furniture and equipment specified for training / teaching spaces, require a flexible design for use by students, teachers and staff with a wide range of abilities.

Adjustable height tables and chairs, removable armrests and the provision of rolling / locking casters on furniture allows an individual to make any adjustments needed.

6.14.1 Design Requirements

Ensure entrances to training and teaching spaces include: **(Refer to Section 4.2, Doors and Doorways)**

- a. at least one accessible entrance/egress door (e.g., clear width and door hardware); and
- b. a power door operator, where the occupancy of the space exceeds 60 people.

Ensure that the overall design addresses detailed and context-specific accessible design requirements, as specified in other sections of these standards, for:

- a. provision of any common-use area / amenities (e.g., work surfaces / tables / counters), storage areas, as well as public and staff accessible washrooms / change rooms and related spaces, including universal washrooms;
- b. floor surfaces and the use of high colour / tonal contrast throughout, for applicable materials and finishes;
- c. primary accessible circulation routes with required clear width, linking all functional areas and elements within the space;
- d. secondary accessible circulation routes, with minimum clear width of 1100 mm (43¾ in) wide;
- e. accessible reach ranges, operating controls and related mechanisms (e.g., includes shelving and storage elements);
- f. windows, glazed screens and sidelights, where provided; and
- g. assistive learning devices such as screen reading software or adapted keyboards on an as-needed basis.

6.14.2 Built-in Elements

Where built-in elements such as fixed seating, work surfaces, tables or benches are provided, ensure:

- a. 10% (minimum), but no less than one is accessible, including one of each type of element, where they are duplicated throughout the space;
- b. all work areas / tables incorporate access to data and electrical outlets within close proximity and easy reach to accessible seating spaces;
- c. 2% (minimum) of the seating includes wider seats with a load capacity of at least 227 kilograms (500 pounds);
- d. 2% (minimum) of tables and chairs are height adjustable, with accessible operating controls or automatic push button control preferred;
- e. 50% (minimum) of shelf space in storage facilities are accessible;
- f. 10% (minimum), but no less than one, of writing surfaces that are integrated into training / teaching space seating, accommodates the needs of persons who are left-handed;

- g. 3% (minimum) of the total seating capacity is accessible and identified for use by persons who use a mobility device, with the International Symbol of Accessibility (ISA);
- h. all work areas and tables have a glare-free surface finish, with high colour / tonal contrast compared to surroundings; and
- i. all accessible work areas / tables are positioned to allow a personal assistant, service animal and / or extra equipment to be accommodated at each accessible seating location.

Note

Refer to all other relevant sections of these standards that apply to exterior and interior design features and amenities for assembly areas with fixed seating, including accessible and adaptable seating, as part of the detailed planning, design and review process for new construction or retrofit projects.

6.14.3 Assembly Areas (Fixed Seating)

Where classrooms, auditoria, assembly areas and other related training and teaching spaces have fixed seating:

- a. provide at least two options for accessible seating spaces and viewing locations, integrated as part of the overall seating plan, as part of an accessible route and in close proximity to main entrances and exits; and
- b. ensure that the design allows users with varying types of disabilities to access the primary presentation area via an accessible route.

6.14.4 Displays

Where bulletin boards, white boards, smart boards (e.g., interactive displays) or other display systems are provided, ensure:

- a. a minimum of one of each type is accessible:
 - i. located on an accessible route with adjacent required clear floor space; and
 - ii. has its lowest edge located no higher than 760 mm (30 in), above finished floor.

6.14.5 Demonstration Areas

Where there are areas intended for demonstration purposes, including work areas, cooking preparation areas or computer work stations, ensure:

- a. provisions are made to facilitate viewing from a variety of eye-levels, through:
 - i. the installation of mirrors over the demonstration area(s); or
 - ii. the use of cameras and a monitor screen for image display;
- b. where any sinks are incorporated, a minimum of one of each type is accessible; and

Note

Alternatively, provide height adjustable work surfaces in Kitchens, with automated controls preferred.

- c. where any kitchens and / or related amenities are provided, including appliances, ensure:
 - i. overall design, for a minimum of one of each type, addresses detailed requirements for kitchens and appliances, including dishwashers, ranges and / or cooktops, ovens and refrigerators / freezers;
 - ii. the integration of a minimum one accessible work surface, a minimum 920 mm (36 in) wide, located a maximum 865 mm (34 in) high, with knee space below a minimum of 920 mm (36 in) wide, 480 mm (18 $\frac{7}{8}$ in) depth, and 685 mm (27 in) high; and
 - iii. for detailed requirements, **Refer to Section 6.5, Kitchens and Kitchenettes**

6.14.6 Additional Requirements

Ensure spaces / elements intended for general training, teaching and study have:

- a. a background noise level no higher than 30 decibals above ambient (dBA);
- b. a lighting level at a minimum of 500 lux (50 foot candles) and 750 lux (75 foot candles), where any accessible podium is provided; and
- c. alternate mounting heights and reach ranges accommodating children, as identified in **Table 16**, where intended primarily for use by children.

Table 16: Alternate Reach Requirements for Children

Forward or Side Reach	Age 3 to 4	Age 5 to 8	Age 9 to 12
High (maximum)	915 (36)	1015 (40)	1120 (44)
Low (minimum)	510 (20)	455 (18)	405 (16)
Note: Children over the age of 12 have the same reach requirements as adults.			

Laboratories

6.15

Application

This section applies to all areas of laboratories where users with disabilities may be students, staff or volunteers. Fixtures, fittings, furniture and equipment specified for laboratories require design flexibility in terms of accommodating a wide range of diverse users. However, it is recognized that not all equipment typically provided in laboratories is usable by persons with disabilities and additional accommodations may be required.

Typical areas that require accessibility features include:

- Public, staff or student amenities in common use areas, such as waiting / queuing areas, service counters, lounges and washrooms; and
- Common spaces and elements specifically used by staff or students, such as meeting rooms, offices, demonstration and work areas with specialized equipment (e.g., laboratory benches and fume hoods).

Reference

- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.13 Office Environments

Best Practice

Additional detailed accessibility standards may be available and are typically prepared by other organizations that represent the educational sector and that may also be applicable to laboratories.

Individual staff with a disability may require additional accommodations beyond those identified within this section. Typical accommodations include the ability to enter and move freely throughout the space, as well as use the various built-in elements within (i.e. blackboards, switches, benches, sinks, etc.).

Note

Wherever practical, it is recommended that controls and operating mechanisms associated with built-in elements and equipment are mounted on the front face of the built-in element or equipment, or in an equivalent location that is reachable by a user in a seated position.

6.15.1 Design Requirements

Provide a minimum of one accessible entrance / egress to laboratory spaces and ensure:

- a. the overall doorway design addresses all other accessibility requirements identified in these standards (e.g., clear width / door hardware); and
- b. doorway(s) are equipped with a power door operator, where the occupancy of the space exceeds 60 people.

Ensure that the overall design addresses detailed and context-specific accessible design requirements, as specified in other sections of these standards, for:

- a. provision of any common-use area / amenities (e.g., work surfaces / tables / counters), storage areas, as well as public and staff accessible washrooms / change rooms and related spaces, including universal washrooms;
- b. floor surfaces and the use of high colour / tonal contrast throughout, for applicable materials and finishes;
- c. primary accessible circulation routes with required clear width, linking all functional areas and elements within the space;
- d. secondary accessible circulation routes, with minimum clear width of 1100 mm (43¼ in);
- e. accessible reach ranges, operating controls and related mechanisms (e.g., includes shelving and storage elements);
- f. windows, glazed screens and sidelights, where provided; and
- g. assistive learning devices such as screen reading software or adapted keyboards on an as needed basis.

6.15.2 Built-in Elements

Where built-in elements such as fixed seating, work surfaces, tables, laboratory benches or fume cabinets are provided, ensure:

- a. 3% (minimum), but no less than one is accessible, including one of each type of element, where they are duplicated throughout the space;
- b. all work areas / tables incorporate access to data and electrical outlets within close proximity and easy reach to accessible seating spaces;
- c. 50% (minimum) of shelf space in storage facilities are accessible;
- d. all work areas and tables have a glare-free surface finish, with high colour / tonal contrast compared to surroundings; and
- e. all accessible work areas / tables are positioned to allow a personal assistant, service animal and / or extra equipment to be accommodated at each accessible seating location.

6.15.3 Fume Cabinets

Where provided as part of fume cabinets, ensure accessible fume hoods have:

- a. a base surface mounted no higher than 865 mm (34 in) above the floor; and
- b. one fume hood (minimum), with knee-space below, a minimum of 685 mm (27 in) high by 480 mm depth (18 $\frac{3}{8}$ in) by 920 mm wide (36 in).

6.15.4 Safety equipment

For all safety equipment such as fire extinguishers, eye wash stations or deluge showers, ensure:

- a. the provision of accessible design features and usability by persons with diverse disabilities, based on detailed requirements identified in applicable sections of these standards.

6.15.5 Displays

Where bulletin boards, white boards, smart boards (e.g., interactive displays) or other display systems are provided, ensure:

- a. a minimum of one of each type is accessible:
 - i. located on an accessible route with adjacent required clear floor space; and
 - ii. has its lowest edge located no higher than 760 mm (30 in), above finished floor.

6.15.6 Demonstration Areas

Where there are areas intended for demonstration purposes, including laboratory benches, fume cabinets / hoods or computer work stations, ensure:

- a. provisions are made to facilitate viewing from a variety of eye-levels, through:
 - i. the installation of mirrors over the demonstration area(s); or
 - ii. the use of cameras and a monitor screen for image display; and
- b. where any sinks are incorporated, a minimum of one of each type is accessible.

6.15.7 Additional Requirements

Ensure spaces / elements intended for general training, teaching and study have:

- a. a background noise level no higher than 30 decibals above ambient (dBA); and
- b. a lighting level at a minimum of 500 lux (50 foot candles) and 750 lux (75 foot candles), where any accessible podium is provided.



Service Animal Relief Areas

6.16

Application

This section applies to the provision of a Service Animal Relief Area (SARA), which is a designated exterior area for service animals to relieve themselves (e.g., guide or companion dogs who assist users with their mobility and that are trained to use these facilities).

Reference

- Sec. 2.5 Overhanging and Protruding Objects
- Sec. 3.3 Exterior Paths of Travel
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.8 Signage and Wayfinding

6.16.1 Provision and Location

- a. connect and locate adjacent to an exterior accessible route / path of travel, with a minimum clear width of 1830 mm (72 in) and ensure it is located away from high traffic areas such as vehicular drive aisles, access routes and loading docks; and
- b. locate as close as possible to an accessible entrance.

Best Practice

Locating any SARA between 30 m to 50 m (98 ft 5 in to 164 ft) from an accessible entrance is recommended.

6.16.2 Design and Layout

An exterior SARA can potentially be designed in many ways depending on the site context, however, typical features include: **(Figure 106)**

- a. provide a dedicated space, clearly marked with accessible identification signage, and with a waste receptacle; and
- b. ensure no interior obstructions or projections, with interior ground space (e.g., grass, mulch or artificial turf) providing a minimum turning space diameter of 1525 mm (60 in), or preferred 3000 mm (118 in), which allows a service animal to circle its handler prior to relieving itself.

Note

Consider providing additional information signage, to explain what the SARA is and to remind handlers to clean up afterwards.

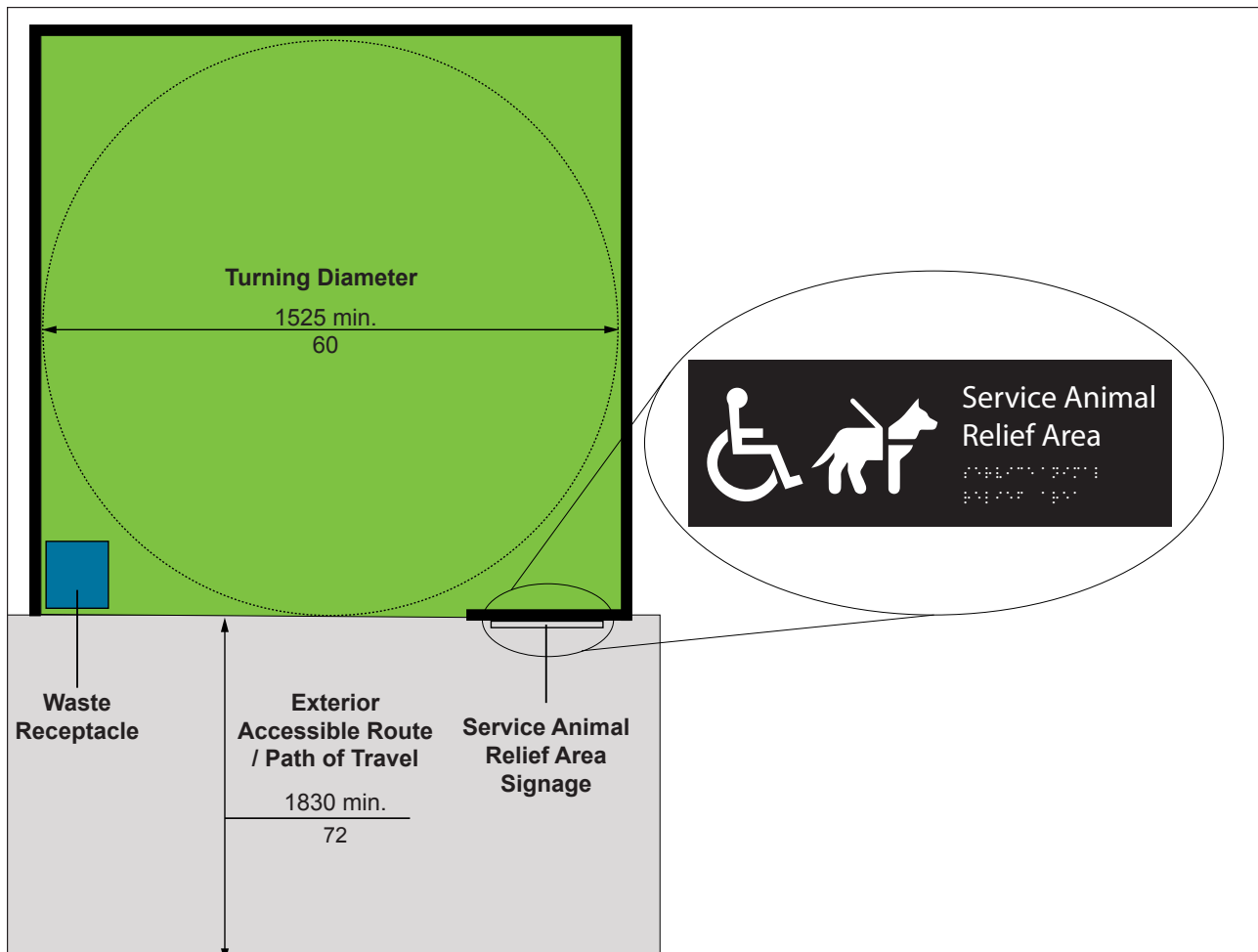


Figure 116: Typical SARA Design Features and Layout



Municipal Courts

6.17

Application

This section applies to municipal courts and members of the judiciary, court clerks or other officials, defendants, members of counsel and members of the public.

Typical areas that require detailed accessibility features include:

- spectator, press and other areas with fixed seats or flexible furniture (e.g., seating, tables, serveries);
- jury boxes and witness stands;
- judges' benches; and
- courtroom stations (e.g., clerk / bailiff, court reporter, litigant, counsel).

The design of municipal courts is typically complex due to unique spaces and elements that are provided. Therefore, it is important to refer to all other relevant sections of these standards that apply to exterior and interior design features and amenities for municipal courts, as part of the detailed planning, design and review process for new construction or retrofit projects.

Reference

- Sec. 2.8 Seating, Tables and Work Surfaces
- Sec. 2.9 Drinking Fountains
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 5.2 Assistive Listening Systems
- Sec. 5.7 Lighting
- Sec. 5.8 Signage and Wayfinding
- Sec. 6.1 Assembly Areas
- Sec. 6.5 Kitchens and Kitchenettes
- Sec. 6.13 Office Environments

Note

Refer to additional detailed accessibility standards prepared by the Province of Ontario that may be applicable (e.g., Ministry of the Attorney General).

6.17.1 General Provisions

6.17.1.1 Entrances

Provide all required accessibility features, including an accessible route leading to:

- one restricted entrance (minimum);
- one secured entrance (minimum); and
- any fixed security barrier systems at all required accessible entrances.

6.17.2 Other Features

For existing conditions, where security barriers incorporate equipment such as metal detectors, fluoroscopes, or other similar devices which can't be made accessible:

- provide an accessible route adjacent to such security screening devices, to facilitate an equivalent circulation path; and
- ensure two-way communication systems, where provided to gain admittance into restricted areas within a facility, are accessible with both visual and audible signals.

6.17.3 Assembly Areas - Fixed Seating

Where fixed seating is provided, ensure:

- accessible seating spaces and viewing locations are integrated as part of the overall seating plan, as part of an accessible route; and
- provide accessible seating spaces for users of mobility aids and adaptable seating based on design requirements and the total number of fixed seats (**Refer to Section 6.1, Assembly Areas**).

6.17.4 Jury Boxes and Witness Stands

Where a jury box and witness stand are provided:

- provide an accessible route and level access into seating areas, with required minimum clear floor space within its defined area of 920 mm (36 in) by 1525 mm (60 in); and
- ensure any related features or equipment are accessible (e.g., evidence shelf, work surface and communication equipment such as a microphone etc.).

Note

Restricted entrances are those entrances used only by judges, public officials, facility personnel or other authorized parties on a controlled basis. Secured entrances are those entrances to judicial facilities used only by detainees and detention officers.

Exception

Accessible door hardware is not required for secured entrances, doors and doorways operated only by security personnel.

In alterations, accessible clear floor spaces are not required to be located within the defined area of jury boxes or witness stands and may be located outside these spaces where a ramp or lift access poses a hazard by restricting or projecting into a required means of egress.

6.17.5 Judges' Benches and Courtroom Stations

Where a judges' bench and work stations (e.g., used by clerk / bailiff / court reporter / legal counsel etc.) are provided as part of an accessible route:

- a. ensure floor space and related millwork (e.g., tables / work surfaces) are designed based on the requirements identified in these standards.

6.17.6 Additional Considerations

Ensure that the overall design addresses detailed and context specific accessible design requirements, as specified in other sections of these standards, for:

- a. the provision of any common-use areas / amenities (e.g., work surfaces / tables / counters), storage areas, as well as public and staff accessible washrooms / change rooms and related spaces, including universal washrooms;
- b. assistive listening systems (e.g., including a suitable number of receivers based on expected occupancy of rooms / spaces), with required informational signage indicating the availability and locations of the system(s), marked with the international symbol for hearing loss; and
- c. other key elements and spaces, including those provided in areas for jury assembly or deliberation, such as refreshment areas, kitchenettes, and any built-in refreshment dispensers or drinking fountains.



Fire Stations

6.18

Application

This section applies to fire stations, where persons with disabilities may be members of the public or fire station staff (e.g., including employees who may have a temporary disability or injury and require accommodations) and where fire stations may be used for diverse public programming space and events.

Typical areas that require accessibility features include:

- public, visitor and staff amenities in common use areas, such as waiting / queuing areas and service counters;
- common spaces and elements such as meeting rooms, kitchen, lounge, public washrooms; and
- areas used frequently by visitors during site visits and tours (e.g., apparatus bay for school visits and educational seminars), emergency events, elections (e.g., space used for a polling station), safety training or other municipal functions and special events.

Reference

All other relevant sections of these standards that apply to exterior and interior design features and amenities for fire stations, as part of the detailed planning, design and review process for new construction or retrofit projects.

Best Practice

Additional detailed accessibility standards may be available and are typically prepared by the Province of Ontario that may also be applicable to fire stations and related spaces.

Exception

Accessible design compliance is not required for existing fire facilities and spaces that are for the exclusive use of firefighters such as hose towers, fitness rooms, 2nd floor offices or other spaces (e.g., dormitories), as well as any basement level storage areas.

Exception

Accessible door hardware is not required for secured entrances, doors and doorways operated only by fire personnel.

Note

Space for an adult-sized change table is required, with provision of an adult-sized change table with automatic height adjustment recommended, but not required. An accessible baby change table is required.

Additional universal washrooms / showers / changerooms for use by staff and public to be provided based on detailed review during the design of new fire stations based on occupancy requirements, the overall size of the facility, and other requirements identified in these standards.

6.18.1 General Design Features

6.18.1.1 Main Entrance

Provide all required accessibility features, including an accessible route leading to:

- a. the main public entrance; and
- b. one secured entrance (minimum) used by staff / firefighters.

6.18.2 Emergency Communications System

Ensure an accessible two-way emergency call system (with visual and audible notification) is provided at the main accessible public entrance, with this entrance providing level access and equipped with a power door operator.

6.18.3 Common Areas

- a. provide at least one universal washroom, with an accessible shower and change room or area for public / staff use, located on the main floor level, as part of an accessible route and in close proximity to the primary accessible entrance to the facility; and
- b. ensure an accessible route, doorways and related features are provided, leading to key / centralized spaces including the apparatus bay, dispatch / communications office and meeting / office areas.

6.18.4 Additional Considerations

Ensure that the overall design addresses detailed and context-specific accessible design requirements, as specified in other sections of these standards, for:

- a. provision of any common-use area / amenities (e.g., work surfaces / tables / counters), storage areas, as well as public and staff accessible seating areas, kitchens / kitchenettes, and key spaces such as washrooms, change rooms and related spaces, including universal washrooms;
- b. floor surfaces and the use of high colour / tonal contrast throughout, for applicable materials and finishes;
- c. primary accessible circulation routes for public and staff with required clear width, linking all functional areas and elements within the space;
- d. secondary accessible circulation routes, with minimum clear width of 1100 mm (43¼ in);
- e. accessible reach ranges, operating controls and related mechanisms (e.g., includes shelving and storage elements);
- f. windows, glazed screens and sidelights, where provided; and
- g. any other space, element or feature that applies.



Police Stations

6.19

Application

This section applies to police stations, where persons with disabilities may be members of the public, detainees, members of counsel or police staff.

Typical areas that require accessibility features include:

- Public, visitor and staff amenities in common use areas, such as waiting / queuing areas, washrooms and service counters; and
- Secured areas such as holding cells and any common use areas for detainees.

Reference

All other relevant sections of these standards that apply to exterior and interior design features and amenities for police stations, as part of the detailed planning, design and review process for new construction or retrofit projects.

Best Practice

Additional detailed accessibility standards may be available and are typically prepared by the Province of Ontario that may also be applicable to police facilities and related spaces.

Exception

Accessible door hardware is not required for secured entrances, doors and doorways operated only by police personnel.

Note

Where accessible communications systems incorporate a telephone handset, one telephone handset (minimum) requires volume controls.

6.19.1 General Provisions

6.19.1.1 Entrances

Provide all required accessibility features, including an accessible route leading to:

- a. all public entrances;
- b. one secured entrance (minimum) used by the public; and
- c. any fixed security barrier systems that are provided at all required accessible entrances.

6.19.2 Security Features

For existing conditions, where security barriers incorporate equipment such as metal detectors, fluoroscopes, or other similar devices which cannot be made accessible:

- a. provide an accessible route adjacent to such security screening devices, to facilitate an equivalent circulation path; and
- b. ensure two-way communication systems, where they are provided to gain admittance into restricted areas within a facility, are accessible with both visual and audible signals.

6.19.3 Specialized Areas

6.19.3.1 Visiting Areas

Where there are secured, non-contact visiting areas (e.g., detainees are separated from visitors), that serve accessible holding cells or related rooms / spaces, provide features and elements as part of an accessible route as follows:

- a. ensure the overall design, related millwork (e.g., work surfaces, tables, counters) and clear floor space that is required for circulation by users of mobility aids is provided, on both the visitor and detainee side and as identified in these standards, for:
 - i. 5%, but not less than one cubicle / counter work surface; and
 - ii. 5% but not less than one service / information counter.
- b. incorporate accessible communications systems (e.g., hands-free type speaker, with push button activation), mounted at dual height, for both individuals who use mobility aids and individuals who have difficulty bending, where solid partitions or security glazing separates visitors from detainees (**Refer to Section 5.2, Assistive Listening Systems**).

6.19.3.2 Holding Cells

Where holding cells are provided for detainees, ensure:

- a. 2% (minimum), but not less than one, of the total number of cells are designed with accessibility features (e.g., specialized toilet, lavatory, grab bars and other amenities for secured environments);
- b. one cell (minimum) of each type of specialized cell is designed with accessibility features, where provided (e.g., orientation, protective custody, disciplinary, segregation, detoxification or medical isolation); and
- c. 2% (minimum), but not less than one, of general cells are equipped with audible and visual emergency alarm systems.

6.19.4 Additional Considerations

Ensure that the overall design addresses detailed and context specific accessible design requirements, as specified in other sections of these standards, for:

- a. the provision of any common-use area / amenities (e.g., work surfaces / tables / counters), storage areas, as well as public and staff accessible seating areas, and key spaces such as washrooms, change rooms and related spaces, including universal washrooms;
- b. floor surfaces and the use of high colour / tonal contrast throughout, for applicable materials and finishes;
- c. primary accessible circulation routes for public, staff and detainees with required clear width, linking all functional areas and elements within the space;
- d. secondary accessible circulation routes, with minimum clear width of 1100 mm (43¼ in) (e.g., this includes clear width around any furniture such as beds in accessible holding cells);
- e. accessible reach ranges, operating controls and related mechanisms (e.g., includes shelving and storage elements);
- f. windows, glazed screens and sidelights, where provided; and
- g. any other space, element or feature that applies.



Child Care Facilities

6.20

Application

This section applies to all areas of child care facilities where users with disabilities may be children, parents, staff or volunteers.

Typical areas that require accessibility features include:

- public, visitor and staff amenities in common use areas, such as waiting / queuing areas and service counters;
- common spaces and elements such as meeting rooms, kitchens, lounges, and public washrooms; and
- areas used frequently by visitors when dropping off or picking up children.

Reference

Refer to all other relevant sections of these standards that apply to exterior and interior design features and amenities for child care / daycare facilities.

Best Practice

Additional detailed accessibility standards may be available and are typically prepared by organizations representing child care facilities that may also be applicable to these specialized environments.

6.20.1 Design Requirements

To address inclusive design needs for child care facilities, ensure:

- a. accessible service counters, tables, work counters / surfaces, and activity counters or built-in millwork are located on an accessible route, as well as other typical amenities / features common for this type of space, including but not limited to:
 - i. universal washrooms and specialized training washrooms for children;
 - ii. kitchens / kitchenettes or food preparation areas;
 - iii. assembly and seating areas;
 - iv. sleeping / quiet rooms (e.g., for infants versus other ages); and
 - v. cubbies, coat storage, locker areas and mailboxes;
- b. main entrance area and lobby are located in close proximity to a universal washroom for visitor, public and staff use, connected conveniently to a central circulation corridor, an elevator (e.g., if required for multi-level facilities), a stroller and coat storage area, as well as direct access to a doorway leading to an exterior inclusive play space;
- c. where power door operators (PDO's) are provided, they are synchronized with other security measures to prevent children from leaving the center unsupervised, such as keypad, card reader or other type of secure access feature (e.g., incorporated as part of PDO control to activate the power door);
- d. provision of 1525 mm (60 in) clear turning circle, or preferred 2500 mm (98 ½ in) for all key spaces, including clear floor and transfer space adjacent to any furniture, such as sleeping beds or cots, for any dedicated child or infant sleeping room; and
- e. a minimum of 5%, and never less than one, accessible bed / cot with required clear turning, floor and transfer space.

Note

Design requirements to address the needs of children of various ages and abilities may also need additional review as part of detailed design, including understanding varying types of disabilities such as autism.

6.20.2 Enhanced Design Features

- a. ensure entry vestibules are large enough to accommodate a triple stroller and a person, in addition to the free space required for the clear swing of any door that enters the space;
- b. where stairs and ramps are provided, provide regular height handrails (as identified in these standards, with a second child-height handrail mounted at 510 mm to 710 mm (20 in to 28 in));
- c. where elevators are provided, ensure they are sized to accommodate a triple stroller and the appropriate staff-to-child ratio based on the age group(s) served by the facility;
- d. integrate the provision of inclusive play spaces for exterior areas, based on compliance with CAN/CSA Z614 Annex H (current edition); and
- e. provision of additional accessibility features such as public address systems and assistive listening systems where required.

6.20.3 Additional Considerations

Ensure that the overall design addresses detailed and context specific accessible design requirements, as specified in other sections of these standards, for:

- a. provision of any common-use area / amenities (e.g., work surfaces / tables / counters), storage areas, as well as public and staff accessible seating areas, kitchens / kitchenettes, and key spaces such as washrooms, change rooms and related spaces, including universal washrooms;
- b. floor surfaces and the use of high colour / tonal contrast throughout, for applicable materials and finishes;
- c. primary accessible circulation routes for public and staff with required clear width, linking all functional areas and elements within the space;
- d. secondary accessible circulation routes, with minimum clear width of 1100 mm (43¼ in);
- e. accessible reach ranges, operating controls and related mechanisms (e.g., includes shelving and storage elements);
- f. windows, glazed screens and sidelights, where provided; and
- g. any other space, element or feature that applies.



Business, Mercantile and Civic

6.21

Application

This section applies to areas used to conduct business transactions, including public areas (e.g., as customer / consumer), as well as staff work areas. Typical facilities include:

- city service departments;
- retail areas and spaces; and
- sales and distribution centers.

The types of transaction and service counters may vary but commonly are related to:

- customer service areas;
- information desks or counters;
- ticketing counters;
- teller stations;
- registration counters; and
- box office counters.

Reference

All other relevant sections of these standards that apply to interior and exterior design features and amenities for business, mercantile and civic facilities, as part of the detailed planning, design and review process for new construction or retrofit projects.

Sec. 5.2 Assistive Listening Systems

Sec. 6.10 Service Counters

Sec. 6.11 Waiting and Queuing Areas

Sec. 6.13 Office Environments

Best Practice

All work areas and spaces require flexible design and considerations for ongoing and future adaptations or accommodations that may be required for addressing the needs of users with diverse disabilities and based on the type of spaces, individual equipment or assistive devices that may be used.

6.21.1 Design Requirements

In areas used for business transactions and related services, as well as where service counters have cash registers / point of sale devices (POS), ensure:

- a. all accessible service counters / aisles are provided as part of an accessible route, with minimum clear width of 1100 mm (43¼ in), or preferred 1830 mm (72 in) and are marked overhead and at other strategic locations with the International Symbol of Accessibility (e.g., in the same location where the checkout number or type of checkout is displayed);
- b. at least one of each type of service counter has a portion of the counter that is accessible, a minimum of 920 mm (36 in) wide, with:
 - i. required clear floor space in front;
 - ii. clear knee / toe space below, for both frontal / parallel approach and use;
 - iii. where required, provide any point of sale devices that are flexible and not affixed to any counter / work surface, either with wireless capability or attached with a coil / chord for suitable reach within 600 mm (23½ in) of the front edge; and
 - iv. an overall design that addresses all other applicable accessible design requirements identified in these standards;
- c. where counters are dispersed throughout the facility, ensure that the accessible counters are also dispersed;
- d. where public counters have solid partitions or glazing to separate personnel from the public, ensure:
 - i. one of each type (minimum) provides an accessible method to facilitate voice communication (e.g., assistive listening system such as a counter loop system, grills, slats, talk-through baffles, intercoms or handsets); and
 - ii. the method to facilitate voice communication is accessible (e.g., mounted at dual heights) for both seated and standing users (e.g., people who have difficulty bending);
- e. provide the number of accessible checkout aisles, as identified in **Table 17**.



Example of service area and accessible service counter, Neighborhood, Children and Fire Services Office, City of London.

Table 17: Required Number of Accessible Check-out Aisles

Total Number of Check-out Aisles Provided, For Each Type / Design	Minimum Number of Accessible Check-out Aisles Required, For Each Type / Design
1 to 4	1
5 to 8	2
9 to 15	3
Over 15	3 plus 20% of additional aisles



Storage, Shelving and Display Units

6.22

Application

This section applies to typical fixed or built-in storage, shelving and display units, including millwork, that are part of the design of interior environments related to facilities in general, as well as other special facilities and spaces, including but not limited to assembly areas, offices, meeting and multi-purpose rooms, and libraries.

Key considerations include:

- mounting heights need to address a full range of vantage points including the lower sightlines of children or users of mobility aids, including when in a seated position;
- upper and lower reach ranges are designed to accommodate diverse users, including a minimum lower reach range to assist users who may have difficulty bending down;
- strategic use of high colour / tonal contrast and suitable lighting levels to assist with identifying their location, allow users to position themselves properly when approaching and using these elements, as well as to prevent any potential bumping hazards; and
- where possible, use recessed shelving or alternate options (e.g., design related millwork to be cane detectable at sides) to ensure there are no projections into any adjacent accessible routes.

Reference

- Sec. 1.3 Space and Reach Requirements
- Sec. 4.3 Interior Accessible Routes
- Sec. 5.1 Controls and Operating Mechanisms
- Sec. 6.0 Special Facilities and Spaces

Note

Mounting coat hooks on the back side of accessible benches is not permitted, as it will be a bumping hazard and obstructs the use of the bench when transferring or seated.

6.22.1 Design Requirements

Where fixed or built-in storage facilities, such as cabinets, closets, shelves and drawers, are integrated as part of the design of interior accessible rooms or spaces: **(Figure 117)**

- ensure that these types of features and elements are located as part of an accessible route, with a minimum clear floor space of 920 mm (36 in) by 1525 mm (60 in) to allow either a frontal or side approach;
- provide a minimum of one of each type that is accessible, with suitable reach ranges, allowing independent use and approach, as identified in this and other sections of these standards **(Refer to Section 1.3, Space and Reach Requirements)**;
- for an unobstructed frontal approach, reach and use, mount:
 - clothes rods at a maximum of 1200 mm (47 in) high; or
 - shelves between 230 mm to 1200 mm (9 in to 47 in), where a range of shelving heights is provided;
- for a side approach, reach and use, mount clothes rods or shelves:
 - when unobstructed, at a maximum 1370 mm (54 in) high above the floor; or
 - when obstructed, at a maximum 1170 mm (46 in) high above the floor, for a side approach where there is a required reach distance between 255 mm and 535 mm (10 in and 21 in), for example, closets without accessible doors;
- mount coat hooks, where provided, at a maximum 1200 mm (47 in) high above the floor, with collapsible type design that does not project more than 50 mm (2 in) from mounting surface; and

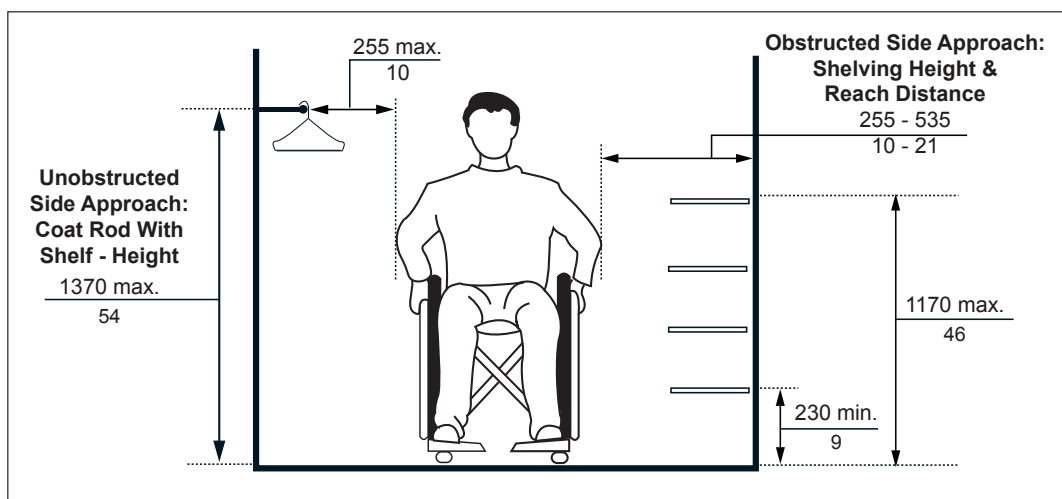


Figure 117: Reach Limits for Storage (Side Approach): Clothes Rods and Shelving

- f. provide accessible hardware, to be determined based on the type of storage, cabinetry and / or millwork design, with high colour / tonal contrast and suitable grasping dimension and operating forces, which may include D-shaped handles / pulls or other hardware systems activated by push or touch of the surface, such as sliding drawers or cabinet doors **(Refer to Section 5.1, Controls and Operating Mechanisms)**.

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Appendices

7.0

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London
CANADA

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Glossary

7.1

Term	Definition
Access Aisle	Refers to an accessible and safe pedestrian space or route used for loading and unloading from vehicle, as well as safe travel to and from designated accessible parking spaces to nearest accessible route / entrance. Access aisles include pavement markings for easy identification and are often shared between accessible parking spaces.
Accessible	Refers to any space, feature, element, site, environment or facility that can be used (e.g., located, approached, entered, exited or operated) by people with varying disabilities, with or without the use of mobility aids or assistive devices. Can also refer to services, practices and programs.
Accessible element	An element specified by this standard (for example, telephone, controls etc.).
Accessible Route	A continuous, unobstructed path (interior or exterior) connecting users to accessible elements, features, amenities and spaces. Typically, accessible routes include parking access aisles, pedestrian sidewalks and curb ramps and interior corridors, floors, elevators and ramps.
Accessible space	Space that complies with this standard.
Accommodation	A term used to reflect how an individual's needs are met for unique circumstances where a solution may not be "technically" feasible or practical to implement. Where barriers continue to exist because it is impossible to remove those barriers at a given point in time, then accommodation should be provided to the extent possible, short of "undue hardship". There is no set formula for accommodating people with disabilities. Each person's needs are unique and must be considered afresh when an accommodation request is made. A solution may meet one person's requirements but not another's, although it is also the case that many accommodations will benefit large numbers of persons with disabilities. Accommodating an individual's needs through differential treatment must be achieved in a manner that maximizes integration and dignity.
Adaptable	The ability of a certain building space or element, such as kitchen counters, sinks, or grab bars, to be added or altered so as to accommodate the needs of individuals with or without disabilities or to accommodate the needs of persons with different types or degrees of disabilities.
Addition	An expansion, extension, or increase in the gross floor area of a facility.
Alteration	A change to a facility that affects or could affect the usability of the facility or part thereof. Alterations include, but are not limited to, remodelling, renovation, retrofitting, rehabilitation, reconstruction, historic restoration, resurfacing of circulation paths or vehicular ways, changes or rearrangement of the structural parts or elements, and changes or rearrangement in the plan configuration of walls and full-height partitions. Normal maintenance, painting or wallpapering, or changes to mechanical or electrical systems are not alterations, unless they affect the usability of the building.

Term	Definition
Ambient Light	The total amount of light in a space, including daylight or artificial light, whether from direct sources or reflected from surfaces in that space.
Amenities	Features or services that are usable by the public that typically increase physical comfort throughout the built environment (e.g., washrooms, resting areas, telephones, drinking fountains or food vending machines).
Amenity Strip	A section of a path or sidewalk that is set aside for placement of street furniture (e.g., benches, hydro poles, vending machines and post boxes), to ensure it is located away from pedestrian path of travel.
Anthropometrics	Refers to the study of human physical measurement, movement and proportions of the human body, with respect to reach ranges, sight lines, etc.
Area of Refuge	A safe holding area which has been designated in a Fire Safety Plan, with direct access to an exit and is equipped with separate ventilation and communication equipment. It is a place where people can wait temporarily until they can exit safely or await further instructions or assistance during an emergency evacuation.
Arena	Refers to an enclosed, indoor venue, often circular or oval-shaped and designed to showcase a variety of performance or sporting events (e.g., hockey, basketball, football or soccer) in a large open space, typically surrounded on most or all sides by tiered seating for spectators. Often, the key feature of an arena is that the event space is the lowest point, allowing for maximum visibility.
Assembly Area	A room or space accommodating a group of individuals for educational, recreational, political, social, civic or amusement purposes, or for the consumption of food and drink.
Assistive Listening Systems (ALS)	Assistive listening systems (ALS) augment standard public address and audio systems by providing signals which can be received directly by persons with special receivers or their own hearing aids and which eliminate or filter background noise. The type of assistive listening system appropriate for a particular application depends on the characteristics of the setting, the nature of the program, and the intended audience. Magnetic induction loops, infrared and radio frequency systems are types of listening systems which are appropriate for various applications. Refer to Induction Loop or Infrared Assistive Listening Systems.
Attic or roof space	The space between the roof and the ceiling of the top storey or between a dwarf wall and a sloping roof.
Audible Signals	Signals which emit a distinctive sound, communication or alert to provide a warning or indicate a readiness to respond (e.g., alarm bell or signal).
Automatic Door	A door equipped with electronic sensors allowing it to be opened and triggered when pedestrians approach (e.g., typically sliding doors or swing doors equipped with guardrails for safety). See Power-Assisted Door.
Barrier	Refers to anything that prevents a person with a disability from fully participating in any aspect of society because of their disability. This can include a physical barrier, an architectural barrier, an information or communication barrier, an attitudinal barrier, or a technological barrier for example. It can also include policies and practices that result in an obstacle or hardship (e.g., systemic barrier).
Blended Curb	A connection with a slope of 1:20 (5%) or less between the level of a pedestrian walkway and the level of a crosswalk.

Term	Definition
Board room / Conference room / Meeting room	A room used for meetings, which accommodates six or more people.
Bollard	Typically a 900 mm high (minimum) post to mark a pedestrian path from vehicular traffic.
Braille	Braille is a system of touch reading for the blind which employs embossed dots evenly arranged to represent numbers and letters. Literary Braille, as officially approved, comprises of two grades. Grade 1 Braille is in full spelling and consists of the letters of the alphabet, punctuation, numbers, and a number of composition signs which are special to Braille. Grade 2 Braille consists of Grade 1 and 189 contractions and short-form words, typically used for signage where space is limited.
Building	A structure occupying an area greater than ten square metres, consisting of a wall, roof and floor or any of them, or a structural system serving the function thereof, including all plumbing, fixtures and service systems appurtenant thereto; or a structure occupying an area of ten square metres or less that contains plumbing, including the plumbing appurtenant thereto; or structures designated in the Ontario Building Code.
Change Room	See Dressing Room.
Circulation Route or Path	An exterior or interior pedestrian way used for traveling from one place to another.
Clear	Unobstructed.
Clear Floor Space	The amount of unobstructed floor or ground space required to accommodate a single stationary user, or a mobility device / aid, such as wheelchairs, scooters, canes and crutches.
Closed Circuit	A telephone with dedicated line(s), such as a house phone, courtesy phone or phone that must be used to gain entrance to a building or part thereof.
Closer	See Door Closer.
Common Use	Refers to those interior and exterior rooms, spaces or elements that are made available for regular and daily for use by the occupants or visitors of a facility. (e.g., common use areas of an office may include kitchens, reception areas, washrooms, etc.)
Communication Devices and Systems	Devices that enable or enhance the ability of people to receive or transmit information, usually electronically, for communication.
Comply with	Meet one or more specifications of this standard.
Cross Slope	The slope that is perpendicular to the direction of travel. Opposite of running slope.
Crosswalk	That part of a roadway at an intersection that is marked for safe pedestrian crossing (e.g., by lines or other markings on the surface).
Curb Ramp	A sloped ramp surface cutting through a curb or built up to it (e.g., between the sidewalk and the road surface).
Dais	Refer to Stage.
Deaf	A term to describe people with a severe to profound hearing loss (90 decibels or greater), with little or no residual hearing. Lowercase deaf is used when referring to the medical / audio logical condition of having little or no hearing, while uppercase Deaf refers to individuals who identify themselves as deaf and share a culture and community, not just a medical condition.

Term	Definition
Deafened	A term used to describe individuals who grow up hearing or hard of hearing and suddenly, or gradually, experience a profound loss of hearing. Late-deafened adults usually cannot understand speech without visual clues such as print interpretation (e.g., computerized note taking), speech reading or Sign Language.
DeafSpace	Deaf people inhabit a rich sensory world where vision and touch are a primary means of spatial awareness and orientation. Many use sign language, a visual-kinetic mode of communication and maintain a strong cultural identity built around these sensibilities and shared life experiences. Our built environment, largely constructed by and for hearing individuals, presents a variety of surprising challenges to which deaf people have responded with a particular way of altering their surroundings to fit their unique ways-of-being. This approach is often referred to as DeafSpace. (Source: Gallaudet University, Campus Design and Planning).
Disability	Describes a functional limitation or activity restriction caused by an impairment. Common types include: sensory (e.g., vision or hearing), mobility, physical, cognitive, learning or mental health disabilities. Refer to the Ontario Human Rights Code for a detailed definition of disabilities.
Door Closer	A device or assembly used to open or close a door automatically.
Door Jamb	The vertical component of a door frame.
Dressing Room	Home or visiting team locker rooms that are not for the general public, but dedicated to the group using the playing areas (e.g., hockey arena, soccer field or basketball court). Generally contains showers, benches and washroom amenities.
Egress (<i>Means of</i>)	Means of egress refers to a continuous path of travel provided for the escape of persons from any point in a building leading to a point of safety (e.g., a separate building or an exterior open space protected from fire exposure), including exits and exit routes.
Element	An architectural or mechanical component of a building, facility, space or site (e.g., telephone, curb ramp, door, drinking fountain, seating or water closet).
Elevator Lobby	The waiting area in front of an elevator.
Entrance	An access point into a building or portion of a building or facility used for the purpose of entering. An entrance includes the approach, the vertical access leading to the entrance platform, the entrance door, landing area, vestibules (if provided), the entry door or gate, and the hardware of the entry door or gate. The principal or main entrance of a building or facility is the door through which most people typically enter (e.g., highest level of use).
Exit	The part of a means of egress, including doorways, that leads from the floor area it serves to a separate building, an open public thoroughfare, or an exterior open space protected from fire exposure from the building and having access to an open public thoroughfare.
Facility	All or any portion of buildings, structures, elements, improvements, equipment and pedestrian or vehicular routes located on a site or in a public right-of-way, where specific programs or services are provided or activities performed.
Fire Safety	A general term typically relating to the ability of a building or site to resist, suppress or control the onset and spread of fire and the protection of building occupants.
Fire Safety Plan	An operational plan that provides information, directions, strategies and recommendations for the safe evacuation of users during fire emergencies.
Firm Surface	Refers to a surface that does not deform under the vertical forces exerted by permitted users. Reference ASTM F 1951 Standard.

Term	Definition
Flared Sides	A sloped surface that flanks a curb ramp and provides a graded transition between the ramp and the sidewalk. Flares bridge differences in elevation and are intended to prevent ambulatory pedestrians from tripping. Flares are not considered part of the accessible route.
FM Assistive Listening System	FM assistive listening systems are variations on the commercial FM radio. Radio signals are broadcast by an FM transmitter that is piggybacked on the sound system used in the facility. These signals are received by individual “radios”, which are small pocket-size receivers tuned to the specific frequency used in the transmission.
Foot-Candle (FC)	Refers to measurements of the visible light intensity on a surface, a distance from the light source. One foot-candle is equivalent to the illumination produced by one candle (an optical standard reference) at a distance of 305 mm (one foot). One foot-candle equals approximately ten lux. Foot-candle is the imperial measure. Refer to Lux.
Forward Approach	Where a person will make use of a service counter, drinking fountain, or any other usable element of the built environment, by positioning their body or mobility aid directly in front of and facing the element.
Glare	Often refers to uncomfortably bright light reflected from a surface, floor, window or screen. Glare occurs when one part of the environment is much brighter than the general surrounding area, causing annoyance, discomfort or loss in visual performance.
Grade	The slope parallel to the direction of travel that is calculated by dividing the vertical change in elevation by the horizontal distance covered.
Graphic conventions	Dimensions that are not marked maximum or minimum are absolute, unless otherwise indicated.
Ground floor	Any occupiable floorless than one storey above or below grade with direct access to grade. A facility always has at least one ground floor and may have more than one ground floor, as where a split-level entrance has been provided or where a facility is built into a hillside.
Guard	Protective barrier to prevent accidental falls at openings in floors and at the open sides of stairs, landings, balconies, mezzanines and ramps. Handrail supports often act as guards.
Handrail	A component which is normally grasped by hand for support at stairways and other places where needed for the safety of pedestrians.
Hard of Hearing	A term used to describe people with a hearing loss who rely on residual hearing to communicate through speaking and speech-reading, as well as to hold conversations on the telephone. The degree of hearing loss can range from mild to profound. People who are hard of hearing can understand some speech sounds, with or without a hearing aid, and communicate primarily by speech. Persons who are hard of hearing often use hearing aids, lip reading and other assistive technologies.
Heritage facility	A facility or portions thereof designated under the Ontario Heritage Act, or identified in the inventory of heritage resources for the City of London. (See Public Heritage Facility).
Illumination	The combined amount and intensity of lighting provided, measured in foot-candles or lux.
Induction Loop Assistive Listening System	Induction loop assistive listening systems use a wire around the room to transmit an electromagnetic signal that is picked up by a small telecoil in the hearing aid. Users simply switch on this telecoil (the “T” setting) and adjust the volume of the hearing aid, if necessary. Loop systems are generally used by fewer people with hearing loss due to advances in hearing aid technology.

Term	Definition
Infrared Assistive Listening System	Infrared assistive listening systems operate on infrared light that is beamed from one or several infrared transmitters to small, specialized receivers. There are several types of infrared receivers: stethoscope-style that dangle from the ears, a headset type that fits over the ears, and a small pocket-size type similar to the FM receiver. Where confidential transmission is essential (e.g., a court room setting), an infrared system generally is more effective recognizing transmission will be restricted within a given space.
Kilonewton (kN)	Equals 1000 Newtons.
Lavatory	A washbasin or sink used for personal hygiene.
Lux	The metric measurement for light intensity or illumination. See Foot-Candle.
Maneuvering Space	The minimum floor or ground area needed for users of mobility aids to move into or out of a place, space or along an accessible pathway or route.
Marked Crossing	A crosswalk or other identified path intended for pedestrian use in crossing a vehicular way.
May	Denotes an option or alternative.
Mezzanine or Mezzanine floor	That portion of a storey which is an intermediate floor level, placed within the storey and having occupiable space above and below its floor.
Mobility Aids (or Devices)	A term used to encompass the variety of assistive devices used by people with mobility / physical types of disabilities, including manual and power wheelchairs, scooters, canes and crutches.
Newton (N)	The amount of force needed to move 1 kilogram of an object 1 meter per second squared.
Occupiable	A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes, or in which occupants are engaged at labour, and which is equipped with means of egress, light and ventilation.
Open space	Large-scale tracts of land without visible evidence of residential, commercial or industrial development. These areas may be privately or publicly owned and are generally left in a natural state and not programmed for active recreation. The benefits of open lands typically extend beyond the immediate area and usually provide community-wide benefits.
Operable Control	The part of equipment or appliances that is used to insert or withdraw objects, to activate or deactivate, or to adjust the equipment or appliance (e.g., a coin slot, pushbutton or handle).
Operable Portion	A part of a piece of equipment or appliance, used to insert or withdraw objects or to activate, deactivate or adjust the equipment or appliance, such as a coin slot, push button or handle.
Park	Land that is privately nor publicly held that has been developed for multiple recreational and leisure-time uses. This land benefits the entire community and balances the demands of the public for outdoor recreational facilities and other amenities, such as pathways, picnic areas, playgrounds, water features, spaces for free play and leisure.
Passenger Loading Zone	Designated and signed area used for loading and unloading of passengers into or out of a waiting vehicle.
Pedestrian Access Route	An accessible route or corridor for pedestrian use within the public right-of-way.
Pictogram	A pictorial symbol or image that represents activities, facilities, spaces or concepts.
Platform Lift	An elevating device which is used to transport a person (with or without assistive equipment) between levels on a platform. A vertical platform lift is a self-contained unit, with or without an enclosure. An inclined platform lift is used for staircases.

Term	Definition
Power-Assisted Door	A door with a mechanism that opens the door automatically, upon the activation of a switch, button or a control. The door also remains in the “open” position for a set period of time to allow safe passage. See Automatic Door.
Private Open Space	Privately owned land areas within a subdivision, generally smaller in scale than open space, which have been left free from structures, parking lots and roads. These types of areas generally benefit only the residents or employees of the particular subdivision and usually remain in private ownership.
Public Entrance	An entrance that is not a service entrance or a restricted entrance.
Public Heritage Facility	A facility or portions thereof designated under the Ontario Heritage Act, or identified in the inventory of heritage resources for the City of London and that is open and accessible to the public. (See Heritage Facility)
Public Use	Buildings, facilities and interior or exterior rooms, spaces, sites or elements that are made available to the public and that are typically owned, operated or leased by the City of London.
Ramp	A walking surface with a running slope steeper than 1:20.
Retrofit	See alteration.
Running Slope	The slope that is parallel to the direction of travel expressed as a ratio of rise to run. Opposite of cross slope.
Service Counter	A raised surface on which business is transacted. Service counters can be composed of either built-in (e.g., kiosks) or loose furniture (e.g., podiums). Other examples of service counters include: ATMs, checkout counters, self service kiosks, food vendor, and information counters.
Service Entrance	An entrance not intended for use by the public and used primarily for delivery of goods and services.
Service Room	A room provided in a building to contain equipment associated with building services.
Service space	A space provided in a facility to facilitate or conceal the installation of facility service facilities such as chutes, ducts, pipes, shafts or wires.
Shall	Denotes a mandatory specification or requirement.
Should	Denotes an advisory specification or recommendation.
Side Approach	Where a person will make use of a service counter, drinking fountain, or any other usable element of the built environment, by positioning their body or mobility aid perpendicular to the element.
Sidewalk	A public right-of-way designated for pedestrian use and typically located between the curb or roadway and the adjacent property line.
Sightline	The line of view between a person in an audience and a performance, speaker or displayed item.
Sign or Signage	A sign is a means of conveying information about direction, location, safety or form of action and in general should be designed to be clear, concise and consistent. Signage displays text, symbols, tactile or pictorial information.
Site	A parcel of land bounded by a property line or a designated portion of a public right-of-way.
Site Improvement	Landscaping, paving for pedestrian and vehicular ways, outdoor lighting, recreational facilities added to a site.

Term	Definition
Sleeping Accommodations	Rooms in which people sleep, for example, a dormitory.
Slip-Resistant	A surface that provides sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation.
Space	A definable area (e.g. room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard or lobby).
Sprinklered	Refers to a building or any part of a building equipped with an automatic sprinkler system.
Stable Surface	Refers to a surface that does not deform or erode under the angular forces of permitted users travelling in a straight line or turning.
Stage	Refers to a space designed primarily for performances and is typically elevated from the audience seating area.
Stair System	Refers to combined elements that make up a typical stair, including steps, landings, and handrails, for example.
Storey	That portion of a building included between the upper surface of a floor and the upper surface of the floor next above. If such portion of a building does not include occupiable space, it is not considered a storey for the purposes of this standard. There may be more than one floor level within a storey, as in the case of a mezzanine or mezzanines.
Street Furniture	Elements in the public right-of-way that are intended for use by pedestrians, including benches, lighting fixtures, waste dispensers and paper vending machines, for example.
Structural Frame	The columns and the girders, beams, trusses and spandrels having direct connection to the columns and all other members which are essential to the stability of the building as a whole.
Tactile	Describes an object that can be perceived using the sense of touch, and typically provided for users with vision loss.
Tactile Walking Surface Indicator (TWSI)	A surface detectable underfoot or by a long white cane, to assist persons with low vision or blindness by alerting or guiding them. TWSI's are referred to as either tactile attention indicator (TAI) or tactile directional indicator (TDI) surfaces.
TDD	(Telecommunication Device for the Deaf): See Text telephone.
Technically Infeasible	Means, with respect to an alteration of a building or a facility, that it has little likelihood of being accomplished, because: <ul style="list-style-type: none"> - existing structural conditions would require moving or altering a load-bearing member which is an essential part of the structural frame; or - other existing physical or site constraints prohibit modification or addition of necessary elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction.
Temporary Structure	A facility that is not of permanent construction but that is extensively used, or is essential for public use for a period of time. Examples of temporary facilities covered by this standard include, but are not limited to, reviewing stands, bleacher areas, temporary kiosks, temporary health screening services or temporary safe pedestrian passageways around a construction site. Structures and equipment directly associated with the actual processes of construction, such as scaffolding, bridging, materials hoists, or construction trailers, are not included.

Term	Definition
Text Telephone (TTY)	Machinery or equipment that employs interactive text-based communication through the transmission of coded signals across the standard telephone network. Text telephones can include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. Text telephones are also called TTYs, an abbreviation for teletypewriter.
Touch Tour	Typically refers to tours provided by museums or other cultural / arts facilities that allow users with vision loss to touch and feel objects, displays and features, for example to gain a sensory understanding of objects and allow individual exploration. Tactile experiences may include: replicas, models, props, and handling objects which convey one aspect of the work.
Transfer Space	An unobstructed area adjacent to a fixture or furniture, allowing the positioning of a mobility aid to assist users with transferring to the fixture or furniture.
Universal Access	A broad term to reflect the intended goal of inclusion for all, based on the principles of universal design or the “design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design” (Ron Mace).
Universal Trail Assessment Process or UTAP	An objective method of documenting trail conditions for universal access. The UTAP: <ul style="list-style-type: none"> - documents actual trail conditions; - enhances user safety through accurate information about trail conditions; - increases access for people of all abilities; - identifies maintenance needs; - creates accessibility information; - enhances environmental protection; - facilitates trail planning and budgeting; - enables informed choice of trails based on interests and abilities; - inventories trails and facilities; and - documents patterns of trail use.
Vehicular way	A route intended for vehicular traffic, such as a street, driveway or parking lot, within the boundary of the site.
Video Signage	Video signage refers to video devices such as televisions, computer monitors / screens, and flat panel displays that may be used to provide information (e.g., directories). Advantages of video signs include the use of motion to attract attention, and the ability to rapidly update the content of the signs.
Vision Loss	This term usually refers to a progressive decrease in visual acuity. However, it can refer to the sudden onset of substantial acuity decrease or total blindness.
Vision Panel	A glazed opening in a door leaf which allows people to see through to the other side without opening the door.
Walk	An exterior pathway with a prepared surface intended for pedestrian use, including general pedestrian areas, such as plazas and courts, within the boundary of the site.
Wayfinding	A term used to describe a variety of means for spatial orientation and finding your way to a destination. Wayfinding design describes a variety of means for helping people find their way, through touch, print, signage, architecture and landscaping, for example.

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Appendix A: Universal Design Principles and Guidelines

7.5

Universal Design

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

The authors, a working group of architects, product designers, engineers and environmental design researchers, collaborated to establish the following Principles of Universal Design to guide a wide range of design disciplines, including environments, products, and communications. These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

The Principles of Universal Design are presented here, in the following format: name of the principle, intended to be a concise and easily remembered statement of the key concept embodied in the principle; definition of the principle, a brief description of the principle's primary directive for design; and guidelines, a list of the key elements that should be present in a design which adheres to the principle. (Note: all guidelines may not be relevant to all designs.)

Reference

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NC State University, The Center for
Universal Design**

Compiled by advocates of universal design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden.

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For additional information, Refer to the poster, "The Principles of Universal Design", available at: http://www.ncsu.edu/ncsu/design/cud/pubs_p/docs/poster.pdf

Principle One: Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines:

- 1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Provisions for privacy, security, and safety should be equally available to all users.
- 1d. Make the design appealing to all users.

Principle Two: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

Principle Three: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

Principle Four: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize "legibility" of essential information.
- 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Principle Five: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail-safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

Principle Six: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

Principle Seven: Size and Space for Approach and Use

Appropriate size and space are provided for approach, reach, manipulation, and use, regardless of user's body size, posture, or mobility.

Guidelines:

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

Please note that the Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations, such as economic, engineering, cultural, gender, and environmental concerns, in their design processes. These principles offer designers guidance to better integrate features that meet the needs of as many users as possible.