

City of Stratford



Accessibility Guidelines

For Barrier-Free Design

Adopted by City Council
August, 2004

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APPENDICES

1.0 INTRODUCTION

The purpose of the *Ontarians with Disabilities Act* is to improve opportunities for people with disabilities and to provide for their involvement in the identification, removal and prevention of barriers to their full participation in the life of the province

Why are these guidelines necessary?

In most cases, the *Ontario Building Code for Barrier Free Design* does not address many of the barriers for people with disabilities. The *Ontario Building Code* is only a minimum standard; therefore, when using minimum standards, it is often assumed that the minimum is what is required. The intention of these guidelines is to assist those who construct or renovate buildings to make them more accessible for people with disabilities by going beyond the minimum requirements. The information gathered for these guidelines come from organizations that have consulted with various people with different disabilities, as well as those who are in the building industry. Collectively, they have come up with guidelines for accessibility that bests accommodates most people with disabilities. We hope that the City of Stratford can be an example to those in the community by going beyond the building code to make their place more accessible to all people.

How to use these guidelines

Although pre-existing conditions in the buildings may not allow all these guidelines to be carried out to the fullest, it is the intention that the users of these guidelines go beyond the minimum standards required by the *Ontario Building Code for Barrier Free Design*. Although it is not required by law to follow these guidelines, it will be a helpful tool to use in order to better accommodate people with disabilities. Some architects, builders and contractors will follow the *Ontario Building Code Barrier Free Design* section believing they have done their best to accommodate people with disabilities. They often find when construction has been completed, it is not always accessible and many people with disabilities are excluded from accessing the building, as a result, spending even more money to accommodate them. When possible, these guidelines should be implemented to the best of the ability by those involved in the planning and construction phases. We hope that these guidelines will be in the useful tool for accommodating people with different disabilities.

Barrier Free Policy Statement

The City of Stratford is a city in which the small town values of community caring and paying attention to all segments of the population are paramount. To do this, we recognize the diverse needs of our citizens and respond by striving to provide services and facilities that are accessible to all.

Our vision of Stratford is that of a well-designed community that is safe, convenient and comfortable. To this end, the City of Stratford, in consultation with the Stratford Accessibility Advisory Committee for Disabled Persons, has developed this Barrier Free Policy and associated goals.

Goals

The City of Stratford is committed to Barrier Free access and will:

1. Take a leadership role in achieving and setting an example to the business, institutional and volunteer sectors in terms of access and integration, employment equity, communications, recreation, transportation, housing and education.
2. Establish a process to identify barriers and gaps in existing services and facilities.
3. Improve the level of accessibility of existing municipal services and facilities, where feasible.
4. Facilitate input from all segments of the community in the design, development and operation of new and renovated municipal services and facilities.
5. Provide resources and support to give effect to this policy.

2.0 GLOSSARY AND DEFINITIONS

GRAPHIC CONVENTIONS

Dimensions that are not marked maximum or minimum are absolute, unless otherwise indicated.

GENERAL TERMINOLOGY

comply with Meet one or more specifications of this standard.

if ... then Denotes a specification that applies only when the conditions described are present.

may Denotes an option or alternative.

shall Denotes a mandatory specification or requirements.

should Denotes an advisory specification or recommendation.

DEFINITIONS

Access aisle: an accessible pedestrian space between elements, such as parking spaces, seating and desks, that provides clearances appropriate for the use of the elements.

Accessible: Describes a site, building, facility or portion thereof that complies with this standard.

Accessible element: An element specified by this standard (for example, telephone, controls, etc.)

Accessible route: A continuous unobstructed path connecting accessible elements and spaces of a facility. Interior accessible routes may include corridors, floors, ramps, elevators, platform lifts and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and platform lifts.

Accessible space: Space that complies with this standard.

Adaptable: The ability of a certain building space or element, such as kitchen counters, sinks and 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.

Area of rescue assistance: An area which has direct access to an exit, where people who are unable to use stairs may remain temporarily in safety to await further instructions or assistance during emergency evacuation.

Assembly area: A room or space accommodating a group of individuals for recreational, educational, political, social, civic or amusement purposes, or for the consumption of food and drink.

Attic or Roof space: The space between the roof and ceiling of the top storey or between a dwarf wall and a sloping roof.

Automatic door: A door equipped with a power-operated mechanism and controls that open and close the door automatically upon receipt of a momentary actuating signal. The switch that begins the automatic cycle may be a photoelectric device, floor mat, or manual switch. [see Power-assisted door]

Board room or **Conference Room** or **Meeting room:** Room used for meetings, which accommodates more than six people.

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*.

Circulation path: An exterior or interior way of passage from one place to another for pedestrians, including, but not limited to, walks, hallways, courtyards, stairways and stair landings.

Clear: Unobstructed.

Clear floor space: The minimum unobstructed floor or ground space required to accommodate a single, stationary wheelchair, scooter or other mobility device, including the user.

Closed-circuit telephone: A telephone with dedicated line(s), such as a house phone, courtesy phone or phone that must be used to gain entrance to a facility.

Common use: Refers to those interior or exterior rooms, spaces or elements that are made available for the use of a restricted group of people [for example, occupants of a homeless shelter, the occupants of an office building, or the guests of such occupants].

Cross slope: The slope that is perpendicular to the direction of travel. [see running slope.]

Curb ramp: A short ramp cutting through a curb or built up to a curb.

Detectable warning: A standardized surface feature built into or applied to walking surfaces or other elements to warn visually impaired people of hazards on a circulation path.

Disability: means,

- (a) any degree of physical disability, infirmity, malformation or disfigurement that is caused by bodily injury, birth defect or illness and, without limiting the generality of the foregoing, includes diabetes mellitus, epilepsy, a brain injury, any degree of paralysis, amputation, lack of physical co-ordination, blindness or visual impediment, deafness or hearing impediment, muteness or speech impediment, or physical reliance on a guide dog or other animal or on a wheelchair or other remedial appliance or device,
- (b) a condition of mental impairment or a developmental disability,
- (c) a learning disability, or a dysfunction in one or more of the processes involved in understanding or using symbols or spoken language,
- (d) a mental disorder, or

- (e) an injury or disability for which benefits were claimed or received under the insurance plan established under the *Workplace Safety and Insurance Act, 1997*; ("handicap")

Egress, Means of: A continuous and unobstructed way of exit travel from any point in a facility to a public way. A means of egress comprises vertical and horizontal travel and may include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, horizontal exits, courts and yards. An accessible means of egress is one that complies with this standard and does not include stairs, steps or escalators. Areas of rescue assistance, protected lobbies or protected elevators may be included as part of an accessible means of egress.

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.]

Entrance: Any access point to a building or portion of a facility used for the purposes of entering. An entrance includes the approach walk, the vertical access leading to the entrance platform, the entrance platform itself, vestibules [if provided], the entry door[s] or gate[s], and the hardware of the entry door[s] or gate[s].

Facility or Facilities: All or any portion of buildings, structures, site improvements, complexes, equipment, roads, walks, passageways, parks, parking lots or other real or personal property located on a site.

Ground floor: Any occupiable floor less 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.

Heritage Facility: Facility or portions thereof designated under the *Ontario Heritage Act*. [see public heritage facility]

Impairment: Any loss or abnormality of psychological, physiological or anatomical structure of function.

Marked Crossing - a crosswalk or other identified path intended for pedestrian use in crossing a vehicular way.

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.

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.

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.

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 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 [for example, coin slot, push button, handle].

Park: Land that is privately or 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, plazas, picnic areas, playgrounds, water features, spaces, for free play and leisure.

Power-assisted door: A door used for human passage that has a mechanism that helps to open the door or relieves the opening resistance of a door, upon the activation of a switch or a continued force applied to the door itself.

Public Heritage Facility: A facility designated under the *Ontario Heritage Act* that is open and accessible to the public [see heritage facility].

Public use: Describes interior or exterior rooms or spaces that are made available to the general public. Public use may be provided at a facility that is privately or publicly owned.

Ramp: A walking surface which has a running slope greater than 1:25.

Running slope: The slope that is parallel to the direction of travel [see cross slope].

Service entrance: An entrance intended primarily for delivery of goods or services and not intended for use by the public.

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.

Signage: Displayed verbal, symbolic, tactile and pictorial information.

Site: A parcel of land bound 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.

Sleeping accommodations: Rooms in which people sleep, for example, a dormitory.

Space: A definable area [e.g. room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard or lobby].

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.

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.

TDD: [Telecommunication Device for the Deaf]: see text telephone.

TTY: [Teletypewriter]: see text telephone.

Tactile: Describes an object that can be perceived using the sense of touch.

Technically infeasible: Means, with respect to an alteration of a building or a facility that it has little likelihood of being accomplished because:

- 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: 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.

Text telephone [TTY]: Machinery or equipment that employs interactive text-based communication through the transmission of coded signals across the standard telephone network. Text telephone 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.

Vehicular way: A route intended for vehicular traffic such as a street, driveway or parking lot, within the boundary of the site.

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.

3.0 SCOPE, APPLICATION AND ENFORCEMENT

GENERAL

The requirements of this standard shall be:

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

Exceptions: This standard does not apply to:

- houses, including semi-detached houses, duplexes, triplexes, town houses, row houses and boarding or rooming houses with fewer than 8 boarders or roomers;
- buildings of high hazard industrial occupancy; and
- buildings which are not intended to be occupied on a daily or full time basis, including automatic telephone exchanges, pump houses and substations.

GENERAL APPLICATION

All areas of newly designed or newly constructed facilities and altered portions of existing facilities shall comply with Sections 4.1 to 4.5 of this standard unless otherwise provided in this section or as modified in Section 4.5, "Facility-Specific Requirements".

Exceptions: The requirements of Sections 4.1 to 4.5 do not apply to:

- service rooms
- elevator machine rooms
- janitor rooms
- service spaces
- crawl spaces
- attic or roof spaces

APPLICATION BASED ON FACILITY USE

The specific facility types listed in Section 4.5 shall in addition to all of the provisions specified in Sections 4.1 to 4.4, comply with the additional design requirements specified in Section 4.5

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.

WORK AREAS AND EMPLOYEE-DESIGNATED AREAS

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

TEMPORARY FACILITIES

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

RETROFITTING, ALTERING AND ADDITIONS

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 elements/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 or to hazardous material abatement or to automatic sprinkler retrofitting and does not involve the alteration of any elements or spaces required to be accessible under these guidelines, then this standard does not apply [except for alarms, public telephones 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 restrooms, telephones and drinking fountains serving the altered area are readily accessible to and usable by individuals with disabilities.

HERITAGE FACILITIES

This standard will generally apply to alterations to a Heritage Building, however, under the *Ontario Human Rights Code*, there are allowances for modification to the defining features of a Heritage Building 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.
- Access to above- and below-grade areas is not necessary if the context of those areas can be adequately provided on the accessible floor level.

If 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. Any proposed retrofit to any designated Heritage Facility or portion of a heritage facility shall be reviewed and approved by the Stratford Municipal Heritage Committee.

Any proposed retrofit to a designated heritage facility or portion of heritage facility shall be reviewed and approved by the Stratford Municipal Heritage Committee.

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. The Stratford Building and Planning Department will review and approve equivalent facilitation proposals on an individual basis.

ENFORCEMENT

The designer of any municipally-owned project shall receive a copy of the standard prior to the preplanning and design phase of the project and shall certify that the project meets the requirements of the standard upon completion of the project.

4.0 DESIGN STANDARDS

4.1 ACCESS AND CIRCULATION

4.1.1 SPACE AND REACH REQUIREMENTS

Rationale

The dimensions and manoeuvring characteristics of wheelchairs 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 the average user in an average-sized wheelchair. Such an approach excludes the many users who are not average. 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.

Application

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

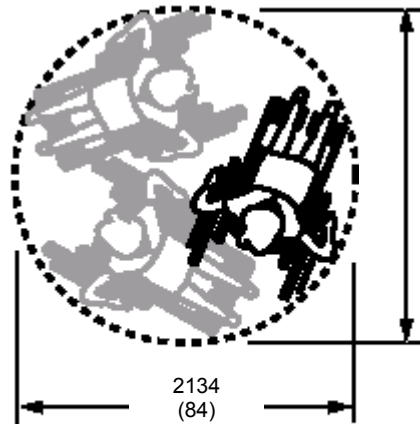


Figure 4.1.1.1
360° Turning Space

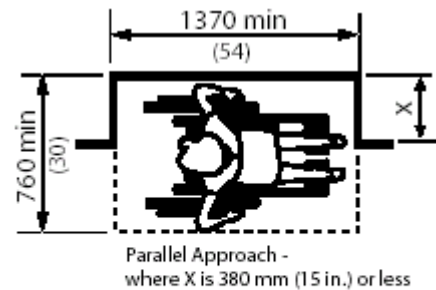


Figure 4.1.1.3
Clearances at Alcove

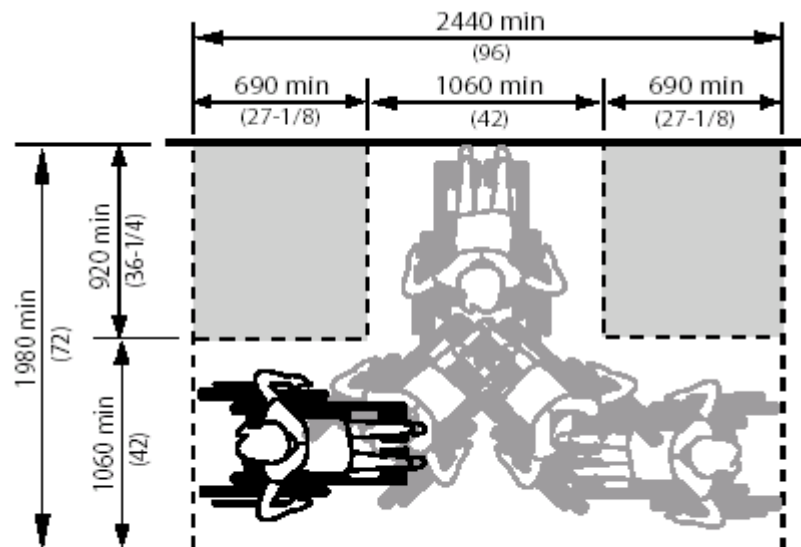


Figure 4.1.1.2
180° Turn

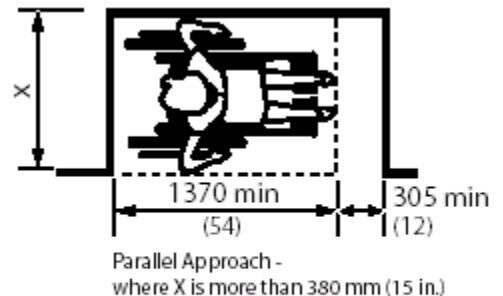


Figure 4.1.1.4
Clearances at Alcove

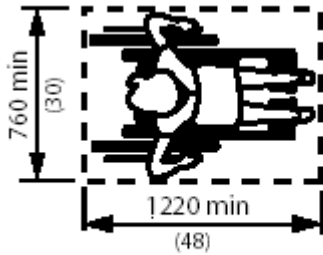


Figure 4.1.1.5
Clear Floor Space for Wheelchair

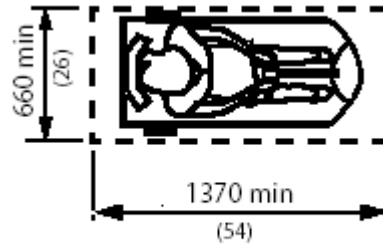
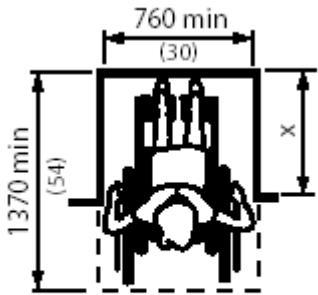
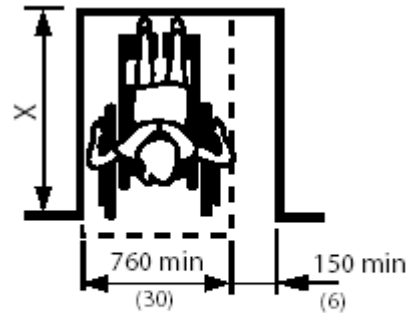


Figure 4.1.1.6
Clear Floor Space for Scooter



Frontal Approach -
where X is 610 mm (24 in.) or less

Figure 4.1.1.7
Clearances at Alcove



Frontal Approach -
where X is more than 610 mm (24 in.)

Figure 4.1.1.8
Clearances at Alcove

Design Requirements

The space required for a wheelchair to make a 360 degree turn is a clear space of 2134 mm (84 inch) diameter (Figure 4.1.1.1) or a 180 degree turn as shown in Figure 4.1.1.2.

The minimum clear floor or ground space required to accommodate a single, stationary wheelchair or scooter and occupant shall be 760 mm (30 in.) x 1370 mm (54 in.) Refer to Figures 4.1.1.5 and 4.1.1.6.

The minimum clear floor or ground space for wheelchairs or scooters may be positioned for forward or parallel approach to an object.

Clear floor or ground space for wheelchairs may be part of the knee space required under some objects.

One full, unobstructed side of the clear floor or ground space for a wheelchair or scooter shall adjoin or overlap an accessible route or adjoin another wheelchair clear floor space. If a clear space is located in an alcove or otherwise confined on all or part of three sides, additional manoeuvring clearances shall be provided as shown in Figures 4.1.1.3, 4.1.1.4, 4.1.1.7 and 4.1.1.8.

The surface of clear floor or ground spaces for wheelchairs and scooters shall comply with 4.1.2.

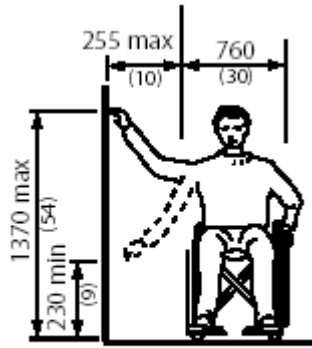


Figure 4.1.1.9
Side Reach

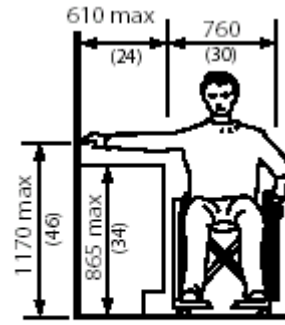


Figure 4.1.1.10
Side Reach over an Obstruction

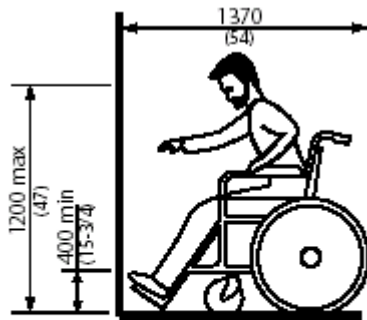


Figure 4.1.1.11
Forward Reach

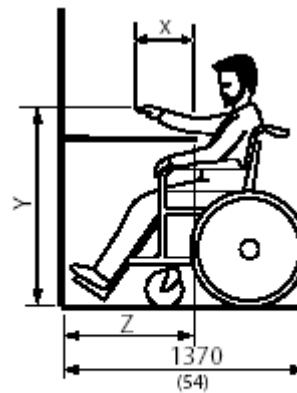


Figure 4.1.1.12
Forward Reach over an Obstruction

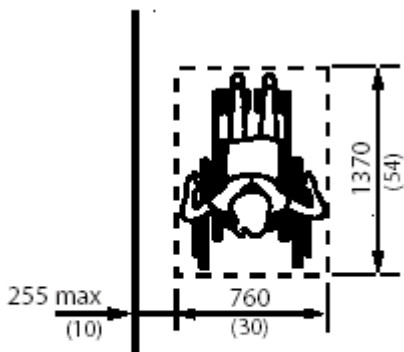


Figure 4.1.1.13
Side Reach - Maximum Distance to Wheelchair

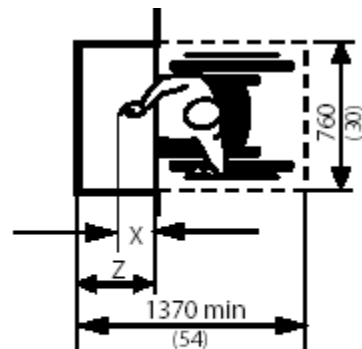


Figure 4.1.1.14
Forward Reach over an Obstruction

If the clear floor space only allows forward approach to an object, the maximum high forward reach allowed shall be 1200 mm (47 in.). The minimum low forward reach is 400 mm (16 in.). Refer to Figure 4.1.1.11. If the high forward reach is over an obstruction, reach and clearances shall be as shown in Figures 4.1.1.12 and 4.1.1.13.

If the clear floor space allows parallel approach to an object, the maximum high side reach allowed shall be 1370 mm (54 in.) and the low side reach no less than 230 mm (9 in.) above the floor. Refer to Figure 4.1.1.9. If the side reach is over an obstruction, the reach and clearances shall be as shown in Figure 4.1.1.9 and 4.1.1.13. Notwithstanding these requirements, the *Ontario Building Code* requires all controls for the operation of facility services or safety devices, including electrical switches, thermostats and intercom switches, be mounted at not more than 1200 mm (47 in.) above the floor.

NOTE: in Figures 4.1.1.12 and 4.1.1.14, X shall be less than or equal to 635 mm (25 in.); Z shall be greater than or equal to X.

When X is less than 510 mm (20 in.), then Y shall be 1220 mm (48 in.) maximum.

When X is 510 to 635 mm (20 to 25 in.), then Y shall be 1120 mm (44 in.) maximum.

4.1.2 GROUND AND FLOOR SURFACES

Rationale

Design decisions related to ground and floor surfaces will influence every person who enters the building. Irregular surfaces, such as cobblestones or pea-gravel finished concrete, are difficult for either walking or pushing a wheelchair. On slippery surfaces, it is the ambulatory person who is more disabled than the wheelchair user. Appropriate floor surfaces are especially important for children and seniors who may not be sure-footed.

Glare from polished floor surfaces is a particular obstacle to persons with a visual impairment. Glare can obscure important orientation and safety features. It can also disorient persons with low vision, as they are unsure of the location of the ground. Pronounced colour contrast between walls and floor finishes may be helpful for a person with a visual impairment, as are changes in colour/textures where a change in level or function occurs.

Thick pile carpeting makes pushing a wheelchair very difficult. Small and uneven changes in floor level represent a further barrier to wheelchair users but also present a tripping hazard to ambulatory persons. Patterned floors should be avoided, as they can create visual confusion.

Application

Ground and floor surfaces along all routes generally used by staff and public and within all areas generally used by staff and public shall comply with this section.

Design Requirements

Ground and floor surfaces shall be stable, firm, slip resistant and glare-free.

Changes in level, except for elevators and other elevating devices, shall conform to Table 4.1.2.

Vertical Rise	Edge Treatment
0 to 13 mm (0 to ½ in.)	Bevel
Over 13 mm (over ½ in.)	Treat as a sloped floor, <u>ramp</u> or <u>curb ramp</u> .

Table 4.1.2 – Changes in Level

Carpets or carpet tile shall

- be securely fixed;
- have a firm cushion, pad or backing, where used;
- have a level loop, textured loop, level cut pile or level cut/uncut pile texture with a maximum pad and pile height of 13 mm (½ in.); and
- have exposed edges fastened to floor surfaces with trim conforming to Table 4.1.2.

Gratings located in accessible routes shall

- have spaces not greater than 13 mm (½ in.) wide in one direction;
- be placed so that the long dimension is across the dominant direction of travel.

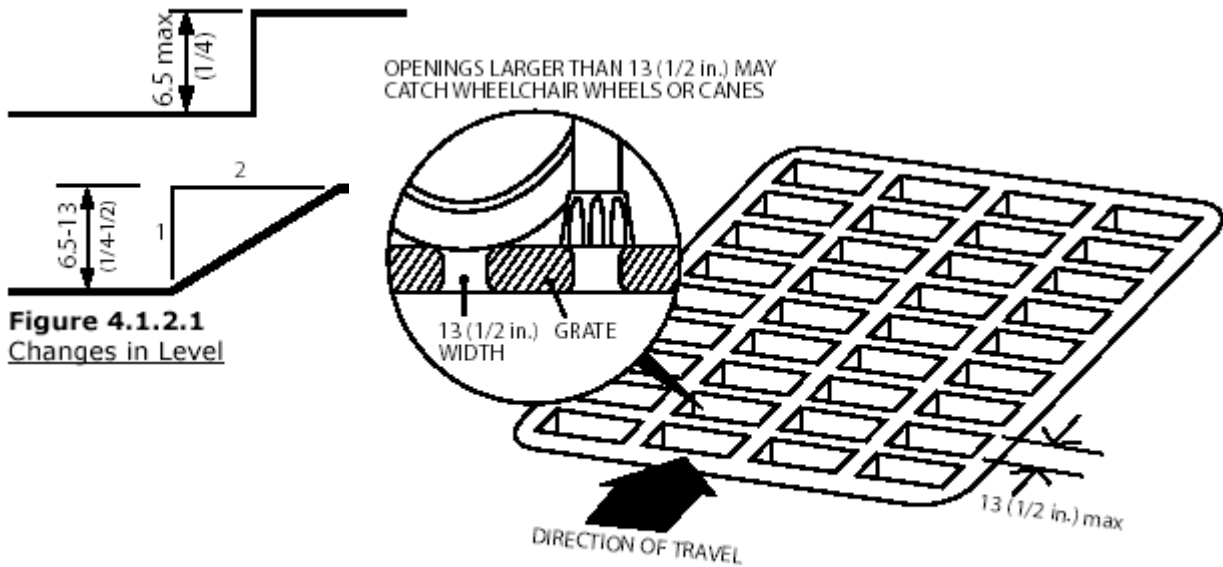


Figure 4.1.2.1
Changes in Level

Figure 4.1.2.2
Grills and Gratings

4.1.3 PROTRUDING OBJECTS IN ACCESSIBLE ROUTES

Rationale

The creation of pathways free from protruding objects or freestanding obstacles is important to all facility users. An object protruding from a wall above the detection range of a name is dangerous for an individual with a visual impairment but is equally hazardous to a pedestrian distracted by a conversation. Detectable surfaces around freestanding obstacles, such as light standards, are advantageous to anyone using a pathway.

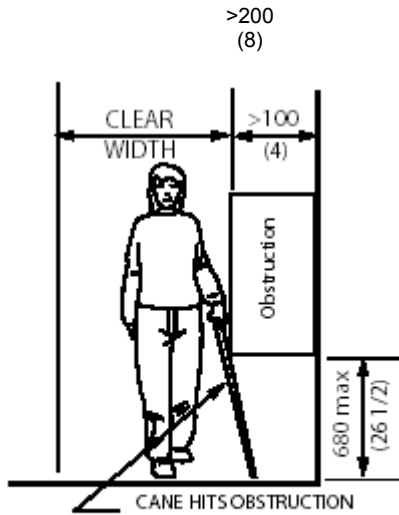


Figure 4.1.3.1
Limits of Protruding Objects

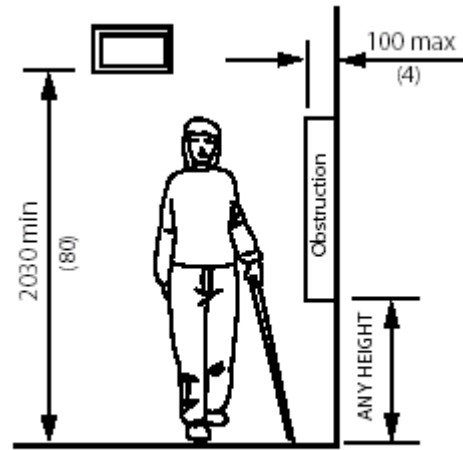


Figure 4.1.3.2
Limits of Protruding Objects

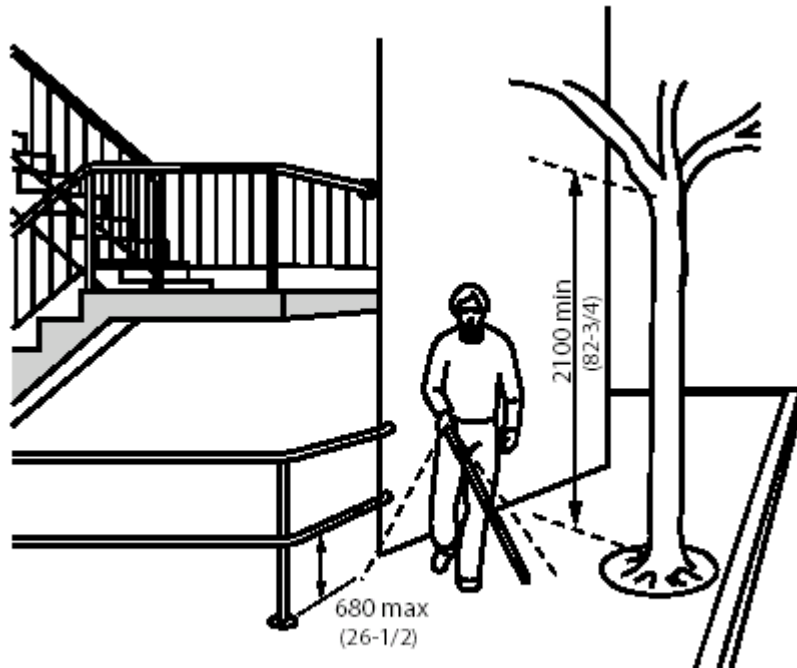


Figure 4.1.3.3
Overhead Obstructions

Application

Protruding objects from a wall, ceiling or other location shall comply with this section.

Design Requirements

Objects protruding into accessible routes with their leading edges between 680 mm (26 ½ in.) and 2100 mm (82 ¾ in.) from the floor shall protrude not more than 200 mm (8 in.) into pedestrian areas, such as walkways, halls, corridors, passageways or aisles.

The minimum clear headroom in an accessible route shall be 2100 mm (82 ¾ in.).

4.1.4 ACCESSIBLE ROUTES, PATHS AND CORRIDORS

Rationale

Maintaining a clear route of travel through a facility is essential. Any route of travel must provide the clear width necessary for persons using wheelchairs or scooters, those in strollers or those travelling in pairs. Consideration should be given not just to the width of items, such as wheelchairs and scooters, but also to their manoeuvrability. While a corridor may be wide enough for a scooter driven in a straight line, it may not be possible to make a turn around a corner. The preferred minimum width for accessible routes is 1830 mm (72 in.).

Strong colour contrasts and/or tactile pathways set into floors may be used to assist visually impaired individuals to negotiate an environment.

Application

Wherever possible, all routes, paths or corridors shall comply with this section.

At least one accessible route complying with this section shall be provided within the boundary of the site from accessible parking spaces, passenger-loading zones (if provided) and public streets or sidewalks to the accessible facility entrance they serve. The accessible route shall, to the maximum extent feasible, coincide with the route for the general public.

At least one accessible route shall connect accessible buildings, facilities, elements and spaces that are on the same site. It is preferable to have all routes accessible.

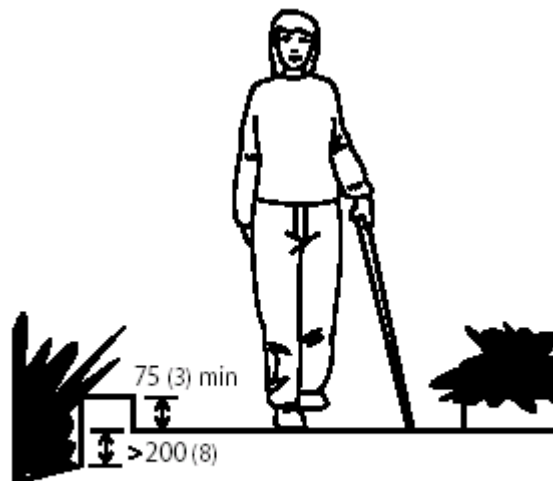


Figure 4.1.4.1
Edge Protection

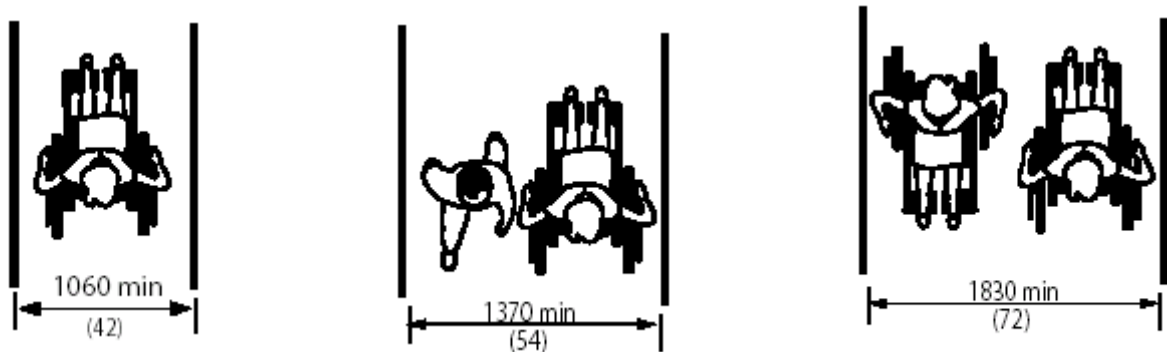


Figure 4.1.4.2
Access Widths

Except where essential obstructions in a work area would make an accessible route hazardous, an accessible route shall connect accessible entrances with all accessible spaces and elements within the facility. An accessible route complying with this section shall be provided within all normally occupiable floor areas. Exceptions: The provision of an accessible route does not apply to:

- service rooms;
- elevator machine rooms;
- janitor rooms;
- service spaces;
- crawl spaces;
- attic or roof spaces;
- mezzanines not served by a passenger elevator or other platform equipped passenger elevating device;
- high hazard industrial occupancies;
- within portions of a floor area with fixed seats in an assembly occupancy where these portions are not part of the accessible route to spaces designated for wheelchair use;
- into suites of residential occupancy that are in storeys other than the entrance storey and that have all entrance doors at floor levels that do not correspond to elevator stop levels;
- within a suite of residential occupancy; or
- within those parts 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 route.

Accessible routes are permitted to include ramps, curb ramps, stairs, elevators or other elevating devices as permitted in 4.1.15, where there exists a difference in elevation.

Design Requirements

The minimum clear width of accessible routes shall be 1060 mm (42 in.) except

- at doors, it shall be 950 mm (37 ½ in.);
- where additional manoeuvring space is required at doorways (see 4.1.6);
- at U-turns around obstacles less than 1220 mm (48 in.) wide, it shall be 1220 mm (48 in.); and

- for exterior routes, it shall be 1220 mm (48 in.)

Accessible routes shall

- have a running slope not steeper than 1:25; and
- have a cross slope not steeper than 1:50

Every accessible route less than 1830 mm (72 in.) wide shall be provided with an unobstructed space of not less than 1830 mm (72 in.) in width and 1830 mm (72 in.) in length, located not more than 30 meters (98 ft. 5 in.) apart.

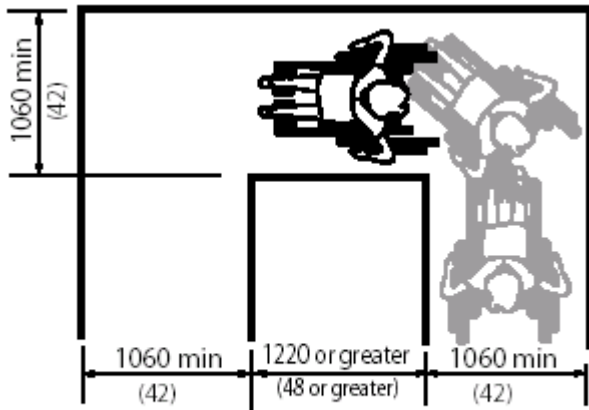


Figure 4.1.4.3
Turn around an Obstacle

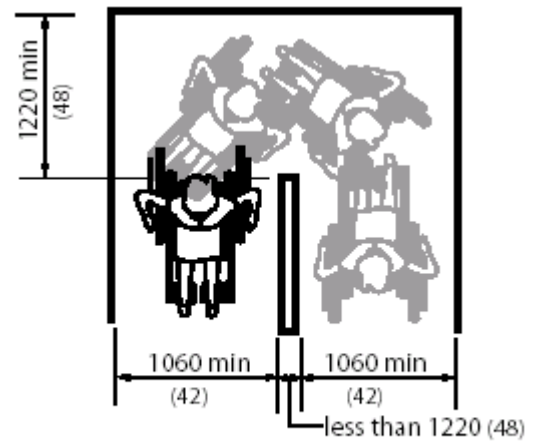


Figure 4.1.4.4
Turn around an Obstacle

Except at stairs and at elevated platforms such as performance areas or loading docks, where the edges of accessible routes, paths or corridors are not level with the adjacent surface, they shall be protected

- where the change in level is greater than 600 mm (23 5/8 in.) by a guard which meets the requirements listed in 4.1.9.

Where there is a change in direction along an accessible route and the intended destination of the route is not evident, directional signage shall be provided.

All portions of accessible routes shall be equipped to provide a level of illumination of at least 50 lux (4.6 ft-candles). Exception: outdoor park settings where routes are not normally illuminated.

Accessible routes paths or corridors having a slope steeper than 1:25 (4%) shall be designed as ramps in compliance with 4.1.9.

4.1.5 ENTRANCES

Rationale

Design decisions concerning doors will have a direct influence on the independence and dignity of everyone entering or exiting a facility. Features such as canopies can limit the influence of weather conditions on this already busy area and also make an entrance more obvious to someone with a cognitive disability or someone unfamiliar with the facility.

Application

All entrances used by staff or the public shall be accessible and comply with this section.

An accessible public entrance must be provided to each tenancy in a facility.

In police stations and municipal courts subject to 4.5.8 and 4.5.9, public entrances that are secured shall be accessible as required in 4.5.8 and 4.5.9.

If direct access is provided for pedestrians from an enclosed parking garage to the facility at least one direct entrance from the parking garage to the facility must be accessible.

If access is provided for pedestrians from a pedestrian tunnel or elevated walkway, one entrance to the facility from each tunnel or walkway must be accessible.

If the only entrance to a facility or tenancy is a service entrance that entrance shall be accessible.

Entrances which are not accessible shall have directional signage complying with 4.4.7 which indicates the nearest accessible entrance.

Accessible entrances shall be identified with signage complying with applicable provisions of 4.4.7.

4.1.6 DOORS

Rationale

Sufficiently wide doorways will be advantageous to individuals using wheelchairs, pushing strollers or making a delivery. However, a raised threshold at the base of the door could impede any one of these same individuals. This same group, with the addition of children, seniors or even someone carrying packages, would have difficulty opening a heavy door and would benefit from some form of automatic door opener.

Careful thought to the direction of the door swing can enhance the usability and limit the hazard to other pedestrians. Sliding doors can be easier for some individuals to operate and can also require less wheelchair manoeuvring space. Doors that require two hands to operate are not considered to be accessible. With revolving doors, space may be an issue for persons using wheelchairs and strollers, while the timing may be difficult for children or someone with a cognitive or visual disability.

Glazed doors can present a hazard to persons who are visually impaired. The inclusion of colour-contrast strips across the glass, mounted at eye level, as well as colour-contrasting doorframes and door hardware, will increase the visibility of a glazed door for a person with a visual impairment.

Application

Wherever possible, all doors used by staff or the public shall comply with this section.

At each accessible entrance to a facility at least one door shall comply with this section.

The door(s) for the accessible entrance(s) described in 4.1.6, including, where the accessible entrance described in 4.1.6 incorporates a vestibule, a door leading from the vestibule into the floor area shall be equipped with a power door operator in

- buildings of Group B Division 2 or 3 major occupancy (as defined by the *Ontario Building Code*); and
- buildings of Group A, D or E major occupancy (as defined by the *Ontario Building Code*) having more than 300 sq. m. (3,230 sq. ft.) in building area.

The requirements listed in the preceding sentence do not apply to an individual suite having an individual area of less than 300 sq. m. (3,230 sq. ft.) in buildings having only suites of A, D or E occupancy where such suite is completely cut off from the remainder of the building.

Within a facility all doors at each accessible space shall comply with this section. In a retrofit situation where it is technically infeasible to make all doors at each accessible space accessible at least one door at each accessible space shall comply with this section.

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

Each door that is an element of an accessible route shall comply with this section.

Each door required by 4.4.1 (Emergency Exits, Fire Evacuation and Areas of Rescue Assistance) shall comply with this section.

Mats and mat sinkages at doors shall comply with this section.

Context	Floor <u>Space</u> Required (in mm)		
	Depth	Width	<u>Space</u> beside latch
Side-hinged door – Front approach (Figure 4.1.6.4)			
Pull side	1525 (60 in.)	1600 (63 in.)	600 (24 in.)
Push side	1370 (54 in.)	1250 (40 ¼ in.) (*1220 (48 in.))	300 (12 in.)
Side-hinged door – Latch-side approach (Figure 4.1.6.3)			
Pull side	1370 (54 in.) (*1220 (48 in.))	1600 (63 in.) (*1525 (60 in.))	600 (24 in.)
Push side	1370 (54 in.) (*1060 (42 in.))	1525 (60 in.)	600 (24 in.)
Side-hinged door – Hinge-side approach (Figure 4.1.6.2)			
Pull side	2440 (96 in.) (*1525 (60 in.))	2440 (96 in.) (*1525 (60 in.))	600 (24 in.)
Push side	1370 (54 in.) (*1060 (42 in.))	1830 (72 in.)	450 (18 in.)
Sliding door (Figure 4.1.6.5)			
Front approach	1370 (54 in.)	1060 (42 in.) (*920 (36 in.))	50 (2 in.)
Side approach	1370 (54 in.) (*1060 (42 in.))	<u>1550</u> (61 in.) (*1370 (54 in.))	540 (21 ½ in.)

Table 4.1.6 – Manoeuvring Space at Doors

Revolving doors or turnstiles shall not be the only means of passage at an accessible entrance or along an accessible route. An accessible gate or door shall be provided adjacent to the turnstile or revolving door and shall be designated to facilitate the same use pattern.

Door hardware on all doors throughout a facility (not just those deemed accessible) shall comply with the door hardware requirements of this section.

Design Requirements

Accessible doors shall be on an accessible route that complies with 4.1.4.

The minimum clear opening of doorways shall be 950 mm (37 ½ in.) measured between the face of the door and the stop with the door open 90 degrees. In retrofit situations where it is technically infeasible to provide this clearance, the minimum clear opening of doorways may be 810 mm (32 in.).

If doorways have two independently operated door leaves, at least one active leaf shall comply with minimum clear opening width requirements and manoeuvring space at door requirements.

Doorways shall have wheelchair manoeuvring space on both sides of the door and a clear space beside the latch, as described in Table 4.1.6 except where access is only required from one side, such as to a closet.

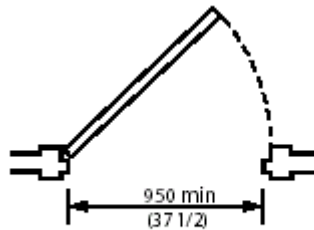


Figure 4.1.6.1
Minimum Clear Width at Doors

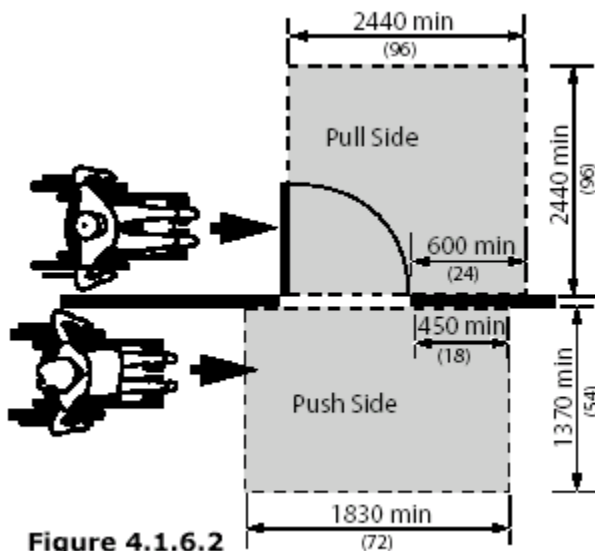


Figure 4.1.6.2
Hinge Side Approach at Hinged Doors

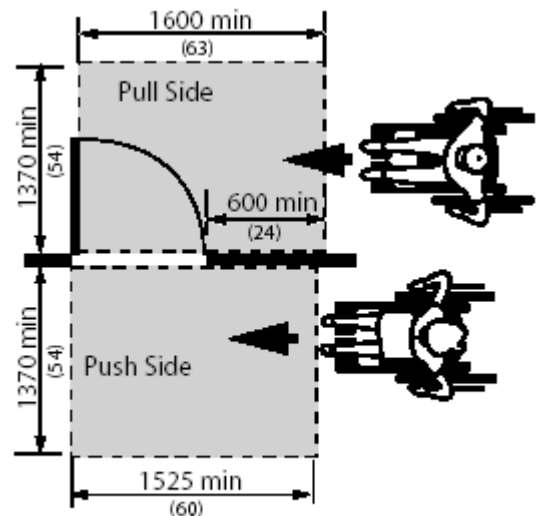


Figure 4.1.6.3
Latch Side Approach at Hinged Doors

The minimum space between two hinged or pivoted doors in series shall be 1370 mm (54 in.) plus the width of any door swinging into the space.

Thresholds shall

- be not more than 13 mm (½ in.) high; and
- where over 6 mm (1/4 in.) high, be bevelled at a maximum slope of 1:2.

Door hardware (operating devices such as handles, pulls, latches and locks) shall

- be operable by one hand;
- not require fine finger control, tight grasping, pinching or twisting of the wrist to operate; and
- be mounted between 400 mm (15 ¾ in.) and 1200 mm (47 in.) from the floor

Operating hardware on sliding doors shall be exposed and usable from both sides when sliding doors are fully open.

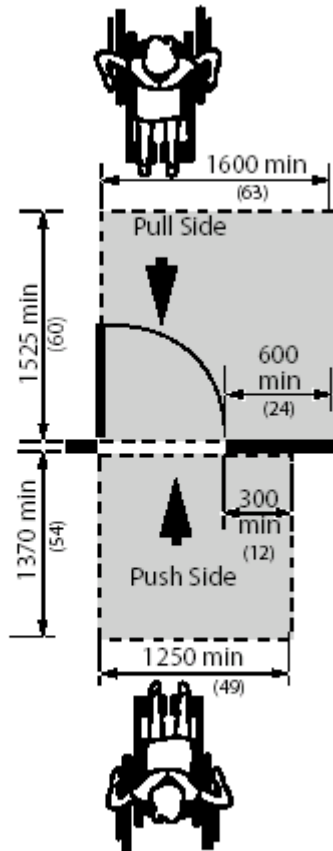


Figure 4.1.6.4
Front Approach at Hinged Doors

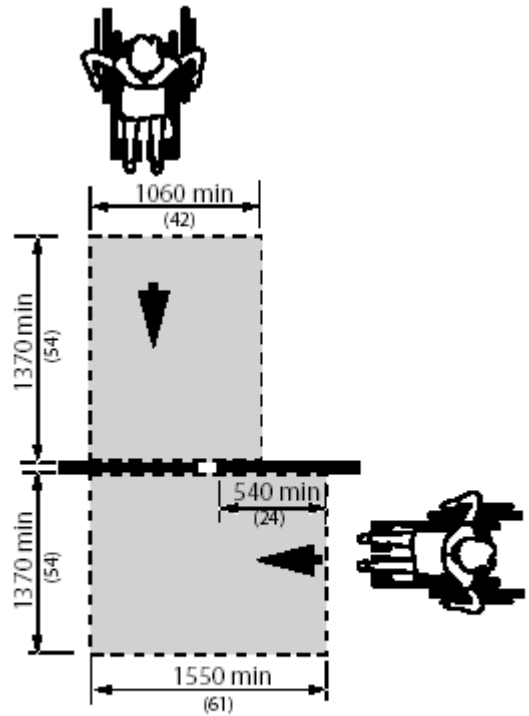


Figure 4.1.6.5
Front and Side Approach at Sliding Doors

The sweep period of door closers shall be adjusted so that, from an open position of 90 degrees, the door will take not less than 3 seconds to move to a semi-closed position of approximately 12 degrees.

The maximum door opening force for pushing or pulling open a door shall be

- 38 N (8.5 lbs.) for exterior hinged doors;
- 22 N (4.6 lbs.) for interior hinged doors; and
- 22 N (4.6 lbs.) for sliding or folding doors.

Power-assisted swinging doors shall

- take not less than 3 seconds to move from the closed to the fully open position; and
- require a force of not more than 66 N (13.8 lb.) to stop door movement.

Permanent mats and metal gratings at entrances and in vestibules shall be sunk level with the floor, so as not to create a tripping hazard.

Occasional mats (e.g. runners used in bad weather) should be level with the floor surface and/or have a gently bevelled edge, so as not to create a tripping hazard.

Where power door operators are provided:

- where manually operated, they shall have controls that are clearly visible which are at least 150 mm (6 in.) in diameter, located in front and clear of the door swing, with sufficient approach space to accommodate a wheelchair or scooter (refer to 4.1.1);
- where pressure-sensitive mats, overhead beams or proximity scanners are used to detect traffic, the layout of mat, beam or scanner coverage shall ensure that wheelchair users are detected; and
- where exterior doors swing open into a pedestrian area, they shall incorporate safety guards that comply with 4.1.3, projecting a minimum of 300 mm (12 in.) beyond both sides of the open door. (See Figure 4.1.6.6)

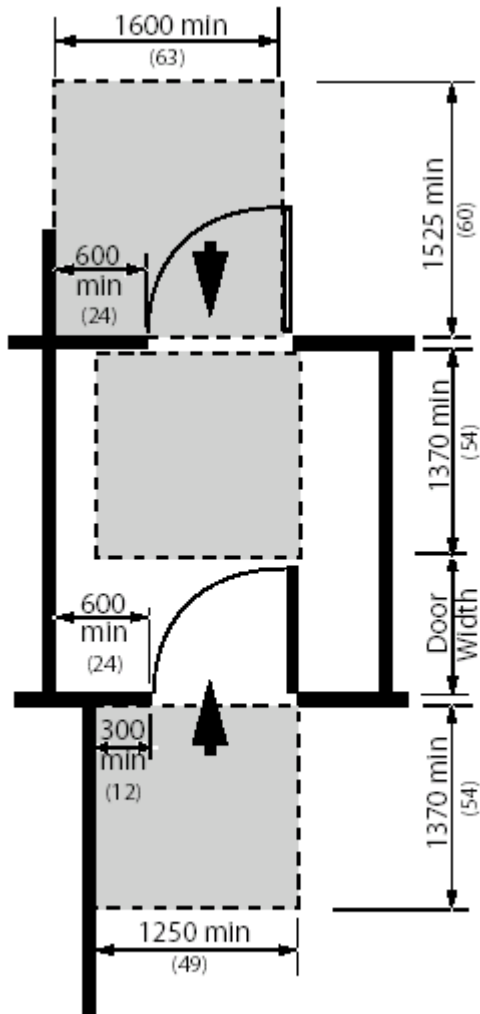


Figure 4.1.6.6
Manoeuvring Space at Doors in Series

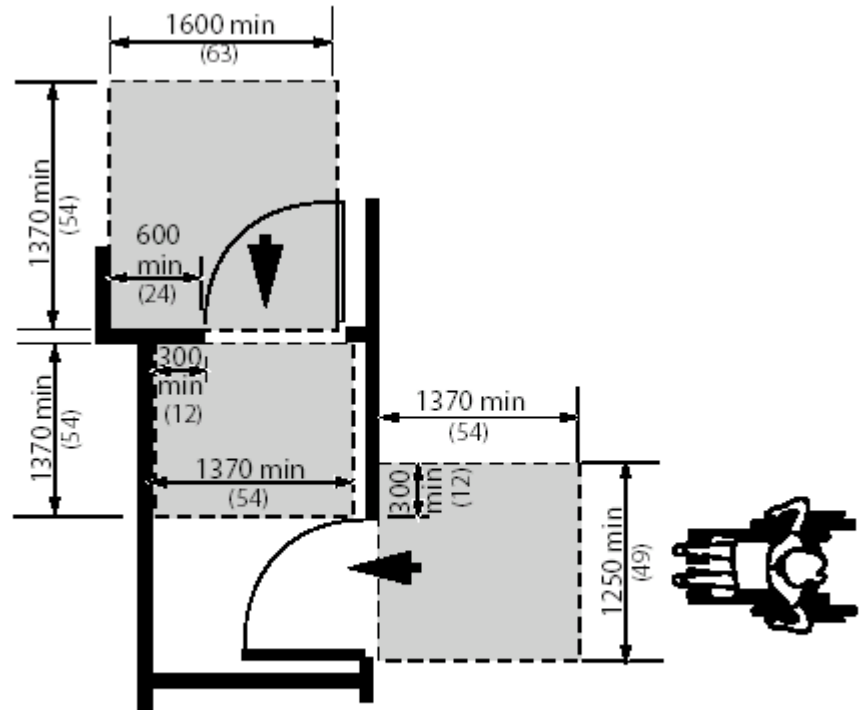


Figure 4.1.6.7
Manoeuvring Space at Doors in Series

Doors shall incorporate pronounced colour contrast to differentiate them from the surrounding environment. Similarly, door handles and other operating mechanisms shall incorporate pronounced colour contrast to differentiate them from the door itself. Where a door is fully glazed it shall comply with section 4.1.8 (Windows, Glazed Screens and Sidelights).

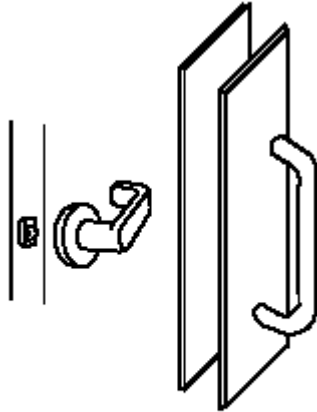


Figure 4.1.6.8
Examples of Accessible Hardware

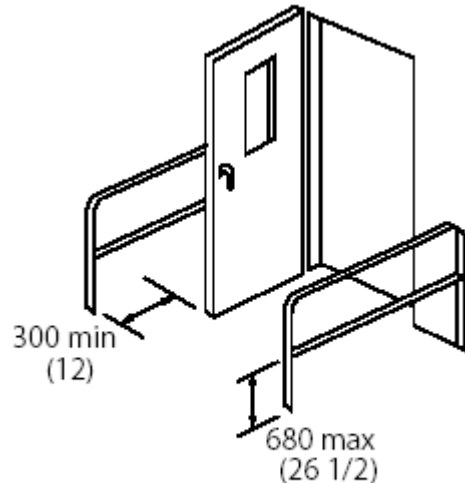


Figure 4.1.6.9
Detectable Safety Guards

4.1.7 GATES, TURNSTILES AND OPENINGS

Rationale

The single-bar gates designed to be at a convenient waist height for ambulatory persons are at neck and face height for children and persons in wheelchairs.

Revolving turnstiles are a physical impossibility for a person in a wheelchair to negotiate. They are also difficult for persons using canes or crutches, or persons with poor balance. An adjacent opening of an appropriate width is essential for wheelchair access, as well as access for those using other mobility devices, strollers, walkers or delivery carts.

Application

Gates, turnstiles and openings shall comply with this section.

Design Requirements

Where gates or openings are provided through fences or screens to public use areas beyond, such openings shall be accessible (i.e. a minimum of 950 mm (37 ½ in.) wide, to allow free passage of a person in a wheelchair. Hardware should be suitable for autonomous use and any closing device should not be spring-loaded.)

Where turnstiles or other ticketing control devices which are not wheelchair accessible are utilized, then a gate or opening which is accessible shall also be provided in the same location.

Turnstiles shall incorporate a pronounced colour contrast to differentiate them from the surrounding environment.

Where gates are incorporated into a chain-link fencing system, the poles at either side of the gate shall incorporate a pronounced colour contrast from the fence and the surrounding environment.

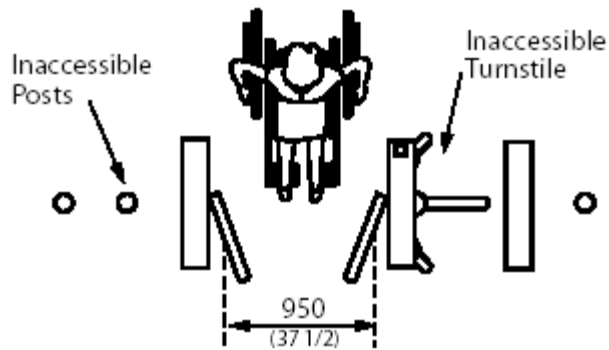


Figure 4.1.7.1
Access at Turnstile

4.1.8 WINDOWS, GLAZED SCREENS AND SIDELIGHTS

Rationale

Broad expanses of glazing in screens, sidelights and doors can be difficult to see. While this may be a particular concern to persons with visual impairments, it is possible for anyone to walk into a very clean and clear sheet of glazing, especially if they are distracted or in a hurry.

Persons who use wheelchairs or scooters experience the facility from a seated position, this lowers their eye level. Operating mechanisms on windows, blinds, louvres, etc., should respect the limited reach of persons using wheelchairs and those with other reach limitations. Window controls and operating devices should also respect the limitations of hand strength or dexterity encountered with different disabilities, including arthritis.

Application

Windows, glazed screens, fully-glazed sidelights and fully-glazed doors shall comply with this section.

Design Requirements

Fully-glazed sidelights at exterior entrances or vestibules, as well as fully-glazed screens, shall be clearly identified with a horizontal row of decals, or a continuous stripe minimum 50 mm (2 in.) wide and of highly contrasting colour, mounted with its centre line between 1475 mm (58 in.) and 1525 mm (60 in.) from the floor or ground. Additionally, a second row of decals, or a continuous stripe, a minimum 50 mm (2 in.) wide and of highly contrasting colour shall be provided, mounted with its centreline between 1170 mm (46 in.) and 1220 mm (48 in.) above the floor or ground.

Where decals are used, they shall be located at a maximum of 150 mm (6 in.) from centre to centre. The decals can either be 50 mm (2 in.) square or round and/or of a special design (e.g. a logo) provided the solid portion of the decals provide high colour contrast and is easy to identify by persons who are visually impaired.

Where etched or patterned glass is used, decals or a stripe of highly contrasting colour shall still be provided.

Where frameless glass panels are used, exposed edges shall be identified with a vertical safety stripe, applied to cap the end glass panel.

Where viewing windows are provided:

- the sill height of the window shall be no more than 765 mm (30 in.) from the floor; and
- where horizontal transoms are incorporated in windows, the transoms shall not be located between 1060 mm (42 in.) and 1220 (48 in.) from the floor.

In facilities with operable windows, window opening hardware shall

- be mounted between 400 mm (16 in.) and 1200 mm (47 in.) from the floor;
- be operable using one hand; and
- not require fine finger control, tight grasping, pinching or twisting of the wrist to operate.

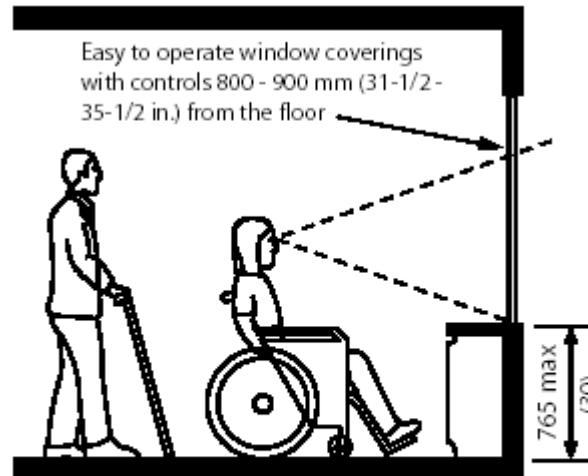


Figure 4.1.8.1
Window Sill
Height

4.1.9 RAMPS

Rationale

For many years, ramps have been synonymous with wheelchair accessibility. However, ramps should be considered a last resort in providing accessibility. Ramps can be difficult and dangerous to negotiate. Also, the physical space required for ramps makes them cumbersome to integrate into a facility. However, where a change in level already exists or cannot be avoided, a properly designed ramp can provide access for those using wheelchairs, pushing strollers or moving packages on a trolley.

The design of the ramp is critical to its usefulness and safety. A steeply inclined ramp is too difficult to push up when using a wheelchair and it increases the risk of the wheelchair tipping backwards. A steep ramp is difficult to ascent and dangerous to come down. A cross slope must be avoided as it will increase the effort required to negotiate the ramp. The placement of the ramp is also important to its accessibility. Space at the bottom of a ramp may be needed for an individual to slow their speed. Similarly, flat areas at points along a long ramp enable an individual to slow down or to rest. Textured surfaces, edge protection and handrails all provide important safety functions.

Application

Any part of an accessible route with a slope steeper than 1:25 shall be considered a ramp and shall comply with this section.

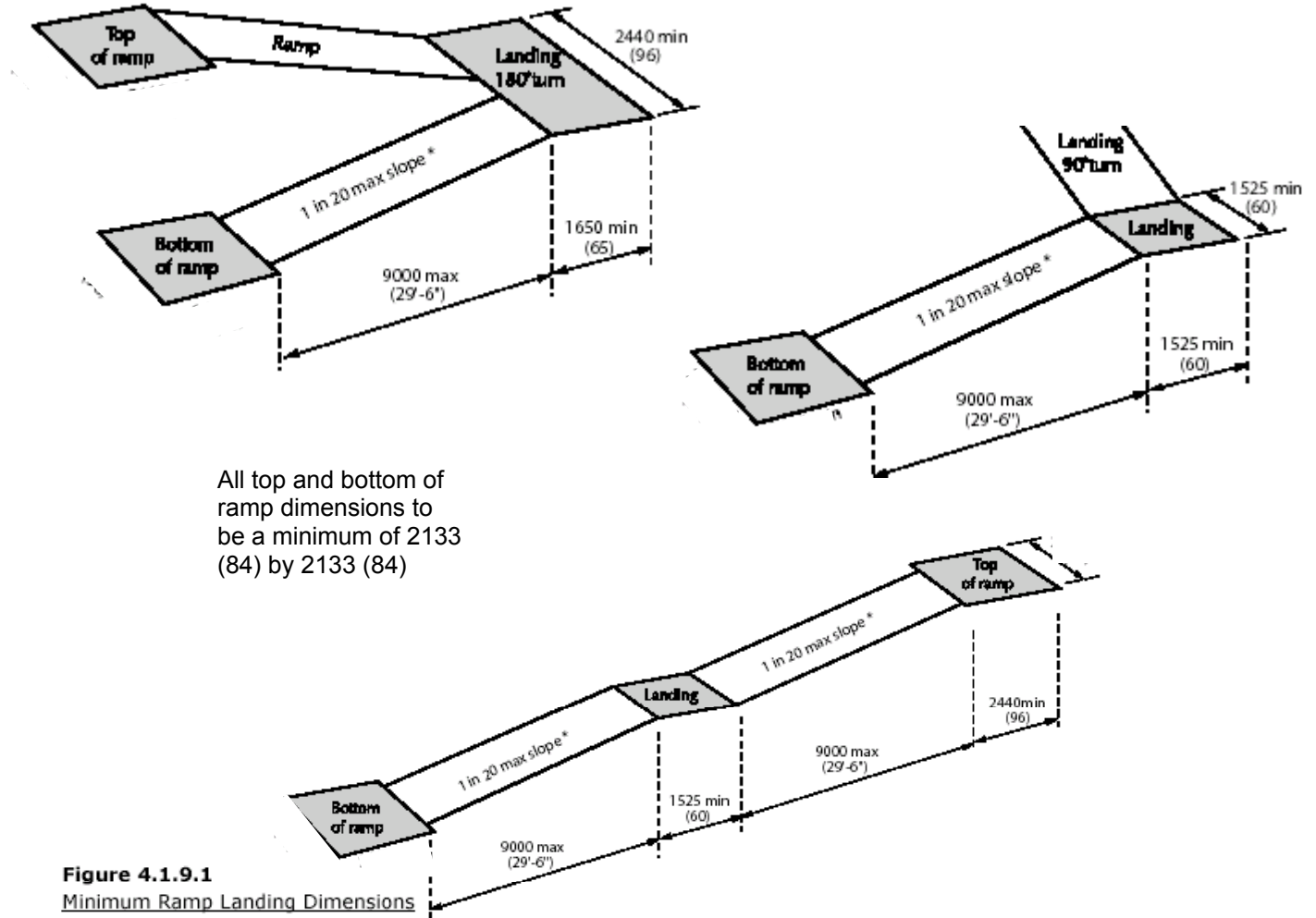
Design Requirements

Accessible ramps shall be on an accessible route complying with 4.1.4.

The running slope shall be between 1:20 and 1:24.9 and the maximum horizontal length between landings shall not exceed 9 m (29 ft., 6 in.).

The maximum cross slope of ramp surfaces shall be 1:50.

The minimum width of a ramp between handrails shall be 950 mm (37 ½ in.) .



Ramps shall have level landings at the top and bottom of each run and also where the ramp changes direction.

Landings shall

- be at least as wide as the widest ramp run leading to it;
- have a minimum size not less than 2134 x 2134 mm (84 in. x 84 in.) if located at the top or bottom of ramp or if served by a doorway;
- where an intermediate landing at the switchback of a U-shaped ramp (refer to Figure 4.1.9.1) have a length not less than 1650 mm (65 in.) and a width not less than 2134 mm (84 in.) ;

- where an intermediate landing at the corner of an L-shaped ramp (refer to Figure 4.1.9.1) have a length and width not less than 1525 mm (60 in.); and
- where an intermediate landing at a straight ramp (refer to Figure 4.1.9.1) have a length not less than 1525 mm (60 in.)

Ramp and landing surfaces shall be slip-resistant.

Outdoor ramps and their approaches shall be designed so that water will not accumulate on walking surfaces.

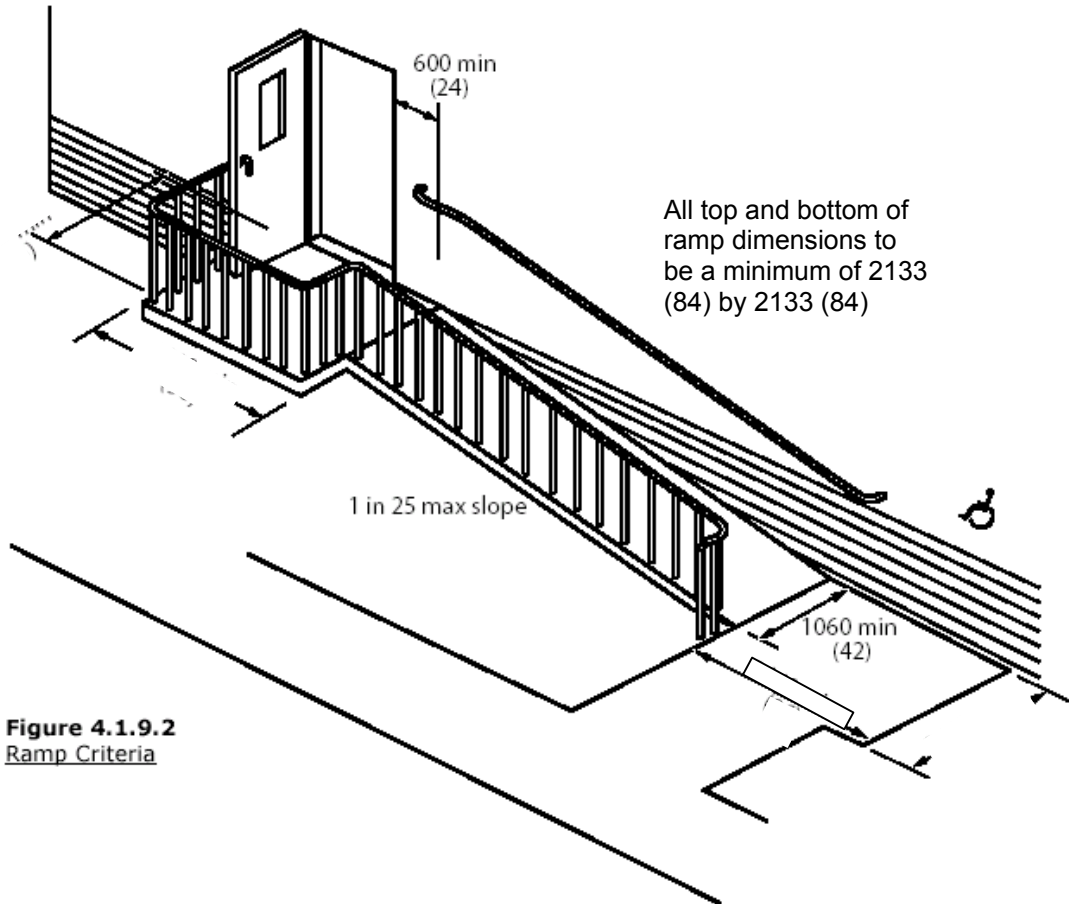


Figure 4.1.9.2
Ramp Criteria

Ramps and landings more than 600 mm (24 in.) above adjacent grade shall have a wall or guard on both sides.

Where a guard is provided, it shall

- be not less than 1070 mm (42 in.) measured vertically to the top of the guard from the ramp surface;
- be designed so that no member, attachment or opening between 140 mm (5 ½ in.) and 900 mm (35 in.) above the ramp surface being protected by the guard will facilitate climbing; and
- be provided
 - with a curb at least 50 mm (2 in.) high on any side of the ramp where no solid enclosure or solid guard is provided; or

- with railings or other barriers that extend to within 50 mm (2 in.) of the finished ramp or have a curb not less than 50 mm (2 in.) high

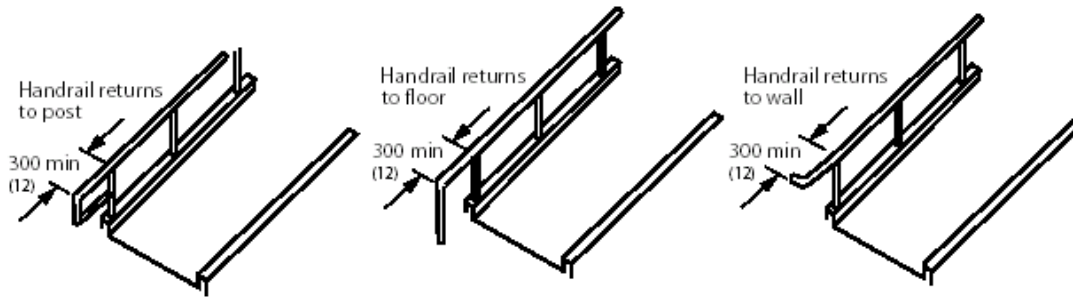


Figure 4.1.9.3
Horizontal Handrail
Extensions

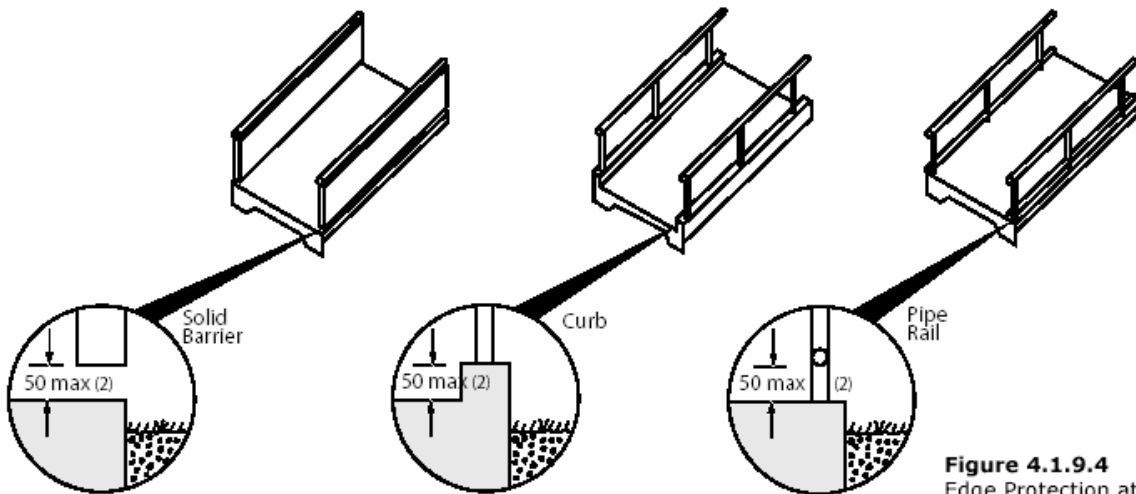


Figure 4.1.9.4
Edge Protection at
Ramps

A ramp run with a rise greater than 150 mm (6 in.) shall have handrails which

- are on both sides;
- comply with 4.1.13;
- are continuous on the inside of switchback (U-shaped) or dogleg (L-shaped) ramps;
- when not continuous, extend horizontally at least 300 mm (12 in.) beyond the top and bottom of the ramp and return to the wall, floor, or post;
- measure between 865 mm (34 in.) and 920 mm (36 in.) from the ramp surface to the top of the handrail; and
- have a distance between handrails of 950 mm (37 ½ in.) to 1000 mm (39 ½ in.)

EXCEPTION: where a ramp serves as an aisle way for fixed seating, the requirements for ramp handrails do not apply.

4.1.10 CURB RAMPS

Rationale

In the interest of moving people safely and efficiently off a roadway, the design of curb ramps is very important. The same issues related to the slopes of ramps apply equally to slopes of curb ramps. A well-designed curb ramp can be spoiled by an uneven or gapped transition between the road surface and curb ramp. Flared sides on the curb ramp eliminate the hazard of pedestrians stepping off an edge. While a smooth transition and minimal slope are ideal for someone in a wheelchair, they are a potential hazard to an individual with a visual impairment who may not notice the transition from sidewalk to street. Textured surfaces become an important safety feature in this scenario.

Application

Curb ramps complying with this section shall be provided wherever any path of travel crosses a curb.

Design Requirements

Accessible curb ramps shall be on an accessible route complying with 4.1.4.

The maximum running slope shall conform to Table 4.1.10 and the maximum horizontal length shall not exceed 2000 mm (79 in.)

The maximum counter slope of gutters and road surfaces immediately adjacent to curb ramps shall be 1:20.

The minimum width of curb ramps, exclusive of flared sides, shall be 1220 mm (48 in.).

Surfaces of curb ramps shall

- be slip-resistant;
- have a detectable warning surface that is colour and texture contrasted with the adjacent surfaces; and
- have a smooth transition from the ramp and adjacent surfaces.

Maximum vertical rise between landings	Slope
150 mm (6 in.)	1:10.1 to 1:12
75 mm (3 in.)	1:8 to 1: 10

Table 4.1.10 – Curb Ramp Rise and Slope

Curb ramps shall have flared sides where pedestrians are likely to walk across them.

The maximum slope of flared sides shall be 1:10.

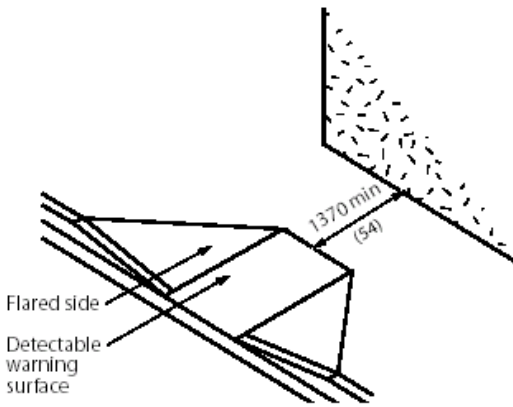


Figure 4.1.10.1
Curb Ramp with Flared Sides

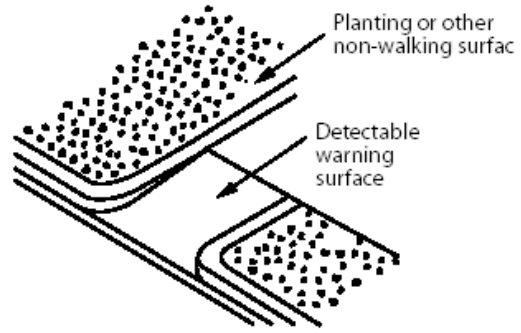


Figure 4.1.10.2
Curb Ramp with Returned Sides

Curb ramps at pedestrian cross walks shall be wholly contained within the area designated for pedestrian use.

Raised islands in crossings shall

- be cut through level with the street; or
- have curb ramps at both sides and a level area not less than 1370 mm (54 in.) in the middle.

Islands level with the street shall have within the area designated for pedestrian use detectable warning surfaces in compliance with 4.4.8 that are

- at least 920 mm (36 in.) long; and
- of a texture and colour that contrast with the surrounding walking surfaces.

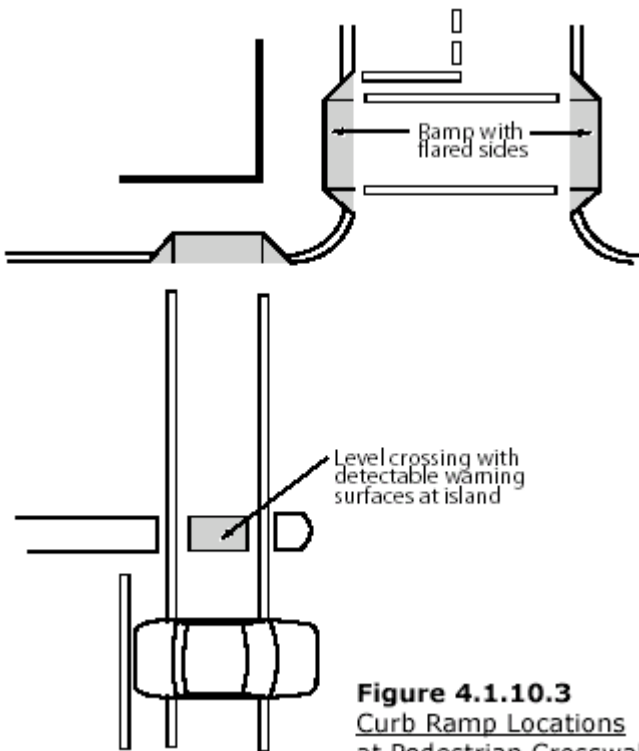


Figure 4.1.10.3
Curb Ramp Locations at Pedestrian Crosswalks

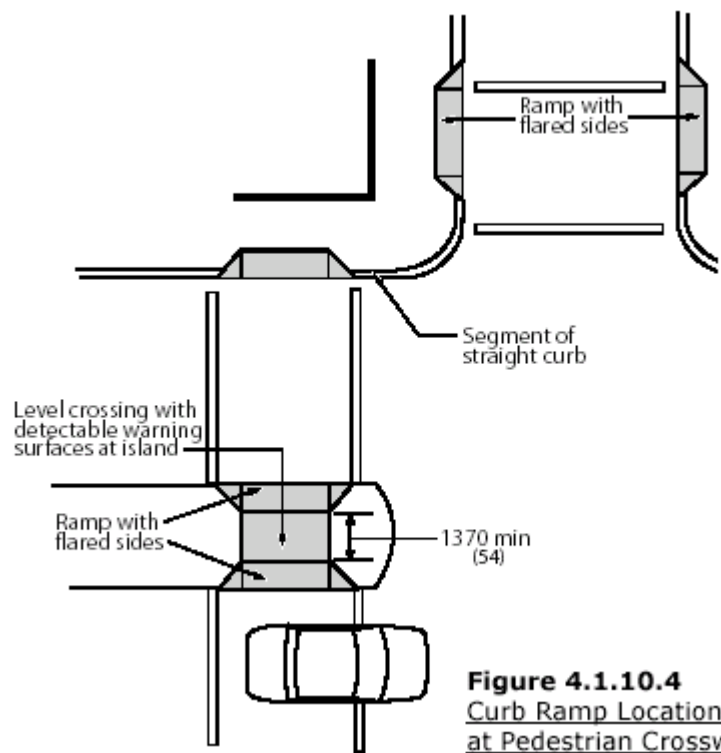


Figure 4.1.10.4
Curb Ramp Locations at Pedestrian Crosswalks

4.1.11 STAIRS

Rationale

Stairs that are comfortable for an adult may be challenging for children, seniors or persons of short stature. Poorly designed nosings can present tripping hazards, particularly to persons with prosthetic devices or those using canes. Cues to warn a person with a visual impairment of an upcoming set of stairs are vitally important. These persons will also benefit from stairs designed with contrasting edges on treads.

Application

Interior and exterior stairs shall comply with this section except fire escape stairs.

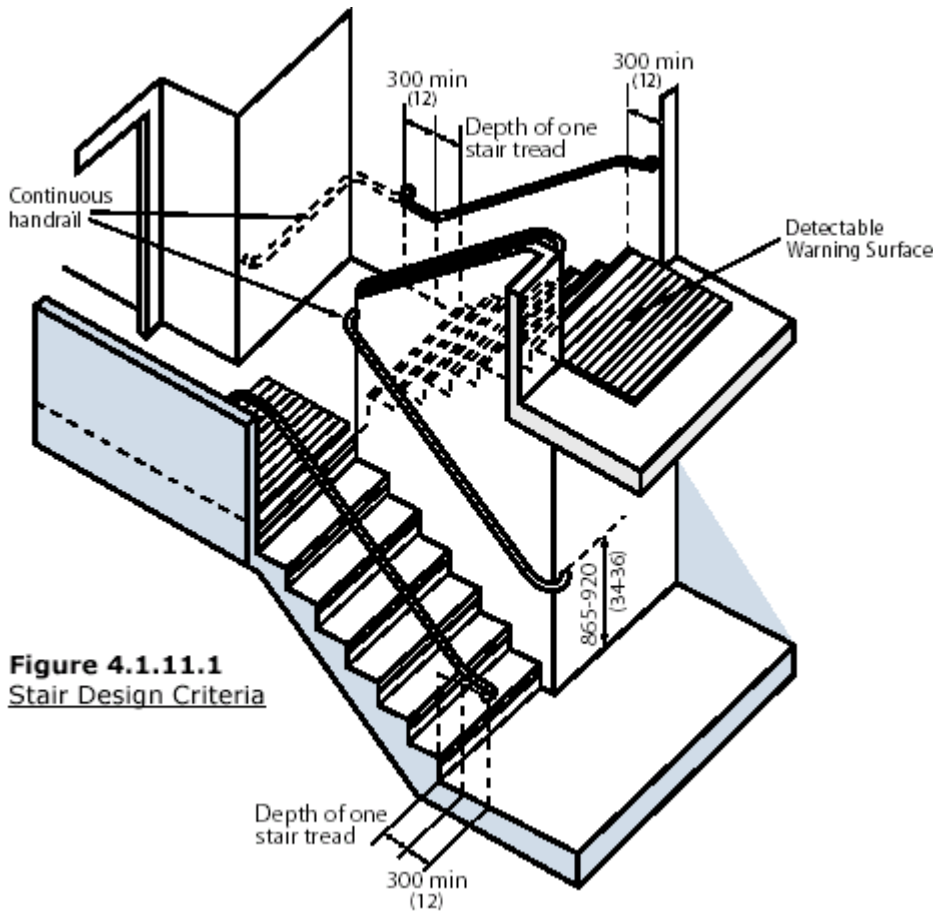


Figure 4.1.11.1
Stair Design Criteria

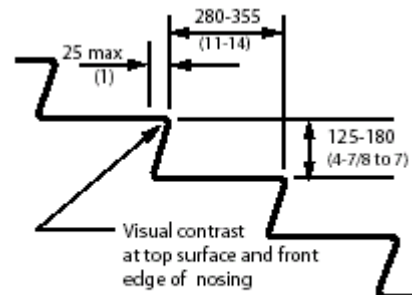


Figure 4.1.11.2
Stair Tread Criteria

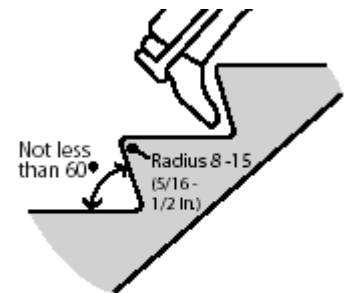


Figure 4.1.11.3
Raked Riser

Design Requirements

A flight of stairs shall have

- uniform riser heights and tread depths;
- risers not more than 178 mm (7 in.) and not less than 125 mm (4 7/8 in.) high;
- run not less than 280 mm (11 in.) and not more than 355 mm (14 in.) deep, measured from riser to riser; and
- no open risers, except for stairs serving bleachers and fire escapes.

Nosings shall

- project not more than 25 mm (1 in.);
- have no abrupt undersides;

- have a cured or bevelled leading edge of the tread between 8 mm (5/16 in.) and 13 mm (½ in.);
- where projecting, be sloped to the riser at an angle not less than 60 degrees to the horizontal;
- be illuminated to a level of at least 100 lux (9.2 ft. candles);
- be slip-resistant; and
- have the horizontal and vertical surface of the stair nosing in colour contrast with the remainder of the riser and tread.

Stairs shall incorporate detectable warning surfaces that comply with 4.4.8.

Handrails for stairs shall

- comply with 4.1.13;
- be installed on both sides;
- be of uniform height, ranging between 865 mm (34 in.) and 920 mm (36 in.) from the stair nosing;
- have a continuous inside handrail on switchback or dogleg stairs; and
- where not continuous
 - extend horizontally at the top and bottom of the stairs not less than 300 mm (12 in.) at a height ranging between 865 mm (34 in.) and 920 mm (36 in.) above the floor; and
 - return to the wall, or post in a manner that will not obstruct pedestrian travel or create a hazard.

4.1.12 HANDRAILS

Rationale

In the design of handrails, one must consider the range of hands that will grasp them. A handrail suited to an adult's hand may be difficult for a child or person with arthritis to use. The same is true for the heights of handrails.

Extensions of the handrails at the top and bottom of stairs, along with the use of a contrasting colour provide important cues for a visually impaired individual and provide a support to ensure a safe and stable gait before ascending or descending the stairs. A continuous handrail with no interruptions ensures that a handhold will not be broken.

The clear space between the wall and handrail is also essential as it must provide a clear area for the hand and knuckles but must not offer space into which the arm may slip during a fall or stumble on the stairs.

Application

Handrails shall comply with this section.

Design Requirements

Handrails shall

- have a circular section of at least 30-40 mm (1 ¼ - 1 ½ in.) in diameter or any non-circular shape, with a graspable portion that has a perimeter not less than 100 mm (4 in.) and not more than 155 mm (6 1/8 in.) whose largest cross-sectional dimension is not more than 57 mm (2 ¼ in.) ;
- be free of any sharp or abrasive elements;
- have continuous gripping surfaces, without interruption by newel posts, other construction elements, or obstructions that can break a handhold; and
- have a clear space between the handrail and the wall of

- at least 40 mm (1 9/16 in.); or
- at least 60 mm (2 3/8 in.) where the wall has a rough surface
- be terminated in a manner that will not obstruct pedestrian travel or create a hazard.

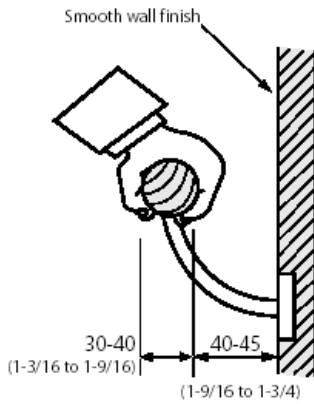


Figure 4.1.12.1
Handrail

Min 40
(1-9/16)

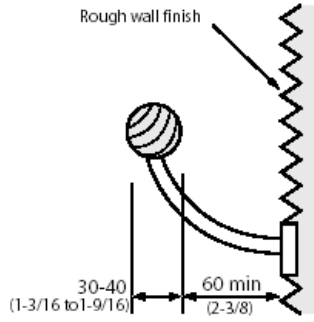


Figure 4.1.12.2
Handrail at Rough Wall

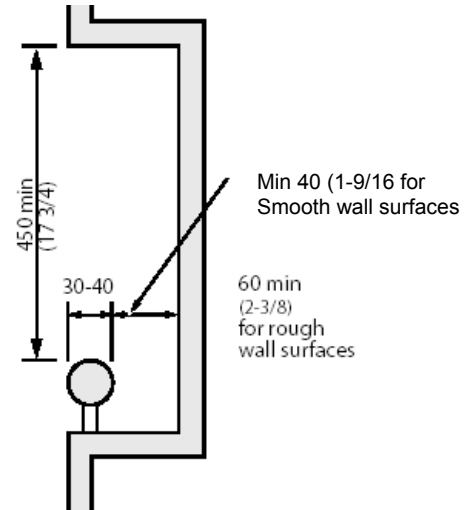


Figure 4.1.12.3
Handrail in Recess

A recess containing a handrail shall extend at least 450 mm (17 3/4 in.) above the top of the rail.

Handrails and their supports shall be designed and constructed to withstand the loading values obtained from the nonconcurrent application of

- a concentrated load of not less than 0.9 kN (200 lbs.) applied at any point and in any direction; and
- a uniform load of not less than 0.8 kN/m (47 lb./ft.) applied in any direction to the handrail.

Handrails shall incorporate a pronounced colour contrast to differentiate them from the surrounding environment.

4.1.13 ESCALATORS

Rationale

Entering and exiting an escalator can be challenging for many persons. This is largely due to the speed of the escalator operation. In addition, the lack of contrast on the edge of steps makes it difficult for many to determine the position of the steps or judge their speed. Platforms of a different texture extending in front of the escalator provide warning to any pedestrian, especially someone with a visual impairment. Contrasting colour strips on stair edges are also necessary.

Application

Escalators shall comply with this section.

Design Requirements

Escalator installations shall include high definition (colour contrast) of tread edges and nosing.

Detectable warning surfaces that comply with 4.4.8 shall be provided at the head and foot of the escalator.

The surface of escalator treads shall be in a matte finish to minimize reflected glare.

Lighting over escalators shall be a minimum of 200 lux (18.4 ft. candles) evenly distributed, from a low-glare light source.

4.1.14 ELEVATORS

Rationale

The buttons used on elevators need to address a range of functional issues including reach, dexterity and visual impairments as discussed in 4.4.2 and 4.4.15. More specific to elevators is the need to provide audible cues for visually impaired individuals to identify different floor levels as well as the direction of travel. These are in fact, of benefit to anyone who uses the elevator. Adequate door-closing delays provide individuals using mobility devices additional time to reach, enter or exit the elevator car.

Application

One passenger elevator complying with this section shall serve each level, including mezzanines in all multi-storey facilities unless exempted below. If more than one elevator is provided, each passenger elevator shall comply with this section.

Freight elevators shall not be required to meet the requirements of this section unless the only elevators provided are used as combination passenger and freight elevators for use by the public and employees.

Elevators are not required

- in facilities that are less than three storeys and not open to the general public;
- in elevator pits, elevator penthouses, mechanical rooms, piping or equipment catwalks;
- when accessible ramps complying with 4.1.9 are used in lieu of an elevators; and
- when platform lifts (wheelchair lifts) complying with 4.1.15 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 4.3.2;
 - to provide access to incidental occupied spaces and rooms that are not open to the general public and which house no more than 5 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.

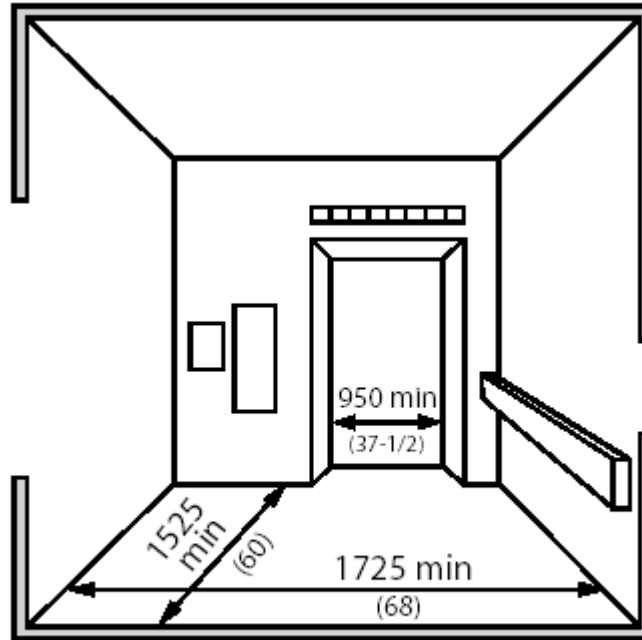


Figure 4.1.14.1
Elevator Cab

Design Requirements

Accessible elevators shall be on an accessible route complying with 4.1.4.

Accessible elevators shall be identified with signage complying with applicable provisions of 4.4.7.

Elevators shall be automatic and be provided with a two-story automatic maintaining levelling device to maintain the floor level to ± 13 mm ($\frac{1}{2}$ in.).

Power operated horizontally sliding car and landing doors opened and closed by automatic means shall be provided.

The clear width for elevator doors shall be at least 950 mm ($37 \frac{1}{2}$ in.)

Doors shall be provided with a door re-opening device that will function to stop and reopen a car door and an adjacent hoist way door to an least 950 mm ($37 \frac{1}{2}$ in.) In case the car door is obstructed while closing. This re-opening device shall also be capable of sensing an object or person in the path of a closing door at a nominal 125 ± 25 mm (5 ± 1 in.) and 735 ± 25 mm (29 ± 1 in.) above the floor without requiring contact for activation.

From the time the doors start to open a minimum of 4 seconds shall elapse before the door starts to close, if it is a hall call and 3 seconds if it is a car call. This time may be reduced by operation of the door-close button.

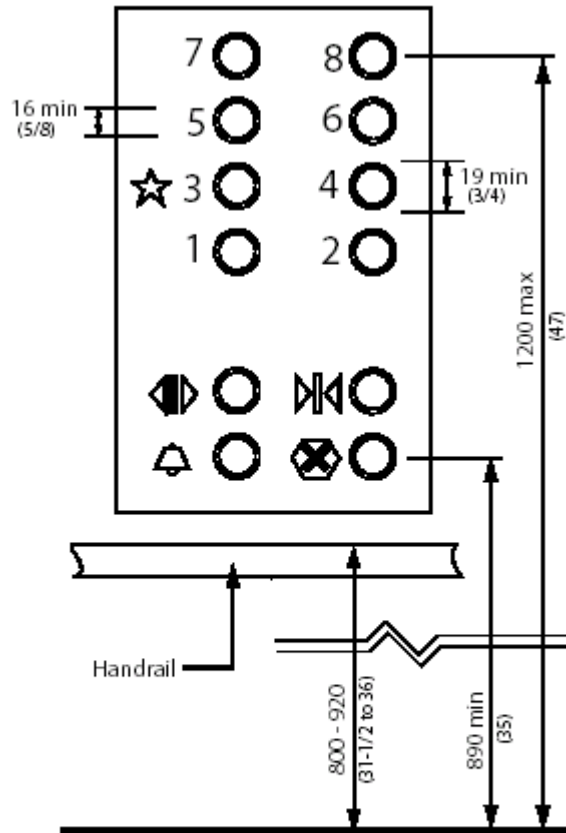


Figure 4.1.14.2
Control Panel

The minimum distance between the walls or between the wall and door, excluding return panels, shall not be less than 1725 x 1525 (68 in. x 60 in.). In facilities with high public use such as arenas, libraries or entertainment complexes, the distance between walls or between wall and door shall be 2030 x 1525 mm (80 in. x 60 in.).

Car controls shall be readily accessible from a wheelchair upon entering an elevator.

Floor register buttons in elevator cabs shall

- be a minimum 19 mm (3/4 in.) in size and may be raised, flush or recessed. The depth of flush or recessed buttons when they are being operated shall not exceed 10 mm (3/8 in.) ; and
- be provided with visual and momentary audible indicators to show when each call is registered. The visual indicators shall be extinguished when each call is answered.

All car control buttons shall be designated by Grade 2 Braille characters and by raised standard alphabet characters for letters, Arabic characters for numbers and standard symbols. Markings shall be a minimum of 16 mm (5/8 in.) high and raised a minimum of 0.75 mm (1/32 in.) placed immediately to the left of the buttons to which they apply. Exception: where the call buttons are mechanical, the raised markings may be on the buttons.

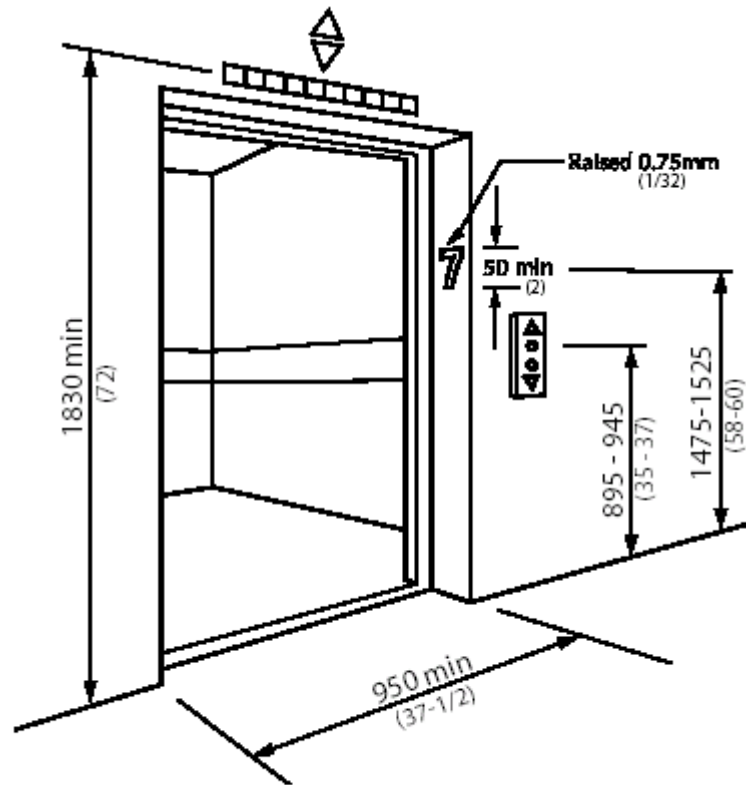


Figure 4.1.14.3
Elevator Entry

Emergency car controls and door operating buttons shall be grouped together at the bottom of the control panel. The centre line of the alarm button and the emergency stop switch shall be not less than 890 mm (35 in.) from the floor. The centre line of the highest floor button shall be no higher than 1200 mm (47 in.) from the floor. Other controls may be located where it is convenient.

Figure 4.1.14.4 – Tactile Symbols

An indicator shall be provided in the car to show the position of the car in the hoist way by illuminating the indicator corresponding to the landing at which the car is stopped or passing. Indication characters shall be on a contrasting colour background and a minimum of 16 mm (5/8 in.) high.

Floors of elevator cabs shall have a firm and slip-resistant surface that permits easy movement of wheelchairs.

Handrails shall be provided on all non-access walls at a height of 800 to 920 mm (31 ½ to 36 in.) with a space of 40 to 45 mm (1 9/16 to 1 ¾ in.) between the rails and wall.

The illumination at the car controls and landing sill shall be not less than 100 lux (10 ft. candles).

The centre line of hall call buttons shall be 920 ± 25 mm (36 ± 1 in.) above the floor. Buttons shall be a minimum of 20 mm (13/16 in.) in size, mounted one above the other.

Hall visual indication shall be provided to show each call that is registered and that is extinguished when the call is answered.

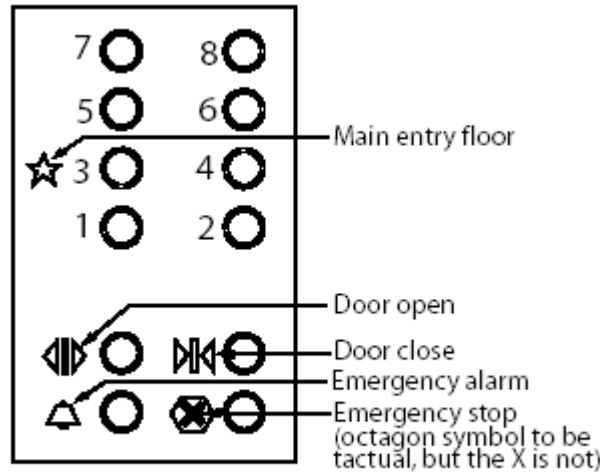


Figure 4.1.14.4
Tactile Symbols

Hall or in-car lanterns shall be provided. The centre line of the fixture shall be a minimum of 1830 mm (72 in.) above the floor. An audible signal shall be provided when the elevator stops at the landing. Visual elements shall be a minimum of 60 mm (2 3/8 in.) in the smallest direction.

All elevator hoist way entrances shall have raised Arabic numerals and Braille floor designations provided on both jambs. The characters shall be a minimum of 50 mm (2 in.) and at least 0.75 mm (1/32 in.) shall be placed on both sides of the door jambs with the centre line at 1500 ± 25 mm (59 ± 1 in.) from the floor.

As the car stops at a floor the floor and direction of travel shall be announced using voice-annunciation technology.

Elevators shall be linked by an emergency call system to a monitored location with two-way communication ability. The highest operable portion of the 2-way communication system shall be a maximum of 1200 mm (47 in.) from the floor of the car. It shall be identified by a raised symbol and lettering located adjacent to the device. The symbol shall be a minimum of 38 mm (1 1/2 in.) high and raised by a minimum of 0.75 mm (1/32 in.). Permanently attached plates are acceptable. If the system uses a handset, then the length of the cord from the panel to the handset shall be at least 735 mm (29 in.). Additionally, the handset shall be equipped with a receiver that generates a magnetic field in the area of the receiver cap and the handset shall have a volume control and shall comply with CSA Standard T515. IF the system is located in a closed compartment, the compartment door and hardware shall conform to 4.4.2. The emergency intercommunication system shall not require voice communication.

Lighting in elevator cabs shall be at least 100 lux (9.2 ft. candles), measured at the floor level and at the same lighting level as the adjacent lobby space.

Mirror shall not be used within elevator cabs as a finish material on the wall opposite the door.

Floor finishes within elevator cabs shall comply with 4.1.2.

Elevator doors shall incorporate pronounced colour contrast to differentiate them from the surrounding environment.

There shall be a pronounced colour contrast between the car sill and the facility floor.

4.1.15 PLATFORM LIFTS

Rationale

As with ramps, platform lifts have long been considered an accessibility requirement. In fact, these lifts tend to segregate persons with disabilities and limit space at entrance and stair locations. Furthermore, independent access is often compromised as access to platform lifts is controlled by key operation. Whenever possible, grading or integrated elevator access should be incorporated to avoid the use of lifts.

If there are no suitable alternatives, lifts must be selected to permit the use of scooters as well as wheelchairs.

Application

Accessible platform lifts shall comply with this section.

Platform lifts may only be used in lieu of an elevator or ramp where allowable under 4.1.14.

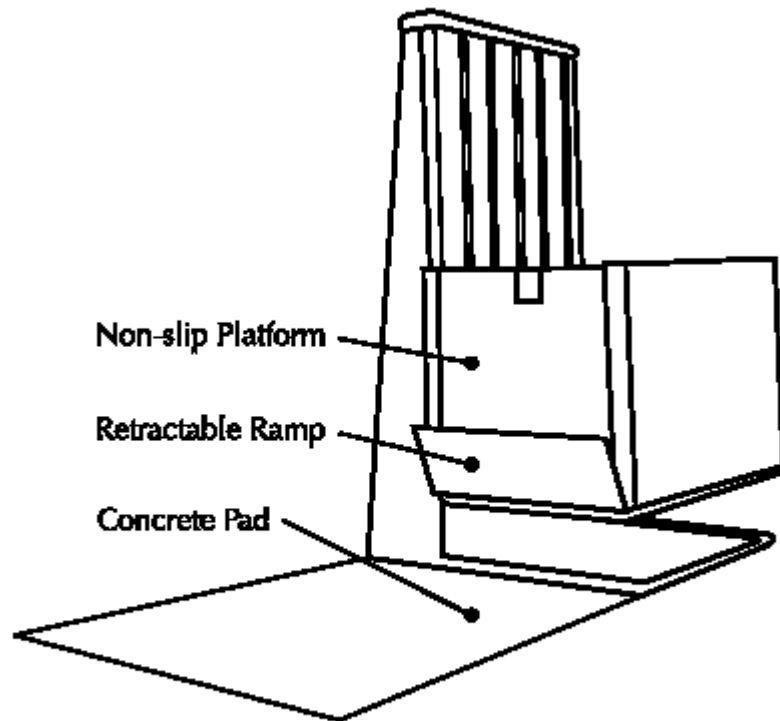


Figure 4.1.15.1
Vertical Platform Lift

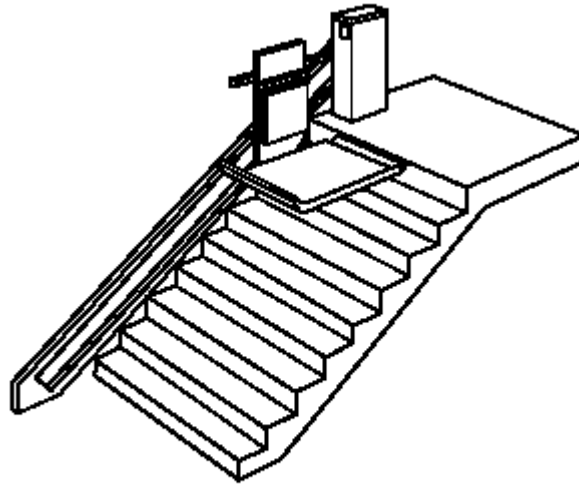


Figure 4.1.15.2
Inclined Platform Stair-Lift

Design Requirements

Accessible platform lifts shall

- be on an accessible route complying with 4.1.4;
- be identified with signage complying with applicable provisions of 4.4.7;
- comply with CSA standard CAN/CSA B355; and
- facilitate unassisted entry, operation and exit from the lift.

The platform size shall be no less than 1220 x 1525 mm (48 in. x 60 in.).

The doors to the platform lift shall comply with 4.1.6.

Controls and operating mechanisms shall comply with 4.4.2.

Platform lifts shall be linked by an emergency call system to a monitored location within the facility, with 2-way communication ability. The highest operable portion of the 2-way communication system shall be a maximum of 1200 mm (47 in.) from the floor of the car. If the system uses a handset, then the length of the cord from the panel to the handset shall be at least 735 mm (29 in.). If the system is located in a closed compartment, the compartment door and hardware shall conform to 4.4.2.

Floor finishes within platform lifts shall comply with 4.1.2 and 4.4.14.

4.2 WASHROOM FACILITIES

4.2.1 TOILET AND BATHING FACILITIES

Rationale

Although most persons who are disabled use toilet and bathing facilities independently, some people require assistance. If the assistant is of the same gender providing assistance is easy in a gender-specific public washroom. In other cases, an individual washroom is required.

Bathrooms are prime places where falls occur. Circumstances such as wet surfaces and the act of transferring between toilet and wheelchair can make bathrooms

accident-prone areas. Because of the risk of accidents, door swings are another safety consideration. An individual falling in a bathroom with a door that swings inward could prevent people offering assistance from opening the door to get to the person. Door swings are also critical to ensure that a person using a wheelchair can enter the washroom stall, turn about and close the door behind them. Due to the risk of accidents, bathrooms are prime locations for emergency call switches.

Identification of washrooms involves design issues that must be considered. For children or someone who cannot read text, a symbol is preferred. A visually impaired individual might require large-print signage and/or some form of tactile lettering. Features such as colour-contrasting door frames and door hardware will also assist many persons who are visually impaired.

Application

Where toilet facilities are provided, each public or common use toilet facility shall comply with this section. Other toilet rooms provided for the use of occupants of specific spaces (ie a private toilet room for the occupant of a private office) shall be adaptable.

In addition to any accessible public or common use toilets, at least one individual washroom complying with 4.2.7 shall be provided in all public buildings. If the individual washroom is not visible from the common or public use washrooms, directional signage complying with 4.4.7 shall be provided.

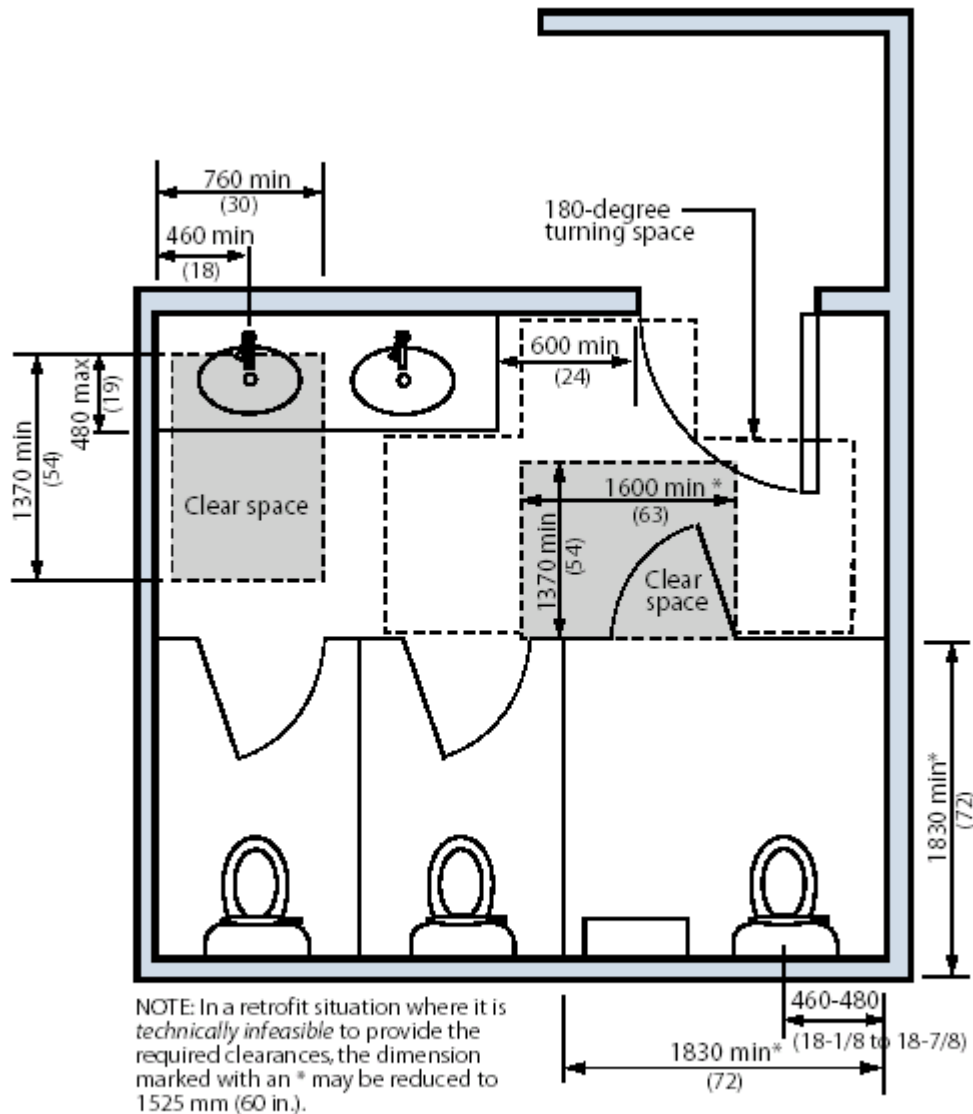


Figure 4.2.1.1
Washroom Dimensions

If bathing facilities are provided on a site, then each such public or common use bathing facility shall comply with this section.

For single-user portable toilet or bathing units clustered at a single location, at least 5%, but no less than one portable toilet unit or portable bathing unit of the barrier-free type portable toilet unit or portable bathing unit, shall be provided at cluster wherever type inaccessible units are provided. (Exception: portable toilet units at construction sites used exclusively by construction personnel are not required to comply with this section.)

Where an individual washroom is provided primarily for the use of persons of both sexes with physical disabilities, in lieu of facilities for persons with physical disabilities in washrooms used by the general public, the individual washroom shall be provided on the same floor level within 45 m (147 ft. 8 in.) of the washrooms used by the general public.

Design Requirements

Accessible toilet and bathing facilities shall be on an accessible route complying with 4.1.4.

All doors to accessible toilet and bathing rooms shall comply with 4.1.6. Doors shall not swing into the clear floor space required for any fixture.

The accessible fixtures and controls within toilet and bathing rooms shall be on an accessible route complying with 4.1.4.

Washrooms shall incorporate a clear floor space to allow a person in a wheelchair to make a 180 degree turn.

Accessible toilet and bathing facilities shall be identified with signage complying with applicable provisions of 4.4.7.

4.2.2 TOILET STALLS

Rationale

Manoeuvrability of a wheelchair or scooter is a prime consideration in the design of an accessible stall. Not only is space required for the mobility equipment but there may also be instances where an individual requires assistance and the stall will have to accommodate a second person. Door swings are normally outward for safety reasons and space considerations, but this makes it difficult to close the door once inside. A handle mounted part way along the door may make it easier for someone to close the door behind them.

The increased size of an accessible stall is required to ensure there is sufficient space to facilitate the proper placement of a wheelchair or scooter to accommodate a transfer onto the toilet fixture.

Application

If toilet stalls are provided in a toilet or bathing facility, then the number of accessible toilet stalls designated to accommodate disabled persons shall comply with Table 4.2.2.

# of toilet stalls within the washroom	Required # of accessible toilet stalls
1-5	1
More than 5	2

Table 4.2.2 – Number of Accessible Toilet Stalls

Accessible toilet stalls shall comply with this section.

All other toilet stalls within a facility (ie those considered to be non-accessible) shall be a minimum 920 mm (36 in.) wide by 1525 mm (60 in.) long and shall incorporate door-locking mechanisms in compliance with this section.

Design Requirements

Accessible toilet stalls shall

- be on an accessible route complying with 4.1.4;
- have internal dimensions at least 1830 mm x 1830 mm (72 in. x 72 in.);

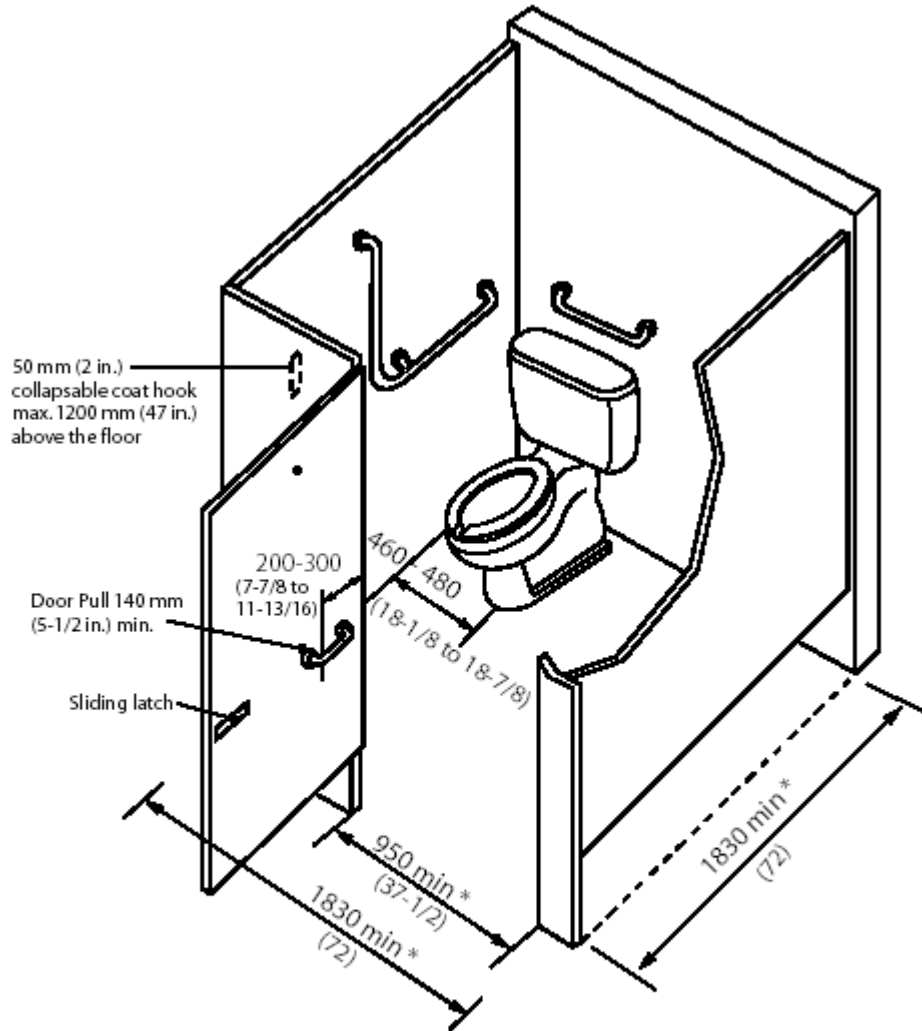
Stratford Accessibility Guidelines

- have a toilet complying with 4.2.3; and
- be equipped with a coat hook mounted not more than 1200 mm (47 in.) from the floor on a side wall and projecting not more than 50 mm (2 in.) from the wall.

Toilet stall doors shall

- be capable of being locked from the inside by a device that is operable with one hand, does not require fine finger control, tight grasping, pinching or twisting of the wrist and requires a force of not more than 22 N (4.9 lb.) to activate (e.g. sliding bolt or lever);
- provide a clear opening of at least 950 mm (37 ½ in.) with the door in the open position;
- swing outward unless additional space is provided within the stall for the door swing;
- be provided with a “D” type contrasting coloured door pull at least 140 mm (5 ½ in.) long on the inside of an out-swinging door, located so that the centre line is between 200 and 300 mm (7 7/8 in. and 11 13/16 in.) from the hinged side of the door at outside door handle height; and
- be provided with a “D” type contrasting coloured door pull at least 140 mm (5 ½ in.) long on the outside near the latch side of the door.

Where more than one accessible toilet stall is provided within a washroom, the stall shall be configured with the transfer space (ie the open space beside the toilet) on opposite sides of the toilet fixtures.



NOTE: In a retrofit situation where it is *technically infeasible* to provide the required clearances, the dimensions marked with an * may be reduced. Refer to 4.2.2 - Design Requirements.

Figure 4.2.2.1
Accessible Toilet Stall

4.2.3 TOILETS

Rationale

Automatic flush controls are preferred. If flushing mechanisms are not automated, then consideration must be given to the ability to reach a switch and the hand strength or dexterity to operate it. Strategic placement of grab bars makes sitting and standing or transfers between toilet and wheelchair safer.

Application

Accessible toilets shall comply with this section. Wall-mounted toilets are preferred.

Design Requirements

Toilet fixtures shall have

- the top of the seat between 400 and 460 mm (15 3/4 in. and 18 1/8 in.) from the floor;
- no spring-activated seat;
- a back support where there is no seat lid or tank; and
- the tank top securely attached.

Toilets shall be located 460 to 480 mm (18 1/8 in. to 18 7/8 in.) from the centre line to the adjacent wall.

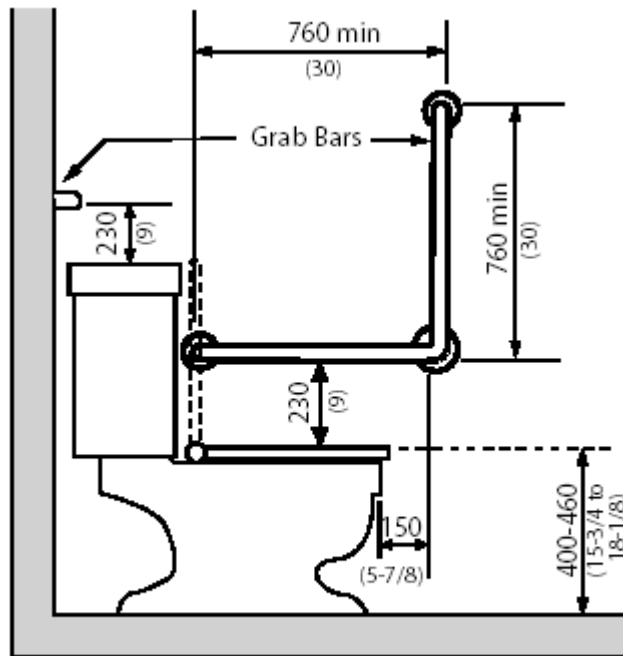


Figure 4.2.3.1
Grab Bar Configuration

A minimum 915 mm (36 in.) wide clear transfer space shall be provided on one side of the toilet fixture.

Toilet flush controls shall be

- hand-operated on the transfer side of the toilet; or
- be electronically automatically controlled.

Hand-operated flush controls shall comply with 4.4.2.

Toilets shall be equipped with grab bars that shall

- comply with 4.2.10;
- be L-shaped with 760 mm (30 in.) long horizontal and vertical components mounted with the horizontal component 230 mm (9 in.) above the toilet seat and the vertical component 150 mm (5 7/8 in.) in front of the toilet bowl; and
- be at least 600 mm (23 5/8 in.) in length, mounted horizontally on the wall behind the toilet, from 840 mm (33 in.) to 920 mm (36 in.) above the floor and where the water closet has a water tank, be mounted 150 mm (5 7/8 in.) above the tank.

Where a toilet paper dispenser is provided, the dispenser shall be

- wall mounted;
- located below the grab bar;
- in line with or not more than 300 mm (11 ¾ in.) in front of the toilet seat;
- not less than 600 mm (23 5/8 in.) above the floor; and
- contrasting in colour to the wall.

4.2.4 LAVATORIES

Rationale

The accessibility of lavatories will be greatly influenced by their operating mechanisms. While faucets with remove-eye technology might initially confuse some individuals, their ease of use is notable. Individuals with hand strength or dexterity difficulties can use lever-style handles. For an individual in a wheelchair, a lower counter height and clearance for knees under the counter would be required. This lower counter may also serve children. The insulation of pipes protects an individual in a wheelchair whose legs may come into contact with hot water pipes. This is particularly important when a disability impairs sensation such that the individual would not sense that their legs are being burned.

Application

All lavatories shall comply with this section.

Design Requirements

Lavatories shall

- be on an accessible route complying with 4.1.4;
- be mounted so that the minimum distance between the centre line of the fixture and the side wall is 460 mm (18 1/8 in.) ;
- have the top located between 820 mm (32 ¼ in.) and 840 mm (33 in.) from the floor;
- have a knee space of at least
 - 760 mm (30 in.) wide;
 - 735 mm (29 in.) high at the front edge;
 - 724 mm (28 ½ in.) at a point 205 mm (8 1/8 in.) back from the front edge; and
 - 230 mm (9 in.) high over the distance from a point 280 mm (11 in.) to a point 430 mm (16 7/8 in.) back from the front edge;
- have a minimum clear floor space 760 mm (30 in.) wide and 1370 mm ((54 in.) deep of which a maximum of 480 mm (18 7/8 in.) in depth may be under the lavatory;
- have not water and drain pipes insulated if they abut the clearances noted above or have the water temperature limited to a maximum of 43 degrees Celsius (100 degrees F) ; and
- have soap and towel dispensers that are
 - located to be accessible to persons in a wheelchair (ie not having to reach over the lavatory to access the devices);
 - located so that the dispensing height is not more than 1200 mm (47 in.) above the floor;
 - colour-contrasted from the surrounding environment; and
 - in compliance with 4.4.2.

Faucets and other controls shall

- have handles of the lever style (not self-closing) operable with a clenched fist or be electronically controlled; and
- be located so that the distance from the centre line of the faucet to the edge of the basin, or where the basin is mounted in a vanity, to the front edge of the vanity is not more than 485 mm (19 1/8 in.)

The front apron of a vanity shall have a minimum clearance of 750 mm (29 1/2 in.) wide by 720 mm (28 3/8 in.) high.

Shelves or other projections above lavatories shall be located so they will not present a hazard to persons with a visual disability.

Where mirrors are provided at lavatories or vanity units, they shall comply with 4.2.6.

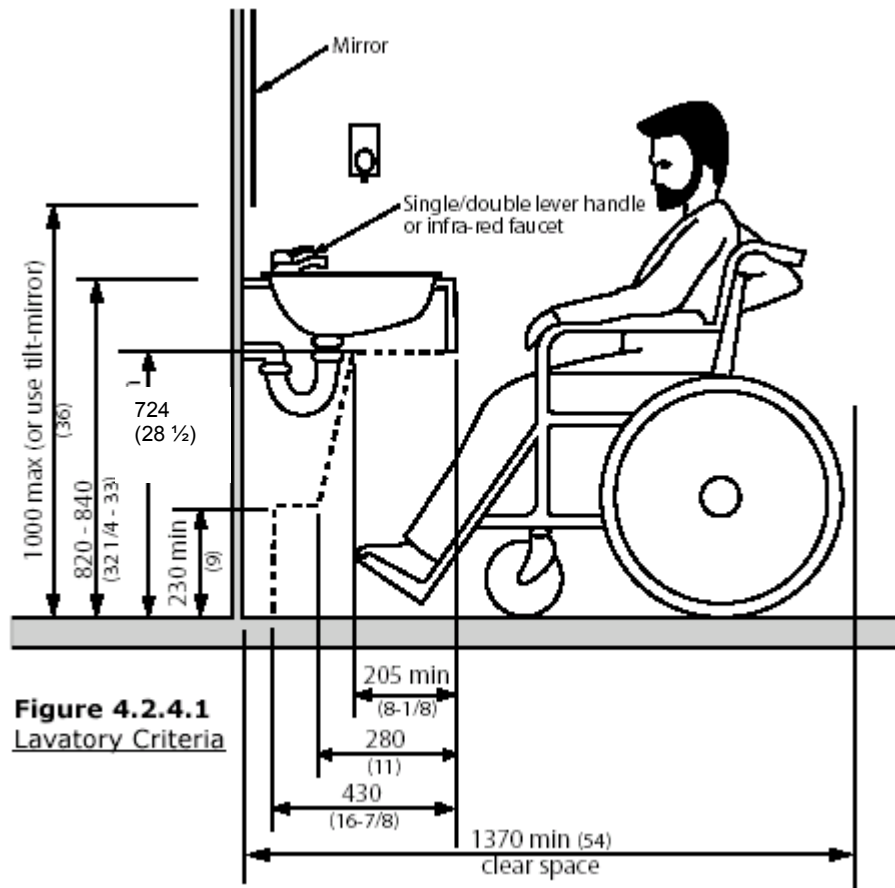


Figure 4.2.4.1
Lavatory Criteria

4.2.5 URINALS

Rationale

A clear floor space is required in front of urinals. Some using wheelchairs can pull themselves up to a standing position. Others may use the grab bar to steady themselves. Floor-mounted urinals make it easier to drain appliances. Flush controls should be lever or automatic (preferred).

Application

Where urinals are provided in an accessible toilet or bathing facility, they shall comply with this section.

Design Requirements

Urinals shall be

- wall mounted with an elongated rim located with the rim between 488 mm (19 ¼ in.) and 512 mm (20 1/8 in.) above the finished floor; or
- floor mounted with the rim level at the finished floor.

A clear floor space of 760 mm x 1370 mm (30 in. x 54 in.) shall be provided in front of the urinal to allow for a forward approach. This clear space shall adjoin or overlap an accessible route and shall comply with 4.1.1.

Where privacy screens are provided

- there shall be at least 800 mm (31 ½ in.) of clearance between them; and
- they shall incorporate a pronounced colour contrast to differentiate them from the surrounding environment with a vertical outer edge that contrasts with the screen and the surrounding environment.

The urinal shall have grab bars installed on each side, vertically mounted, not less than 300 mm (12 in.) long, with the centre line 100 mm (39 in.) above the floor and located not more than 380 mm (15 in.) from the centre line of the urinal. Grab bars shall comply with 4.2.10.

Flush controls shall be hand-operated or automatic, mounted at no more than 1120 mm (44 in.) above the finished floor, and shall comply with 4.4.2.

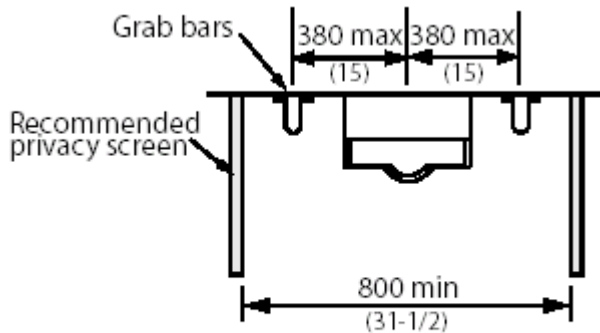


Figure 4.2.5.1
Urinal

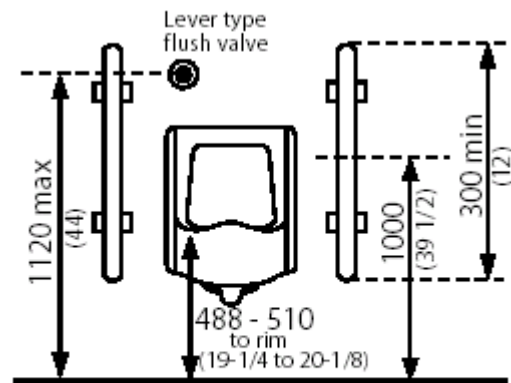


Figure 4.2.5.2
Urinal

4.2.6 WASHROOM ACCESSORIES

Rationale

Design issues related to washroom accessories include the hand strength and dexterity required to operate mechanisms. Reaching the accessory is another concern. Accessories that require the use of two hands to operate can present difficulties for a range of disabled persons when the ability to reach or balance is impaired. Section 4.4.2 addresses operating mechanisms in greater detail.

Application

Where washroom accessories are provided in a toilet or bathing facility, they shall comply with this section.

Design Requirements

Each type of washroom accessory provided, except those located in toilet stall as specified in 4.2.2 and lavatories as specified in 4.2.4 shall have operable portions and controls mounted between 900 mm (35 in.) and 1200 mm (47 in.) from the floor.

The operable controls and mechanisms of washroom accessories shall comply with 4.4.2.

Where mirrors are provided at least one shall be

- mounted with its bottom edge not more than 1000 mm (39 3/8 in.) from the floor; or
- inclined to the vertical to be usable by a person in a wheelchair.

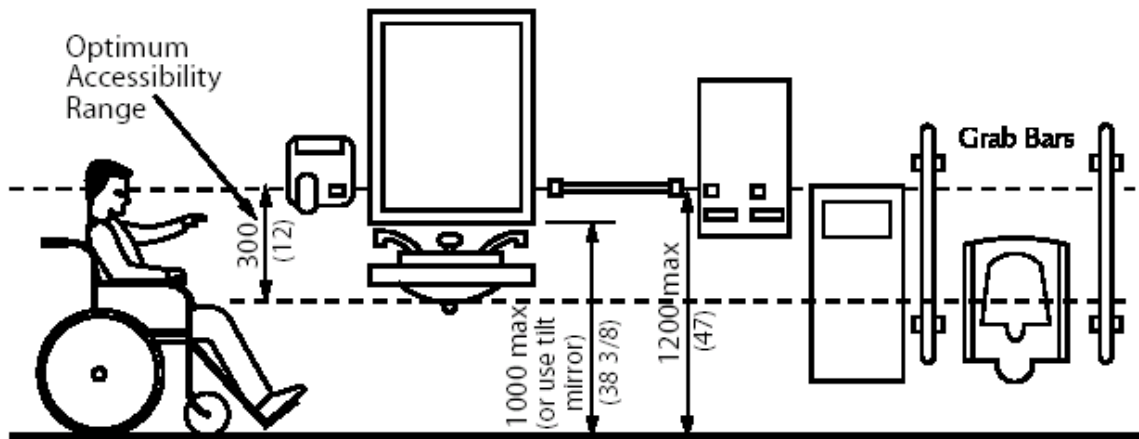


Figure 4.2.6.1
Washroom Accessories

4.2.7 INDIVIDUAL WASHROOMS

Rationale

The provision of a separate individual washroom is advantageous in a number of circumstances. For an individual using a wheelchair, the extra space provided with a separate washroom is preferred to an accessible stall. Should the disabled person require an attendant to assist them in the washroom then the complication of a woman entering a men's washroom or vice versa is avoided. This same scenarios would apply to a parent with a young child of a different gender. In the event of an accident or fall by a single individual in this form of washroom, an emergency call switch and a means of unlocking the door from the outside are important safety features.

Application

Accessible individual washrooms shall comply with this section.

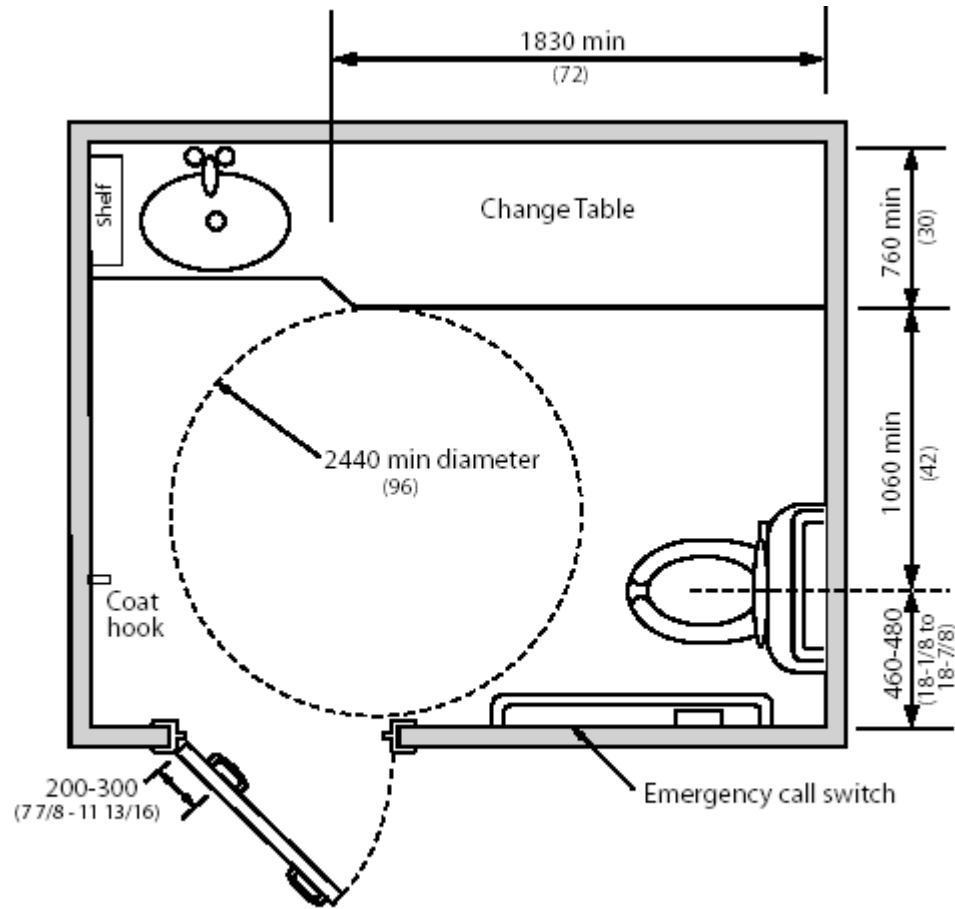


Figure 4.2.7.1
Individual Washroom

Design Requirements

Accessible individual washrooms shall be on an accessible route complying with 4.1.4.

Accessible individual washrooms shall be identified with signage complying with applicable provisions of 4.1.35.

Individual washrooms shall

- be designed to permit a wheelchair to turn in an open space that has a diameter of not less than 2134 mm (7 ft.)
- be equipped with a door that
 - complies with 4.1.6;
 - is capable of being locked from the inside with one hand and being released from the outside in case of emergency;
 - has graspable latch operating and locking mechanisms located not less than 900 mm (35 in.) and not more than 1000 mm (39 in.) above the floor; and
 - if it swings outward, has a door pull not less than 140 mm (5 ½ in.) long, located on the inside so that its midpoint is not less than 200 mm (7 7/8 in.)

and not more than 300 mm (11 ¾ in.) from the hinged side of the door and not less than 900 mm (35 in.) and not more than 1000 mm (39 in.) from the floor;

- be provided with a lavatory conforming to 4.2.4;
- be equipped with a toilet conforming to 4.2.3 and located
 - so that its centre line is not less than 460 mm (18 1/8 in.) and not more than 480 mm (18 7/8 in.) from an adjacent wall on one side; and
 - not less than 1060 (42 in.) to the wall on the other side;
- be equipped with grab bars conforming to 4.2.10;
- have fixture clearances conforming to 4.2.3 and 4.2.4;
- be designed to permit a wheelchair to back into the clear space beside the toilet fixture;
- be equipped with
 - a coat hook mounted not more than 1200 mm (47 in.) from the floor on a side wall and projecting not more than 50 mm (2 in.) from the wall;
 - a shelf located not more than 1000 mm (39 in.) above the floor in a location accessible to a person in a wheelchair. The shelf shall be colour-contrasting to the surrounding environment, with no sharp corners; and
 - a mirror and washroom accessories complying with 4.2.6.

Where accessible individual washrooms are provided in larger public buildings, such as recreation facilities, the washroom shall incorporate an emergency call system linked to a central location (e.g. office or switchboard).

Accessible individual washrooms shall incorporate a change table

- at least 760 mm (30 in.) wide by 1830 mm (72 in. long);
- located with the change surface no higher than 865 mm (34 in.);
- which incorporates an adjacent clear floor space not less than 760 mm (30 in.) by 1370 mm (54 in.);
- designed to support the weight of an adult;
- located on an accessible route in compliance with 4.1.4 and
- if of the fold-down type, have no operable portions higher than 1200 mm (47 in.).

4.2.8 BATHTUBS

Rationale

Bathtubs can present a slipping hazard. Slip-resistant surfaces are an important feature and will benefit any individual, including those with disabilities. Grab bars also provide stability. Operating systems are subject to limitations in hand strength or dexterity.

Application

Where bathtubs are provided, all bathtubs shall comply with this section.

Design Requirements

Accessible bathtubs shall be on an accessible route complying with 4.1.4.

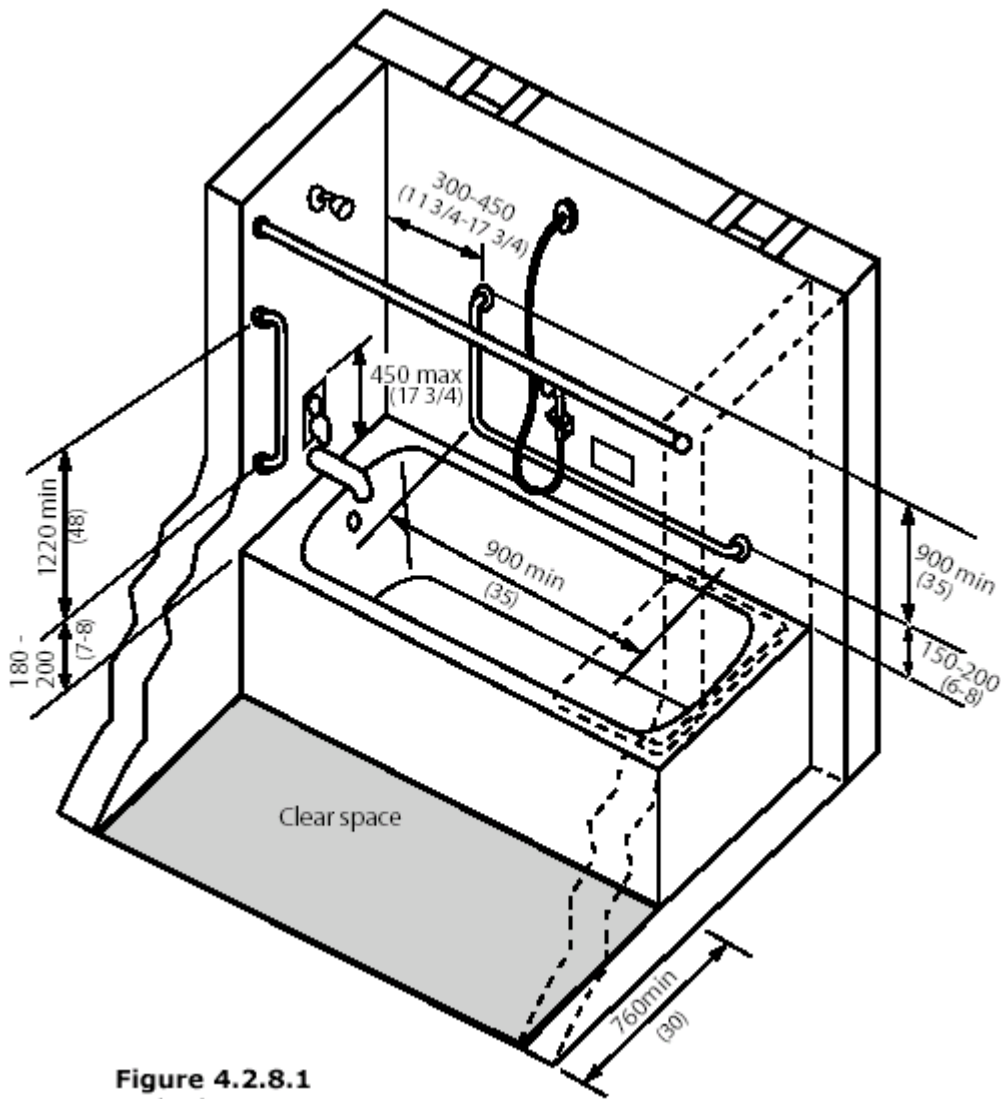


Figure 4.2.8.1
Bathtub

Accessible bathtubs shall have:

- a clear floor space at least 760 mm (30 in.) along the length of the bathtub (the lavatory can encroach a maximum of 300 mm (11 ¾ in.) into this space provided there is clear knee space and toe space under the lavatory);
- faucet handles of the lever type that are not spring-loaded or are automatically operable;
- faucet handles that are located so as to be usable by a person seated in a bathtub;
- faucets and other controls mounted not more than 450 mm (17 ¾ in.) above the bathtub rim;
- a shower head complying with 4.2.9;
- unless the bathtub is free standing, an “L”-shaped grab bar conforming to 4.2.10 mounted on the wall
 - with each leg of the “L” being at least 900 mm (35 in.) long;
 - with the legs of the “L” being separated by 90 degrees;

- with the horizontal leg of the “L” being located between 150 mm (5 7/8 in.) and 200 mm (7 7/8 in.) above and parallel to the rim of the bathtub; and
- with the vertical leg of the “L” being located between 300 mm (11 3/4 in.) and 450 mm (17 3/4 in.) from the control end of the bathtub;
- controls equipped with a pressure-equalizing or thermostatic-mixing valve, operable from the seated position and in compliance with 4.4.2;
- soap holder(s) which can be reached from the seated position, ideally fully recessed; and
- unless the bathtub is free-standing, a grab bar conforming to 4.2.10 which is at least 1220 mm (48 in.) long, mounted vertically at the foot end of the tub adjacent to the clear floor space, with the lower end 180-2000 mm (7-8 in.) above the bathtub rim.

Enclosures for bathtubs shall not

- obstruct controls;
- interfere with a person transferring from a wheelchair or
- have tracks mounted on the bathtub rim.

4.2.9 SHOWER STALLS

Rationale

Grab bars and non-slip materials are safety measures which will support any individual. Additional equipment such as a hand-held shower or bench may be an asset to someone with a disability, but also convenient for others. Equipment that contrasts in colour from the shower stall itself assists individuals with a visual impairment. Roll-in or curbless shower stalls eliminate the hazard of stepping over a threshold and are essential for persons with disabilities who use wheelchairs in the shower.

Application

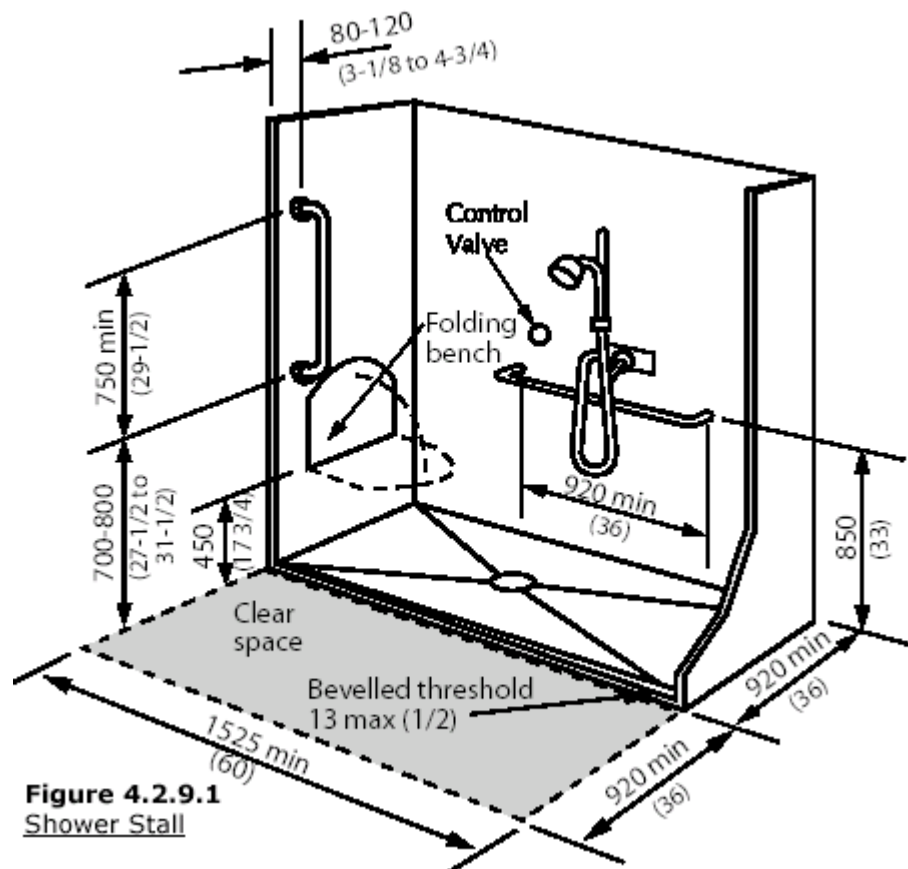
Where shower stalls are provided, all shower stalls shall comply with this section.

Design Requirements

Accessible shower stalls shall

- be on an accessible route complying with 4.1.4;
- be at least 1525 mm (60 in.) in width and 920 mm (36 in.) in depth;
- have a clear floor space at the entrance to the shower of at least 920 mm (36 in.) in depth and the same width as the shower, except that fixtures are permitted to project into that space, provided they do not restrict access to the shower;
- have a slip resistant floor surface;
- have no threshold or a bevelled threshold not exceeding 13 mm (1/2 in.) above the finished floor;
- be equipped with a wall-mounted folding seat that is not spring-loaded, or make provisions for a portable seat that is
 - 38 mm (1 1/2 in.) to 62 mm (2 1/2 in.) less than the shower compartment depth in width and 430 mm (16 7/8 in.) to 530 mm (20 7/8 in.) in depth;
 - mounted approximately 450 mm (17 3/4 in.) above the floor; and
 - designed to carry a minimum load of 1.33 kN (300 lbs.);
- be equipped with a horizontal grab bar that shall
 - be at least 920 mm (36 in.) in length;
 - be mounted horizontally approximately 850 mm (33 in.) above the floor;

- be located on the wall so at least 300 mm (11 ¾ in.) of its length is reachable from one side of the seat; and
- conform to 4.2.10;
- be equipped with a vertical grab bar that shall
 - be at least 750 mm (29 ½ in.) in length;
 - be mounted 80-120 mm (3 ⅓ to 4 ¾ in.) from the front edge, starting between 700 and 800 mm (27 ½ and 31 ½ in.) from the floor; and
 - conform to 4.1.27;
- be equipped with a pressure-equalizing or thermostatic-mixing valve, operable from the seated position and in compliance with 4.4.2;
- be equipped with a hand-held shower head with at least 1525 mm (60 in.) of flexible hose, located so that it can be reached from the seated position and equipped with a support so that it can be operated as a fixed shower head; and
- have soap holder(s) which can be reached from the seated position, ideally fully recessed.



Where the shower head is mounted on a vertical bar, the bar shall be installed so as not to obstruct the use of the grab bar.

Enclosures for shower stalls shall not obstruct controls or obstruct transfer from wheelchairs onto shower seats.

4.2.10 GRAB BARS

Rationale

Grab bars are an important feature to those who require assistance in standing up, sitting down or stability while standing. Transferring between toilet and wheelchair may be another scenario where grab bars are utilized.

Application

Grab bars shall comply with this section.

Design Requirements

Grab bars shall

- be installed to resist a load of at least 1.3 kN (300 lbs.) applied vertically or horizontally;
- be not less than 30 mm (1 3/16 in.) and not more than 40 mm (1 9/16 in.) in diameter;
- have a clearance of 30 mm (1 3/16 in.) to 40 mm (1 9/16 in.) from the wall;
- be free of any sharp or abrasive elements;
- be colour-contrasted with the surrounding environment; and
- have a slip resistant surface.

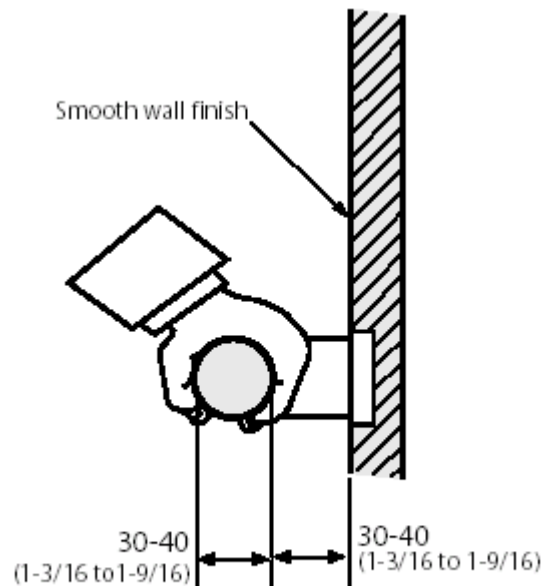


Figure 4.2.10.1
Grab Bar

4.3 OTHER AMENITIES

4.3.1 DRINKING FOUNTAINS

Rationale

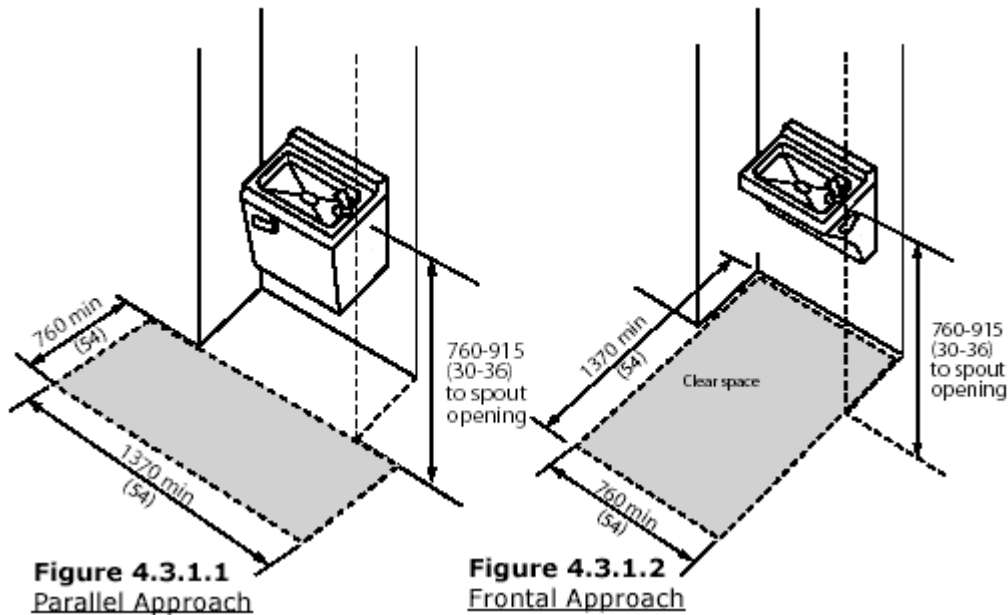
Planning for the design of drinking fountains should consider the limited height of children or persons using a wheelchair. In the same respect, there may be individuals who have difficulty bending who would require a higher fountain. The operating system should account for limited hand strength or dexterity difficulties. The placement of the fountain is also important. Fountains should be recessed, to avoid protruding into the path of travel of a person with a visual impairment.

Application

Where drinking fountains are provided on a floor, at least one shall be accessible and shall comply with this section.

Where only one drinking fountain is provided on a floor, it shall incorporate components that are accessible to individuals who use wheelchairs in accordance with this section, as well as components that are accessible to persons who have difficulty stooping or bending.

Where more than one drinking fountain or water cooler is provided on a floor, 50% shall comply with this section.



Design Requirements

Accessible drinking fountains shall

- be located on an accessible route complying with 4.1.4;
- have a spout located near the front of the unit between 760 mm (30 in.) and 915 mm (36 in.) above the floor or ground surface;
- have a spout that directs the water flow in a trajectory that is parallel or nearly parallel to the front of the unit;

- be equipped with controls that are easily operated from a wheelchair using one hand with a force of not more than 22 N (4.9 lb.) or be automatically operable.

Cantilevered drinking fountains shall

- have a clear floor space of at least 760 mm (30 in.) by 1370 mm (54 in.);
- have a knee space between the bottom of the apron and the floor or ground of at least 760 mm (30 in.) wide, 200 mm (7 7/8 in.) deep and a minimum of 724 mm (28 1/2 in.) high;
- have a toe space not less than 760 mm (30 in.) wide, 230 mm (9 in.) deep and 230 mm (9 in.) high; and
- be recessed or otherwise located out of the circulation route.

Free standing or built-in fountains not having a knee space shall have a clear floor space shall have a clear floor space at least 1370 mm (54 in.) wide by 760 mm (30 in.) deep in front of the unit.

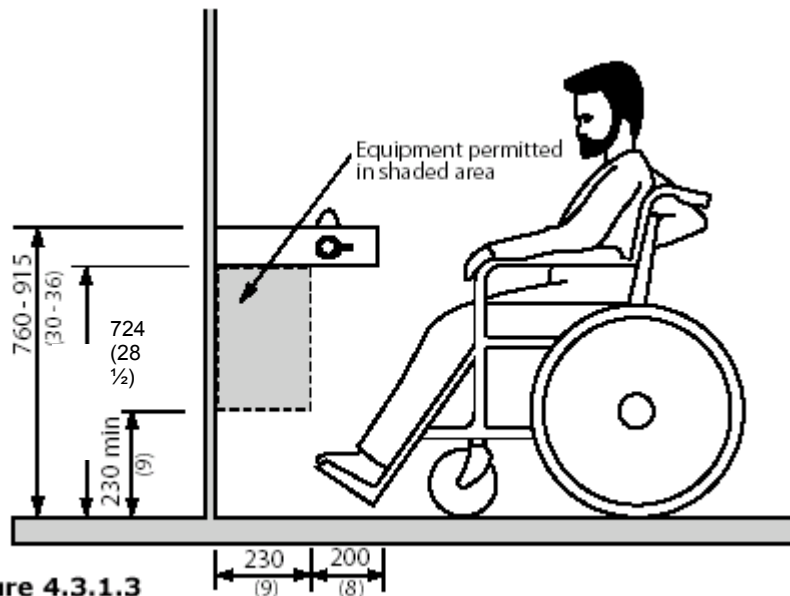


Figure 4.3.1.3
Clearances

4.3.2 VIEWING POSITIONS

Rationale

Designated viewing areas are required for individuals unable to use typical seating. Viewing areas need to provide adequate space to manoeuvre a mobility device as large as a scooter and should not be limited to one location. Designated companion seating should also be provided. Guards placed around a viewing area should not interfere with the line of sight of someone sitting in a wheelchair. A choice of locations and ticket price range should be available.

Application

In places of assembly with fixed seating, accessible wheelchair locations shall comply with this section and shall be provided in numbers as indicated by Table 4.3.2.

In addition, 1% but not less than one of all fixed seats shall be aisle seats with no armrests on the aisle side or shall have removable or folding armrests on the aisle side. A sign or marker shall identify each of the seats. Signage notifying patrons of the availability of such seats shall be posted at the ticket office.

Number of Fixed Seats in Seating Area	Minimum Number of Spaces Required for Wheelchairs
Up to 100	2
101 to 200	3
201 to 300	4
301 to 400	5
401 to 600	6
Over 600	Not less than 1% of the seating capacity

Table 4.3.2 – Wheelchair Viewing Locations

Die 4.3.2
Wheelchair Viewing Locations

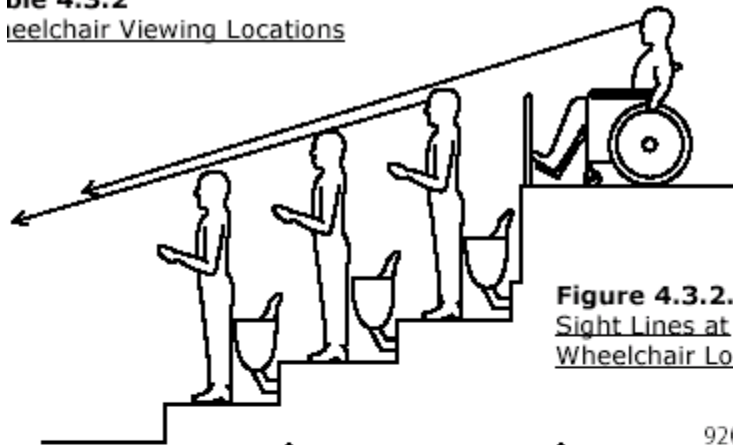


Figure 4.3.2.1
Sight Lines at Wheelchair Locations

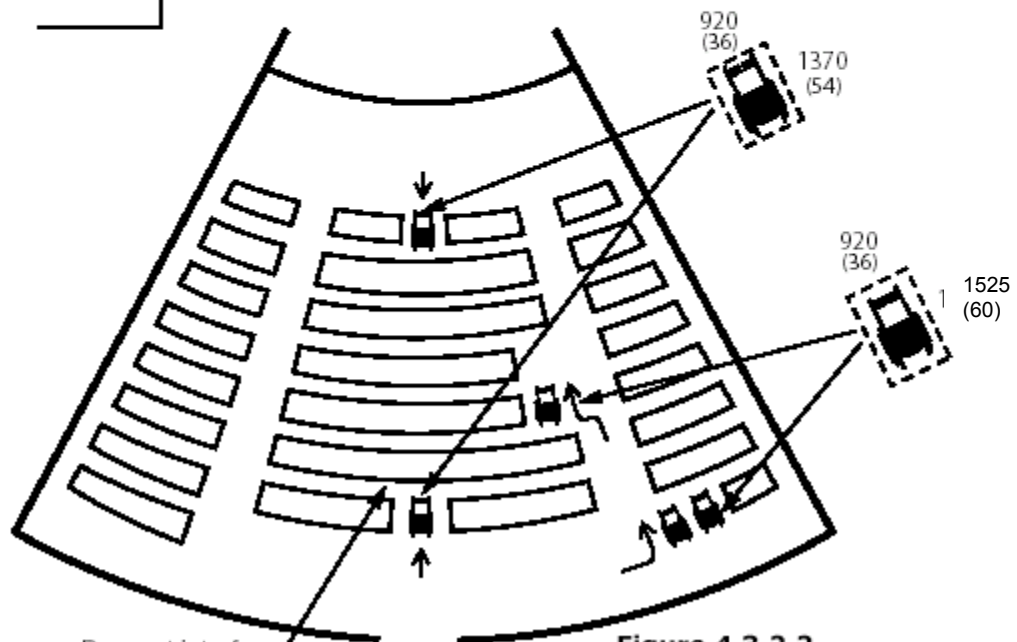


Figure 4.3.2.2
Distribution of Wheelchair Locations

Design Requirements

Accessible wheelchair locations shall adjoin an accessible route complying with 4.1.4 without infringing on egress from any row of seating or any aisle requirement.

Each accessible wheelchair location shall be

- an integral part of any seating plan. Seats may be distributed in a manner that provides people with physical disabilities with choices comparable to those for members of the general public;
- clear and level or level with removable seats;
- if the wheelchair enters from a side approach, not less than 920 mm (36 in.) wide and 1525 mm (60 in.) long;
- if the wheelchair enters from a front or rear approach, not less than 920 mm (36 in.) wide and 1370 (54 in.) long;
- arranged so that at least two designated wheelchair locations are side by side;
- arranged so that at least one companion fixed seat is provided next to each wheelchair seating area.

4.3.3 ELEVATED PLATFORMS

Rationale

Elevated platforms such as stage areas, speaker podiums, etc. should be accessible to all. A marked accessible route should be provided along with safety features to assist persons who are visually impaired.

Application

Elevated platforms provided for use by the general public, clients, customers or employees shall comply with this section.

Design Requirements

Elevated platforms shall

- be located on an accessible route that complies with 4.1.4;
- be capable of being illuminated to at least 100 lus (9.3 ft. candles) at floor level at the darkest point;
- be sized to safely accommodate wheelchairs and other mobility equipment in compliance with 4.1.1. and
- have open platform edges defined by detectable warning surface.

The detectable warning surface on elevated platforms shall

- comply with the requirements of 4.4.8;
- be consistent throughout the setting;
- be positioned parallel to the open platform edge, extending the full length of the platform; and
- be a minimum depth of 610 mm (24 in.) and a maximum of 915 mm (36 in.) flush from the open edge of the platform.

4.3.4 DRESSING ROOMS

Rationale

Similar to individual washrooms, a separate unisex dressing room is useful. This is valuable in a scenario where an attendant of the opposite sex or a parent is assisting

a child. Sufficient space should be allowed for two people and a wheelchair along with benches and accessories.

Application

Where dressing rooms are provided for use by the general public, patients, customers or employees, they shall comply with this section.

Design Requirements

Accessible dressing rooms shall be located on an accessible route complying with 4.1.4.

A clear floor space allowing a person using a wheelchair to make a 180 degree turn shall be provided in every accessible dressing room entered through a swinging or sliding door. No door shall swing into any part of the turning space. Turning space shall not be required in a private dressing room entered through a curtained opening at least 950 mm (37 ½ in.) side if clear floor space complying with section 4.1.1. renders the dressing room usable by a person in a wheelchair.

All doors to accessible dressing rooms shall be in compliance with 4.1.6.

Every accessible dressing room shall have a 610 mm (24 in.) x 1220 mm (48 in.) bench fixed to the wall along the longer dimension. The bench shall

- be mounted 450 to 500 mm (17 ¾ in. to 19 5/8 in.) above the finished floor;
- have clear floor space provided alongside the bench to allow a person using a wheelchair to make a parallel transfer onto the bench;
- be designed to carry a minimum load of 1.33 kN (300 lb.) ; and
- where installed in conjunction with showers, swimming pools, or other wet locations, be designed so that
 - water shall not accumulate upon the surface of the bench; and
 - the top surface is slip-resistant.

Where mirrors are provided in dressing rooms of the same use, then in an accessible dressing room, a full-length mirror measuring at least 460 mm (18 in.) wide by 1370 mm (54 in.) high shall be mounted in a position affording a view to a person on a bench, as well as to a person in a standing position.

4.3.5 OFFICES, WORK AREAS AND MEETING ROOMS

Rationale

Offices providing services or programs to the public should be accessible to all, regardless of mobility or functional profile. Furthermore, office and related support areas should be accessible to staff and visitors with varying levels of ability.

All persons, but particularly those with a hearing impairment, would benefit from having a quiet acoustic environment – background noise from mechanical equipment such as fans, should be minimal. Telephone equipment for individuals with hearing impairments may also be required.

Tables and workstations should address the knee space requirements of an individual in a wheelchair. Circulation areas also need to consider the spatial needs of mobility equipment as large as scooters.

Natural coloured task lighting, such as that provided through halogen bulbs, is a design feature that will facilitate use by all, especially persons with vision

impairments. In location where reflective glare might be problematic, such as large expanses of glass with reflective flooring, consideration should be given to providing blinds that can be louvered upwards.

Application

Wherever offices, work areas or meeting rooms are provided for use by the general public, employees, clients or customers, they shall comply with this section.

At least 50% of meeting rooms shall meet this requirement.

Design Requirements

Where work areas and meeting rooms are provided for use by the general public, clients or customers, they shall

- be located on an accessible route complying with 4.1.4;
- where equipped with a door, the door shall comply with 4.1.6;
- incorporate a clear floor space allowing a person in a wheelchair to make a 180 degree turn;
- incorporate an accessible route through the space that does not require the person in a wheelchair to travel backwards to enter/leave the space;
- incorporate an accessible route in compliance with 4.1.4 that connects the primary activity elements within the work area or meeting room;
- incorporate knee clearances below work surfaces that comply with 4.3.7;
- incorporate access in compliance with 4.3.9 to storage, shelving or display units for use by the general public, clients or customers;
- provide a clear floor space in front of the equipment that complies with 4.1.1 where equipment such as photocopiers are provided for use by the general public, clients or customers; and
- be equipped with an assistive listening system that complies with 4.4.6 where an assistive listening system is required.

4.3.6 WAITING AND QUEUING AREAS

Rationale

Queuing areas for information, tickets or services should permit persons in wheelchairs or others with disabilities to move through the line safely and conveniently.

Waiting and queuing areas need to provide space for mobility devices such as wheelchairs and scooters. Queuing lines that turn corners or double back on themselves will need to provide adequate space to manoeuvre mobility devices. Providing handrails in queuing lines may be useful support for individuals and guidance for those with a visual impairment. The provision of benches in waiting areas is important for individuals who may have difficulty with standing for extended periods.

Application

Waiting and queuing areas shall comply with this section.

Design Requirements

Barriers at queuing areas shall be laid out in parallel, logical lines spaced a minimum of 1060 (42 in.) apart.

Barriers at queuing areas provided to streamline people movement, shall be firmly mounted to the floor and should have rigid rails to provide support for waiting persons.

Where floor slots or pockets are included to receive temporary or occasional supports such as slots or pockets shall be level with the floor finish and have an integral cover to as not to cause a tripping hazard.

Permanent queuing areas shall incorporate clearly defined floor patterns/colours/textures in compliance with 4.4.15 as an aid to persons who are visually impaired.

There shall be pronounced colour contrast between ropes, bars or solid barriers used to define queuing areas and the surrounding environment.

4.3.7 TABLES, COUNTERS AND WORK SURFACES

Rationale

Tables, counters and work surfaces should accommodate the needs of a range of users. Consideration should be given to standing-use as well as seated use. For individuals using wheelchairs, tables need to be high enough to provide knee space with enough clear space to pull into. The furniture placement at tables and manoeuvring space at counters should provide sufficient turning space for a person using a wheelchair or scooter.

Application

If fixed or built-in tables, counters and work surfaces (including but not limited to dining tables and study carrels) are provided in accessible public or common use areas, at least 10% but not less than one, of the fixed or built-in tables, counters and work surfaces shall comply with this section.

Design Requirements

Accessible tables, counters and work surfaces shall be located on an accessible route complying with 4.1.4.

An accessible route complying with 4.1.4 shall lead to and around such fixed or built-in tables, counters and work surfaces.

Wheelchair seating spaces at accessible tables, counters and work surfaces shall incorporate a clear floor space of not less than 760 mm (30 in.) by 1370 mm (54 in.).

Where a forward approach is used to access a wheelchair seating space, a clear knee space of at least 760 mm (30 in.) wide, 480 mm (19 in.) deep and underside height of a minimum of 724 mm (28 ½ in.) high with the top of the counter a maximum of 813 mm (32 in.) high, shall be provided. It may overlap the clear floor space by a maximum of 480 mm (19 in.).

The top of accessible tables, counters and work surfaces shall be located between a minimum of 734 mm (28 ½ in.) to a maximum of 813 mm (32 in.) above the finished floor or ground.

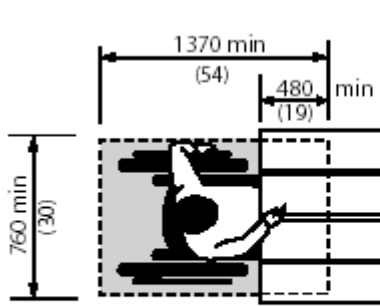
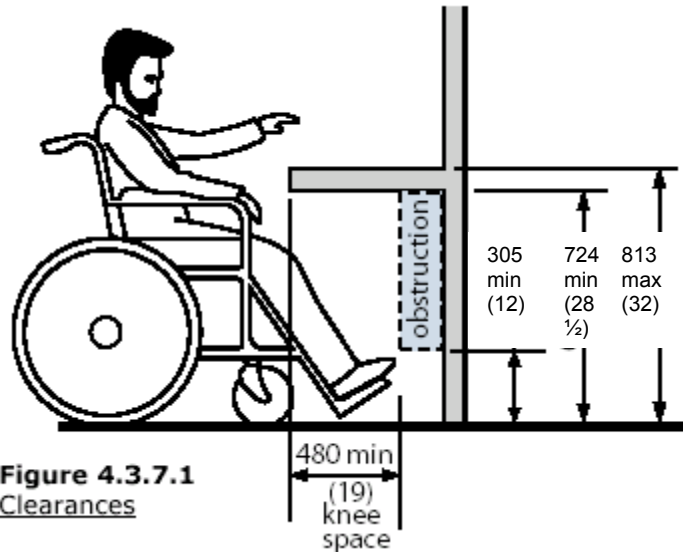


Figure 4.3.7.2
Frontal Approach

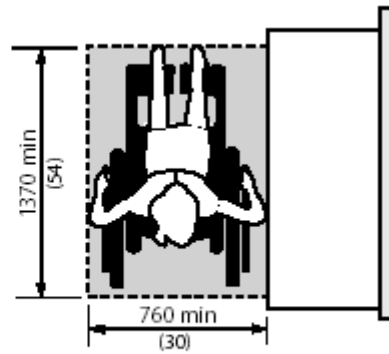


Figure 4.3.7.3
Parallel Approach

4.3.8 INFORMATION, RECEPTION AND SERVICE COUNTERS

Rationale

Information, reception and service counters should be low enough to serve children, persons of short stature and persons using wheelchairs. This includes writing surfaces. A variety of counter heights is recommended to provide a range of options for a variety of persons. The use of colour contrast, tactile difference or audio landmarks (e.g. receptionist voice or music source) can assist individuals with visual impairment to more precisely locate service counters or speaking ports.

Application

Counters for information or service shall have at least one section usable by persons in wheelchairs.

Design Requirements

Information, reception and service counters shall be located on an accessible route complying with 4.1.4.

Counters for information or service shall incorporate at least one accessible section that is located a minimum of 734 mm (28 1/2 in.) and a maximum of 813 mm (32 in.) above the finished floor or ground. This section shall be at least 915 mm (36 in.) wide.

Accessible sections of information, reception and service counters shall have on both sides of the counter, knee space below of a minimum of 734 mm (28 1/2 in.) high by 480 mm (19 in.) deep.

Wheelchair seating spaces at accessible sections of information, reception and service counters shall incorporate a clear floor space not less than 760 mm (30 in.) by 1370 mm (54 in.).

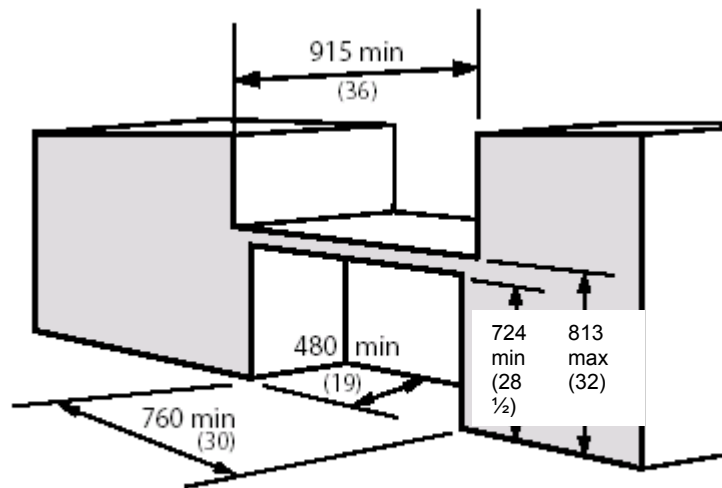


Figure 4.3.8.1
Service Counter

Where a forward approach is used to access a wheelchair seating space, a clear knee space of at least 760 mm (30 in.) wide, 480 mm (19 in.) deep and a minimum of 734 mm (28 1/2 in.) high shall be provided. It may overlap the clear floor space by a maximum of 480 mm (19 in.).

Where speaking ports are provided at information, reception or service counters, at least one such position should have a speaking port no higher than 1060 mm (42 in.) above the finished floor or ground.

4.3.9 STORAGE, SHELVING AND DISPLAY UNITS

Rationale

The heights of storage, shelving and display units should address the lower vantage points of children or persons using wheelchairs. The lower heights also serve the lower reach of these individuals. Having displays at two heights may also assist individuals with vision impairments, especially those with back problems.

Application

If fixed or built-in storage facilities such as cabinets, closets, shelves and drawers are provided in accessible spaces, at least one of each type provided shall contain storage space complying with this section.

Shelves or display units allowing self-service by customers in mercantile operations shall be located on an accessible route complying with 4.1.4. Requirements for accessible reach ranges do not apply.

Design Requirements

A clear floor space at least 760 mm (30 in.) by 1370 mm (54 in.) complying with 4.1.1 that allows either forward or parallel approach by a person using a wheelchair shall be provided at accessible storage facilities.

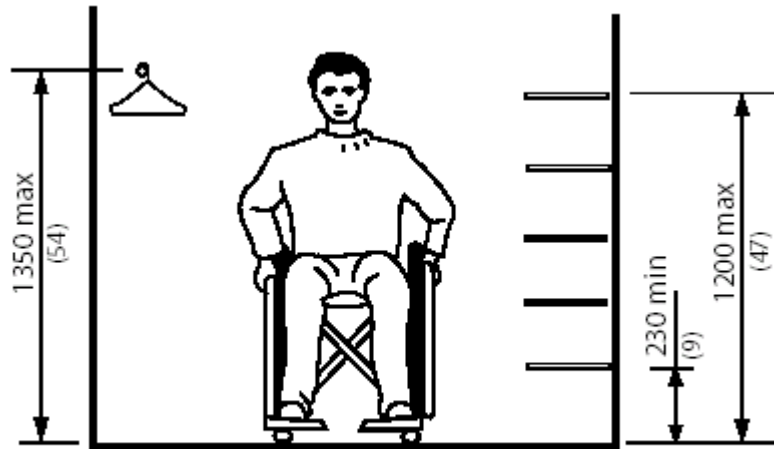


Figure 4.3.9.1
Reach Limits for Storage

Accessible storage spaces shall be within at least one of the reach ranges specified in 4.1.1. Clothes rods or shelves shall be a maximum of 1370 mm (54 in.) above the finished floor for a side approach. Where the distance from the wheelchair to the clothes rod or shelf is 255 – 535 mm (10 – 21 in.) (as in closets without accessible doors) the height of the rod or shelf shall be no more than 1200 mm (47 in.)

Hardware for accessible storage facilities shall comply with 4.4.2. Touch latches and U-shaped pulls are acceptable.

4.3.10 LOCKERS AND BAGGAGE STORAGE

Rationale

In schools, recreational facilities, transit facilities, etc. or wherever public or private storage lockers are provided, at least some of the storage units should be usable by persons in wheelchairs.

The provision of lockers at lower heights serves the reach restrictions of children or persons using wheelchairs. The operating mechanisms should also be at an appropriate height and operable by individuals with restrictions in hand dexterity.

Application

If lockers or baggage storage units are provided in accessible public or common use areas, at least 10% but not less than one, of the lockers or baggage storage units shall comply with this section.

Design Requirements

Accessible lockers and baggage storage units shall be located on an accessible route complying with 4.1.4.

Lockers and baggage storage units shall have their bottom shelf no lower than 400 mm (16 in.) and their top shelf no higher than 1200 mm (47 in.) above the floor or ground.

Locks for accessible lockers and baggage storage units shall be mounted no higher than 1060 mm (42 in.) from the floor or ground and shall comply with 4.4.2.

Numbers or names on lockers and baggage storage units should be in clearly legible lettering, raised or recessed and of a highly contrasting colour or tone (in compliance with the relevant parts of 4.4.7).

Baggage racks or carousels for suitcases, etc. shall have the platform surface no higher than 460 mm (18 in.) from the floor and shall incorporate a continuous colour-contrasting strip at the edge of the platform surface.

Aisle spaces in front of lockers, baggage compartments and carousels should be a minimum of 1370 mm (54 in.) deep to permit forward and lateral approach by wheelchair users.

4.3.11 BALCONIES, PORCHES, TERRACES AND PATIOS

Rationale

Where a number of balconies, porches, patios or terraces are provided, it is desirable to consider options for different levels of sun and wind protection, as an aid to seniors and persons with disabilities. Thresholds at balcony doors should be avoided.

Application

Balconies, porches, terraces and patios provided for use by the general public, clients, customers or employees shall comply with this section.

Design Requirements

Balconies, porches, terraces and patios shall

- be located on an accessible route complying with 4.1.4; and
- have a minimum depth of 2440 (96 in.).

Exterior balconies, porches, terraces and patios, where directly accessible from the interior spaces, shall incorporate a threshold in compliance with 4.1.2.

Balcony, porch, terrace and patio surfaces shall

- comply with 4.1.2;
- be sloped to ensure removal of water; and
- be sloped no more than 2%.

Railings and guards at balconies, porches, terraces and patios shall

- comply with the requirements of the *Ontario Building Code*; and
- be designed to allow viewing below the rail for person seated in wheelchairs; and
- incorporate pronounced colour contrast between the railings and guards and the surrounding environment.

Door openings out onto balconies shall be located to open against a side wall or rail.

4.3.12 PARKING

Rationale

The provision of parking spaces near the entrance to a facility is important to accommodate persons with a variety of disabilities. Conditions such as arthritis or heart conditions, using crutches or a wheelchair, all make it difficult to travel long distances. Minimizing travel distances is particularly important outdoors where weather conditions and ground surfaces can make travel both difficult and hazardous. The accessible route of travel connecting the parking to the entrance should be well marked and free of steps and curbs.

Persons who are mobility challenged may use cars or vans. Consequently, accessible parking spaces should accommodate both. A person using a wheelchair requires a wider parking stall to accommodate the positioning of the wheelchair beside the car or van.

Additionally, the van may incorporate a lift or ramp. These lifts or ramps are often deployed through the side door of the van, but may also be installed in the rear of the vehicle. The person with a disability will require space not only for the lift itself but additional manoeuvring space to access the lift platform in the lowered position.

Vans are typically modified to accommodate equipment and functional needs. The height of a van may be increased through modifying the roof, resulting in the need for additional overhead clearance. Alternatively, the floor of the van may be lowered, resulting in lower tolerances for speed bumps and pavement slope transitions.

Application

This standard is applicable to all new parking structures and surface parking lots. For existing structures and surface parking lots undergoing renovations/alterations, standards should be employed whenever feasible.

The number of parking spaces designated to accommodate disabled persons shall be in accordance with Table 4.3.12.

All designated spaces shall be located on the shortest possible circulation route with minimal traffic flow crossing to an accessible facility entrance (e.g. in lots serving a particular facility) or to an accessible pedestrian entrance of the parking facility (e.g. in lots not serving a particular facility).

In facilities with multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located closest to the accessible entrances.

<u>Number of Automobile Parking Spaces</u>	<u>Number of Designated Parking Spaces</u>
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1000	2% of total
1001 and over	20 plus 1 for each 100 over 1000

Table 4.3.12 – Designated Accessible Parking Spaces

Design Requirements

An accessible route shall be provided from each accessible parking area to an accessible entrance into the facility. Accessible aisles shall be indicated by yellow hash lines on the pavement.

Accessible parking spaces shall

- be located on an accessible route complying with 4.1.4 wherever possible;
- be at least 2440 mm (96 in.) wide;
- have an adjacent access aisle at least 2440 mm (96 in.) wide;
- have a firm, level surface with a maximum of 1.5% running slope for drainage;
- where surfaces are paved, have access aisles clearly indicated by markings (refer to Figures);
- have a maximum cross slope of 1%; and
- have a height clearance of at least 2750 mm (9 ft.) at the parking space and along the vehicle access and egress routes.

Accessible parking spaces shall be designated as being reserved for use by persons with disabilities.

Signage of parking spaces should incorporate the following components:

- an official designated disabled parking space sign developed by the Ministry of Transportation (1991), mounted vertically; and
- an international symbol of access on the pavement of the stall.

Vertical parking space designation signs shall

- be at least 300 mm (12 in.) wide x 450 mm (18 in.) high; and
- be installed at a height of 1500 mm (47 in.) to 2500 mm (98 in.) from the ground/floor surface to the centre line of the sign.

It is the policy of the City to centre parking space designation signs wherever possible.

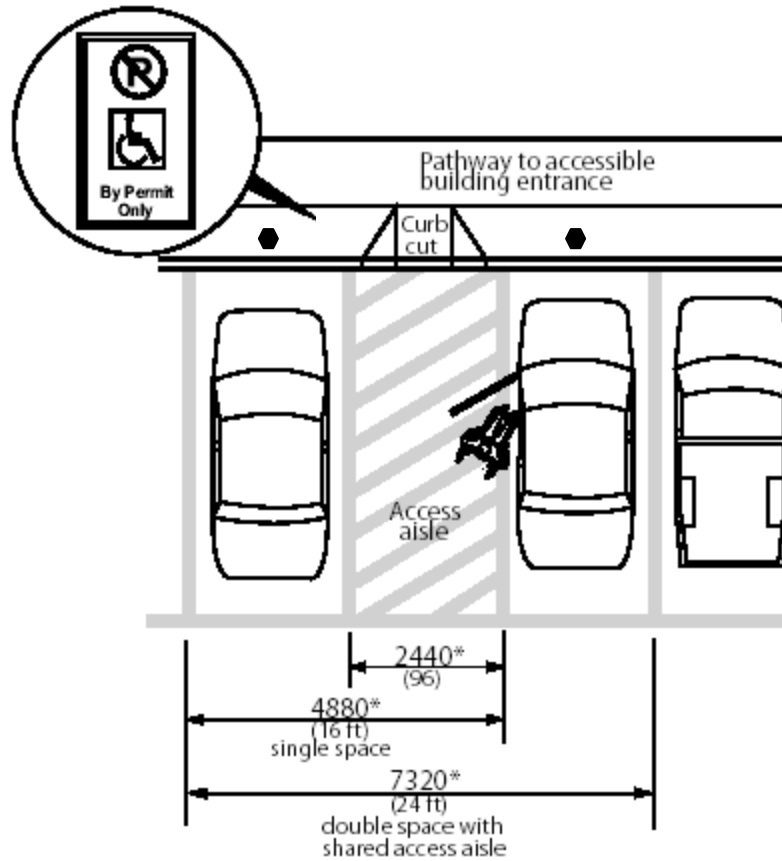


Figure 4.3.12.1
Side-by-side Parking Space

The symbol of access shall be painted on the pavement of each designated parking space and shall

- be at least 1000 mm (39 in) long;
- be located in the centre of the space; and
- be painted white on a background field of blue.

Where the location of designated parking spaces for persons with disabilities is not obvious or is distant from the approach view points, directional signs shall be placed along the route leading to the designated parking spaces. Such directional signage will incorporate the symbol of access and the appropriate directional arrows.

Where the location of the nearest accessible entrance is not obvious or is distance from the approach view points, directional signs shall be placed along the route leading to the nearest accessible entrance to the facility. Such directional signage will incorporate the symbol of access and the appropriate directional arrows.

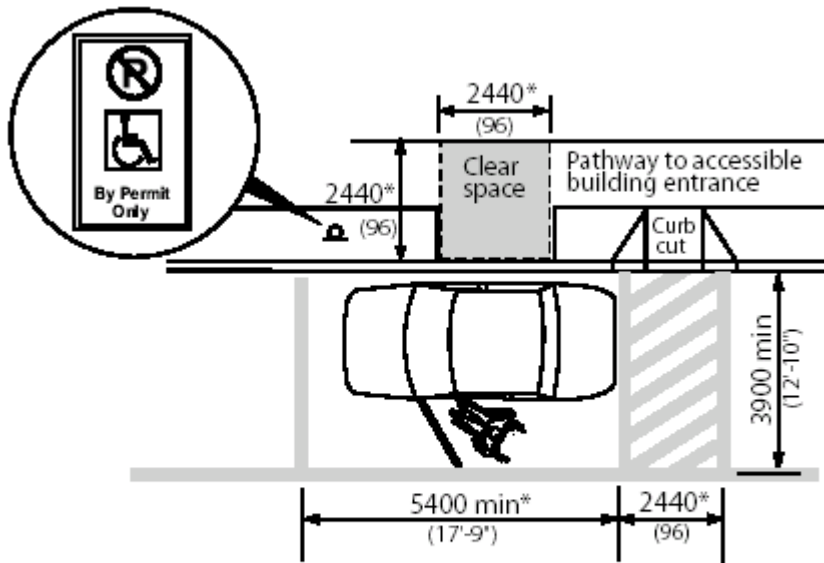


Figure 4.3.12.2
Parallel Parking Space

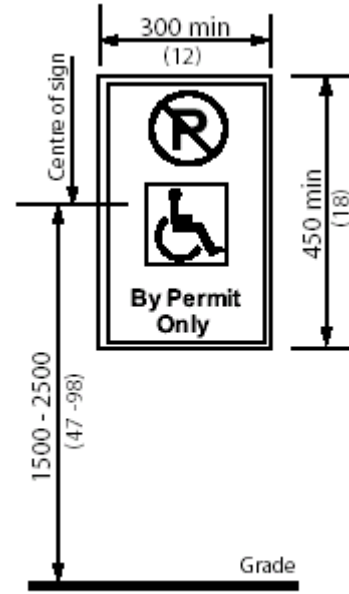


Figure 4.3.12.3
Parking Sign

4.3.13 PASSENGER-LOADING ZONES

Rationale

Passenger-loading zones are important features for individuals who may have difficulty in walking distances or those who use parallel transit systems. Spatial requirements for side-loading wheelchair lifts must be accommodated.

Application

Where passenger-loading zones are provided, at least one shall comply with this section.

Accessible passenger-loading zones shall be identified with signage complying with applicable provisions of 4.4.7.

Design Requirements

Passenger-loading zones shall

- be on an accessible route complying with 4.1.4;
- provide an access aisle at least 2440 mm (96 in.) wide and 7000 mm (23ft.) long, adjacent and parallel to the vehicle pull-up space;
- have a curb ramp complying with 4.1.10 where there are curbs between the access aisle and the vehicle pull-up space; and
- have a minimum vertical clearance of 3350 mm (11 ft.) at the loading zone and along the vehicle access route to such areas to and from the site entrances.

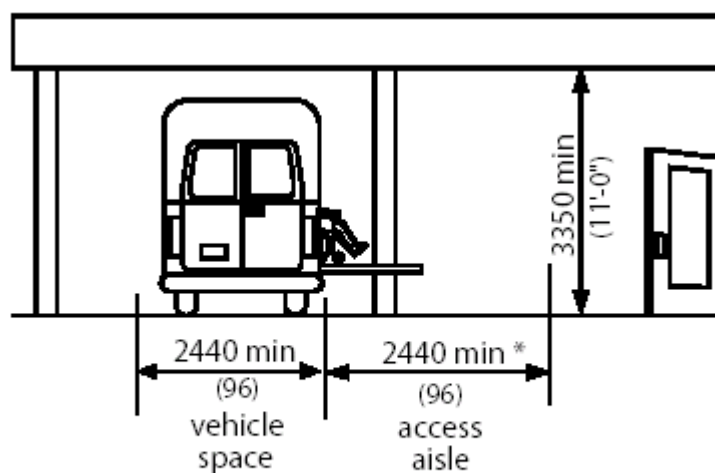


Figure 4.3.13.1
Clearances at
Passenger Loading Zone

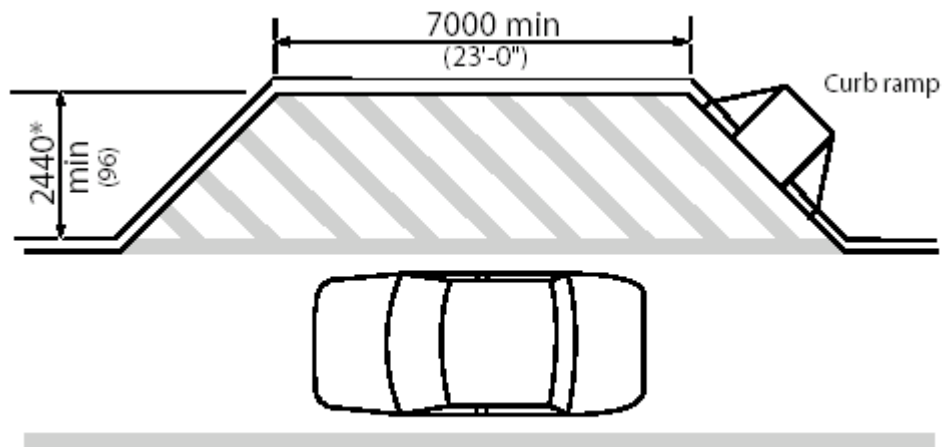


Figure 4.3.13.2
Passenger Loading Zone

4.3.14 LANDSCAPING MATERIALS AND PLANTINGS

Rationale

Landscape materials, trees, shrubs and plants should be selected and located with a wide variety of disabled users in mind. For instance, plants and shrubs with a variety of fragrances can provide an interesting orientation cue for persons who are visually impaired, whereas plants with thorns or heavy berries may constitute a walking hazard. Using contrasting flowers near walkways can be helpful as a guide for landmarks.

Plants that drop large seed pods can present slipping hazards as well as difficulties for pushing a wheelchair. Plantings that overhand pathways can impede both the disabled and non-disabled. Tree limbs overhanging pathways could be a particular hazard to an individual with a visual impairment.

The use of unit pavers as a walking/wheeling surface is not recommended unless they are laid in a location that is not subject to the effects of settlement and frost heave, such as over a structural slab or indoors.

Application

Landscaping materials and plantings contained within the site shall comply with this section.

Where plant beds are provided for gardening use of the general public, clients, customers or employees, 10% of the area of the plant beds, but not less than one, shall comply with this section. It is preferable to have all plant beds comply with this section.

Design Requirements

Accessible plant beds shall be

- raised 460 mm (18 in.) above the adjacent floor or ground surface; and
- located on an accessible route complying with 4.1.4.

The edges of planting beds located immediately adjacent to pedestrian walks, shall incorporate clearly defined, cane-detectable curbs at least 75 mm (3 in.) high.

Where variations in grading immediately adjacent to pedestrian walks are potentially hazardous (particularly to persons who are visually impaired) the hazardous edges of the walk shall incorporate clearly defined, cane-detectable curbs at least 100 mm (4 in.) high.

Shrubs with thorns and sharp edges shall be planted at least 915 mm (36 in.) away from accessible pathways and seating areas.

Plants that drop large seed pods shall not overhang or be positioned near accessible paths or walkways.

Permanent guy wires shall not be used in any area which is intended for use by the general public, clients, customers or employees. Temporary guy wires such as those used when planting new trees shall be clearly identified with strong colour contrast.

Overhanging branches of trees or shrubs over walkways or paths shall not reduce the available headroom at any part of the walkway or path to less than 2030 mm (80 in.).

4.3.15 BENCHES

Rationale

Benches provide resting places for individuals who may have difficulty with standing or walking for extended periods. Benches should be placed adjacent to pedestrian walkways to provide convenient rest places without becoming potential obstructions. Appropriate seat heights can facilitate sitting and rising for individuals such as seniors. Armrest may also provide assistance in sitting and rising. Persons who are blind will find it easier to locate benches if they are located adjacent to a landmark such as a large tree, a bend in a pathway or a sound source.

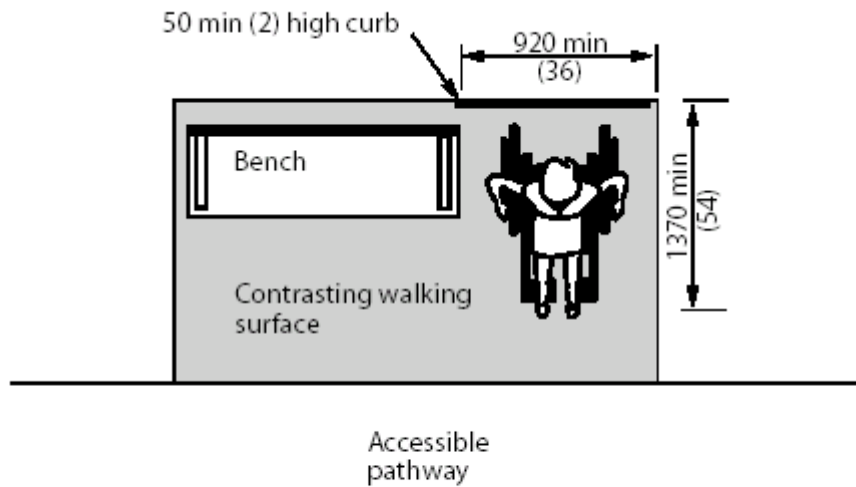


Figure 4.3.15.1
Rest Area

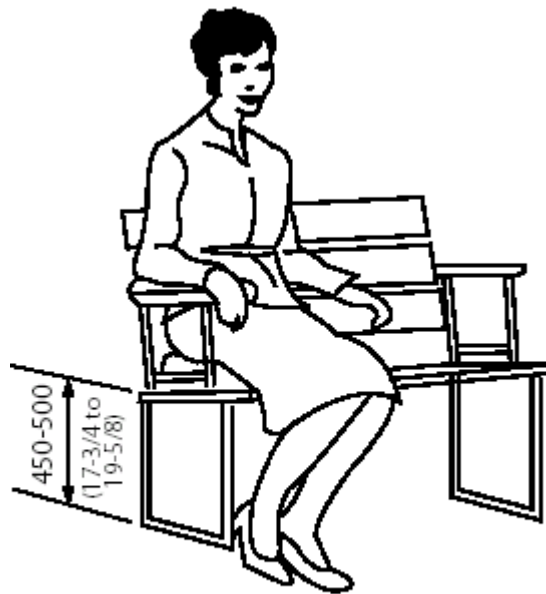


Figure 4.3.15.2
Bench Seating

Application

All benches, except those located in unpaved areas of parks, wilderness, beach or unpaved picnic areas, shall be accessible to persons using wheelchairs or other mobility devices.

At least 10% of benches in any geographical area shall be accessible to persons in wheelchairs.

Design Requirements

Benches shall

- be adjacent to an accessible route complying with 4.1.4;
- be stable;
- have seat height between 450 mm (17 ¾ in.) and 500 mm (19 5/8 in.) from the ground;
- have arm and back rests;
- be of contrasting colour to their background; and
- have an adjacent level, firm ground surface at least 920 mm (36 in.) x 1370 mm (54 in.).

4.3.16 PICNIC TABLES

Rationale

Picnic tables with an extension of the table surface make them accessible to persons using wheelchairs. A firm, level surface around the table with an accessible path leading to the table, is required for wheelchair accessibility. A change in texture from a pathway to the picnic table area is an important cue for a visually impaired individual.

Application

If picnic tables are provided in an accessible public or common use area, at least 10% but not less than one, for each cluster of picnic tables shall comply with this section. It is preferable to have all picnic tables comply with this section.

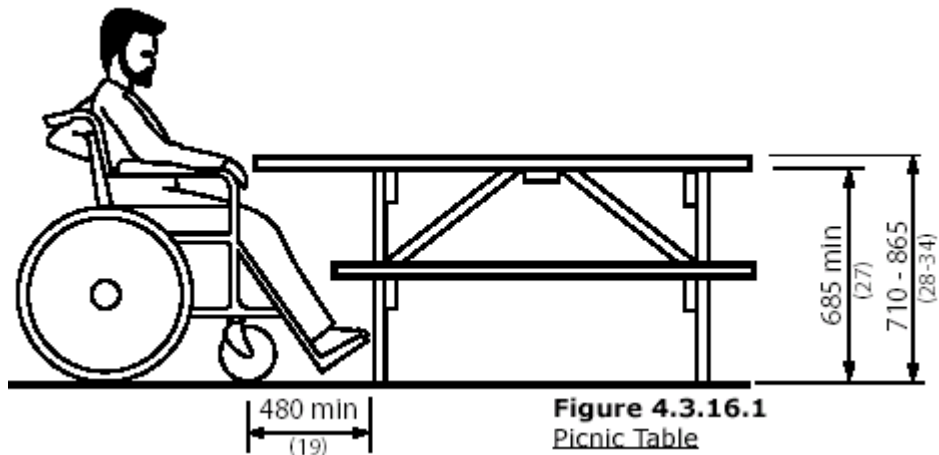


Figure 4.3.16.1
Picnic Table

Design Requirements

Picnic tables shall

- be adjacent to an accessible route complying with 4.1.4;
- have knee space under the table at least 760 mm (30 in.) wide by 480 mm (19 in.) deep and a minimum of 734 mm (28 ½ in.) high;
- be of contrasting colour to their background; and
- have a level, firm ground surface extending at least 2000 mm (78 ¾ in.) on all sides of the table.

The top of accessible picnic tables shall be a maximum of 813 mm (32 in.) above the finished floor or ground.

4.3.17 STREET FURNITURE

Rationale

Street furniture can provide a resting place for an individual with difficulty in walking distances. Such furniture should be located off pathways to minimize its potential as an obstruction to pedestrians.

Application

Street furniture including but not limited to waste receptacles, light standards, signs, planters, mail boxes and vending machines contained within the site shall comply with this section, including furniture that is located inside or outside of facilities.

All waste receptacles except those located in unpaved areas of parks, wilderness, beach or unpaved picnic areas or large industrial containers, shall be accessible to persons using wheelchairs or other mobility devices.

Design Requirements

Street furniture shall

- not reduce the required width of an access route as specified in 4.1.4;
- be cane-detectable; and
- be located to one side of the normal path of pedestrian travel as illustrated in 4.3.15.1.

Where lids or openings are provided on waste receptacles, they shall be mounted no higher than 1060 mm (42 in.) above the adjacent floor or ground surface.

Street furniture shall incorporate pronounced colour contrast to differentiate it from the surrounding environment.

4.4 **SYSTEMS AND CONTROLS**

4.4.1 EMERGENCY EXITS, FIRE EVACUATION AND AREAS OF RESCUE ASSISTANCE

Rationale

In order to be accessible to all individuals, emergency exits must include the same accessibility features as other door specified in 4.1.6. In the event of fire when elevators cannot be used, areas of rescue assistance are an asset to anyone who would have difficulty traversing sets of stairs.

Application

On the first storey all required exits required by the *Ontario Building Code* shall be accessible for all storeys above or below the first storey.

3.3.1.7 Protection on Floor Areas with a Barrier-free path of travel

- (1) Except as provided in sentences (2) and (3), every floor area above or below the first storey that has a barrier-free path of travel shall
 - a) be served by an elevator
 - i) conforming to sentences 3.2.6.9.(4) to (6),
 - ii) protected against fire in conformance with clauses 3.2.6.9 (3)(b) or (c), and
 - iii) in a building over 3 storeys in building height, protected against smoke movement so that the hoistway will not

contain more than 1% by volume of contaminated air from a fire floor during a period of 2 h after the start of a fire, assuming an outdoor temperature equal to the January design temperature on a 2.5% basis determined in conformance with subsection 2.5.1., or

- b) be divided into at least 2 zones by fire separations conforming to Sentences (4), (5) and (6) so that
 - i) persons with physical disabilities can be accommodated in each zone,
 - ii) the travel distance from any point in one zone to a doorway leading to another zone shall be not more than the value for travel distance permitted by sentence 3.4.2.5.(1) for the occupancy classification of the zone, and
 - iii) a barrier-free path of travel is provided to an exit.

See Appendix A

- (2) In residential occupancies, the requirements of sentence (1) are waived if a balcony conforming to sentence (7) is provided for each suite, except for suites on the storey containing the barrier-free entrance described in Article 3.8.1.2.
- (3) The requirements of sentence (1) and (2) are waived when the building is sprinklered.
- (4) Except as permitted by sentence (5), the fire separations referred to in clause (1)(b) shall have a fire-resistance rating not less than 1 h. (See A-3.3.3.5 (6) in Appendix A.)
- (5) The fire-resistance rating of the fire separations referred to in clause (1)(b) is permitted to be less than 1 h but not less than 45 min provided the fire-resistance rating required by subsection 3.2.2 is permitted to be less than 1 h for
 - a) the floor assembly above the floor area, or
 - b) the floor assembly below the floor area, if there is no floor assembly above.
- (6) A door acting as a closure in a fire separation referred to in clause (1)(b) shall be weatherstripped or otherwise designed and installed to retard the passage of smoke.
- (7) A balcony required by sentence (2) shall
 - a) reserved
 - b) be not less than 1500 mm (4 ft. 11 in.) deep from the outside face of the exterior wall to the inside edge of the balcony, and
 - c) provide not less than 0.5 m² (5.4 ft.²) for each occupant of the suite.

Design Requirements

Where emergency warning systems are provided, then they shall include both audible alarms and visible alarms. Visual alarms shall comply with 4.4.4.

Accessible means of egress shall comply with 4.1.4.

Accessible means of egress shall be identified with signage complying with applicable provisions of 4.4.7.

Zones for rescue assistance shall be

- located on an accessible route complying with 4.1.4;
- of a size that allows a minimum floor space of 850 mm (33 ½ in.) x 1370 mm (54 in.) per non-ambulatory occupant with no fewer than 2 such spaces;
- designated as an area of rescue assistance for persons with disabilities on the facility plans and in the facility;
- smoke protected in facilities of more than three storeys; and

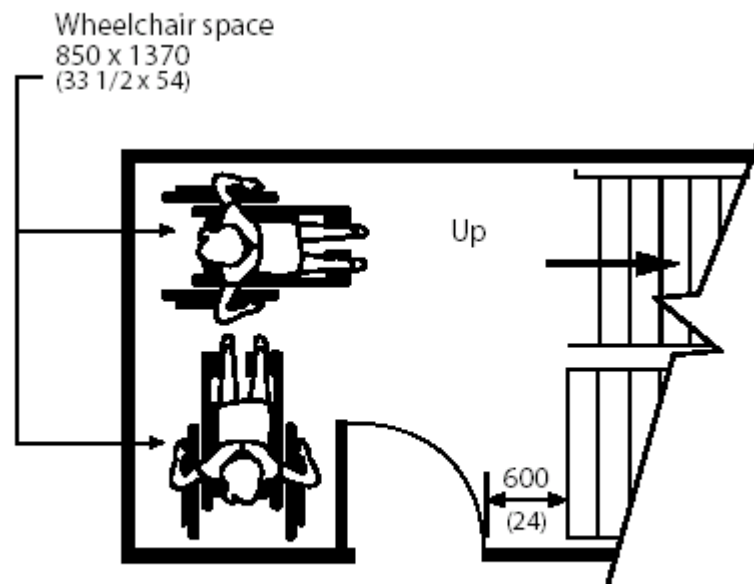


Figure 4.4.1.1
Area of Rescue Assistance

4.4.2 CONTROLS AND OPERATING MECHANISMS

Rationale

Operating mechanisms that require a high degree of dexterity or strength will be difficult for many people to use. They can also be obstacles for children, individuals with arthritis or even someone wearing gloves. Controls that require two hands to operate can also be difficult for some people, particularly those with reach or balance limitations or those who must use their hands to hold canes or crutches.

The placement of controls is integral to their accessibility. For the individual using a wheelchair, the height of the controls and the space to position the wheelchair in front of the controls are important. Controls placed high on a wall are also difficult for children or persons of short stature.

Individuals with a visual impairment may have difficulty with flush-mounted buttons, touch screens or controls without Braille. Controls that contrast in colour from their background including colour-contrasted raised letters, may be easier to find by an individual with a visual impairment.

Application

Controls and operating mechanisms generally used by staff or public (e.g. light switches and dispenser controls) shall comply with this section.

Design Requirements

A clear, level floor area at least 760 mm (30 in.) x 1370 mm (54 in.) should be provided at controls and operating mechanisms such as dispensers and receptacles.

The operable portions of controls and operating mechanisms shall be located between 400 mm (15 ¾ in.) and 1200 mm (47 in.) from the floor.

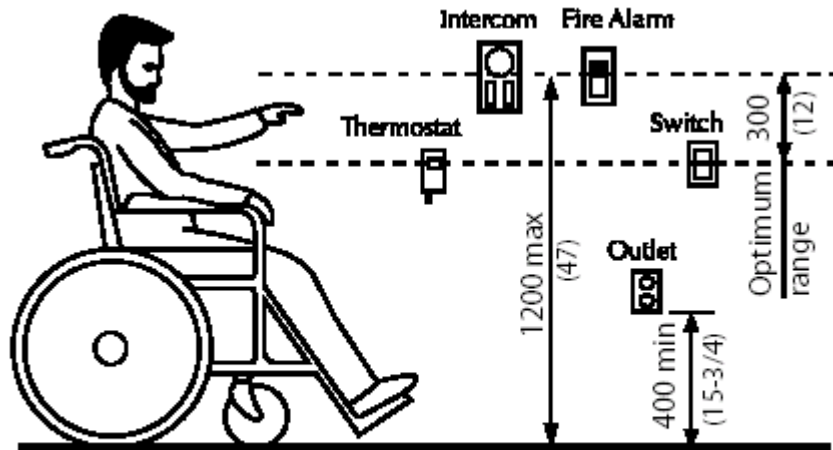


Figure 4.4.2.1
Reach Range for
Accessible Controls

4.4.3 VENDING AND TICKETING MACHINES

Space in front of vending machines allows for manoeuvrability of mobility aids. Seating areas and tables adjacent to vending machines offer convenience and should accommodate the spatial requirements of wheelchairs. The selection of machines should include a number of factors. Operating mechanisms should be within reach of children and individuals in wheelchairs. The mechanisms should be operable with one hand and minimal strength to accommodate a host of disabilities.

4.4.4 VISUAL ALARMS

Rationale

Visual alarms are essential for the deaf, deafened and hard of hearing individuals who may not hear audible alarms.

Application

Visual alarms shall comply with this section.

At a minimum visual alarm appliances shall be provided in facilities in each of the following areas: restrooms and any other general usage areas (e.g. meeting rooms) hallways, lobbies and any other areas for common use.

Design Requirements

Visual alarm signals shall meet the requirements of the most recent version of CANULC S526

4.4.5 PUBLIC TELEPHONES

Rationale

The placement of telephones should address the limited reach of children or persons seated in wheelchairs. Longer cords facilitate the use of the phone for someone unable to get close to the phone due to a mobility device. Adjustable volume controls are important for the hard of hearing individuals, as are the shelves that could support a TDD device. A fold-down seat is an asset to someone having difficulty standing for extended periods. Telephones projecting from a wall may present a hazard, particularly to persons with a visual impairment, if the sides are not configured to be cane-detectable.

Application

Where public pay phones are provided inside buildings, they shall comply with this section. Where there is a bank of telephones (ie two or more) in a group, at least one telephone shall be accessible.

All telephones required to be accessible shall be equipped with a volume control.

Signage complying with applicable provisions of 4.4.7 shall be provided.

At least one public text telephone (TTY) shall be provided.

Where an interior public pay telephone is provided in the secured area of a detention or correctional facility subject to 4.5.8, then at least one public text telephone shall also be provided in at least one secured area. Secured areas are those areas used only by detainees or inmates and security personnel.

Design Requirements

Accessible telephones shall be on an accessible route complying with 4.1.4.

Telephones, enclosures and related equipment shall comply with 4.1.3.

Telephones shall have push-button controls where service for such equipment is available. The characters on the push buttons shall contrast with their background which should be non-glare (matte finish) and the buttons themselves should contrast with their background.

The minimum handset cord length of accessible telephones shall be 1000 mm (39 in.).

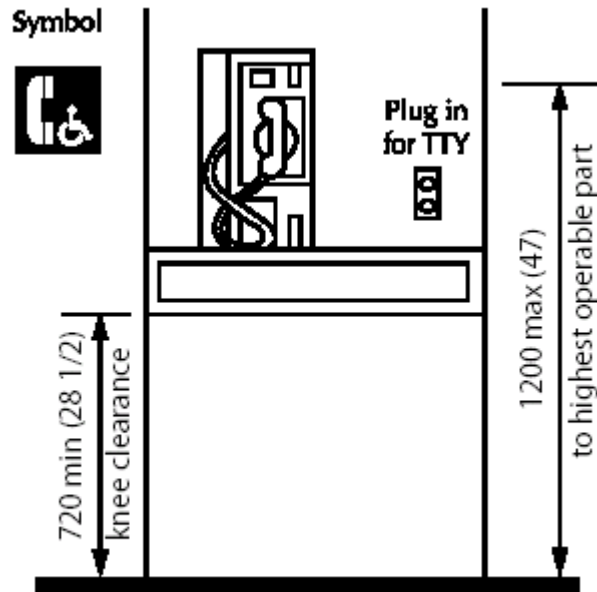


Figure 4.4.5.1
Telephone

Telephones required to be accessible shall

- have the maximum height of operable portions, including the coin slot, 1200 mm (47 in.) above the floor;
- have a clear floor space not less than 760 mm (30 in.) wide by 1370 mm (54 in.) deep in front of the telephone and this space may extend a maximum of 480 mm (18 7/8 in.) underneath the telephone if a clear height of 720 mm (23 3/8 in.) is provided for knee space; and
- have a flat telephone directory shelf at least 500 mm (19 3/4 in.) side and 350 mm (13 3/4 in.) deep.

Text telephones (TTYs) used with a pay telephone shall be permanently affixed within or adjacent to the telephone enclosure. If an acoustic coupler is used, the telephone cord shall be sufficiently long to allow connection of the text telephone (TTY) and the telephone receiver.

Where additional telephones are provided for use by persons who are deaf or hard of hearing, and these telephones are designed to accommodate a portable text telephone (TTY) the telephones shall

- comply with CSA Standard T515;
- have a shelf at least 250 mm (9 7/8 in.) wide by 350 mm (13 3/4 in.) deep with at least 250 mm (9 7/8 in.) clear space above the shelf to accommodate the use of a portable text telephone;
- be equipped with an electrical outlet within or adjacent to the telephone enclosure; and
- be equipped with a handset capable of being placed flush on the surface of the shelf.

Accessible telephones shall be identified by the appropriate symbol of accessibility for mobility impaired persons and/or persons who are deaf or hard of hearing.

When directional signs for telephones are installed, they shall include the appropriate access symbols.

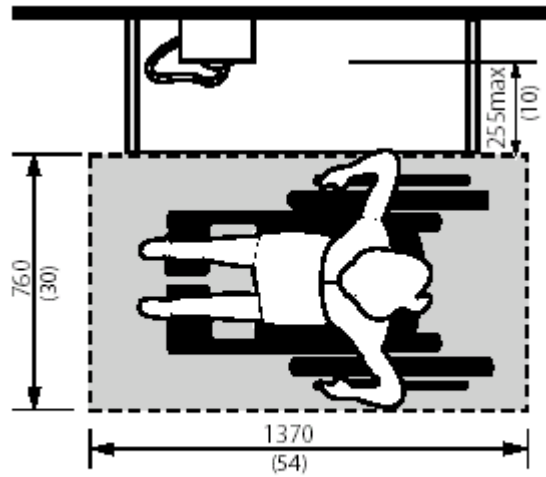


Figure 4.4.5.2
Parallel Approach

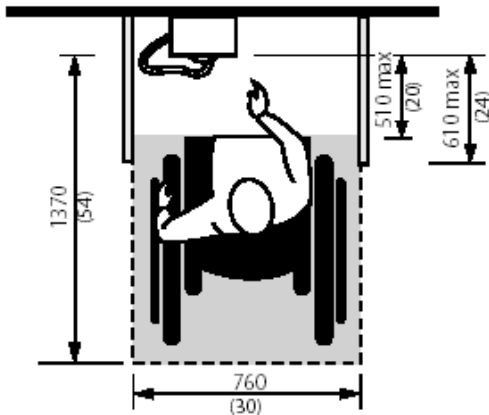


Figure 4.4.5.3
Frontal Approach

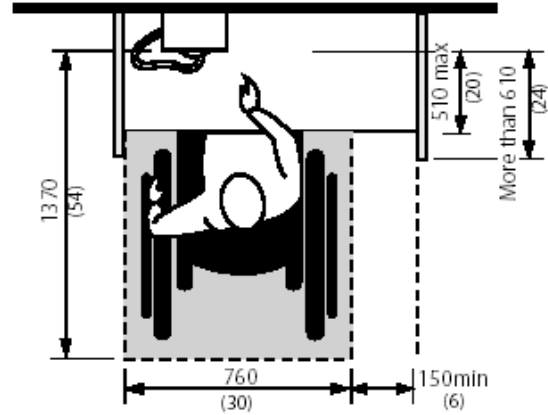


Figure 4.4.5.4
Frontal Approach

4.4.6 ASSISTIVE LISTENING SYSTEMS

Rationale

The provision of assistive listening devices is important for the range of individuals who may have difficulty hearing.

Adequate and controllable lighting is required for persons who lip-read or those who require increased task lighting due to visual impairment.

Application

Assistive listening systems shall comply with this section.

This section applies to assembly areas where audible communications are integral to the use of the space (e.g. concert theatres, meeting rooms, classrooms, auditoriums,

etc.) Such assembly areas where they accommodate at least 75 persons and where greater than 100 sq. m. (1080 sq. ft.) in floor area, shall have a permanently installed listening system complying with this section.

Design Requirements

Signage complying with the requirements of the *Ontario Building Code* shall be installed.

4.4.7 SIGNAGE

Rationale

Signage should be simple, uncluttered and incorporate plain language. The use of graphic symbols is helpful for individuals with literacy concerns. Sharp contrasts in colour make signage easier to read, particularly by those with a visual impairment. The intent of the symbol must be evident and culturally universal. To enhance readability, raised tactile lettering should incorporate edges that are slightly smoothed.

Application

Signage shall comply with this section.

Signs that designate permanent rooms or spaces shall be wall-mounted and include tactile characters and numbers.

Signs that provide direction to or information about functional spaces, shall comply with this section. Exception: facility directories, menus and all other signs that are temporary are not required to comply.

Elements and spaces of accessible facilities should be identified by the International Symbol of Accessibility.

Audible signs (infrared and digital) that are readable by visually impaired persons using a receiving device may be the sole orientation aid across open spaces. Consideration should be given to include wire drops for future installation.

Design Requirements

All signs should be in conformity with International Symbols of Accessibility.



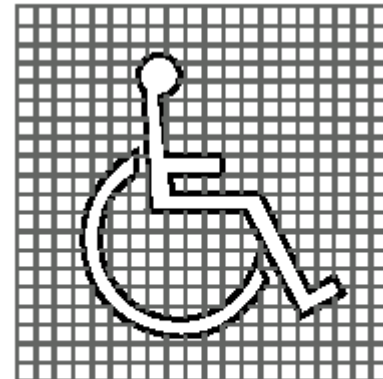
Figure 4.4.7.1
Colour Contrast on Signs



Figure 4.4.7.2
Pictograms
 (Note: Must incorporate equivalency verbal description)



Figure 4.4.7.3
Tactile Lettering



Grid for reference only
Figure 4.4.7.4
International Symbol of Access

4.4.8 DETECTABLE WARNING SURFACES

Rationale

Detectable warning surfaces provide important cues for persons with a visual impairment to navigate an environment. These surfaces alert a person with a visual impairment to potential hazards, such as cross walks or stairs. Suitable surfaces include a change in texture and high colour contrast but should not be a tripping hazard. Detectable warning surfaces should be used consistently throughout a facility.

Application

Detectable warnings at walkways, curb ramps, stairs and raised platforms shall comply with this section.

Design Requirements

All textured surfaces used as detectable warning surfaces shall be cane-detectable and clearly differentiated from the surrounding ground or floor surfaces. Refer also to 4.4.15.

Detectable warning surfaces shall contrast visually with adjoining surfaces, being either light on dark or dark on light.

Detectable warning surfaces at stairs shall be provided at the top of the stairs and at landings.

If a walk crosses or joins a vehicular way, excluding driveways, and the walking surfaces are not separated by curbs, railings or other elements between the pedestrian areas and vehicular areas, the boundary between the areas shall be defined by a continuous detectable warning surfaces.

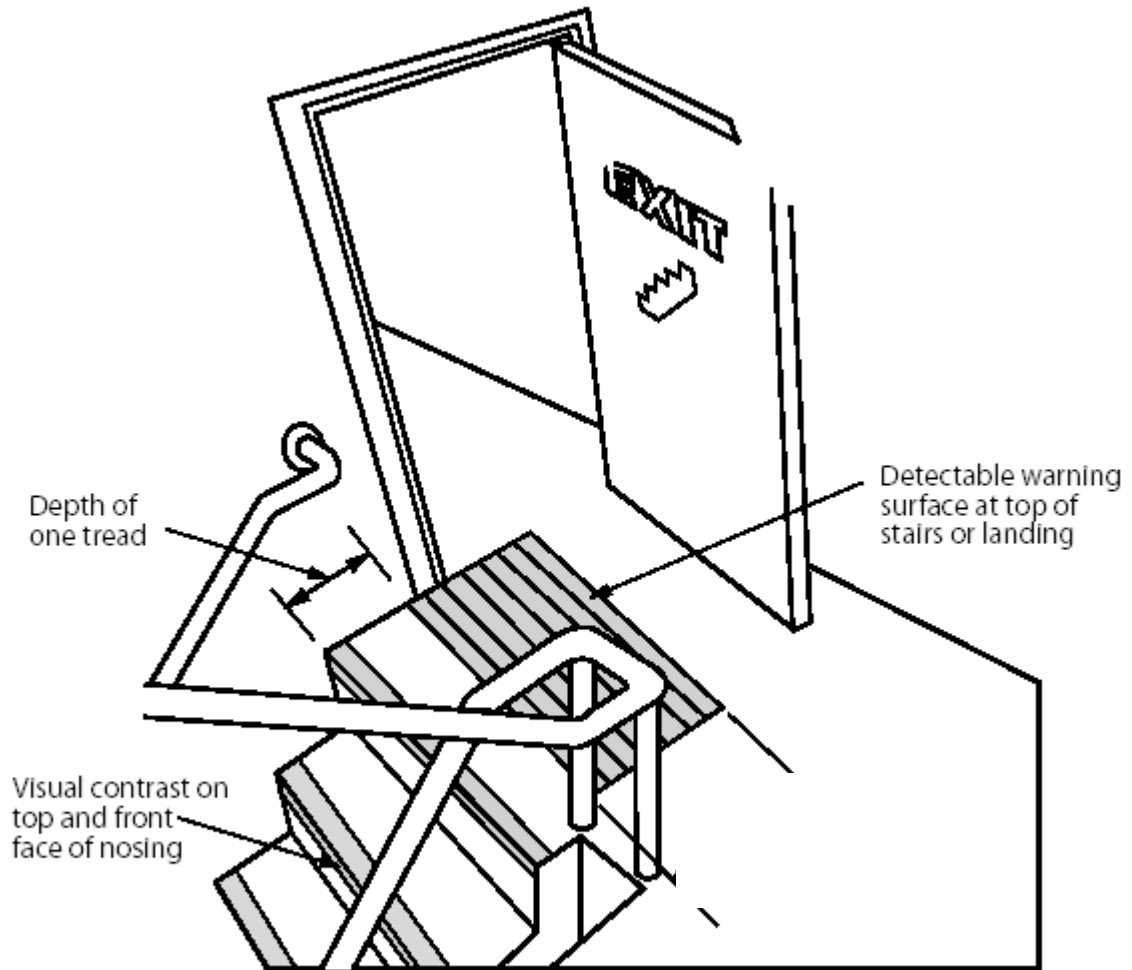


Figure 4.4.8.1
Detectable Warnings at Stairs

4.4.9 PUBLIC ADDRESS SYSTEMS

Rationale

Public address systems need to be easy to hear above the ambient background noise. There should be no distortion or feedback to assist persons with hearing impairments. Background noise should be minimized.

Visual provisions should be made for individuals who may not hear an audible public address system.

Application

Public address systems shall comply with this section.

Design Requirements

Public address speakers shall be mounted above head level and provide effective sound coverage in required areas such as corridors, assembly and meeting room areas, recreational and entertainment facilities, educational facilities and common use areas in institutional settings.

Public address systems shall be zoned so that information can be directed to key locations only, minimizing background noise in other areas.

Where public address systems are used to broadcast background music, the music shall not be broadcast continuously or throughout the entire facility.

All-point call systems shall only be utilized for fire and emergency information.

Paging systems for staff and other key persons shall be discreet and low volume and sound only at those devices or locations where such persons might expect to be located.

4.4.10 INFORMATION SYSTEMS

Rationale

Video display terminals may present difficulties for persons with visual impairments. Alternate technology or audio interfaces are required. Seated eye-level, reach and knee-space provisions should also be considered, to ensure that a person using a wheelchair can access an information terminal.

Application

Information systems such as display kiosks and video display terminals shall comply with this section.

Design Requirements

Where information is provided by video display terminals to the general public, clients or customers, the same information shall be provided in an alternate format such as audio, Braille and large-text print. The minimum font size for large text print shall be 16 point.

Information systems designed for direct access by the public such as touch-screen video display, keyboard or keypad access, shall be mounted at a height suitable for use by persons using wheelchairs or scooters. Refer to 4.4.2.

Essential print information shall be provided in large text on a highly contrasting background colour and should also be available in other formats such as audiotape and large-text print.

Push buttons or other controls for accessing public information systems should be clearly identifiable by colour and/or tone from the background colour and should include raised numbers, numerals or symbols for easy identification by persons who are visually impaired. Tactile identification shall comply with 4.4.15.

4.4.11 CARD ACCESS, SAFETY AND SECURITY SYSTEMS

Rationale

Seniors and persons with disabilities are conscious of their own vulnerability and therefore tend to seek more reassurance and inherent security than in the past.

Where card-access systems are selected as a means of entry to particular facilities or spaces, the systems and components selected should be suitable for use by persons with varying abilities, including persons with reduced manual dexterity, poor vision or difficulty with reaching. The use of heat sensing activation buttons should be avoided as they are indiscernible to a blind person.

Application

Card access, safety and security systems shall comply with this section.

Design Requirements

Adequate lighting shall be provided continuously along public walkways, steps and ramps that are actively used at all times of year and/or where staff and public parking is provided.

An accessible public telephone complying with 4.4.5 should be located at or close to primary accessible entrances for the use of persons requiring assistance.

Card entry systems shall

- be wall-mounted, no higher than 1185 mm (47 in.) above the floor or ground, adjacent to the door and free of the door swing; and
- use cards that incorporate a distinctive colour, texture or raised graphic/lettering on one side.

Encoded entry/exit systems such as keypads shall

- be wall-mounted, no higher than 1185 mm (47 in.) above the floor or ground, adjacent to the door and free of the door swing; and
- incorporate buttons that
 - are raised;
 - are mounted on a clearly differentiated coloured background; and
 - include raised numerals or letters in a constant array.

4.4.12 GLARE AND LIGHT SOURCES

Rationale

Direct or reflected glare of floors, walls or work surfaces is a major problem for persons with reduced vision. Therefore, every attempt should be made to select light

sources, materials and finishes which do not add to the problem, and to ensure that natural daylight is controllable, particularly on west and southwest exposures.

The strategic use of lighting is especially important for individuals with some form of visual impairment. Glare can make navigating an environment more difficult for an individual with a visual impairment and is in fact uncomfortable for any other individual. In addition, offering a variety of task lighting at work areas is beneficial to all.

Application

Systems used to control glare and excessive reflected light shall be considered.

4.4.13 LIGHTING

Rationale

Artificial lighting and natural light sources should provide comfortable, evenly distributed light at all working areas in all circulation routes and in all areas of potential hazard. Also, outdoor lighting should be provided at entrances, along frequently used access routes and at frequently used outdoor amenities.

Application

Exterior and interior lighting systems shall comply with this section.

Design Requirements

EXTERIOR LIGHTING

Exterior lighting shall be in compliance with I.E.S.N.A. Standards in all public thoroughfares and at all pedestrian routes, to provide safe access for persons with disabilities from sidewalks, bus stops and parking areas to nearby facilities and amenities.

At pedestrian entrances, lighting levels should be minimum of 100 lux (9.4 ft. candles) consistently over the entrance area, measured at the ground.

Over frequently used pedestrian routes, including walkways, paths, stairs and ramps, lighting levels shall be minimum 30 lux (3 ft. candles) consistently over the route, measured at the ground.

At frequently used accessible parking spaces, lighting levels shall be minimum 30 lux (3 ft. candles) consistently over the parking spaces, measured at the ground.

At frequently used steps and stairs, lighting shall be located at or beside the steps or stairs to clearly define the treads, risers and nosings.

All lighting shall

- be evenly distributed to minimize cast shadows; and
- provide a good colour spectrum.

Supplementary lighting shall be provided to highlight key signage and orientation landmarks.

Low-level lighting shall be high enough to clear normal show accumulation.

Lighting fixtures shall comply with the relevant parts of 4.1.3 and 4.3.17.

INTERIOR LIGHTING

Consideration should be given to light sources and fixtures that minimize direct glare or indirect glare on nearby reflective surfaces.

4.4.14 MATERIALS AND FINISHES

Rationale

The selection of flooring materials can be critical to the safe and easy movement of persons using all kinds of mobility aids as well as persons with low vision.

Floor finishes such as carpet, should be selected and installed so that persons using wheelchairs and walkers or other mobility aids can easily travel over them without using undue energy or tripping. Finishes should be slip-resistant and should be selected to minimize reflected light and glare.

Application

Exterior and interior materials and finishes shall comply with this section.

Design Requirements

EXTERIOR FINISH MATERIALS

Suitable paving surfaces for walkways include tar and chip, concrete, compacted gravel screening, interlocking brick and patio stones. Such materials used as walkways shall

- have joints that are no greater than 6 mm (¼ in.) wide with variations in level of no more than 3 mm (1/8 in.); and
- be laid to drain

Where possible, gratings and grills shall be located to one side of the pedestrian walkways so as not to impede the accessible route. Where this is not possible, the bars of the grating or grill shall be located perpendicular to the dominant path of travel with opening of no greater than 13 mm (½ in.).

Steps shall be finished with a non-slip material and incorporate highly contrasted nosings.

Ramp surfaces shall be firm and non-slip.

Handrails and guards shall be continuous, smooth and well maintained.

INTERIOR MATERIALS AND FINISHES

Carpet shall be of low-level loop construction, 10- or 12-gauge non-static fibre, directly glued to the subfloor.

Where hard, monolithic materials are selected, they shall be non-slip and non-glare, complying with 4.4.12.

Where floor tiles, bricks or pavers are used, joints should be no wider than 6 mm (¼ in.) and should be flush.

4.4.15 TEXTURE AND COLOUR

Rationale

Many persons with visual impairments are highly dependent on visual and tactile cues which can be provided through the careful use of colour and texture.

Caution is recommended in the selection of heavy or distinct patterns on walls or floors since these can add visual confusion to settings for persons with low vision. Simple, repetitive, non-directional patterns than feature monochromatic or low-colour contrast are preferred. Changes in material or texture should not necessitate a threshold.

Application

Textural and colour systems shall be used to enhance accessibility and shall comply with this section.

Design Requirements

Signs shall incorporate pronounced glare-free colour contrast. For signs the most visible colours are white or yellow on a black, charcoal other dark background such as brown, dark blue, dark green or purple. Black lettering on white is also acceptable, although less readable than the reverse. Unacceptable background colours are light grey and pastel colours. Red lettering on a black background is also unacceptable.

Colour contrasts shall be used as a safety measure to define edges or boundaries of objects (e.g. stair nosings, doors, handrails, etc.). Colour or tone shall be used to visually define the boundaries of a room (ie where the wall meets the floor). Baseboards in monochromatic environments shall be highly contrasting with the wall and floor colours to provide boundary definition.

Colour shall be used consistently to visually identify distinctive objects (e.g. exit doors).

Bright colours and/or highly contrasting tone shall be used to assist with way finding (e.g. if used as part of a signage band located on walls at eye level, this band is easier to follow than monolithic wall colouring and can be the visual cue for other essential signs.)

End walls or return walls in long corridors shall be visually defined using highly contrasting colours or tone to enhance a change of direction or the end of the space.

Detectable warning surfaces shall be used to define potential hazards. Refer to 4.4.8.

All textured surfaces used as detectable warning devices shall be cane-detectable and clearly differentiated from the surrounding paving surfaces.

Suitable exterior textures include saw-cut concrete with regular grooves, positioned no more than 50 mm (2 in.) apart; grooves should be at right angles to the path of travel.

Suitable interior textures include raised domes, dots or squares, deeply grooved concrete, terrazzo or other stone-like materials with closely centred grooves at right angles to the path to travel or applied carborundum or other non-slip strips.

Clearly defined boundaries of materials like carpeting or floor tiles define the junction between walls and floors, doorway recesses and corridor intersections.

Throughout any one site, the same texture shall be used to identify the same type of hazard.

4.4.16 ACOUSTICS

Rationale

The acoustic environment of public buildings and spaces should accommodate the unique needs of persons who are hearing impaired and who need to differentiate essential sounds from general background noise.

Application

The acoustical environment of facilities used by the general public, clients, customers and employees shall comply with this section.

Design Requirements

Floor finishes, wall surfaces and ceiling should be selected so that occasional noise is not unduly amplified.

4.5 FACILITY-SPECIFIC REQUIREMENTS

4.5.1 ARENAS, HALLS AND OTHER INDOOR RECREATIONAL FACILITIES

Rationale

Opportunities for recreation, leisure and active sport participation should be available to all members of the community. Access should be provided to halls, arenas and other sports facilities including access to the site, all activity spaces, gymnasias, fitness facilities, lockers, change rooms and showers. Persons who are disabled may be active participants as well as spectators, volunteers and members of staff.

Application

In addition to the design requirements specified in 4.1 to 4.4, arenas, halls and other indoor recreation facilities shall comply with this section.

Where dressing facilities are provided for use by the general public, clients, customers, performers or staff, at least 50% but not less than one, for each type of use in each cluster of dressing facilities shall be accessible and in compliance with 4.3.4. It is preferable to have all dressing facilities accessible.

Design Requirements

Arenas, halls and other indoor recreation facilities shall

- provide an accessible route in compliance with 4.1.4 to the arena/facility floor and/or ice surface, including access panels or gates provided at least 950 mm (37 ½ in.) clear width;
- where coat hooks are provided, have at least 10% but never less than one, within the reach ranges specified in 4.1.1.

4.5.2 OUTDOOR RECREATIONAL FACILITIES

Rationale

Opportunities for recreation, leisure and active sport participation should be available to all members of the community. Access should be provided to playing fields and other sports facilities including access to the site, all activity areas, outdoor trails,

docks, swimming areas, play spaces, lockers, change rooms and showers. Persons who are disabled may be active participants as well as spectators, volunteers and members of staff.

Application

In addition to the design requirements specified in 4.1 to 4.4, the outdoor recreation facilities listed below shall comply with this section.

Where dressing facilities are provided for use by the general public, clients, customers, performers or staff, at least 50% but not less than one, for each type of use in each cluster of dressing facilities shall be accessible and in compliance with 4.3.4. It is preferable to have all dressing facilities accessible.

Design Requirements

GENERAL

Parks accessibility shall encompass the development of routes, auxiliary services, planting and an overall environment which is accessible and provides a fulfilling recreational experience.

BOARDWALKS

Where boardwalks are provided, they shall

- have a minimum width of 2440 mm (96 in.);
- incorporate surfaces constructed of firm, non-slip materials. (Where wooden planks are used, they shall be laid perpendicular to the path of travel and have joints no greater than 6 mm (¼ in.));
- incorporate a continuous up-stand edge where the grade drop-off on any side of the boardwalk is greater than 200 mm (8 in.). The up-stand edge shall be at least 100 mm (4 in.) high and of a contrasting colour to the surrounding terrain;
- handrails, guards or other suitable barriers where the grade drop-off is greater than 450 mm (18 in.);
- access points to boardwalks that allow easy wheelchair access; and
- benches, garbage cans, drinking fountains, etc. where provided, shall be located adjacent to the boardwalk on firm, level surfaces at the same elevation as the boardwalk. Refer also to 4.3.17.

DOCKS

Where docks for fishing, boating or swimming are provided, they shall

- be located on an accessible route in compliance with 4.1.4;
- where changes in elevation are necessary, incorporate ramps or curb ramps in compliance with 4.1.8 and 4.1.9. Ramps with a slope no greater than 1:12 are acceptable;
- incorporate a continuous up-stand edge at least 100 mm (4 in.) high and of a contrasting colour where dock surfaces are greater than 200 mm (8 in.) above the surface of the water;
- incorporate a guard rail where dock surfaces greater than 450 mm (18 in.) above the surface of the water; and
- where steps are provided to access the water for swimming, incorporate colour-contrasting handrails at the steps. Such handrails shall extend to a minimum of 600 mm (24 in.) above the dock surface and return down to the dock.

OUTDOOR POOLS

Outdoor swimming pools shall comply with 4.5.3.

TRAILS AND FOOT BRIDGES

Where significant changes in grade occur, trail routes shall ideally be sloped at no greater than 1:20 or have adjacent steps and ramps.

Where steps, footbridges or ramps are used, the surfacing shall be of non-slip materials and include suitable colour contrasting handrails and/or guards.

The slope on bridges shall not exceed 1:20.

PATHWAYS

Accessible routes and walkways shall conform with 4.1.4.

Garbage cans, light standards, benches and other potential obstructions shall be located adjacent to pathways. Refer also to 4.3.17.

A different ground colour and/or texture shall be used to indicate the following:

- risk areas such as intersections, ramps or steps; and
- functional changes such as seating areas, viewpoints or outlooks.

Refer also to 4.4.15.

PLANTING AND TREES

Planting and trees along accessible pathways shall comply with 4.3.14.

REST AREA

Rest areas shall

- be provided on trails, pathways and walkways;
- be positioned adjacent to the trail, pathway or walkway;
- have accessible ground surfaces in compliance with 4.1.2;
- use a contrasting ground finish material to identify functional change; and
- incorporate at least one bench in compliance with 4.3.15

PARKS, PARKETTES AND PLAYGROUNDS – GENERAL

Entrance gates, paths and walkways throughout the park shall be accessible to persons using wheelchairs or scooters.

Picnic and play areas shall be provided in both sunny and shaded areas.

PLAYGROUNDS

Children's play areas and playground equipment, sandboxes or other amenities shall generally be designed to be accessible to and useable by children with varying disabilities. Colour contrast is important.

Playground surfaces shall be firm, level, non-abrasive and drain rapidly. Surfaces below playground equipment, including swings, slides and climbing structures shall be level, free-draining and provide a safe, resilient landing surface.

PICNIC TABLES

Accessible picnic tables shall comply with 4.3.16.

Where public parking is provided to serve picnic facilities, accessible picnic areas shall be within 30 metres (100 ft.) of the accessible parking spaces.

DRINKING FOUNTAINS

Accessible drinking fountains shall comply with 4.3.1.

PUBLIC TELEPHONES

Accessible public telephones shall comply with 4.4.5.

ILLUMINATION (WHERE PROVIDED)

Illumination levels shall

- be a minimum of 10 lux (1 ft. candles);
- be maintained at 5 lux (0.5 ft. candles) in areas of heavy trees and shrubbery; and
- be maintained at 5 lux (0.5 ft. candles) in all other areas of park at ground level.

Light sources used shall be indirect, non-glare, non-flickering type and provide even levels of light distribution. Refer also to 4.4.13.

WASHROOMS

Where washrooms are provided, they shall conform with 4.2.1.

WATERFRONT AREAS

Where paths and/or look out points are provided, they shall be accessible to all individuals.

Seating shall be provided along paths and at look out points in compliance with 4.3.15.

Where parking is provided it shall be located as close as possible to waterfront areas. An accessible route shall be provided from the parking area to paths and/or look out points (where provided).

NATURAL AREAS

Accessible pathways, trails and footbridges shall be provided where environmental considerations will permit.

Paths and trails shall incorporate rest areas with appropriate seating.

Where special lookout locations or wildlife viewing areas are provided, they shall be identified with clear signage.

Trails shall feature a tactile map at the start of the trail and periodically along its length.

Information and interpretative signage shall incorporate Braille.

GRANDSTAND AND OTHER VIEWING AREAS

Where visitor, spectator and/or participant seating is provided, accessible seating options in compliance with 4.3.2 shall be provided.

PLAYING FIELDS

Controlled access points shall be designed to accommodate persons using wheelchairs (e.g. where turnstiles are used, an adjacent accessible gate shall be provided.)

Level seating areas shall be provided beside sports fields for spectators or participants with disabilities.

Where provided, public viewing areas shall comply with 4.3.2.

Where provided, public washrooms shall comply with 4.2.1.

Where provided, public showers and change rooms shall comply with 4.2.1 and 4.3.4.

4.5.3 SWIMMING POOLS

Rationale

Swimming is an important recreational and therapeutic activity for many persons with disabilities. The buoyancy and freedom offered by swimming can be enabling in themselves. Primary consideration for accommodating persons who have mobility impairments include accessible change facilities and a means of access into the water. Ramped access into the water is preferred over lift access, as it promotes integration (everyone will use the ramp) and independence. Many persons who are visually impaired will benefit from colour and textural cues along primary routes of travel and at potentially dangerous locations such as the edge of the pool, at steps into the pool and at railings.

Application

In addition to the design requirements specified in 4.1 to 4.4, swimming pools, wading pools, hot pools and therapy pools shall comply with this section.

Design Requirements

Swimming pools, wading pools, hot pools and therapy pools shall have

- where the pool is indoors, a direct accessible route in compliance with 4.1.4 from the lobby/entrance to the change rooms;
- a direct accessible route in compliance with 4.1.4 from the change rooms to the pool deck;
- access from the pool deck into the water, provided by a ramp sloped no steeper than 1:12;
- a shower chair available at each facility for use in transferring into the water;
- where steps are provided into the pool, steps marked with a colour contrasting strip at least 50 mm (2 in.) wide at both the riser and the tread;
- where steps are provided into the pool, colour contrasting handrails on both sides of the steps. Such handrails shall extend at least 300 mm (12 in.) beyond the pool edge;
- pool boundaries clearly defined by both a textural change and a colour contrast to both the water surface and surrounding pavement;
- firm, slip-resistant materials and finishes used on the pool perimeter, deck or paved areas surrounding the pool;
- non-abrasive and easy to clean pool perimeter finishes;
- adequate drainage on the pool deck to drain water quickly;
- where pool-depth indicator marking is provided, depth-indicator markings as well as 'SHALLOW END' and 'DEEP END' markings of a highly contrasting colour and sufficient size to be easily visible;
- where diving boards or platforms are provided, they shall be clearly marked and protected. Overhead clearances should a minimum of 2030 mm (6 ft. 8 in.) or protected by suitable guards;

- where lanes and/or lane markers are provided, they shall be of a highly contrasting colour. Tie-off devices for lane markers shall be positioned such that they do not create a tripping hazard;
- where starting blocks are provided, they shall be of a highly contrasting colour and capable of being securely fixed in place;
- safety equipment and other accessories shall be stored such that they do not present a tripping hazard; and
- lifeguard chairs, slides and other pool related structures shall be in highly contrasting colours.

Wading pool access shall be safe and gradual so that a child with a disability can be assisted into the water easily and/or use a wheelchair to enter.

4.5.4 CAFETERIAS

Rationale

Cafeteria design needs to reflect the lower sight lines, reduced reach, knee-space and manoeuvring requirements of persons using wheelchairs or scooters. Patrons using mobility devices cannot hold a tray or food items while supporting themselves on canes or manoeuvring a wheelchair. Tray slides should be designed to move trays with a minimum of ease.

Application

In addition to the design requirements specified in 4.1 to 4.4, cafeterias shall comply with this section.

Where fixed tables or counters are provided, at least 10%, but not less than one, shall be accessible and shall comply with 4.3.7. It is preferable to have all fixed tables accessible.

In new construction and where practicable in alterations, the fixed tables or counters shall be distributed throughout the space or facility.

At least one lane at each cashier area shall be accessible and comply with this section. It is preferable to have all lanes at all cashier areas accessible.

Design Requirements

Where food or drink is served at counters exceeding 865 mm (34 in.) in height for consumption by customers seated on stools or standing at the counter, a portion of the main counter which is 1525 mm (60 in.) in length (minimum) shall be provided in compliance with 4.3.8 or service shall be available at accessible tables within the same area.

All accessible fixed tables shall be accessible by means of an access aisle at least 1060 mm (42 in.) clear between parallel edges of tables or between a wall and the table edges.

Dining areas, including raised or sunken dining areas and outdoor seating areas shall be accessible.

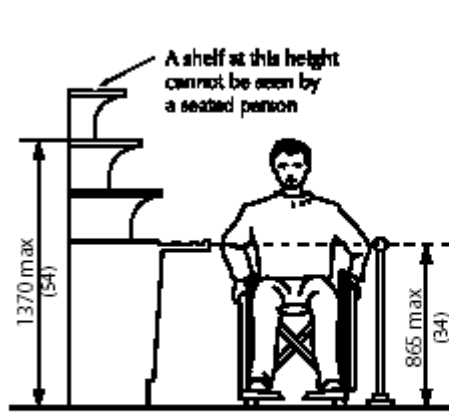


Figure 4.5.4.1
Self Serve Counter

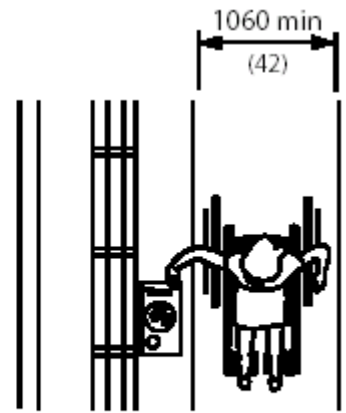


Figure 4.5.4.2
Aisle Width

Food service lines shall have a minimum clear width of 1060 mm (42 in.).

Tray slides shall be mounted no higher than 865 mm (34 in.).

If self-service shelves are provided at least 50% must be within the reach ranges specified in 4.1.1. It is preferable to have all self-service shelves accessible.

Self-service shelves and dispensing devices for tableware, dishware, condiments, food and beverages shall be installed to comply with 4.1.1.

In banquet rooms or spaces where a head table or speaker's lectern is located on a raised platform, the platform shall be accessible in compliance with 4.1.9 or 4.1.15 as well as 4.3.3.

Spaces for vending machines, beverage dispensers and other equipment shall comply with 4.1.1 and shall be located on an accessible route in compliance with 4.1.4.

Cashier locations should feature at least one access aisle which is a minimum of 1060 mm (42 in.) wide. It is preferable to have all aisles accessible.

Barriers and/or turnstiles where provided to control access, shall comply with 4.1.7.

Queuing areas shall comply with 4.3.6.

Access to outdoor eating areas shall comply with 4.3.1.

4.5.5 CHURCHES, CHAPELS AND OTHER PLACES OF WORSHIP

Rationale

Access to all places of worship should be provided. Access assumes that persons with disabilities may be participants, leaders, staff or volunteers.

4.5.6 LIBRARIES

Rationale

Traditional and automated systems should be available to all patrons and staff. Both the design of the facility and the provision of services should be considered. Service counters and study carrels should accommodate the knee-space and armrest requirements of persons using wheelchairs. Computer catalogues, carrels and workstations should be provided at a range of heights to accommodate persons who are standing or sitting as well as children.

Application

In addition to the design requirements specified in 4.1 to 4.4, libraries shall comply with this section.

Where fixed seating, tables or study carrels are provided, at least 10% shall be accessible and in compliance with this section. It is preferable to have all fixed seating, tables and study carrels accessible.

Where computer catalogues or workstations are provided, at least 50% shall be accessible and shall comply with this section. It is preferable to have all computer catalogues and workstations accessible, including the provision of information in Braille and large print.

Design Requirements

Accessible fixed seating, tables and study carrels shall be located on an accessible route in compliance with 4.1.4.

Clearances between fixed seating, tables and study carrels shall comply with 4.1.4.

Where shelving is provided at fixed seating, tables or study carrels, the shelving shall be no higher than 1200 mm (47 in.).

Accessible fixed study carrels shall incorporate

- work surfaces and knee/toe clearance in compliance with 4.1.1;
- an electrical outlet; and
- lighting levels of at least 100 lux (9.3 ft. candles) at the work surface.

Where provided, traffic control or book security gates shall comply with 4.1.7.

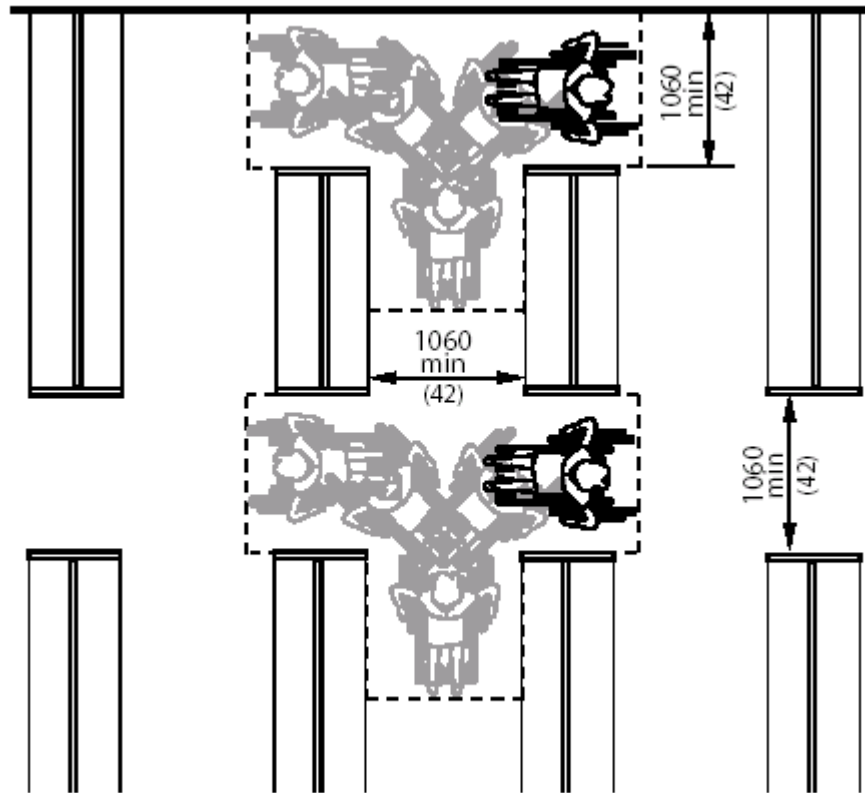


Figure 4.5.6.1
Aisle Width

Minimum clear aisle space at card catalogues and at stacks shall comply with 4.1.1. Aisle configuration shall incorporate a clear floor space allowing a person in a wheelchair to make a 180 degree turn.

Maximum reach heights at card catalogues shall comply with 4.1.1.

Shelf height in stack areas is unrestricted.

Circulation service counters and information service counters shall comply with 4.3.8.

Where provided, computer catalogue or computer workstations shall incorporate

- knee and toe space below in compliance with 4.1.1 and 4.3.7;
- a maximum work surface height of 865 mm (34 in.) ; and
- a maximum table depth of 900 mm (35 in.).

A minimum of one movable chair shall be provided at every information service counter, computer catalogue or computer workstation.

Book drop slots shall

- be located on an accessible route complying with 4.1.4;
- be located adjacent to a 2440 by 2440 mm (96 in. by 96 in.) level platform;
- have a slot that is operable using one hand, located between 860 mm (34 in.) and 900 mm (35 in.) above the floor.

Lighting at book stacks shall be mounted directly over the aisle space and provide a minimum of 200 lux (20 ft. candles) at a nominal working height of 920 mm (36 in.).

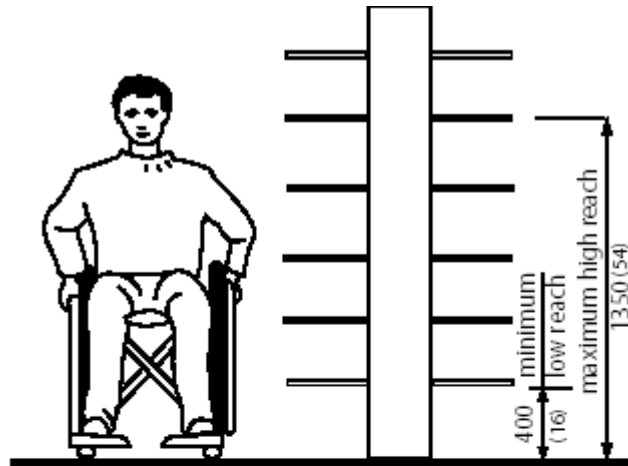


Figure 4.5.6.2
Reach Heights

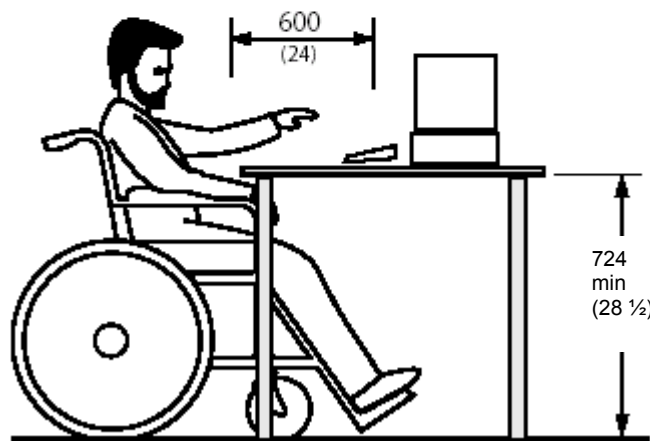


Figure 4.5.6.3
Work Surfaces

The acoustic quality shall be free of unnecessary background noise and should permit comprehension by persons with limited hearing. Refer also to 4.4.16.

Where CDs, tapes, talking books, etc. are available as part of the library resource materials or for loan purposes, a separate space shall be provided for auditing this material without disturbing other library users.

4.5.7 BUSINESS, MERCANTILE AND CIVIC

Rationale

The role of persons with disabilities should not be restricted or limited to that of the customer or consumer. Workspaces should be designed with a view to future adaptation or accommodation of individual equipment or assistive devices.

4.5.8 POLICE STATIONS

Rationale

Police stations should accommodate persons with disabilities who may be members of the public, detainees, members of counsel or police staff. All areas of the police station that are used by the public, members of staff and counsel should be fully accessible to persons with disabilities. Secure areas such as cells and common areas used by detainees should have provisions to accommodate persons with disabilities.

Application

In addition to the design requirements specified in 4.1 to 4.4, consideration should be given to providing an accessible holding cell in police stations.

Design Requirements

Accessible cells shall be located on an accessible route in compliance with 4.1.4.

Where provided to serve accessible cells, the following elements or spaces shall be accessible and connected by an accessible route:

- all doors and doorways on an accessible route shall comply with 4.1.6. Exception: secured entrances, doors and doorways operated only by security personnel shall not be required to have accessible door hardware;
- accessible beds shall have manoeuvring space at least 915 mm (36 in.) wide along one side.

4.5.9 MUNICIPAL COURTS

Rationale

Municipal court facilities should accommodate persons with disabilities who may be members of the judiciary, court clerks or other officials, defendants, members of counsel and members of the public.

4.5.10 TRANSPORTATION FACILITIES

Rationale

Links to usable transportation are essential to all members of the community. This includes public and private bus, taxi, train and airplane arrival and departure points. A variety of lift devices may need to be accommodated and alternatives to audio- and/or visual-only scheduling should be available.

Application

In addition to the design requirements specified in 4.1 to 4.4, transportation facilities located within a site shall comply with this section.

Design Requirements

Bus shelters shall

- be located on firm, level pads approximately at the same elevation as the sidewalk or walkway;
- have clearances around at least two sides of the shelter including the landing pad side of at least 1220 mm (48 in.) ;
- provide a clear view of oncoming traffic;

- incorporate sufficient clear floor space to accommodate a person using a wheelchair or scooter; and
- feature at least one seat with armrests and seat height between 400 mm and 450 mm (16 in. and 18 in.).

All glazed panels surrounding bus shelters shall incorporate decals and other safety features as specified in 4.1.8.

BUS STOPS

Bus stops shall

- incorporate a paved, firm, level surface in compliance with municipal standards; and
- not be impeded by adjacent street furniture such as dispensers, vending machines, waste boxes, planters, posts, signs and guy wires.

TRANSIT TERMINALS

Where bus platforms or other boarding platforms are provided, they shall allow safe access for persons using wheelchairs and where possible, provide level access into buses.

The edges of platforms shall incorporate a continuous detectable warning surface at least 610 mm (24 in.) wide that complies with 4.4.8.

Lighting levels at all boarding platforms shall be at least 100 lux (10 ft. candles) at the platform or boarding surface edge.

Boarding locations shall incorporate visible and audible warning signals to advise travellers of approaching vehicles.

Where special lifting devices are used either on the vehicle or at the boarding point, appropriate manoeuvring space shall be provided around the boarding point for waiting passengers using wheelchairs.

Seating shall be provided in compliance with 4.3.15 at or close to boarding points.

Appendix A – Universal Design Principles and Guidelines

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UNIVERSAL DESIGN

The design of products and environments to be usable by all people to the greatest extent possible without the need of adaptation or specialized design.

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.

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 (ie 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.

Bibliography

The following documents were utilized in the development of the City of Stratford's **Accessibility Guidelines**:

- **City of London 2001 Facility Accessibility Design Standards** prepared by Designable Environments Inc., 1238 Stavebank Road North, Mississauga ON L5G 2V2, Tel: 905-891-5232;
- **Accessibility Guidelines** for the City of Toronto;
- **Accessibility Guidelines for Buildings and Facilities (ADAAG)** – The American with Disabilities Act;
- **Barrier-Free Design** – CAN/CSA-B651-95;
- **Barrier-Free Design Guidelines** – Alberta Safety Codes Council;
- **Barrier-Free Design Guidelines** – City of North York;
- **Barrier-Free Design Standards** – Regional Municipality of Hamilton-Wentworth and The Corporation of the City of Hamilton;
- **Joint Municipal Guidelines for Accessibility** for the Towns of Richmond Hill, Markham and Vaughan