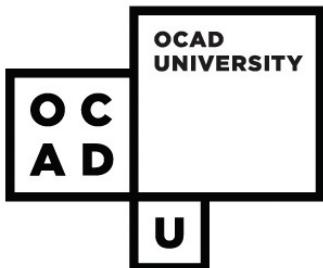


ACKNOWLEDGEMENTS



January 2017

OCAD University Facility Accessibility Design Standards (FADS)

These standards apply to all newly constructed and/or renovated OCAD University owned, leased or operated facilities. Designing and constructing to this standard shall be included as a mandatory requirement in all OCAD University request for proposals, tender documents and construction contracts.

We would like to thank and recognize the contributions of:

- The City of London for its permission to use the City of London 2006 Facility Accessibility Design Standards (FADS 2006) as the basis for these standards.
- Brock University Accessibility Advisory Committee for sharing their Facility Accessibility Design Standard.
- Members of the OCAD University Built Environment Accessibility Working Group who provided input into these design standards.
- Mr. Bob Topping and other staff of DesignABLE Environments Inc. (www.designable.net), who have been instrumental in creating the OCAD University Facility Accessibility Design Standards.

Should you require an alternate format version of the OCAD University FADS document, please contact the department of Facilities and Studio Services at workrequest@ocadu.ca.



London
CANADA



Brock
University



DESIGNABLE
ENVIRONMENTS

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1.0 INTRODUCTION

This Standard particularly addresses the needs of persons with disabilities, including, but not limited to: mobility impairment, hearing impairment, visual impairment, environmental sensitivities, neurological/psychological impairment, perceptual impairment, persons who are deaf-blind and persons with limited stamina and/or dexterity, as well as other persons with non-visible disabilities.

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

This standard incorporates the belief in universal design that recognizes the broad diversity of people who use *facilities*. Universal design is defined as:

"The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design." The universal design philosophy is structured around the seven design principles listed below. (Refer to Appendix A for further information on the universal design principles and their guidelines.)

This standard reflects minimum dimensional criteria required

for adult persons. Prior to the design stage of a project, special consideration should be given to the function of the *facility* and the patrons who will use it. A review and upgrade of this standard may be required in some instances, particularly if a *facility* is designed primarily for the use of a particular type of user, such as children or older persons.

Where conflicts exist between scoping and/or dimensional requirements of this standard and legislation enacted by the federal or provincial governments', the most accommodating requirements shall apply (i.e. the requirement(s) that will result in the most accommodating environment but never less than the minimum requirements of the current Ontario Building Code). Where conditions permit, limits, dimensions and an approach to layout in general shall be as generous as possible.

The departments of Facilities and Studio Services and Campus Planning and Projects are responsible for the FADS and will seek advisement from the Office of Diversity, Equity and Sustainability Initiatives. The FADS will be reviewed and or updated every five years to reflect technological advancement and new construction practices, as well as changes to the barrier-free design requirements of various codes and standards such as the Ontario Building Code (OBC), Accessibility for Ontarians with Disabilities Act (AODA), and the CSA Standard B651 - Accessible Design for the Built Environment. This version of the standards incorporates the 2015 accessibility amendments to the Ontario Building Code.

This standard recognizes the concept of equivalent facilitation as a means to encourage new and innovative design ideas and solutions. Departures from particular technical and scoping requirements of this standard by the use of other designs and technologies are encouraged when the alternatives will provide substantially equivalent or greater access to the usability of the *element* and/or *facility*. Design departures from information provided and referenced in this standard should be carefully assessed to determine the validity of the application and may require review by a committee appointed for this purpose by the OCAD University.

This document is to be read in conjunction with Purchasing Policy and Procedures Manual - Accessibility Section 4.12 and Appendix I: Documentation of Incorporation of Accessibility Form.

Dimensions used in this standard are in metric units. Nearest imperial equivalent dimensions are in parentheses.

For the purposes of this standard, words and terms in *italics* have their meanings defined in Section 2.0.

OCAD University encourages all users of this standard to provide feedback to Facilities and Studio Services or Campus Planning and Projects. All users of this standard can provide feedback to these departments in addition to any proposal for alternative equivalent facilitation.

1. EQUITABLE USE:

The design is useful and marketable to people with diverse abilities.

2. FLEXIBILITY IN USE:

The design accommodates a wide range of individual preferences and abilities.

3. 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.

4. PERCEPTEABLE INFORMATION:

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

5. TOLERANCE FOR ERROR:

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

6. LOW PHYSICAL EFFORT:

The design can be used efficiently and comfortably with a minimum of fatigue.

7. SIZE AND SPACE FOR APPROACH AND USE:

Appropriate size and space are provided for approach, reach, manipulation and use, regardless of user's body position, size, posture or mobility.

The Principles of **UNIVERSAL DESIGN**

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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 requirement.

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 spaces* 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 the 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**: A room used for meetings, which accommodates six or more 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 and 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).

2.0 GLOSSARY AND DEFINITIONS

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.

Depressed curb: A continuous area where a curb is lowered to the same level as the adjacent roadway, resulting in a seamless transition between a pedestrian walkway and a vehicular route.

Detectable warning surfaces: A standardized surface feature built into or applied to walking surfaces or other *elements* to warn persons with a visual *impairment* of hazards on a *circulation path*.

Disability: The interaction between barriers and impairments(s). Individual impairments may be physical, cognitive, mental, sensory, emotional, developmental, or some combination of these. Barriers may be physical, like stairs or attitudinal, like bias and may differ depending on context. Barriers may hinder a person's full and effective participation in society on an equal basis with others.

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 into a *building* or *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.

Guard: A safety railing used as a barrier to prevent encroachment or accidental falling from heights.

Handrail: A component which is normally grasped by hand for support at stairways and other places where needed for the safety of pedestrians.

Heritage Facility: A *facility* or portions thereof designated under the Ontario Heritage Act, or identified in the inventory of heritage resources for OCAD University. (See *Public Heritage Facility*)

Impairment: see *Disability*

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.

Marked crossing: A crosswalk or other identified path intended for pedestrian use in crossing a *vehicular way*.

Occupiable: A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes, or in which occupants are engaged at labour, and which is equipped with *means of egress*, light and ventilation.

Open space: Large-scale tracts of land without visible evidence of residential, commercial or industrial development. These areas may be privately or publicly owned and are generally left in a natural state and not programmed for active recreation. The benefits of open lands typically extend beyond the immediate area and usually provide community-wide benefits.

Operable 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, 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.

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.

2.0 GLOSSARY AND DEFINITIONS

Public Heritage Facility: A *facility* or portions thereof designated under the Ontario Heritage Act, or identified in the inventory of heritage resources for OCAD University and 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, such as teaching spaces, significant public spaces and libraries. *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.

Residence Room: Sleeping rooms and *common-use* areas within a residence unit.

Retrofit: See *Alteration*.

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*.

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: A *facility* that is not of permanent construction but that is extensively used, or is essential for *public use* for a period of time. Examples of temporary *facilities* covered by this standard include, but are not limited to, reviewing stands, bleacher areas, temporary kiosks, temporary health screening services or temporary safe pedestrian passageways around a construction *site*. Structures and equipment directly associated with the actual processes of construction, such as scaffolding, bridging, materials hoists, or construction trailers, are not included.

Text telephone (TTY): Machinery or equipment that employs interactive text-based communication through the transmission of coded signals across the standard telephone network. *Text telephones* can include, for example, devices known as *TDDs* (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. *Text telephones* are also called *TTYs*, an abbreviation for teletypewriter.

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

Visible: The ability of a dwelling unit to offer a reasonable level of access to accommodate visitors with disabilities, elderly persons or residents who may be temporarily disabled – allowing a persons to access the dwelling safely via a level entry, maneuver independently throughout the entry level, and utilize a toilet.

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 apply to

- all newly constructed and retrofitted *facilities* owned, leased or operated by OCAD University

Exceptions: This standard does not apply to

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

GENERAL APPLICATION

All areas of newly designed or newly constructed *facilities* and altered portions of existing *facilities* shall comply with Sections 4.1 to 4.4 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 4.4 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 Section 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, ALTERATIONS 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 *element*/*space*/*feature*/*area* shall comply with all applicable provisions. If the applicable provision for new construction requires that an *element*/*space*/*feature*/*area* be on an *accessible route* and the altered *element*/*space*/*feature*/*area* is not on an *accessible route*, this route shall be altered to become *accessible*.

If *alterations* of single *elements*, when considered together, amount to an *alteration* of a room or space in a *facility*, the entire space shall be made *accessible*.

Where project *alterations* affect more than 50% of the total floor area of a *facility*, the accessibility-related systems and elements of the entire *facility* shall be upgraded to meet the requirements of these standards.

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 life safety systems, 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*.

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

3.0 SCOPE, APPLICATION AND ENFORCEMENT

EXCEPTIONS

Exceptions to the requirements are permitted where one or more of the following conditions can be demonstrated:

- It is *technically infeasible* to comply with the requirements, or some of them, because existing physical or site constraints prohibit modification or addition of elements, spaces or features.
- The requirements, or some of them, would likely affect the cultural heritage value or interest of a property identified, designated or otherwise protected under the Ontario Heritage Act as being of cultural heritage value or interest.
- The requirements, or some of them, would affect the preservation of places set apart as National Historic Sites of Canada by the Minister of the Environment for Canada under the Canada National Parks Act (Canada).
- The requirements, or some of them, would affect the national historic interest or significance of historic places marked or commemorated under the Historic Sites and Monuments Act (Canada)
- The requirements, or some of them, might damage, directly or indirectly, the cultural heritage or natural heritage on a property included in the United National Educational, Scientific and Cultural Organisation's World Heritage List of sites under the Convention Concerning the Protection of the World Cultural and Natural Heritage.
- There is a significant risk that the requirements, or some of them, would adversely affect water, fish, wildlife, plants, invertebrates, species at risk, ecological integrity or natural heritage values, whether the adverse effects are direct or indirect.

Where an exception is permitted to a requirement for an exterior path of travel, the exception applies solely,

- to the particular requirement for which the exception is allowed and not to any other requirement that applies to the exterior path; and
- to the portion of the exterior path for which it is claimed and not to the exterior path in its entirety.

HERITAGE FACILITIES

This standard will apply to *alterations* to a Heritage Facility, however, under the Ontario Human Rights Code, there are allowances for modification to the defining features of a Heritage Facility which are deemed to alter the essential nature or substantially affect the viability of the enterprise.

Public Heritage Facilities should be assessed for compliance to accessibility standards on an individual basis, to determine the most effective and least disruptive means of retrofit, where required. Consider the following general guidelines:

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

If 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.

3.0 SCOPE, APPLICATION AND ENFORCEMENT

EQUIVALENT FACILITATION

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

Equivalent facilitation proposals shall be referred to either the Director of Facilities and Studio Services, or Director of Campus Planning and Projects for review and approval on an individual basis.

IMPLEMENTATION

The departments of Facilities and Studio Services, and Campus Planning and Projects, other departments, as well as contracted consulting firms shall be responsible for the application of the 2014 Facilities Accessibility Design Standards when designing and administering all construction and renovation projects associated with new *facilities*, as well as the retrofit, *alteration* or *addition* to existing *facilities*, owned, leased or operated by OCAD University.

Designing and constructing to this standard shall be included as a mandatory requirement in all OCAD University request for proposals, tender documents and construction contracts.

ENFORCEMENT

Facilities and Studio Services, Campus Planning and Projects, as well as other departments of OCAD University, through the project management function, shall monitor compliance throughout the design, and construction phases of the project.

4.0 DESIGN STANDARDS

All areas of newly designed or newly constructed *facilities* and altered portions of existing *facilities* shall comply with this section, unless otherwise provided in Section 3.0.

Exceptions: This standard does not apply to

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

The requirements of this section apply to all areas of a facility except

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

4.1.1 SPACE AND REACH REQUIREMENTS

RATIONALE

The dimensions and manoeuvring characteristics of wheelchairs, scooters and other mobility devices are as varied as the people who use them. Traditionally, accessibility standards have taken a conservative approach to wheelchair manoeuvrability, reflecting the needs of a physically strong individual using a manual wheelchair. Such an approach excludes the many users without such a degree of strength or those using a larger mobility device. This standard more accurately reflects the vast array of equipment that is used by persons to access and use facilities, as well as the diverse range of user ability. This standard incorporates more generous space requirements, particularly related to the dynamic movement of people using wheelchairs, scooters or other assistive devices. Persons of large stature also benefit from larger spatial areas particularly if they also use a wheelchair.

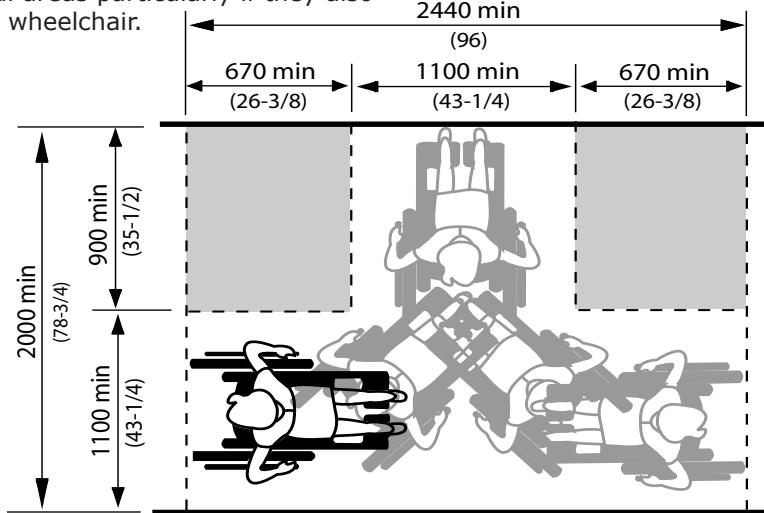
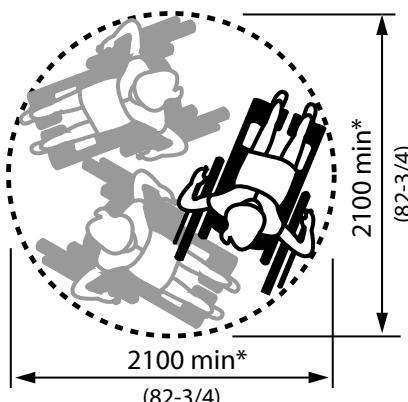


Figure 4.1.1.2
180° Turning Space

APPLICATION

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



*Where possible, the ideal is for the diameter to be 2440mm (96)

Figure 4.1.1.1
360° Turning Space

4.1 ACCESS AND CIRCULATION

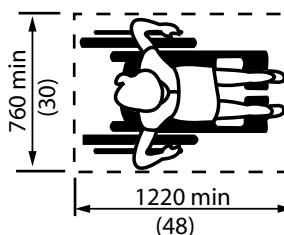


Figure 4.1.1.5
Clear Floor Space for Wheelchair

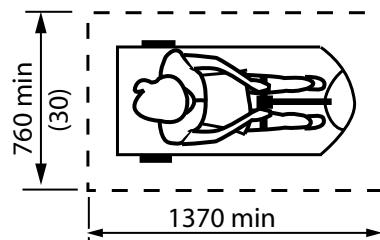
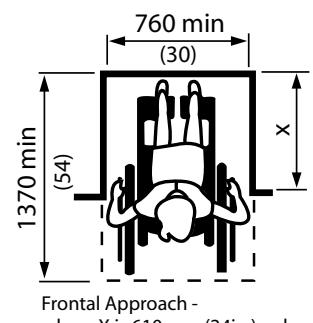
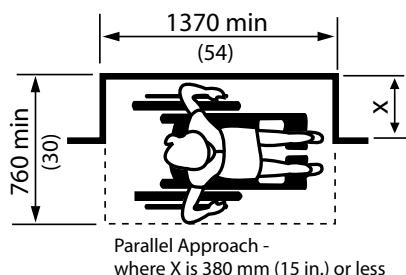


Figure 4.1.1.6
Clear Floor Space for Scooter

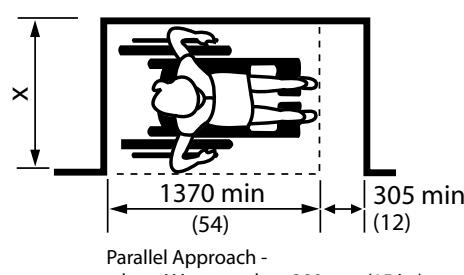


Frontal Approach -
where X is 610 mm (24 in.) or less

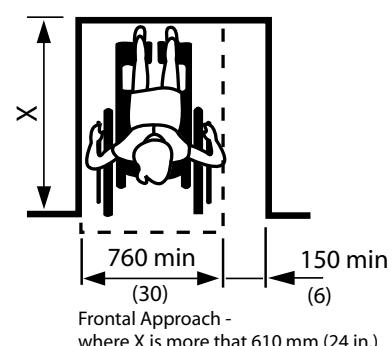
Figure 4.1.1.7
Clearances at Alcove



Parallel Approach -
where X is 380 mm (15 in.) or less



Parallel Approach -
where X is more than 380 mm (15 in.)



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

Figure 4.1.1.8
Clearances at Alcove

4.1 ACCESS AND CIRCULATION

DESIGN REQUIREMENTS

The space required for a wheelchair to make a 360-degree turn is a *clear floor space* of 2100 mm (82-3/4 in.) in diameter (Figure 4.1.1.1). Where possible, the ideal is for the diameter to be 2440 mm (96 in.). The space required for a 180-degree turn is shown in Figure 4.1.1.2.

The minimum *clear floor space* or *ground space* necessary to accommodate the largest

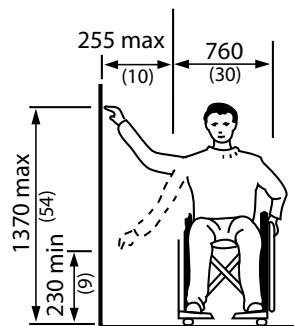


Figure 4.1.1.9
Side Reach

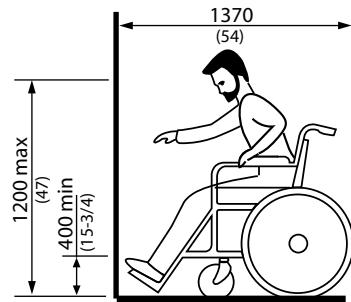


Figure 4.1.1.11
Forward Reach

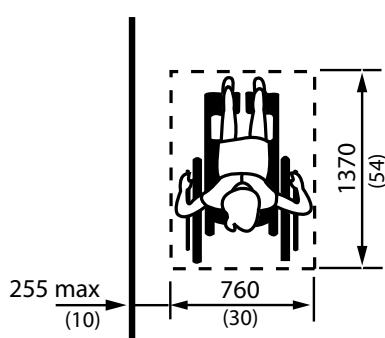


Figure 4.1.1.13
Side Reach - Maximum Distance to Wheelchair

4.1.1 SPACE AND REACH REQUIREMENTS

dimensional requirement of a single, stationary wheelchair or scooter and its' 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 space* or *ground space* for wheelchairs or scooters may be positioned for forward or parallel approach to an object.

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

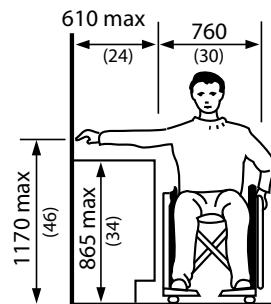


Figure 4.1.1.10
Side Reach over an Obstruction

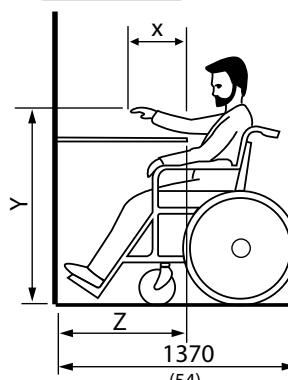


Figure 4.1.1.12
Forward Reach over an Obstruction

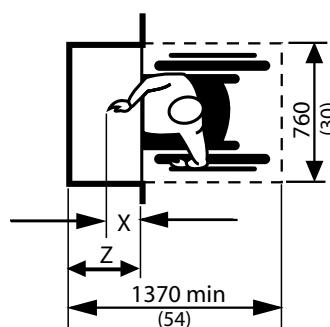


Figure 4.1.1.14
Forward Reach over an Obstruction

One full, unobstructed side of the *clear floor space* or *ground space* for a wheelchair or scooter shall adjoin or overlap an *accessible route* or adjoin another wheelchair *clear floor space*. If a *clear floor 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.

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 (15-3/4 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* to be no more than 1200 mm (47 in.) above the floor for thermostats or manual pull stations and 900 - 1100 mm (35-1/2 - 43-1/4 in.) for all other controls.

NOTE: In Diagrams 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 both walking and pushing a wheelchair. Slippery surfaces are hazardous to all individuals and especially hazardous for seniors and others who may not be sure-footed.

Glare from polished floor surfaces can be uncomfortable for all users and can be a particular obstacle to persons with a visual *impairment* by obscuring important orientation and safety features. Pronounced colour contrast between walls and floor finishes may be helpful for persons with a visual *impairment*, as are changes in colour/texture where a change in level or function occurs.

Patterned floors should be avoided, as they can create visual confusion.

Thick pile carpeting makes pushing a wheelchair very difficult. Small and uneven changes in floor level represent a further barrier to using a wheelchair but also present a tripping hazard to ambulatory persons.

Openings in any ground or floor surface such as grates or grilles can catch canes or wheelchair wheels.

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.

Carpets or carpet tile shall

- be securely fixed;
- where used, have a dense cushion underlay, underpad or other backing;
- 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 (1/2 in.); and
- have exposed edges fastened to floor surfaces with trim conforming to Table 4.1.2.

Gratings located in walking surfaces shall

- have spaces not greater than 13 mm (1/2 in.) wide in one direction; and
- be placed so that the long dimension is across the dominant direction of travel.

4.1 ACCESS AND CIRCULATION

LEGISLATION REFERENCES

AODA 80.23
OBC 3.8.1.3(2)

RELATED SECTIONS

4.1.4 Accessible Routes, Paths and Corridors
4.4.8 Detectable Warning Surfaces
4.4.14 Materials and Finishes
4.4.15 Texture and Colour

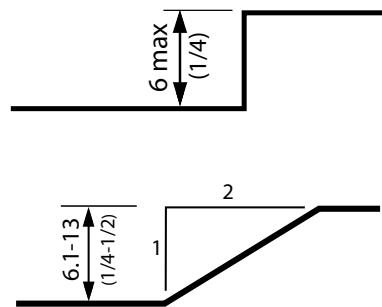


Figure 4.1.2.1
Changes in Level

| Vertical Rise | Edge Treatment |
|--------------------------------------|--|
| 0 to 6 mm (0 - 1/4 in.) | May be vertical |
| 6.1 mm to 13 mm (9/32 in. - 1/2 in.) | Bevel, maximum slope 1:2 |
| Over 13 mm (over 1/2 in.) | Treat as sloped floor, <i>ramp</i> , or <i>curb ramp</i> |

Table 4.1.2
Changes in Level

OPENINGS LARGER THAN 13 (1/2 in.) MAY CATCH WHEELCHAIR WHEELS OR CANES

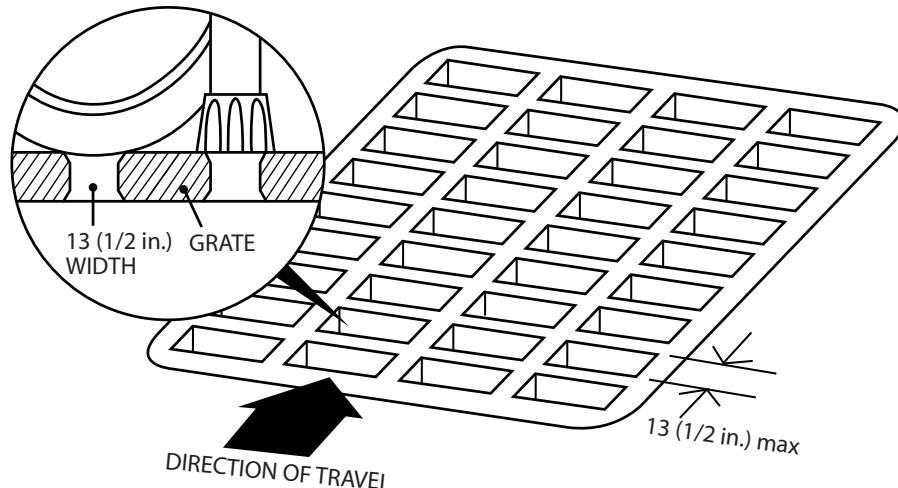


Figure 4.1.2.2
Grills and Gratings

4.1 ACCESS AND CIRCULATION

4.1.3 PROTRUDING & OVERHEAD OBJECTS

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 cane is dangerous for persons individual with a visual *impairment* or a pedestrian distracted by a conversation. The underside of stairways is a common overhead hazard. Temporary construction barriers can also be hazardous if their lower edge is too high to be detected by a person using a long white cane for mobility. *Detectable warning surfaces* around freestanding obstacles, such as light standards, are advantageous to anyone using a pathway.

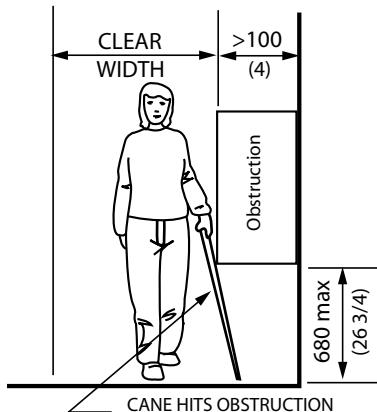


Figure 4.1.3.1
Limits of Protruding Objects

APPLICATION

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

DESIGN REQUIREMENTS

Objects protruding from walls with their leading edges between 680 mm (26-3/4 in.) and 2100 mm (82-3/4 in.) from the floor shall protrude not more than 100 mm (4 in.) into pedestrian areas, such as walkways, halls, corridors, passageways or aisles.

Objects attached to a wall with their leading edges at or below 680 mm (26-3/4 in.) from the floor may protrude any amount.

Freestanding objects shall not have any overhang of more than 300 mm (11-3/4 in.) between 680 mm (26-3/4 in.) and 2100 mm (82-3/4 in.) from the ground or floor.

The maximum height of the bottom edge of freestanding objects with a space of more than 300 mm (11-3/4 in.) between supports shall be 680 mm (26-3/4 in.) from the ground or floor.

Protruding objects shall not reduce the *clear width* required for an *accessible route* or manoeuvring space.

The minimum *clear headroom* in pedestrian areas, such as walkways, halls, corridors, passageways, or aisles, shall be 2100 mm (82-3/4 in.).

A detectable *guard*, *guardrail* or other barrier having its leading edge at or below 680 mm (26-3/4 in.) from the floor shall be provided where the headroom of an area adjoining an *accessible route* is reduced to less than 2100 mm (82-3/4 in.).

LEGISLATION REFERENCES

OBC 3.15.5.2(1)
OBC 3.8.1.3(5)(6)
OBC 9.9.5.3

RELATED SECTIONS

4.1.4 Accessible Routes, Paths and Corridors
4.4.8 Detectable Warning Surfaces
4.4.14 Materials and Finishes
4.4.15 Texture and Colour

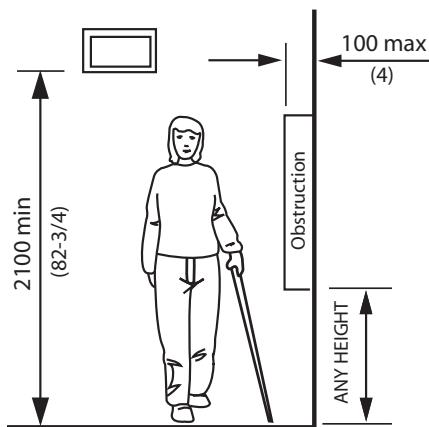


Figure 4.1.3.2
Limits of Protruding Objects

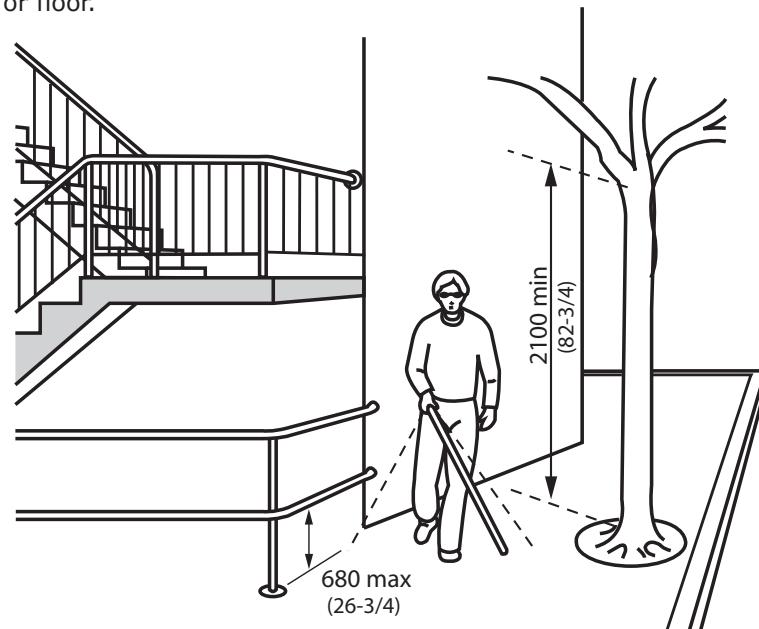


Figure 4.1.3.3
Overhead Obstructions

4.1.4 ACCESSIBLE ROUTES, PATHS & CORRIDORS

RATIONALE

Routes of travel through a facility should address the full range of individuals that may use them. They must provide the *clear width* necessary for persons using wheelchairs or scooters, those pushing 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 person to drive a scooter 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.).

Persons of large stature also benefit from wider spatial areas particularly if they also use a wheelchair.

Strong colour contrasts and/or tactile pathways set into floors may be used to assist individuals with a visual *impairment* to negotiate an environment. Edge protection that guards a change in level is an important safety feature for all users.

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*.

Walkways or pedestrian bridges that connect *accessible floors* in different buildings shall be *accessible*.

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

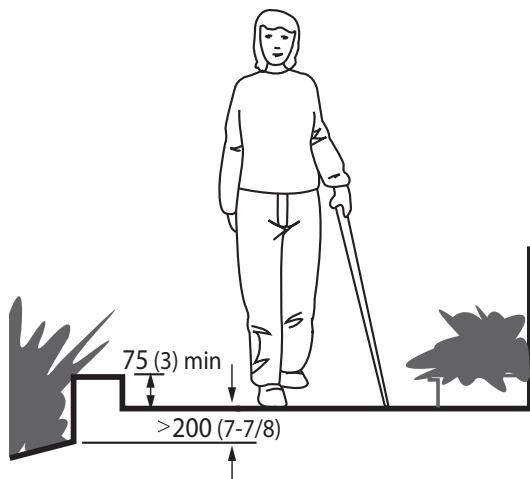
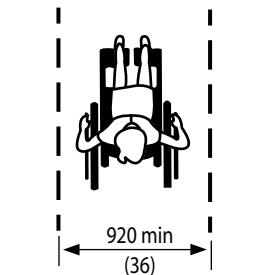


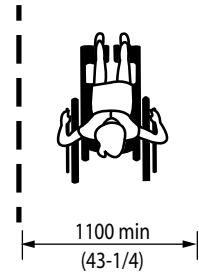
Figure 4.1.4.1
Edge Protection

4.1 ACCESS AND CIRCULATION

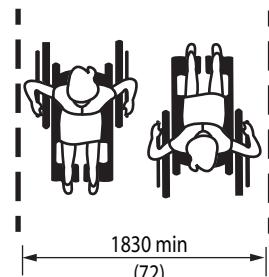
- to service rooms
- to elevator machine rooms
- to janitor rooms
- to service spaces
- to crawl spaces
- to attic or roof spaces
- to high-hazard industrial occupancies
- within portions of a floor area with fixed seats in an *assembly occupancy* where these portions are not part of an *accessible route* to spaces designated for wheelchair use; or
- within a suite of residential occupancy.



Minimum width of secondary access route within open office areas.



Minimum width of interior accessible route.



Minimum width of exterior accessible route.

Figure 4.1.4.2
Access Widths

4.1 ACCESS AND CIRCULATION

APPLICATION

(Continued)

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

DESIGN REQUIREMENTS

The minimum *clear width* of an *accessible route* shall be 1100 mm (43-1/4 in.) except

- at doors - refer to 4.1.6;
- 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.);
- for exterior routes, it shall be minimum 1830 mm (72 in.), but can be reduced to 1200 mm (47-1/4 in.) to serve as a turning space where path connects to a *curb ramp*;
- where space is required for two wheelchairs to pass, it shall be 1830 mm (72 in.); and
- at secondary circulation routes within open office areas, where systems-furniture work station clusters are used, it shall be at least 920 mm (36 in.) wide.

Accessible routes shall

- have a *running slope* not steeper than 1:25 (4%) or be designed as a ramp in compliance with 4.1.9;
- have a *cross slope* not steeper than 1:50 (2%); and
- where the *accessible route* incorporates a *curb ramp*, the *curb ramp* portion of the *accessible route* shall comply with 4.1.10.

Where *accessible routes* less than 2000 mm (78-3/4 in.) wide terminate at a dead end, a turn space in compliance with 4.1.1 shall be provided at the dead end.

Every *accessible route* less than 1830 mm (72 in.) wide shall not be less than 1500 mm (59 in.) and provide an unobstructed passing 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.

4.1.4 ACCESSIBLE ROUTES, PATHS & CORRIDORS

Except at stairs and at elevated platforms such as performance areas or loading docks, where the edge(s) of an *accessible route*, path or corridor is not level with the adjacent surface, the edge(s) shall be protected

- by *curb* which contrasts in colour to adjacent ground surfaces, at least 75 mm (3 in.) high where the change in level is between 200 mm (7-7/8 in.) and 600 mm (23-5/8 in.); and
- by a *guard* which meets the requirements of the Ontario Building Code where the change in level is greater than 600 mm (23-5/8 in.).

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 an *accessible route* shall be equipped to provide a minimum level of illumination of 50 lux (4.6 ft-candles). Exception: In outdoor park settings where routes are not normally illuminated, additional illumination is not required.

Accessible routes shall incorporate level rest areas spaced no more than 30 metres (98 ft. - 5 in.) apart. Consultation with the public and persons with disabilities regarding the design and location of rest areas along exterior paths of travel must be undertaken as required by the AODA Accessibility Standard for the Design of Public Spaces.

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

LEGISLATION REFERENCES

AODA 80.21 - 80.31
OBC 3.8.1.2 - 3.8.1.4
OBC 3.8.2.1

RELATED SECTIONS

- 4.1.2 Ground and Floor Surfaces
- 4.1.5 Entrances
- 4.1.9 Ramps
- 4.1.10 Curb Ramps
- 4.2.3 Elevated Platforms
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

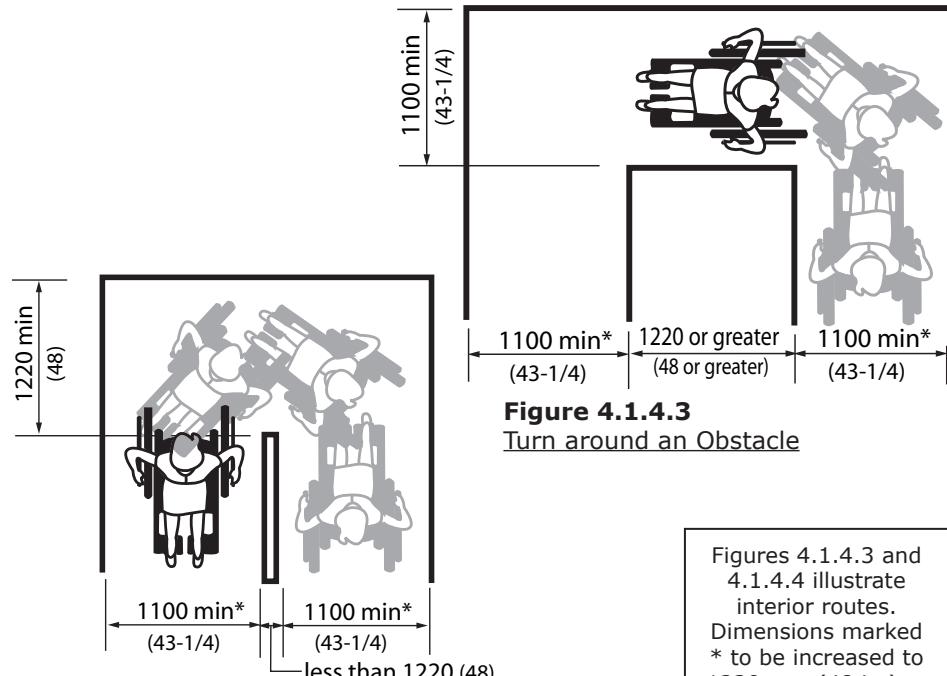


Figure 4.1.4.3
Turn around an Obstacle

Figure 4.1.4.4
Turn around an Obstacle

Figures 4.1.4.3 and 4.1.4.4 illustrate interior routes. Dimensions marked * to be increased to 1220 mm (48 in.) at exterior routes.

4.1.5 ENTRANCES

RATIONALE

Design decisions concerning entrances will have an immediate impact on the independence and dignity of everyone entering a facility. Entrances that address the full range of individuals using the facility promote a spirit of inclusion that separate *accessible* entrances do not. Features such as canopies can limit the influence of weather conditions on this already busy area and also make an entrance more obvious to a person with a cognitive disability or someone unfamiliar with the facility.

APPLICATION

All *entrances* used by staff and/or the public shall be *accessible* and comply with this section. In a retrofit situation where it is *technically infeasible* to make all staff and public *entrances accessible*, at least 50% of all staff and public *entrances* shall be *accessible* and comply with this section. In a retrofit situation where it is *technically infeasible* to make all public *entrances accessible*, the primary entrances used by staff and the public shall be *accessible*.

Accessible public *entrances* must be provided in a number at least equivalent to the number of exits required by the Ontario Building Code. (This paragraph does not require an increase in the total number of public *entrances* required for a *facility*.)

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

If direct access is provided for pedestrians from an enclosed parking garage to a *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, at least 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*.

4.1 ACCESS AND CIRCULATION

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

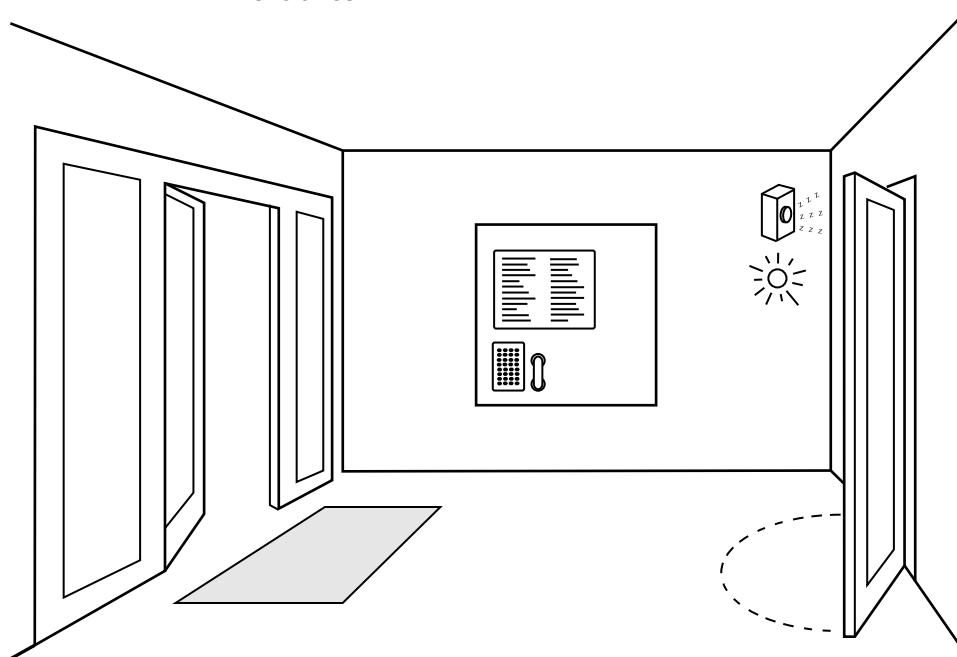
Accessible entrances shall be served by an *accessible route* in compliance with 4.1.4.

LEGISLATION REFERENCES

OBC 3.8.1.2

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.4 Accessible Routes, Paths, & Corridors
- 4.1.6 Doors
- 4.1.7 Gates, Turnstiles and Openings
- 4.1.8 Windows, Glazed Screens and Sidelights
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.10 Self-Service Kiosks and Information Systems
- 4.4.11 Card Access, Safety and Security Systems
- 4.4.13 Lighting



4.1 ACCESS AND CIRCULATION

RATIONALE

Sufficiently wide doorways are advantageous to individuals using wheelchairs or scooters, 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. Where permitted and where feasible, entrances without doors are preferred.

Independent use of doors is desirable. Reliance on assistance from others to open doors is not an *accessible* or dignified solution.

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*. Revolving doors are not *accessible* for persons using wheelchairs and strollers. Also, the coordination required to use such doors may be difficult for children or a person with a cognitive disability.

Glazed doors can present a hazard to all individuals and especially those with a *visual impairment*. The inclusion of colour-contrast strips across the glass, mounted at eye level, as well as colour-contrasting door frames and door hardware, will increase the safety and visibility of a glazed door for a person with a *visual impairment*.

APPLICATION

All doors used by staff or the public shall comply with this section. In a retrofit situation where it is *technically infeasible* to make all doors *accessible*, at least one door at each *accessible space* shall comply with this section. Exception: Doors not requiring full user passage, such as shallow

4.1.6 DOORS

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.

Where a door system incorporates multiple door leafs at a single location, at least one of the door leafs shall comply with this section.

Power operators shall be provided at the following door locations:

- entrances required by 4.1.5, including both inner and outer vestibule doors (where provided);
- *common use* washrooms that include an *accessible* toilet stall;
- universal washrooms with an *accessible* toilet fixture;
- dressing/change rooms that contain *accessible* toilet or shower facilities, as well as a private *accessible* change room;

- intermediate doorways across primary circulation routes within a *facility*. Exception: Doors that are held-open using electromagnetic hold-open devices; and
- significant public occupancies.

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

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.

Frameless glass doors and/or sidelights shall not be used.

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

Table 4.1.6
Manoeuvring Space at Doors

| Context | Floor Space Required (in mm) | | |
|--|---------------------------------------|---------------------------------------|--------------------|
| | Depth | Width | Space beside latch |
| Side-hinged door - Front approach (Figure 4.1.6.3) | | | |
| Pull side | 1525 (60 in.) | 1600 (63 in.) (*1525 (60 in.)) | 600 (23-5/8 in.) |
| | 1370 (54 in.) | 1250 (49-1/4 in.) (*1220 (48 in.)) | 300 (11-3/4 in.) |
| Side-hinged door - Latch-side approach (Figure 4.1.6.2) | | | |
| Pull side | 1370 (54 in.) (*1220 (48 in.)) | 1600 (63 in.) (*1525 (60 in.)) | 600 (23-5/8 in.) |
| | 1370 (54 in.) (*1100 (43-1/4 in.)) | 1525 (60 in.) | 600 (23-5/8 in.) |
| Side-hinged door - Hinge-side approach (Figure 4.1.6.1) | | | |
| Pull side | 2440 (96 in.) (*1525 (60 in.)) | 2440 (96 in.) (*1525 (60 in.)) | 600 (23-5/8 in.) |
| | 1370 (54 in.) (*1100 (43-1/4 in.)) | 1830 (72 in.) | 450 (17-3/4 in.) |
| Sliding door (Figure 4.1.6.4) | | | |
| Front approach | 1370 (54 in.) | 1100 (43-1/4 in.) (*920 (36 in.)) | 300 (11-3/4 in.) |
| | 1370 (54 in.) (*1100 (43-1/4 in.)) | 1550 (61 in.) (*1370 (54 in.)) | 600 (23-5/8 in.) |
| In retrofit situations where it is technically infeasible to provide the required clearances at doors, the clearances may be reduced as shown by the asterisk (*). | | | |

4.1.6 DOORS

4.1 ACCESS AND CIRCULATION

DESIGN REQUIREMENTS

Where permitted, rooms without doors are preferred.

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

The minimum *clear opening* of doorways in *public use* areas shall be 950 mm (37-1/2 in.), measured between the face of the door and

the opposite door stop with the door open 90 degrees. The minimum *clear opening* of doorways to faculty offices and other non-public areas shall be 860 mm (33-3/4 in.), measured between the face of the door and the opposite door stop with the door open 90 degrees. In a retrofit situation where it is *technically infeasible* to provide the clear opening for public use areas, the minimum *clear opening* of doorways may be reduced to 860 mm (33-3/4 in.).

Unless equipped with a power door operator, doors shall have level wheelchair-manoeuvring space on both sides of the door, and *clear space* beside the latch, as described in Table 4.1.6.

Exception: The *clear space* is not required on the inactive side of a door, where access is provided from one side only - such as to a closet.

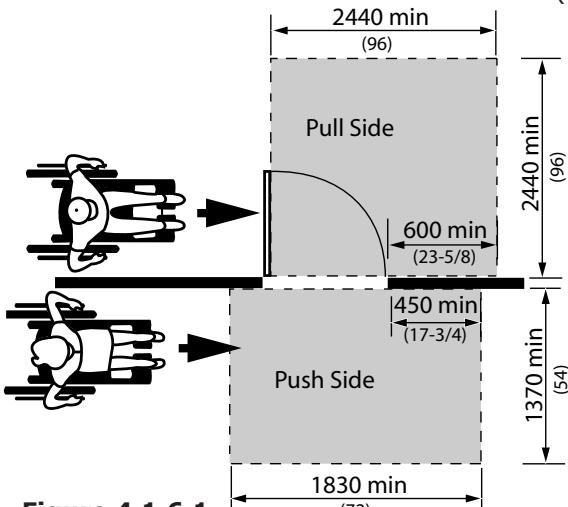


Figure 4.1.6.1
Hinge Side Approach at Hinged Doors

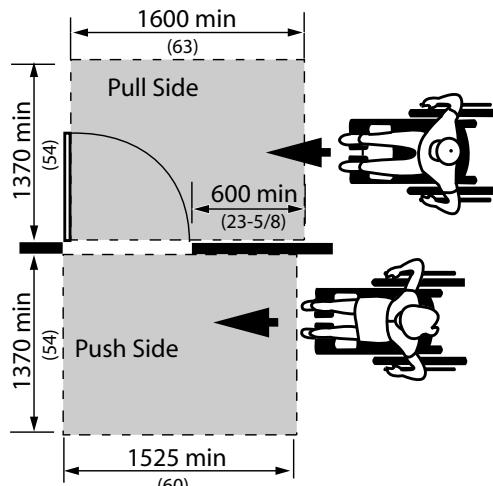


Figure 4.1.6.2
Latch Side Approach at Hinged Doors

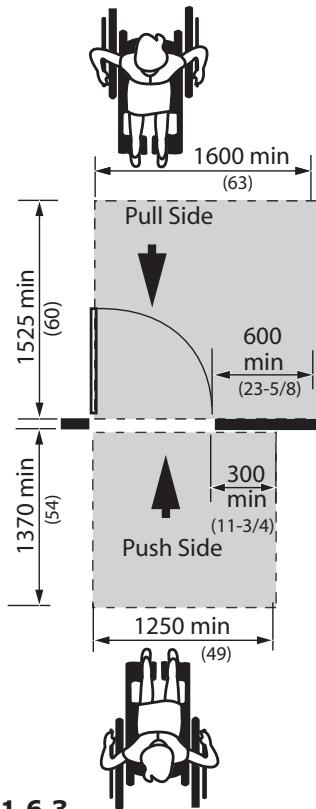


Figure 4.1.6.3
Front Approach at Hinged Doors

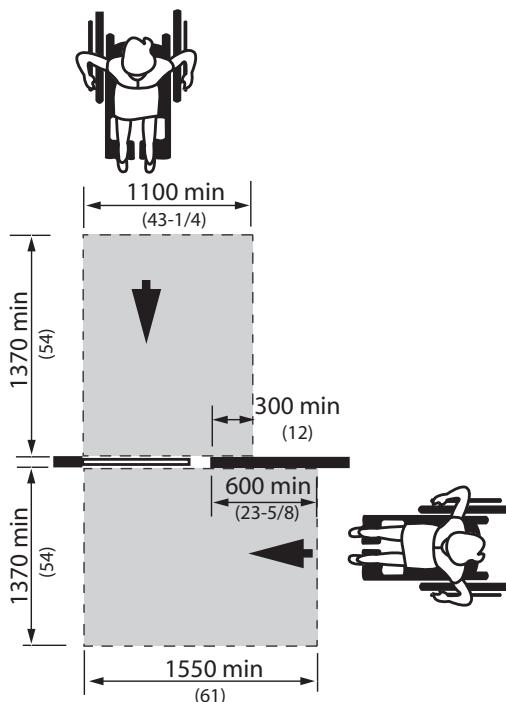


Figure 4.1.6.4
Front and Side Approach at Sliding Doors

4.1 ACCESS AND CIRCULATION

DESIGN REQUIREMENTS

(Continued)

The required *clear space* beside the latch is to be unobstructed for the full height of the door.

The minimum *space* between two hinged or pivoted doors in series shall be 1525 mm (60 in.), plus the width of any door swinging into the space.

Where doors in series do not align, a turn circle of at least 1525 mm (60 in.) shall be provided within the vestibule area, clear of any door swing.

Thresholds shall

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

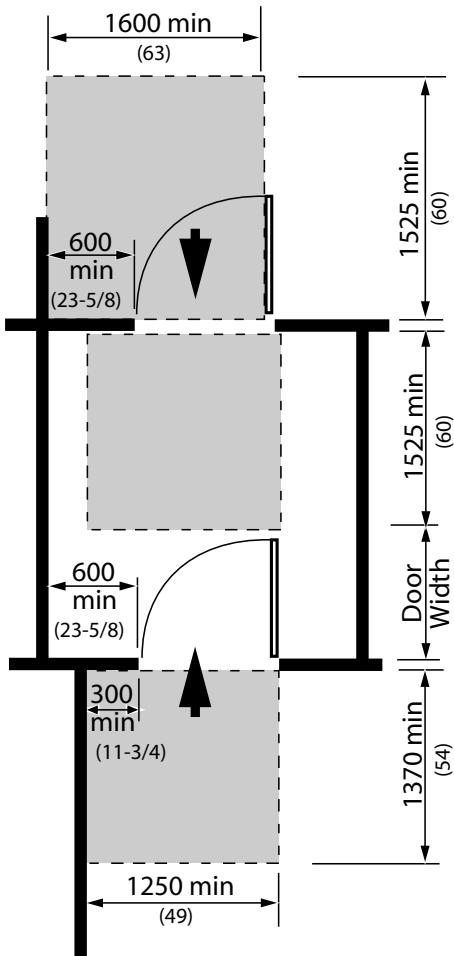


Figure 4.1.6.5
Manoeuvring Space at Doors in Series

4.1.6 DOORS

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

- be operable by using a closed fist;
- not require fine finger control, tight grasping, pinching, or twisting of the wrist to operate; and
- be mounted between 900 mm (35 in.) and 1000 mm (39-3/8 in.) from the floor.

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

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

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

Door closers shall be adjusted to the least pressure possible, but never more than the opening forces noted in this section.

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.

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.

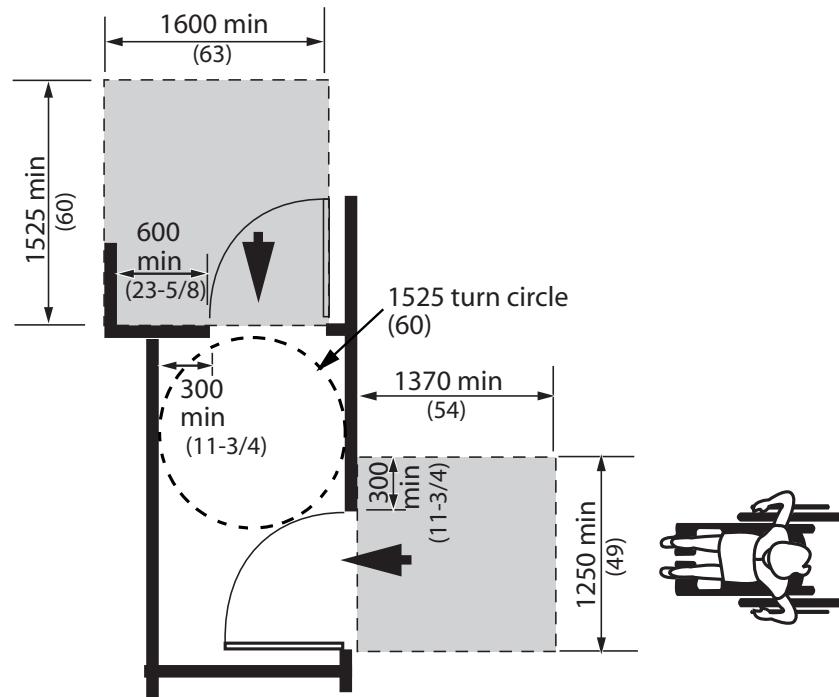


Figure 4.1.6.6
Manoeuvring Space at Doors in Series

4.1.6 DOORS

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 they shall

- be clearly visible;
- be located to allow a person using a wheelchair or scooter to stop immediately adjacent to the control (refer to 4.1.1);
- be located at least 600 mm (23-5/8 in.) from any inside corner;
- be located on the latch side of the door;
- where the door opens towards the user, the control shall be located not less than 600 mm (23-5/8 in.) and not more than 1500 mm (60 in.) beyond the door swing;
- incorporate controls that are;
 - minimum 150 mm (5-7/8 in.) in diameter located with its centre 1000 - 1100 mm (39-3/8 - 43-1/4 in.) above the finished ground/floor surface;
 - configured as a vertical bar that is at least 50 mm (2 in.) wide which can be activated between 200 mm (8 in.) and 900 mm (12 in.) above the finished ground/floor surface.
- incorporate the International Symbol of Access for Persons with Disabilities;
- where pressure-sensitive mats, overhead beams or proximity scanners are used to detect traffic, incorporate systems that will detect individuals using wheelchairs or scooters; and
- where exterior doors swing open into a pedestrian area, incorporate safety *guards* that comply with 4.1.3, projecting a minimum of 300 mm (11-3/4 in.) beyond both sides of the open door. (See Figure 4.1.6.8)

Where doors are not equipped with a closing device, the edge of door shall be colour contrasted to the face of the door. (See Figure 4.1.6.9)

Doors and/or door frames shall incorporate pronounced colour contrast, to differentiate them from the surrounding environment. Door handles and other operating mechanisms shall incorporate pronounced colour contrast, to differentiate them from the door itself.

Where a door incorporates glazing or is fully glazed, it shall comply with Section 4.1.8 (Windows, Glazed Screens and Sidelights).

4.1 ACCESS AND CIRCULATION

LEGISLATION REFERENCES

OBC 3.8.3.3

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.7 Gates, Turnstiles and Openings
- 4.1.8 Windows, Glazed Screens and Sidelights
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.10 Self-Service Kiosks and Information Systems
- 4.4.11 Card Access, Safety and Security Systems

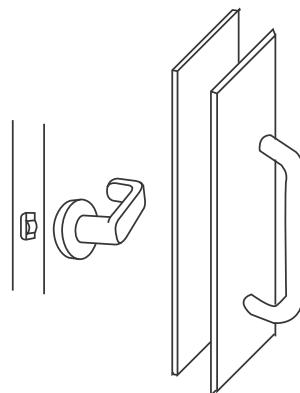


Figure 4.1.6.7
Examples of Accessible Hardware

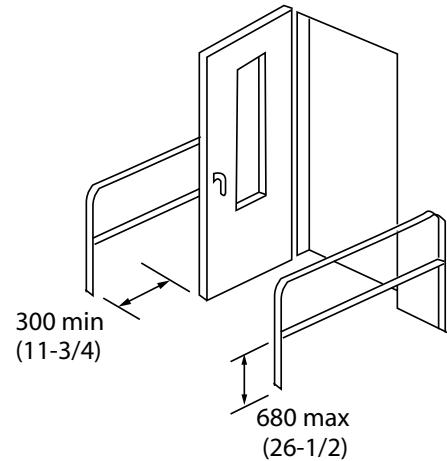


Figure 4.1.6.8
Detectable Safety Guards

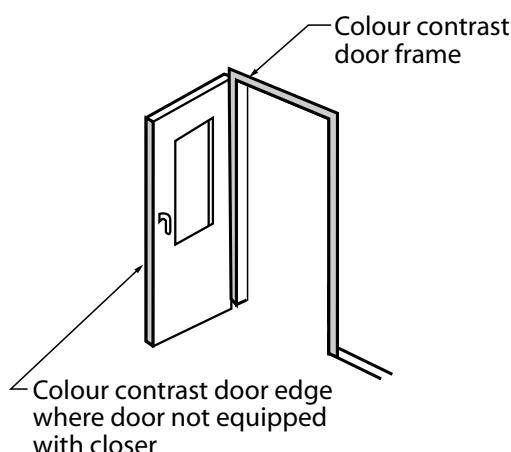


Figure 4.1.6.9
Colour Contrast at Doors

4.1 ACCESS AND CIRCULATION

4.1.7 GATES, TURNSTILES AND OPENINGS

RATIONALE

Gates and turnstiles should address the full range of users that may pass through them. Single-bar gates designed to be at a convenient waist height for ambulatory persons are at neck and face height for children and chest height for persons who use wheelchairs or scooters.

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 *accessible* 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, such openings shall be *accessible* (i.e., a minimum of 950 mm (37-1/2 in.) wide, to allow free passage for persons who use a wheelchair or scooter. (Note: Hardware should be suitable for autonomous use, and any closing device should not be spring-loaded)).

Where turnstiles or other ticketing control devices are utilized which are not *accessible*, a gate or opening which is *accessible* shall be provided in the same location and shall incorporate the International Symbol of Access for Persons with Disabilities.

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.

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.6 Doors
- 4.1.8 Windows, Glazed Screens and Sidelights
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.10 Self-Service Kiosks and Information Systems
- 4.4.11 Card Access, Safety and Security Systems

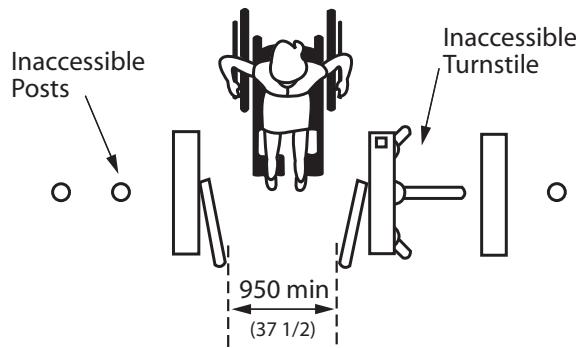


Figure 4.1.7.1
Access at Turnstile

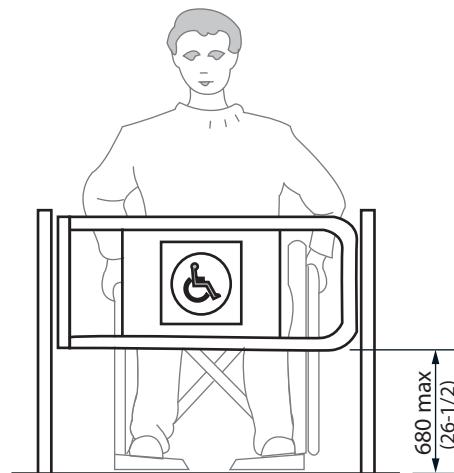


Figure 4.1.7.2
Access at Turnstile

4.1.8 WINDOWS, GLAZED SCREENS & SIDELIGHTS

RATIONALE

Broad expanses of glazing in screens, sidelights and doors can be difficult to detect. While this may be a particular concern to persons with a visual *impairment*, it is possible for anyone to walk into a 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 thereby lowering their eye level and reach range. This necessitates the need for lower sill heights and easily reached operating mechanisms. Window controls and operating devices should also respect the limitations of hand strength or dexterity encountered with different types of *disabilities*, including arthritis.

APPLICATION

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

Frameless glass doors and/or sidelights shall not be used.

DESIGN REQUIREMENTS

Fully-glazed doors and sidelights at exterior *entrances* or vestibules, as well as fully-glazed interior doors, screens and sidelights 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 (5-7/8 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 provides a high colour contrast and is easy to identify by persons with a visual impairment.

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

Where viewing windows or vision panels are provided,

- the sill height shall be no more than 760 mm (30 in.) from the floor; and
- where horizontal mullions are incorporated, the mullions shall not be located between 1060 mm (42 in.) and 1220 mm (48 in.) from the floor.

4.1 ACCESS AND CIRCULATION

In *facilities* with operable windows, window opening hardware shall

- be mounted between 400 mm (15-3/4 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.

LEGISLATION REFERENCES

OBC 3.8.3.3(14-15)

RELATED SECTIONS

4.1.1 Space and Reach Requirements

4.4.2 Controls and Operating Mechanisms

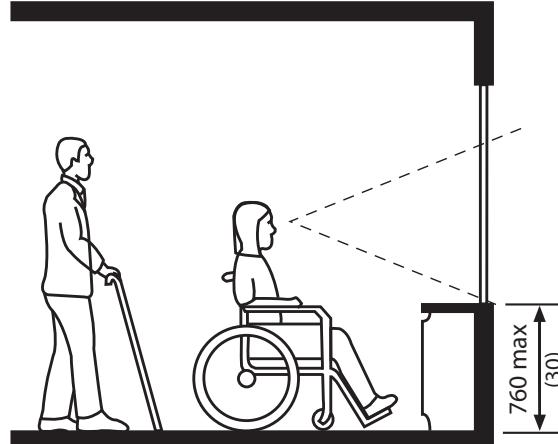


Figure 4.1.8.1
Window Sill Height

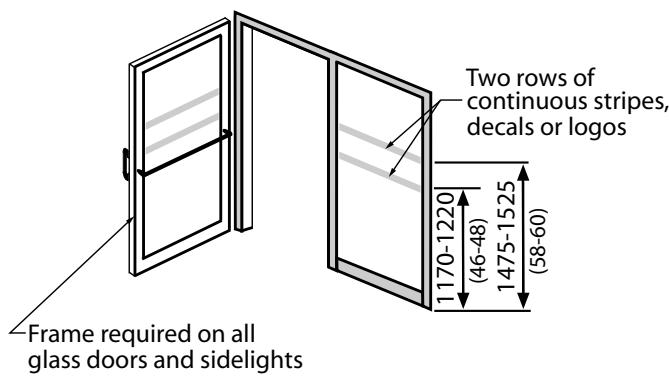


Figure 4.1.8.2
Fully Glazed Doors, Sidelights and Vision Panel Markings

4.1 ACCESS AND CIRCULATION

4.1.9 RAMPS

RATIONALE

Traditionally, *ramps* have been synonymous with wheelchair accessibility. However, *ramps* can be problematic 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 or scooters, 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 difficult to ascend when using a wheelchair, and can increase the risk of the wheelchair tipping backwards. Descending a steep *ramp* can also be hazardous. Any *cross slope* will further increase the effort required to negotiate the *ramp*. Manoeuvring space at the top and bottom are also important factors in a *ramps* usability. Level areas at points along a long *ramp* enable an individual to rest.

Textured surfaces, edge protection and *handrails* all provide important safety features. Heated surfaces are recommended to address the safety concerns associated with snow and ice.

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 1:25. In a retrofit situation where it is *technically infeasible* to provide a *ramp* with a *running slope* between 1:20 and 1:25, a *running slope* not steeper than 1:15 for exterior *ramps* and 1:12 for interior *ramps* may be used. Shallower slopes are preferred.

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

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

The maximum horizontal length between landings shall not exceed 9 m (29'-6").

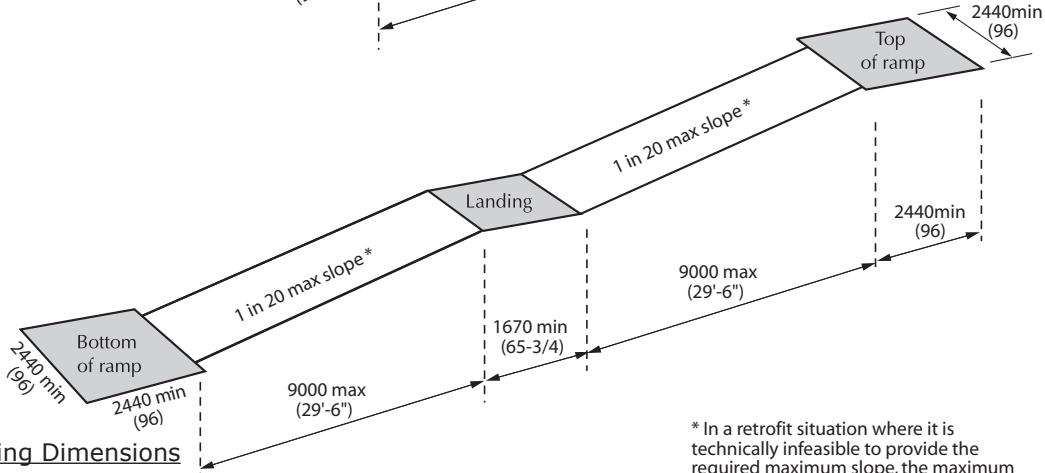
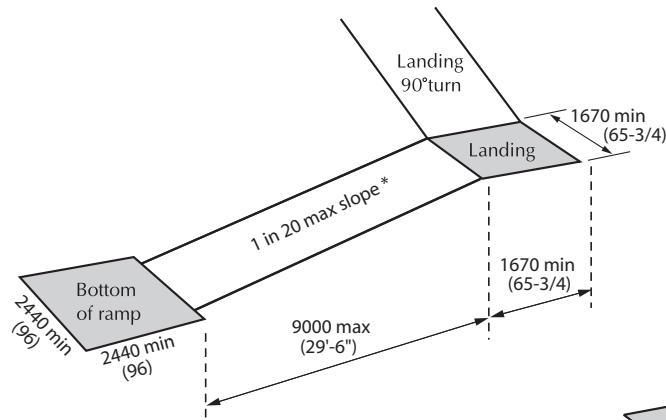
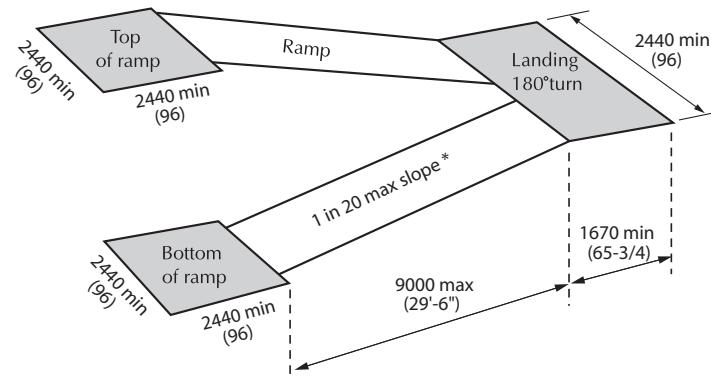


Figure 4.1.9.1
Minimum Ramp Landing Dimensions

* In a retrofit situation where it is technically infeasible to provide the required maximum slope, the maximum slope may be increased up to 1:12

4.1.9 RAMPS

Landings shall

- be at least as wide as the widest ramp run leading to it;
- have a minimum size not less than 2100×2100 mm (82-3/4 x 82-3/4 in.) if located at the top or bottom of a ramp or if served by a doorway. Where possible, the ideal is for the dimensions to be 2440 mm (96 in.). (In a retrofit situation where creating a suitably sized landing is *technically infeasible*, the required landing size may be reduced to 1670×1670 mm. (65-3/4 x 65-3/4 in.));
- 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 1670 mm (65-3/4 in.) and a width not less than 2100 mm (82-3/4 in.). In a retrofit situation where creating a suitably sized landing is

technically infeasible, the required landing width may be reduced to 2120 mm (84 in.);

- where there is a change of 90 degrees or more in the direction of the ramp, have a length not less than 1670 mm (65-3/4 in.) and a width no less than the width of the ramp; and
- where an intermediate landing at a straight ramp (Refer to Figure 4.1.9.1), have a length not less than 1670 mm (65-3/4 in.).

Ramp and landing surfaces shall be firm, stable, and slip-resistant.

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

4.1 ACCESS AND CIRCULATION

Edges of *ramps* and landings shall be protected with a wall or *guard* on all sides.

Where a *guard* is provided, it shall comply with the requirements of the Ontario Building Code.

Edge protection shall be provided at ramps and consist of

- a curb at least 75 mm (3 in.) high on any side of the *ramp* where no solid enclosure or *guard* is provided; and
- railings or other barriers that extend to within 50 mm (2 in.) of the finished *ramp*, or have a curb not less than 75 mm (3 in.) high.

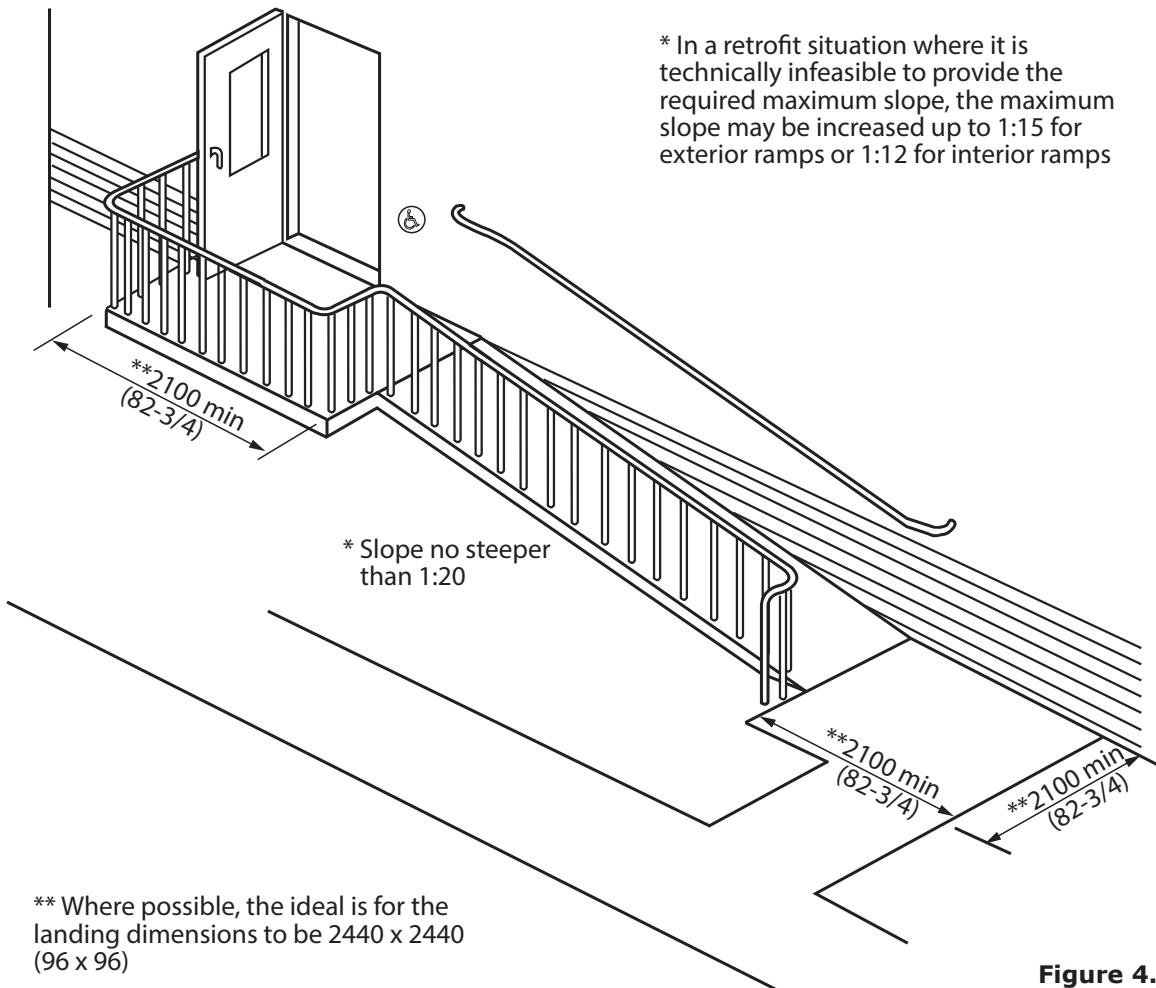


Figure 4.1.9.2
Ramp Criteria

4.1 ACCESS AND CIRCULATION

DESIGN REQUIREMENTS

(Continued)

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

- are on both sides;
- comply with 4.1.12;
- are continuous on the inside of switchback (U-shaped) or L-shaped *ramps*;
- extend horizontally at least 300 mm (11-3/4 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*;

- have a width between at least one set of *handrails* of 950 - 1100 mm (37-1/2 - 43-1/4 in.); and
- where ramps are greater than 2200 mm (86-5/8 in.) wide, one or more intermediate handrails which are continuous between landings must be provided, and located so that there is 900 mm (35-1/2 in.) between at least 1 set of handrails.

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

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

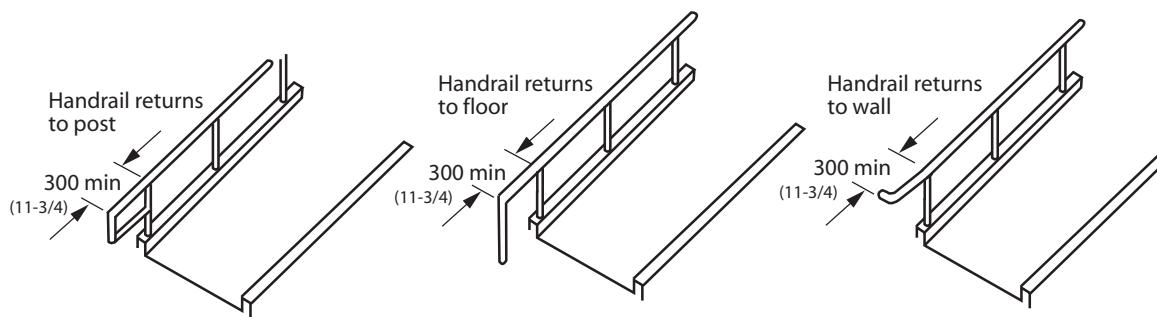


Figure 4.1.9.3
Horizontal Handrail Extensions

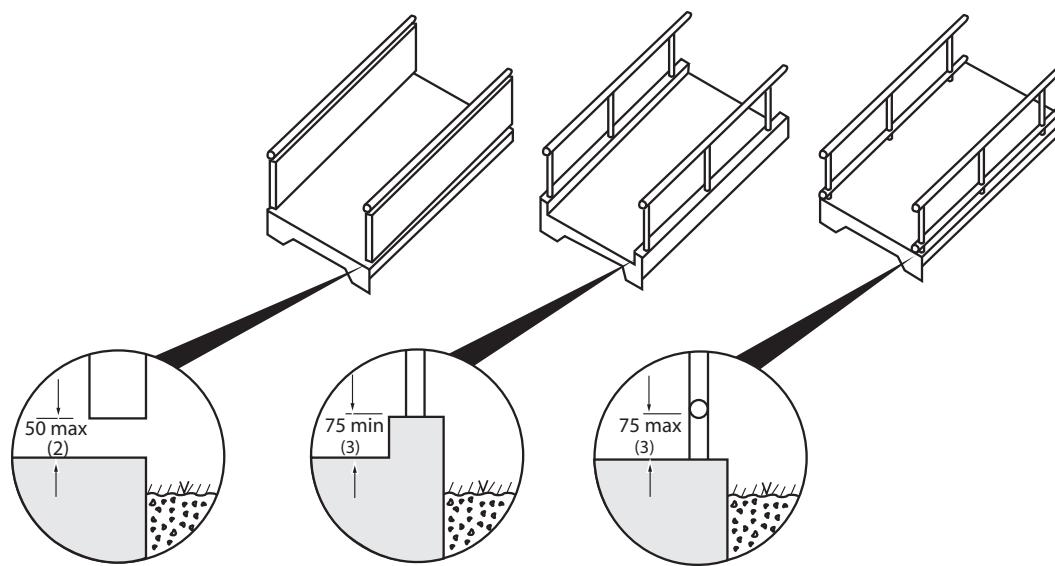


Figure 4.1.9.4
Edge Protection at Ramps

4.1.9 RAMPS

LEGISLATION REFERENCES

AODA 80.24

OBC 3.8.3.4

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.6 Doors
- 4.1.10 Curb Ramps
- 4.1.12 Handrails
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.1.10 CURB RAMPS

4.1 ACCESS AND CIRCULATION

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 of 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.

Snow accumulation at *curb ramps* should be removed completely after each snow fall.

APPLICATION

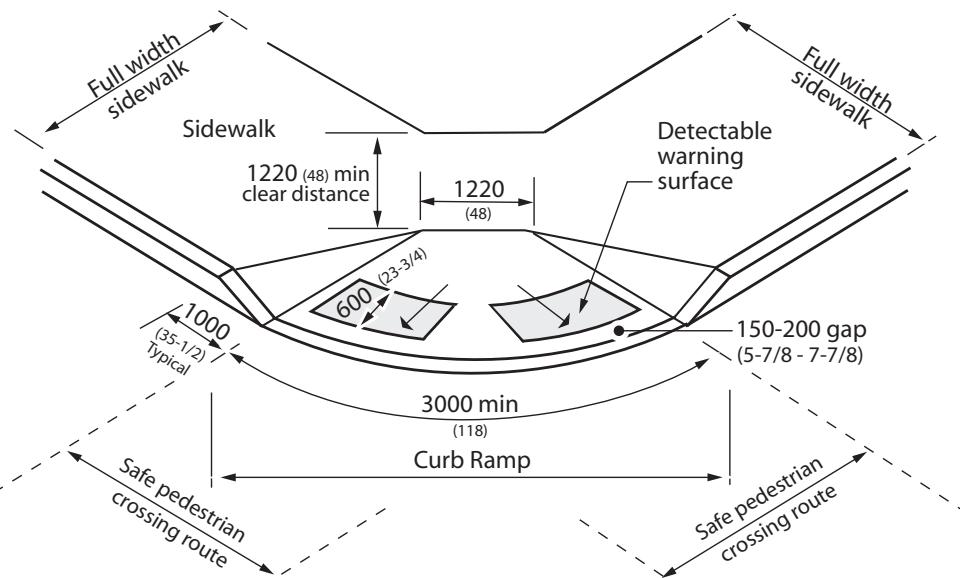
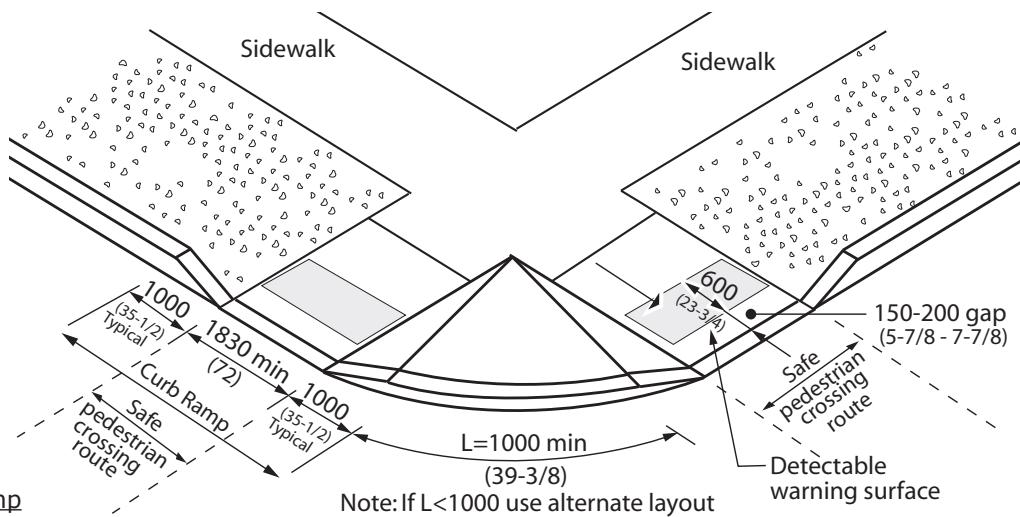
Curb ramps complying with this section shall be provided wherever any path of travel crosses a curb.

DESIGN REQUIREMENTS

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

Where an *accessible curb ramp* is on an *accessible route* it must be aligned with the direction of travel.

The *running slope* shall be between 1:50 and 1:20 (2%-5%). In a retrofit situation where it is *technically infeasible* to achieve these slopes, a *running slope* no steeper than 1:12 (8.3%) may be used.



4.1 ACCESS AND CIRCULATION

4.1.10 CURB RAMPS

DESIGN REQUIREMENTS

(Continued)

The maximum *cross slope* shall be no more than 1:50.

The maximum slope on a flared side shall be no more than 1:10.

The minimum width of *curb ramps*, exclusive of flared sides, shall be 1830 mm (72 in.).

Curb ramp configuration shall be as illustrated in Figures 4.1.10.1 to 4.1.10.7.

The maximum cross fall of gutters and road surfaces immediately adjacent to *curb ramps* shall be 1:20.

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

Surfaces of *curb ramps* shall

- be slip-resistant;
- have a smooth transition from ramp to adjacent surfaces; and
- incorporate a flat-topped domes or cones *detectable warning surface*
- in compliance with 4.4.8;
- 600 mm (24 in.) long, starting 150-200 (5-7/8 to 7-7/8 in.) back from the edge of the curb; and
- extending the entire width of the *curb ramp* .

Provide dedicated area for snow piling from all *curb ramps*, away from pedestrian routes.

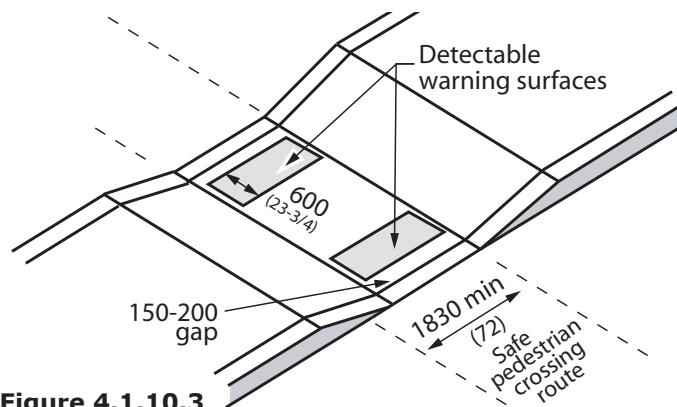


Figure 4.1.10.3
Curb Ramp at Narrow
Median Sidewalk Crossing

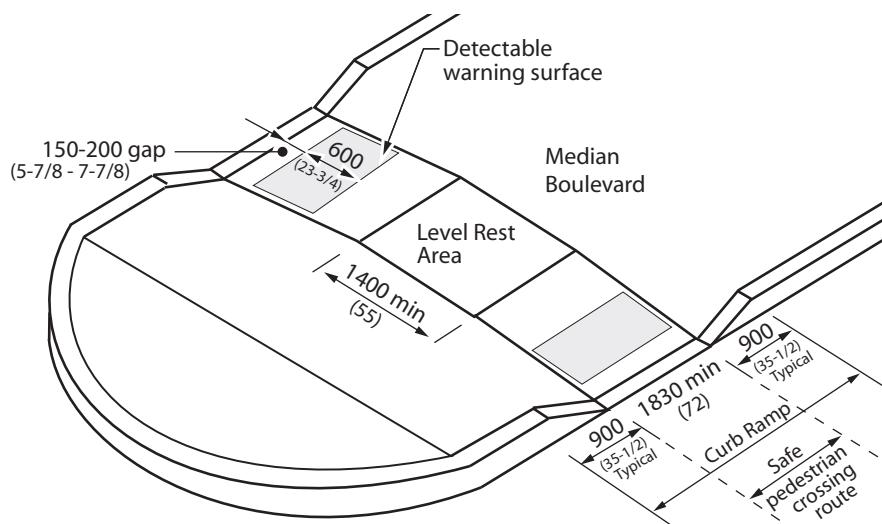


Figure 4.1.10.4
Curb Ramp at Wide
Median Sidewalk Crossing

4.1.10 CURB RAMPS

4.1 ACCESS AND CIRCULATION

Depressed Curbs:

Where a *depressed curb* is provided on an exterior path of travel, the depressed curb shall:

- have a maximum running slope of 1:20 (5%) even in retrofit applications;
- have a minimum width of 1830 mm (72 in.);
- be aligned with the direction of travel; and
- where provided at a pedestrian crossing, it shall incorporate a flat-topped domes or cones *detectable warning surface* that,
 - complies with section 4.4.8;
 - is located at the bottom portion of the depressed curb that is flush with the roadway;
 - is set back 150 - 200 mm (5-7/8 - 7-7/8 in.) from the curb edge; and
 - is a minimum of 610 mm (24 in.) in depth.

LEGISLATION REFERENCES

AODA 80.26
AODA 80.27
OBC 3.8.3.2

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.4.8 Detectable Warning Surfaces
- 4.4.12 Glare and Light Sources
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

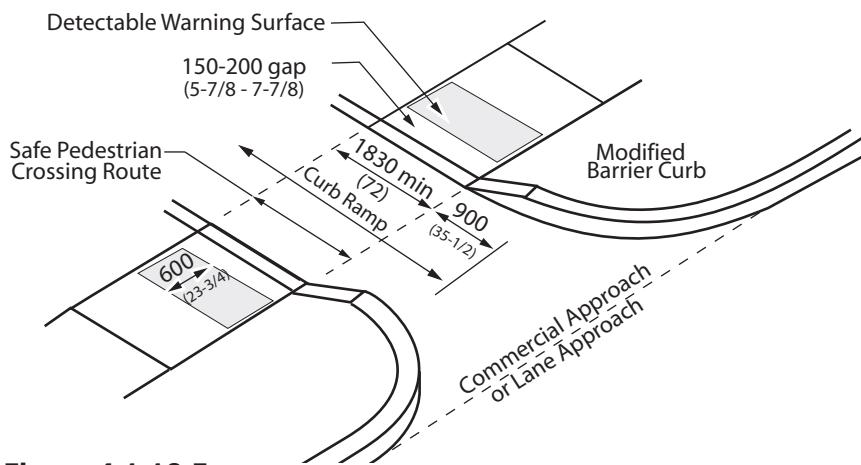


Figure 4.1.10.5
Curb Ramp at Commercial
or Lane Approach

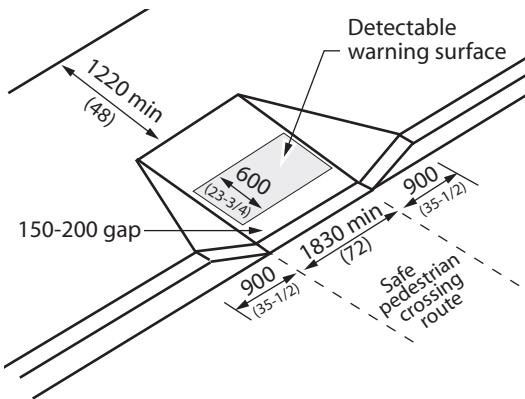


Figure 4.1.10.6
Curb Ramp at
Mid-Block Crossing

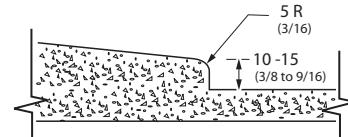


Figure 4.1.10.7
Curb Ramp Transition
at Pavement

4.1 ACCESS AND CIRCULATION

4.1.11 STAIRS

RATIONALE

Stairs that are comfortable for many adults 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.

The appropriate application of *handrails* will aid all users navigating stairways.

APPLICATION

Interior and exterior stairs shall comply with this section. In a retrofit situation

- stairs need not comply if they connect levels that are *accessible* by an elevator, *ramp* or other *accessible* means of vertical access; and
- dimensional changes to steps and landings are not required however all other design requirements must be met.

DESIGN REQUIREMENTS

A flight of stairs shall

- have uniform riser heights (rise) and uniform tread depths (run);
- have a rise not more than 180 mm (7 in.) and not less than 125 mm (4-7/8 in.) high;
- have a run not more than 355 mm (14 in.) and not less than 280 mm (11 in.) deep, measured from riser to riser;
- have slip resistant tread surfaces; and
- have no open risers.

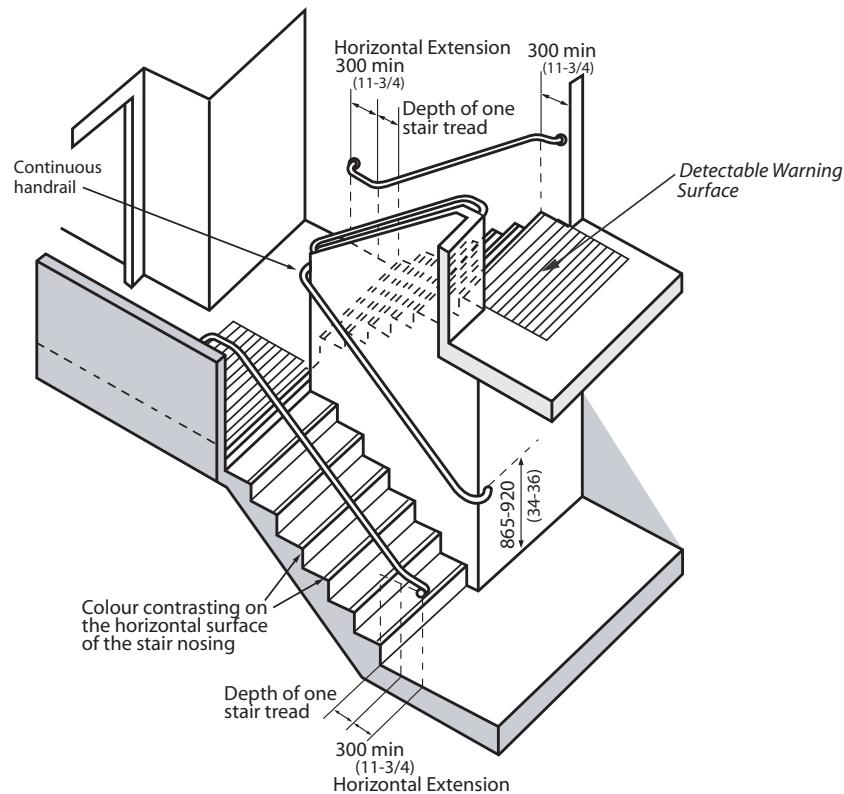


Figure 4.1.11.1
Stair Design Criteria

4.1.11 STAIRS

Nosings shall

- project not more than 25 mm (1 in.);
- have no abrupt undersides;
- have a curved or bevelled leading tread edge of between 6 mm (1/4 in.) and 10 mm (3/8 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 surface of the stair nosing in colour contrast with the remainder of the riser and the tread.

Stairs shall incorporate *detectable warning surfaces* in compliance with 4.4.8.

Handrails for stairs shall

- comply with 4.1.12;
- be installed on both sides;
- be of uniform height, ranging between 865 mm (34 in.) and 920 mm (36 in.) above the stair nosing;
- have a continuous inside *handrail* on switchback stairs; and
- extend at the bottom of the stairs for a distance of one tread depth beyond the first riser, then horizontally not less than 300 mm (11-3/4 in.), at a height ranging between 865 mm (34 in.) and 920 mm (36 in.) above the floor;
- extend horizontally at the top of the stairs not less than 300 mm (11-3/4 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.

Where exterior stairs are greater than 2200 mm (86-5/8 in.) wide, one or more intermediate handrails which are continuous between landings must be provided, and located so that there is no more than 1650 mm (65 in.) between of handrails.

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

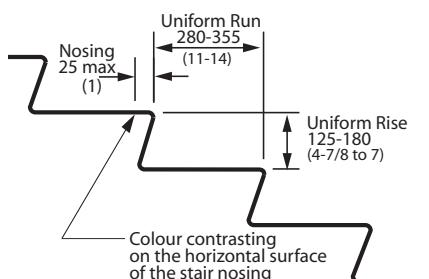


Figure 4.1.11.2
Stair Tread Criteria

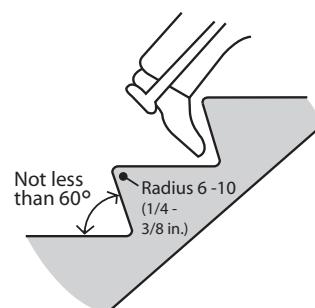


Figure 4.1.11.3
Raked Riser

4.1 ACCESS AND CIRCULATION

LEGISLATION REFERENCES

| | |
|------|---------|
| AODA | 80.25 |
| OBC | 3.4.6.1 |
| OBC | 3.4.6.8 |
| OBC | 3.4.6.9 |

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.6 Doors
- 4.1.12 Handrails
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.1 ACCESS AND CIRCULATION

RATIONALE

In the design of *handrails*, consideration must be given to the range of hands that will grasp them. A *handrail* profile should be graspable for an adult hand as well as a child or a person with arthritis. 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 person with a visual *impairment*, 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 enough space into which an arm may slip during a fall or stumble on the stairs.

APPLICATION

Handrails shall comply with this section.

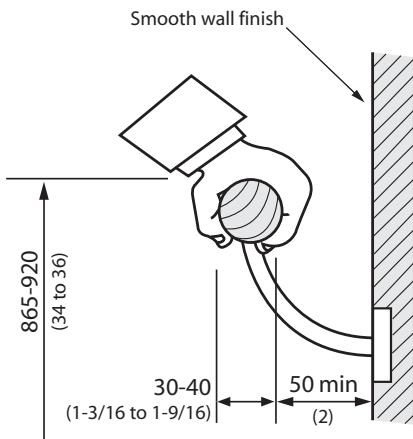


Figure 4.1.12.1
Handrail

4.1.12 HANDRAILS

DESIGN REQUIREMENTS

Handrails shall

- be mounted 865 - 920 mm (34-36 in.) high, measured vertically from a line drawn through the outer edges of the stair nosings or from the surface of a ramp;
- have a circular section 30 - 40 mm (1-3/16 in. - 1-9/16 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 125 mm (5 in.) whose largest cross-sectional dimension is not more than 45 mm (1-3/4 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 or guard of
 - at least 50 mm (2 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.

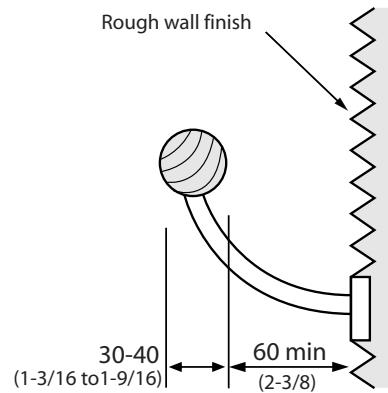


Figure 4.1.12.2
Handrail at Rough Wall

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 lb.) applied at any point and in any direction; and
- a uniform load of not less than 0.7 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.

LEGISLATION REFERENCES

OBC 3.4.6.5

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.9 Ramps
- 4.1.11 Stairs
- 4.4.15 Texture and Colour

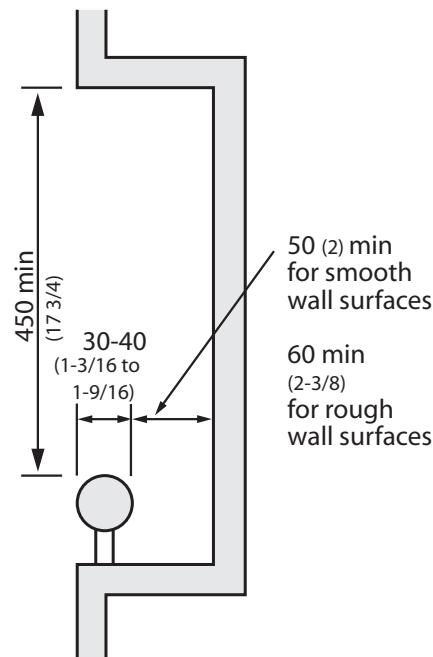


Figure 4.1.12.3
Handrail in Recess

4.1.13 ESCALATORS

4.1 ACCESS AND CIRCULATION

RATIONALE

Boarding and stepping off of an escalator can be challenging for many persons who could have difficulty with the timing or agility.

In addition, any lack of contrast on the edge of steps makes it difficult to determine the position of the steps or judge their speed.

Detectable warning surfaces

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.

Where escalators are provided, an alternate *accessible route* shall also be provided in the same vicinity as the escalator.

DESIGN REQUIREMENTS

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

Detectable warning surfaces in compliance 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.

Directional signage shall be provided to the alternative *accessible route* where the location of the route is not obvious.

LEGISLATION REFERENCES

OBC 3.8.1.4

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.1 ACCESS AND CIRCULATION

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 individuals with a visual *impairment* 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. The installation of a mirror can assist individuals using mobility devices to back out of an elevator where there is not sufficient space to turn around.

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.

Elevator access is not required:

- in elevator pits, elevator penthouses, mechanical rooms, piping or equipment catwalks;
- when *accessible ramps* in compliance with 4.1.9 are used in lieu of an elevator;
- to levels of fire halls and ambulance stations not served by grade-level entry, which do not contain *public use* facilities; and
- when platform lifts (wheelchair lifts) in compliance with 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;

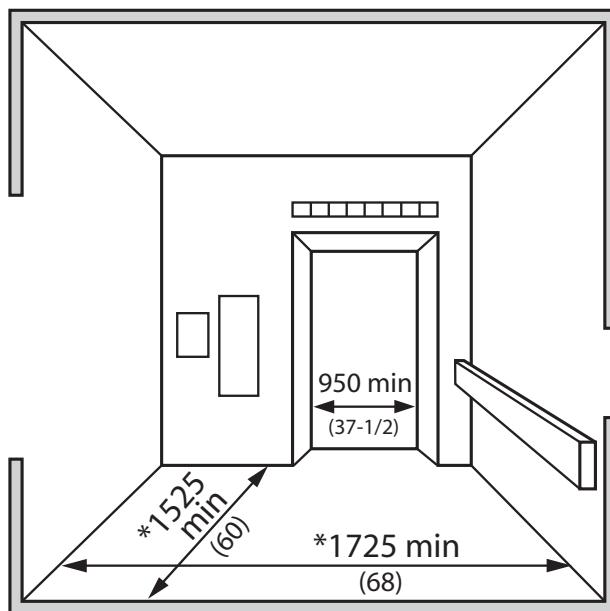


Figure 4.1.14.1
Elevator Cab

* In high-use public facilities, increase minimum dimensions to 2030 x 1525 mm (80 x 60 in.) with a door clear opening width of at least 1065 mm (42 in.)

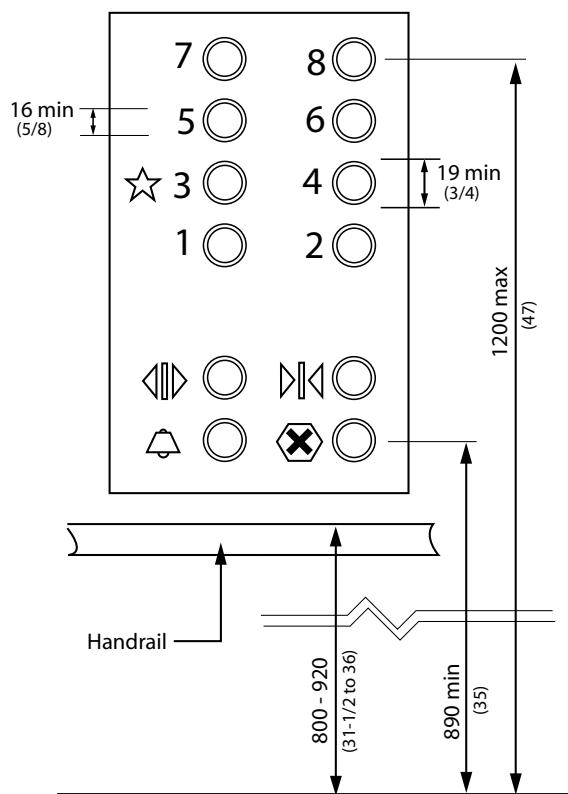


Figure 4.1.14.2
Control Panel

4.1.14 ELEVATORS

- 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 five persons, including, but not limited to, equipment control rooms and projection booths; and
- to provide access to raised judges' benches, clerks' stations, speakers' platforms, jury boxes and witness stands or to depressed areas, such as the well of a court.

DESIGN REQUIREMENTS

Accessible elevators shall be on an *accessible route* in compliance with 4.1.4.

Accessible elevators shall be identified by *signage* in compliance with applicable provisions of 4.4.7.

Elevators shall be automatic and be provided with a two-way automatic levelling device to maintain the floor level to ± 13 mm (1/2 in.).

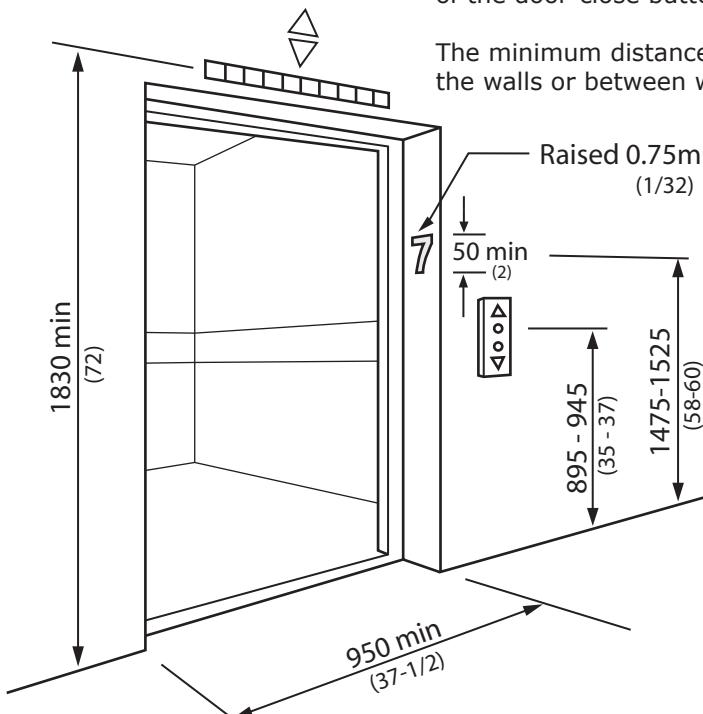


Figure 4.1.14.3
Elevator Entry

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 minimum 950 mm (37-1/2 in.). In a retrofit situation where it is *technically infeasible* to provide a *clear width* of 950 mm (37-1/2 in.), the *clear elevator door width* may be reduced to 900 mm (35 in.).

Doors shall be provided with a door re-opening device that will function to stop and reopen the car door and an adjacent hoist way door to minimum 950 mm (37-1/2 in.), in the event 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 \pm 1 in.) and 735 ± 25 mm (29 \pm 1 in.) above the floor without requiring contact for activation. In high-use public facilities, door clear opening width should be not less than 1065 mm (42 in.).

Elevator doors should remain fully open for minimum 8 seconds. This time may be reduced by operation of the door-close button.

The minimum distance between the walls or between wall and door,

4.1 ACCESS AND CIRCULATION

excluding return panels, shall not be less than 1725 x 1525 mm (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.). Exception: In a retrofit situation where it is *technically infeasible* to install an appropriately sized elevator, a LU/LA (Limited Use/Limited Application) elevating device with a platform length of at least 1525 mm (60 in.), may be used.

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.

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.) above the floor. The centre line of the highest floor button shall be no higher than 1200 mm (47 in.) above the floor. Other controls may be located where it is convenient.

4.1 ACCESS AND CIRCULATION

DESIGN REQUIREMENTS

(Continued)

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 or scooters.

Handrails shall be provided on all non-access walls at a height of 800 to 920 mm (31-1/2 to 36 in.) with a space of 40 to 45 mm (1-9/16 to 1-3/4 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.

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 high (2 in.) and at least 0.75 mm (1/32 in.) shall be placed on both sides of the door jambs, with the centreline at 1500 ± 25 mm (59 ± 1 in.) from the floor.

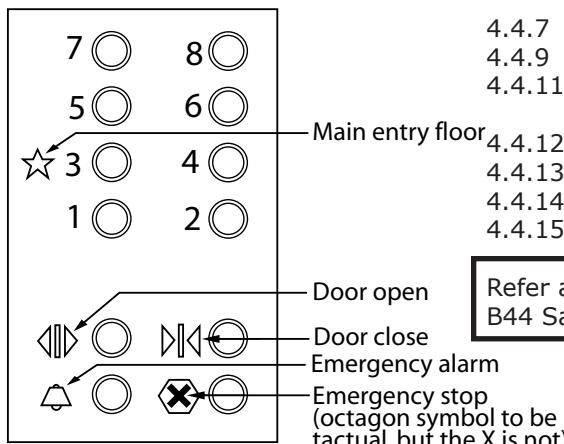
4.1.14 ELEVATORS

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 within the facility with two-way communication ability. The highest *operable portion* of the 2-way communication system shall be a maximum of 1200 mm (47 in.) above 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 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 minimum 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 minimum 100 lux (9.2 ft-candles), measured at the floor level and at the same lighting level as the adjacent lobby space.

Figure 4.1.14.4
Tactile Symbols



Mirrors shall not be used below a height of 2000 mm (78-3/4 in.) within elevator cabs as a finish material on the wall opposite the door.

Where the dimension of elevator cabs is less than 1500 mm (59 in.) in any direction, an angled mirror shall be provided above a height of 2000 mm (78-3/4 in.) on the wall opposite the door, to assist persons who use wheelchairs to back out.

Floor finishes within elevator cabs shall comply with 4.1.2.

Where an elevator serves only two floors, it shall be programmed to move automatically, without the need to activate in-car control buttons.

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.

LEGISLATION REFERENCES

OBC 3.8.3.5
OBC 3.13.8.4

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.6 Doors
- 4.1.12 Handrails
- 4.1.15 Platform Lifts
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.9 Public Address Systems
- 4.4.11 Card Access, Safety and Security Systems
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

Refer also to Appendix E of the CSA B44 Safety Code for Elevators

4.1.15 PLATFORM LIFTS

RATIONALE

Platform lifts are typical in retrofit applications. Elevators that are used by all facility users are preferred to platform lifts which tend to segregate persons with disabilities and limit space at entrance and stair locations. Furthermore, independent access is often compromised, as platform lifts are often 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 spatial requirement of larger mobility devices such as scooters.

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. Exception: Where it is *technically infeasible* to install an elevator, LU/LA (Limited Use/Limited Application) elevating device, or other *accessible* means of change of level.

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 (latest edition); and
- facilitate unassisted entry, operation, and exit from the lift.

The platform size shall be no less than 890 x 1525 mm (35 x 60 in.).

The platform shall incorporate safety wheel-guards along all exposed edges.

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 two-way communication ability. The highest *operable portion* of the two-way communication system shall be a maximum of 1200 mm (47 in.) from the floor of the platform. If the

4.1 ACCESS AND CIRCULATION

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.

LEGISLATION REFERENCES

OBC 3.8.3.5

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.6 Doors
- 4.1.12 Handrails
- 4.1.14 Elevators
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.9 Public Address Systems
- 4.4.11 Card Access, Safety and Security Systems
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

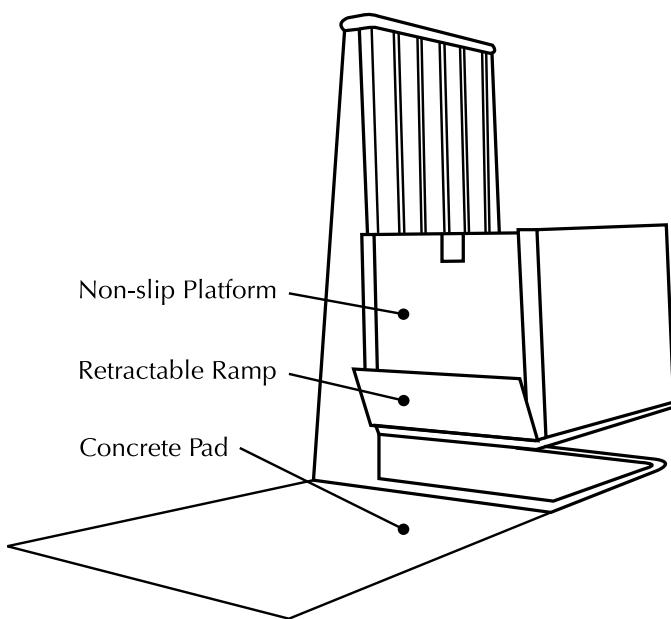


Figure 4.1.15.1
Vertical Platform Lift

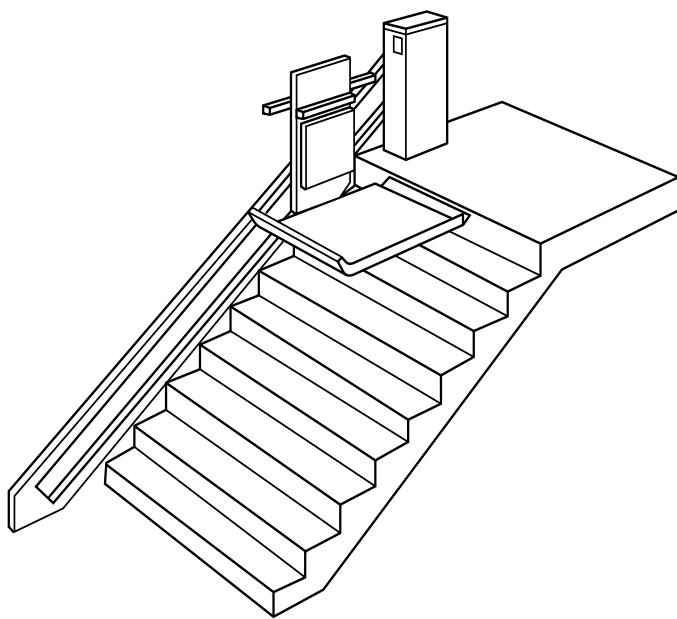


Figure 4.1.15.2
Inclined Platform Stair-Lift

4.2 WASHROOM FACILITIES

RATIONALE

As an integral feature of a *facility*, washroom *facilities* should accommodate the range of people that will use the space. Although many persons with disabilities use toilet *facilities* independently, some may require assistance. Where the individual providing assistance is of the opposite gender then typical gender-specific washrooms are awkward and an universal washroom is preferred.

Parents and caregivers with small children and strollers may also benefit from a large, universal washroom with toilet and change *facilities* contained within the same space.

Circumstances such as wet surfaces and the act of transferring between toilet and wheelchair or scooter can make toilet *facilities* accident-prone areas. An individual falling in a washroom with a door that swings inward could prevent his or her own rescuers from opening the door. Due to the risk of accidents, design decisions such as door swings and material finishes have safety implications and therefore make toilet *facilities* a prime location for emergency call switches. The appropriate design of all features will increase the usability and safety of all toilet *facilities*.

The identification of washrooms involves design issues that must be considered. For children or someone who cannot read text, a symbol or pictogram is preferred. A person with a visual *impairment* would also benefit from accessible *signage*. Features such as colour-contrasting door frames and door hardware will also increase accessibility.

4.2.1 TOILET FACILITIES

APPLICATION

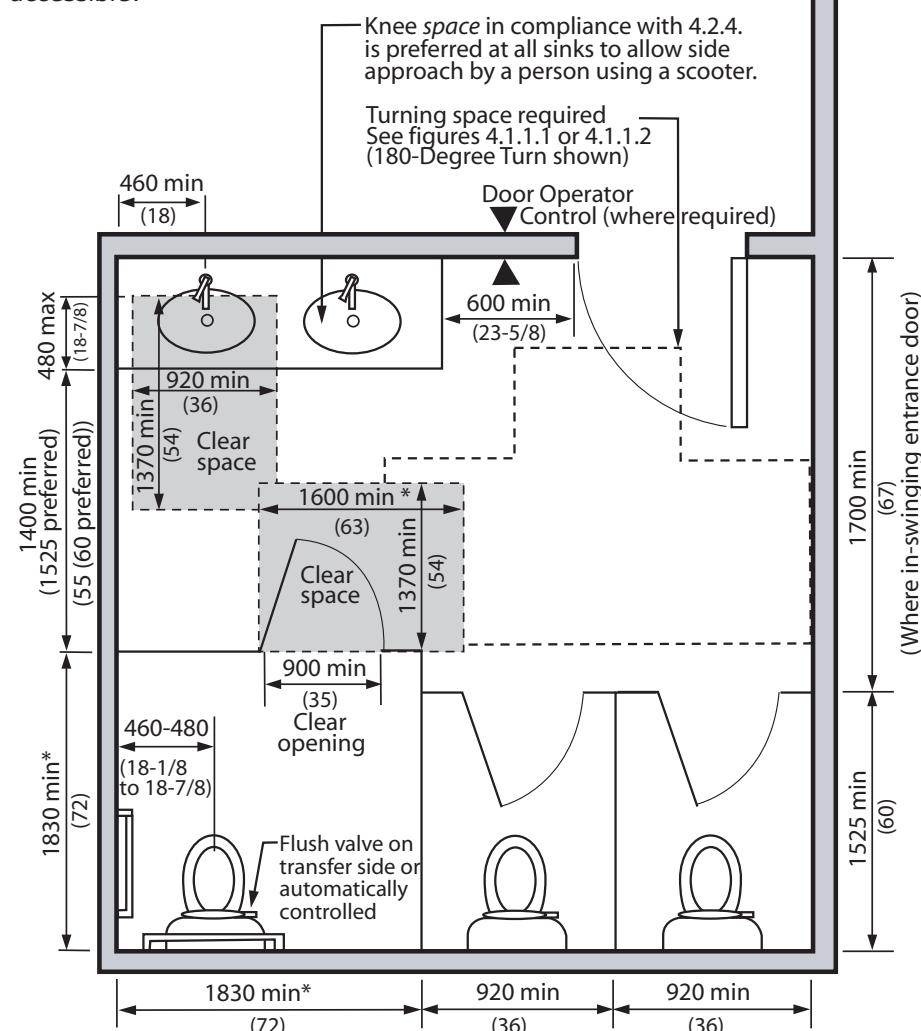
Where toilet *facilities* are provided, each public or *common use* toilet *facility* shall comply with this section. Other toilet rooms provided for the use of occupants of specific *spaces* (i.e. a private toilet room for the occupant of a private office) shall be *adaptable*.

In a retrofit situation where it is *technically infeasible* to make existing public or *common use* toilet *facilities accessible*, the installation of at least one universal washroom per floor and in compliance with 4.2.7, located in the same area as existing toilet *facilities*, will be permitted in lieu of modifying existing toilet *facilities* to be *accessible*.

At least one universal washroom shall be provided on every floor which has washrooms.

If universal washrooms are not visible from the common or *public use* washrooms, directional *signage* in compliance with 4.4.7 shall be provided.

Where bathing *facilities* are provided on a *site*, in conjunction with or in addition to toilet *facilities*, each such public or *common use* bathing *facility* shall comply with this section in addition to 4.2.8, 4.2.9, and other applicable sections of this standard.



NOTE: In a retrofit situation where it is *technically infeasible* to provide the required clearances, the dimension marked with an * may be reduced to 1525 mm (60 in.).

Figure 4.2.1.1
Washroom Dimensions

4.2.1 TOILET FACILITIES

For single-user portable toilet units clustered at a single location, a minimum of 5% but no less than one toilet unit in compliance with this section shall be provided at clusters wherever typical 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 universal washroom is provided primarily for the use of persons of both genders with physical *disabilities*, in lieu of facilities for persons with physical *disabilities* in washrooms used by the general public, the universal 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 facilities shall

- be on an *accessible route* complying with 4.1.4;
- be identified with *signage* complying with applicable provisions of 4.4.7;
- incorporate a *clear floor space* to allow a person in a wheelchair to make a 180 degree turn; and
- incorporate even illumination throughout of at least 100 lux (10 ft-candles).

All entrance doors to *accessible* toilet rooms shall

- comply with 4.1.6;
- not swing into the *clear floor space* required for any fixture;
- have a minimum 1700 mm (67 in.) clearance between the inside face of an in-swinging entrance door and the outside face of an adjacent toilet stall.

Accessible fixtures and controls within toilet and bathing rooms shall

- be on an *accessible route* complying with 4.1.4.
- have a minimum clearance of 1400 mm (55) between the outside face of the *accessible* stall and any wall-mounted fixture or obstruction.

4.2 WASHROOM FACILITIES

LEGISLATION REFERENCES

OBC 3.8.2.3

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.6 Doors
- 4.2.2 Toilet Stalls
- 4.2.3 Toilets
- 4.2.4 Lavatories
- 4.2.5 Urinals
- 4.2.6 Washroom Accessories
- 4.2.7 Universal washrooms
- 4.2.8 Shower Stalls
- 4.2.9 Grab Bars
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.2 WASHROOM FACILITIES

4.2.2 TOILET STALLS

RATIONALE

Manoeuvrability of a wheelchair or scooter is the principal consideration in the design of an *accessible* stall. The increased size of the stall is required to ensure there is sufficient space to facilitate proper placement of a wheelchair or scooter to accommodate transfer onto the toilet fixture. Not only is *space* required for mobility equipment, 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 makes it easier for someone to close the door behind them.

Minimum requirements for non-*accessible* toilet stalls are included to ensure that persons who do not use wheelchairs or scooter can be adequately accommodated within any toilet stall. Universal features include *accessible* hardware and a minimum stall width.

Consider the inclusion of larger toilet stalls to accommodate persons of large stature. Features include; increased space between centreline of toilet fixture and adjacent wall, floor mounted toilets and wider doors.

APPLICATION

Accessible toilet stalls shall comply with this section.

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

All other toilet stalls within a *facility* (i.e., those considered to be non-*accessible*) shall be minimum 920 mm (36 in.) wide by 1525 mm (60 in.) long.

In a retrofit situation where an existing floor is not *accessible* and making it *accessible* is *technically infeasible*, public or *common use* washrooms shall have at least one ambulatory water closet stall.

| # of toilet stalls within the washroom | Required # of accessible toilet stalls |
|--|---|
| 1 - 6 | 1 |
| 7 - 16 | 2 |
| 17 - 20 | 3 |
| 21 - 30 | 4 |
| Over 30 | 5 plus 1 for each additional 10 water closets |

Table 4.2.2
Number of Accessible Toilet Stalls

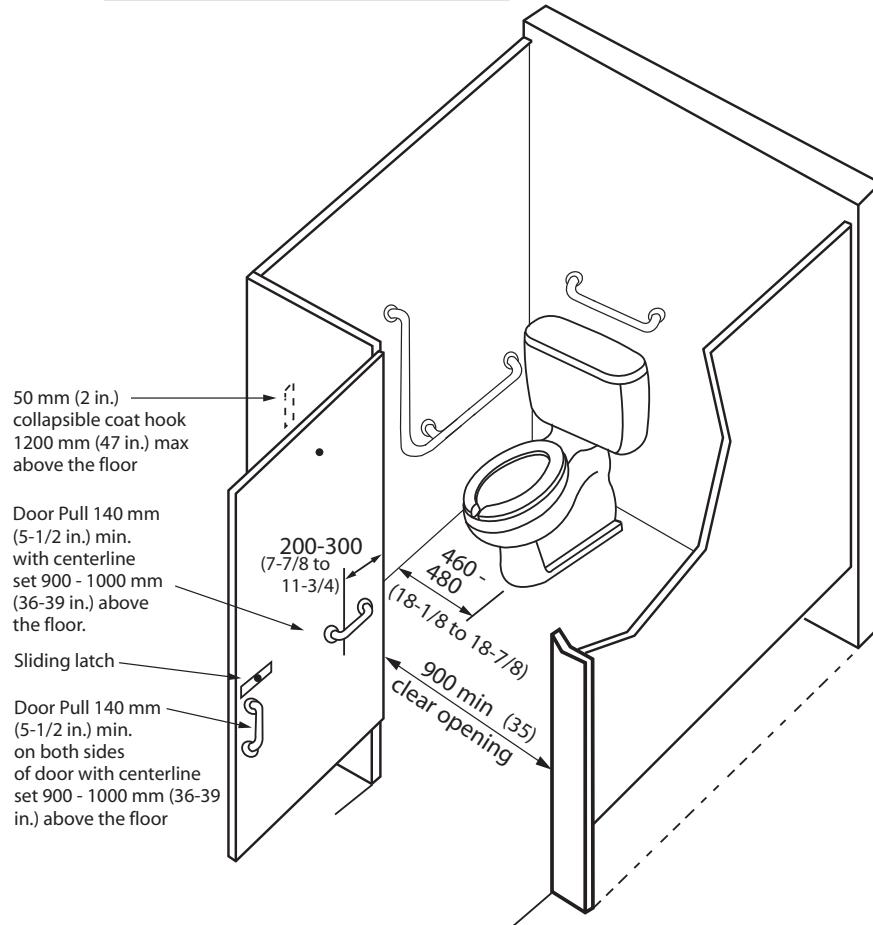


Figure 4.2.2.1
Accessible Toilet Stall

NOTE: Allow for a turn circle clear of all fixtures of at least 1500 mm (59 in.).

4.2.2 TOILET STALLS

DESIGN REQUIREMENTS

All toilet stall doors shall be capable of being locked from the inside by a device that is;

- operable with a closed fist;
- does not require fine finger control, tight grasping, pinching, or twisting of the wrist;
- requires a force of not more than 22 N (4.9 lb.) to activate (e.g., sliding bolt or lever); and
- capable of opening the latch from the outside in case of emergency.

Accessible toilet stalls shall

- be on an *accessible route* in compliance with 4.1.4;
- have internal dimensions that accommodate a turning space at least 1500 mm (59 in.), clear of all fixtures or other obstructions;
- have a toilet fixture in compliance with 4.2.3;
- be equipped with a collapsible coat hook mounted not more than 1200 mm (47 in.) above the floor on a side wall and projecting not more than 50 mm (2 in.) from the wall; and
- have a minimum 920 mm (36 in.) wide and 1500 mm (59 in.) deep *clear transfer space* on one side of the toilet fixture.

Where more than one *accessible* toilet stall is provided within a toilet or bathing *facility*, the stalls shall be configured with the *clear transfer space* (i.e., the *open space* beside the toilet) on opposite sides of the toilet fixtures.

Accessible toilet stall doors shall

- provide a *clear opening* of at least 900 mm (35 in.) with the door in the open position. In a retrofit situation where it's *technically infeasible* to provide the required *clear opening*, the *clear opening* may be reduced to 860 mm (34 in.);
- swing outward, unless additional *clear floor space* of at least 820 mm x 1440 mm (32 in. x 56 in.) is provided within the stall and does not interfere with the arc of the door swing;

- be aligned with the *clear transfer space* adjacent to the toilet fixture;
- be equipped with gravity hinges so that the door closes automatically;
- be equipped with contrasting coloured "D"-type door pulls on both sides, near the latch side of the door and located 900 - 1000 mm (36 - 39 in.) above the finished floor;
- where the door swings out, be equipped with a contrasting coloured "D"-type door pull on the inside of the door, located 200 - 300 mm (7-7/8 to 11-3/4 in.) from the hinged side of the door and 900 - 1000 mm (36 - 39 in.) above the floor.

Ambulatory toilet stalls shall

- be at least 1500 mm (59 in.) deep and 890 - 940 mm (35 - 37 in.) wide;
- have the toilet fixture centred between the partition walls;
- have a door that provides a *clear opening width* of at least 810 mm (32 in.), which swings out unless the minimum stall dimensions are not located within the door swing;
- be equipped with gravity hinges;
- have latch-side pulls in compliance with this section; and
- be equipped with L-shaped grab bars on both sides of the toilet in compliance with 4.2.3 and 4.2.9.

4.2 WASHROOM FACILITIES

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

- operable by one hand;
- operable with a closed fist; and
- mounted between 900 mm (36 in.) and 1000 mm (39 in.) above the floor.

Whenever collapsible coat hooks are supplied in *accessible* washroom stalls, they are to be accompanied by the installation of a vinyl sign to indicate this condition.

Toilet stall partitions and doors shall be colour-contrasted with the surrounding environment.

Toilets, flush controls and other elements shall be designed to meet the requirements of 4.2.3.

LEGISLATION REFERENCES

OBC 3.8.3.8

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.3 Protruding and Overhead Objects
- 4.1.6 Doors
- 4.2.3 Toilets
- 4.2.6 Washroom Accessories
- 4.2.9 Grab Bars
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

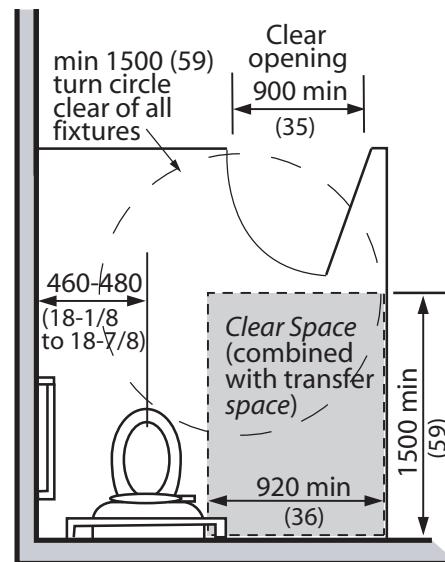


Figure 4.2.2.2
Accessible Toilet Stall
with In-Swinging Door

4.2 WASHROOM FACILITIES

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 required to operate it. Lever style handles on the transfer side of the toilet facilitate these considerations.

Appropriate placement of grab bars makes sitting and standing or transfers between the toilet and a mobility device safer.

Consider the use of floor mounted toilets to accommodate persons of large stature.

APPLICATION

Accessible toilets shall comply with this section. Wall-mounted toilets are preferred except where weight requirements dictate otherwise.

4.2.3 TOILETS

DESIGN REQUIREMENTS

Accessible toilet fixtures shall have

- the top of the seat between 430 and 485 mm (17 and 19 in.) above the floor;
- no spring-activated seat;
- a back support where there is no seat lid or tank; and
- the tank top securely attached.

Accessible toilets shall be

- located between 460 and 480 mm (18-1/8 to 18-7/8 in.) away from an adjacent wall measured from the centre line of the toilet to the surface of the wall; or
- have a clear transfer space of at least 920 x 1500 mm (36 x 59 in.) provided on each side of the toilet.

A *clear transfer space*, minimum 920 mm (36 in.) wide and 1500 mm (59 in.) deep designed to permit a wheelchair or scooter to back into a *clear space* beside a toilet fixture, shall be provided on one side of the toilet fixture in all *accessible* toilet stalls (see 4.2.2.) and in universal washrooms (see 4.2.7.).

The *clear transfer space* shall be clear of obstructions (such as garbage bins or baby change tables). **EXCEPTION:** Sanitary napkin disposal units may be installed within the transfer space provided they are recessed or protrude not more than 100 mm (4 in.) into this space.

Toilet flush controls shall be

- operable by a closed fist from the transfer side of the toilet; or
- be electronically automatically controlled.

Hand-operated flush controls shall comply with 4.4.2.

Where an *accessible* toilet is located adjacent to a wall it shall be equipped with grab bars that

- comply with 4.2.9;
- are L-shaped with 760 mm (30 in.) long horizontal and vertical components mounted with the horizontal component 750 mm (29-1/2 in.) above the floor and the vertical component 150 mm (5-7/8 in.) in front of the toilet bowl; and
- be at least 600 mm (24 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 minimum 150 mm (5-7/8 in.) above the tank.

Note: An optional drop-down grab bar in compliance with this section may be provided on the transfer side of the toilet.

4.2.3 TOILETS

Where an *accessible* toilet stall is not located adjacent to a wall it shall be equipped with drop-down grab bars on each side that

- comply with 4.2.9;
- are at least 760 mm (30 in.) long;
- are mounted on the wall behind the toilet with the horizontal component 750 mm (29-1/2 in.) above the finished floor and 390 - 410 mm (15-3/8 - 16-1/8 in.) from the centre line of the toilet; and
- one grab bar will have the toilet paper dispenser attached.

Toilet fixtures within ambulatory toilet stalls shall have grab bars on both sides in compliance with this section.

Toilet-paper dispensers shall be

- single large roll dispensers, as conventional double roll dispensers put the outside toilet paper roll out of reach of the user;
- wall mounted;
- located below the grab bar;
- in line with or not more than 300 mm (11-3/4 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 WASHROOM FACILITIES

LEGISLATION REFERENCES

OBC 3.8.3.9

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.2.2 Toilet Stalls
- 4.2.9 Grab Bars
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

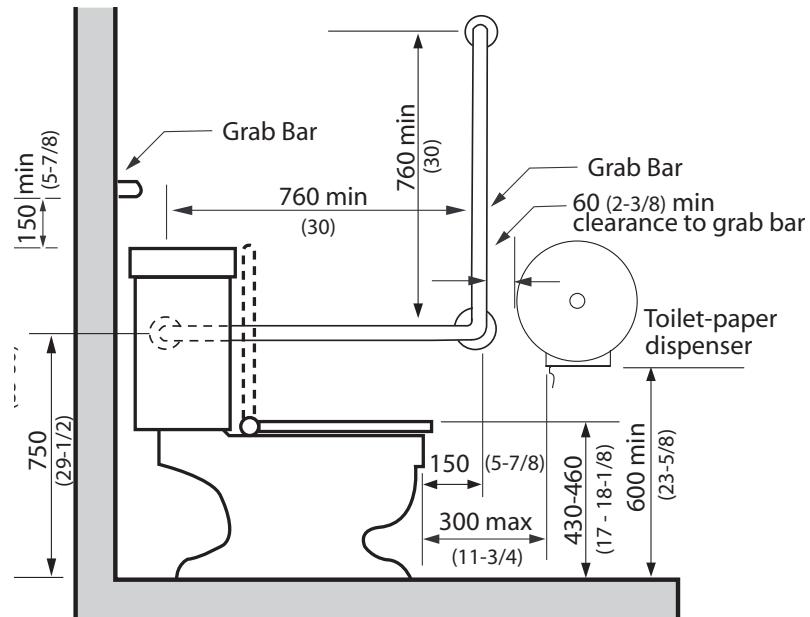


Figure 4.2.3.1
Grab Bar Configuration

4.2 WASHROOM FACILITIES

4.2.4 LAVATORIES

RATIONALE

The accessibility of lavatories will be greatly influenced by their operating mechanisms. While faucets with remote-eye technology may 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 insulating of hot water pipes protects the legs of an individual using a wheelchair. This is particularly important when a disability impairs sensation such that the individual would not sense that their legs were being burned. The combination of shallow sinks and higher water pressures can cause unacceptable splashing at lavatories.

APPLICATION

All lavatories shall comply with this section. In a retrofit situation where it is *technically infeasible* to have all lavatories comply with this section, at least one lavatory in each *accessible* washroom shall comply.

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 (32-1/4 in.) and 840 mm (33 in.) above the floor;
- have a knee space of at least
 - 920 mm (36 in.) wide;
 - 735 mm (29 in.) high at the front edge;
 - 685 mm high (27 in.) at a point 300 mm (12 in.) back from the front edge; and
 - 350 mm (14 in.) high over the distance from a point 300 mm (12 in.) to a point 430 mm (16-7/8 in.) back from the front edge;
- have a minimum *clear floor space* 760 mm wide (30 in.) 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 hot water and drain pipes insulated if they abut the clearances noted above, or limit the water temperature to a maximum of 43 degrees Celsius (100 degrees F); and
- have soap and towel dispensers that are
 - located to be *accessible* to persons who use wheelchairs or scooters (i.e., 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;
 - located not more than 610 mm (24 in.) measured horizontally from the accessible lavatory;
 - operable with one hand;
 - colour-contrasted from the surrounding environment; and
 - in compliance with 4.4.2.

4.2.4 LAVATORIES

Faucets and other controls shall

- be in compliance with 4.4.2;
- have lever-style handles (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 760 mm (30 in.) wide by 735 mm (29 in.) high.

Shelves or other projections shall;

- be located not more than 200 mm (8 in.) above the surface of the lavatory;
- be not more than 1100 mm (43-1/4 in.) above the finished floor; and
- project no more than 100 mm (4 in.) from the wall.

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

4.2 WASHROOM FACILITIES

LEGISLATION REFERENCES

OBC 3.8.3.11

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

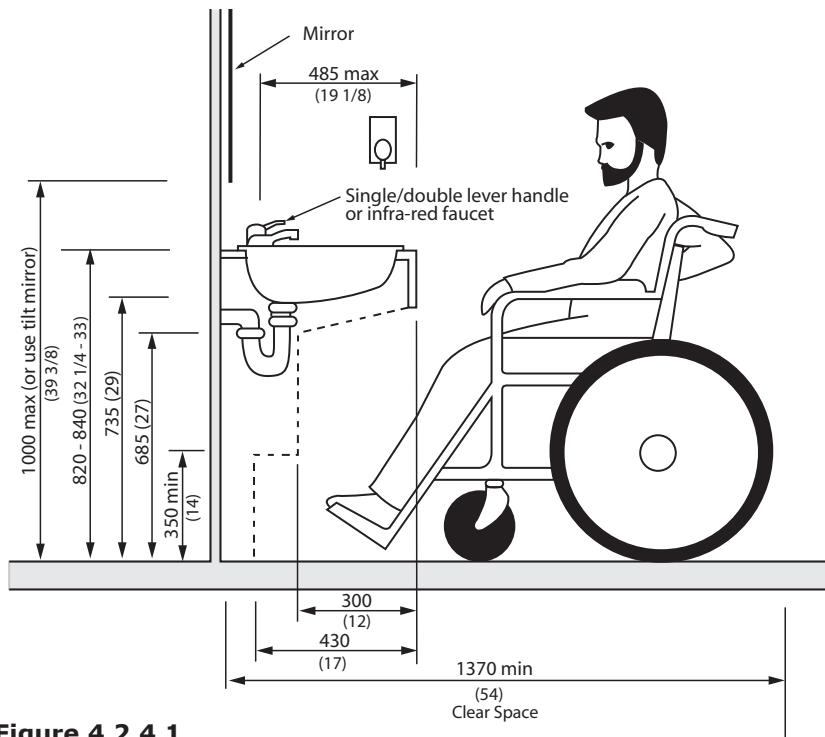


Figure 4.2.4.1
Lavatory Criteria

4.2 WASHROOM FACILITIES

RATIONALE

A *clear floor space* is required in front of urinals to manoeuvre a mobility device. The provision of grab bars may assist an individual in rising from a seated position and to steady themselves. Floor-mounted urinals accommodate children and persons of short stature as well as enable easier access to drain personal care devices. Flush controls should be lever-style or automatic (preferred).

Strong colour contrasts between the urinal, the wall and the floor will assist persons with a visual *impairment*.

APPLICATION

Where more than one urinal is provided in an *accessible* toilet or bathing facility, at least one shall comply with this section.

DESIGN REQUIREMENTS

Urinals shall be

- wall-mounted with an elongated rim located no higher than 430 mm (17 in.) above the finished floor; or
- floor-mounted with the rim at the finished floor level.

Urinals shall be at least 345 mm (13-1/2 in.) deep, measured from the outer face of the urinal rim to the back of the fixture.

A *clear floor space* of 810 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, and not include a step or change in level.

Where privacy screens are provided

- there shall be at least 920 mm (36 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.

4.2.5 URINALS

Urinals shall have grab bars installed on each side that

- comply with 4.2.9;
- are not less than 600 mm (23-5/8 in.) long;
- are mounted vertically
 - 380 mm (15 in.) from the centre line of the urinal; and
 - with the lowest end located between 600 - 650 mm (23-5/8 - 25-1/2 in.) above the floor.

Flush controls shall be operable with a closed fist or automatic, mounted at no more than 1120 mm (44 in.) above the finished floor, and shall comply with 4.4.2.

LEGISLATION REFERENCES

OBC 3.8.3.10

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.2.9 Grab Bars
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

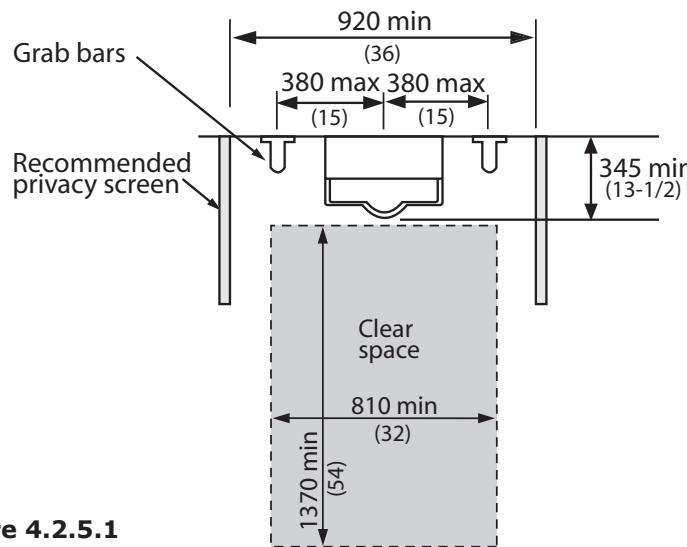


Figure 4.2.5.1
Urinal

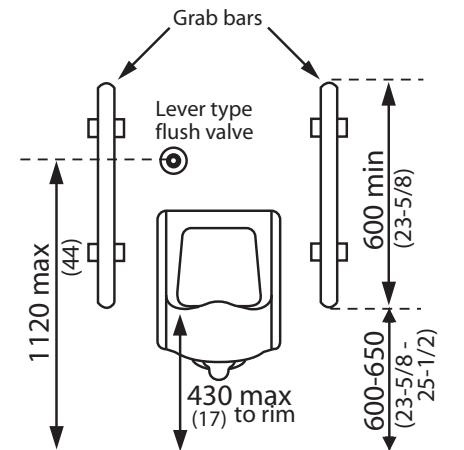


Figure 4.2.5.2
Urinal

4.2.6 WASHROOM ACCESSORIES

RATIONALE

Design issues related to washroom accessories include the hand strength and dexterity required to operate mechanisms. Reaching the accessories is another concern. Accessories that require the use of two hands to operate can present difficulties for a range of persons with disabilities 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. In a retrofit situation where it is *technically infeasible* to make all washroom accessories comply with this section, at least one of each type of washroom accessory shall comply in all accessible toilet or bathing facilities.

DESIGN REQUIREMENTS

Each type of washroom accessory provided, unless otherwise specified in 4.2.2 and 4.2.4, shall have *operable portions* and controls mounted between 900 mm (35 in.) and 1200 mm (47 in.) above 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 from vertical to be usable by a person using a wheelchair.

4.2 WASHROOM FACILITIES

LEGISLATION REFERENCES

OBC 3.8.3.11(2-4)

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.3 Protruding and Overhead Objects
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

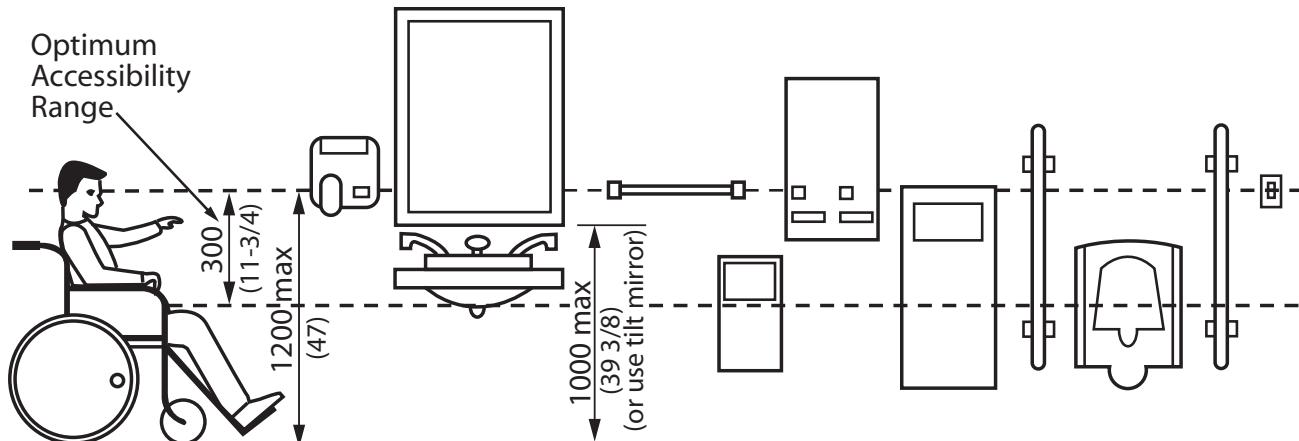


Figure 4.2.6.1
Washroom Accessories

4.2 WASHROOM FACILITIES

4.2.7 UNIVERSAL WASHROOMS

RATIONALE

The provision of a separate universal washroom is advantageous in a number of instances. For an individual using a wheelchair, the extra space provided with a separate washroom is preferred to an *accessible* stall. Should an individual 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 scenario 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 universal washrooms shall comply with this section.

At least one universal washroom, shall be provided on every floor which has washrooms.

If universal washrooms are not visible from the *public use* or *common use* toilets, directional *signage* complying with 4.4.7 shall be provided.

DESIGN REQUIREMENTS

Accessible universal washrooms shall

- be on an *accessible route* in compliance with 4.1.4; and
- be identified with *signage* in compliance with applicable provisions of 4.4.7.
- be designed to permit a wheelchair to turn within an *open space* that has a diameter of not less than 2100 mm (82-3/4 in.). Where possible, the ideal is for the diameter to be 2440 mm (96 in.);

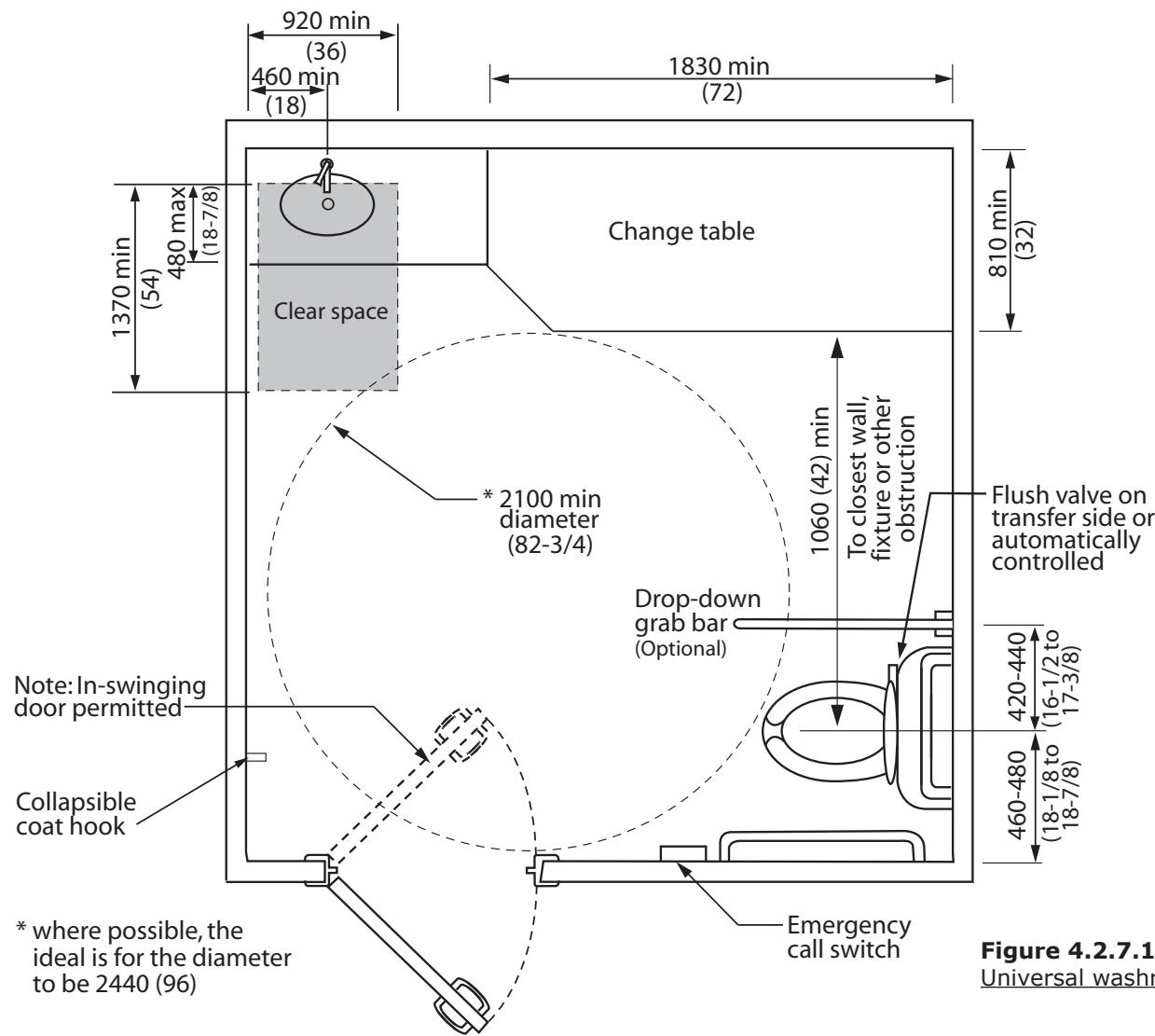


Figure 4.2.7.1
Universal washroom

4.2.7 UNIVERSAL WASHROOMS

- be equipped with a door that
 - complies with 4.1.6;
 - is equipped with a power operator;
 - can be locked from the inside
 - with a closed fist;
 - without tight grasping, pinching or twisting of the wrist; and
 - with a force less than 22 N (5lbf)
- has latch operating and locking mechanisms located not less than 900 mm (35 in.) and not more than 1000 mm (39-3/8 in.) above the floor;
- where equipped with a power locking mechanism, have:
 - a push-to-lock button on the inside;
 - a push-to-unlock button on the inside that also activates the power door operator;
 - signage indicating the door locking/unlocking procedures installed next to the locking/unlocking buttons;
 - a sign on the inside that is illuminated with the word "LOCKED" when the door is locked;
 - a sign on the outside that is illuminated with the words "IN USE" when the door is locked
- can be released from the outside or other means provided for door to be opened from the outside in case of emergency;
- be provided with a lavatory conforming to 4.2.4;
- be equipped with a toilet fixture conforming to 4.2.3
- equipped with flush controls and other elements conforming to 4.2.3;

- be equipped with grab bars conforming to 4.2.3 and 4.2.9;
- have fixture clearances conforming to 4.2.3 and 4.2.4;
- provided with a clear transfer space adjacent to the toilet fixture, as required by 4.2.3;
- be equipped with
 - a collapsible 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 mirror and washroom accessories complying with 4.2.6.
 - a shelf mounted not more than 1200 mm (47 in.) above finished floor; and
 - have lighting controlled by a motion sensor.

Accessible universal washrooms shall incorporate an emergency call system linked to a central monitoring location (e.g., office or switchboard). The emergency call shall also

- be equipped with audible and visual signals both inside and outside washroom;
- be activated by a control device inside washroom typically within reach of the toilet; and
- have a sign that reads IN THE EVENT OF EMERGENCY PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE in letters at least 25 mm (1 in.) high with a 5 mm (1/4 in) stroke and that is posted above the emergency button.

4.2 WASHROOM FACILITIES

All universal washrooms shall provide clear space for an adult-sized change table that:

- is minimum 1830 mm (72 in) long and 810 mm (32 in) wide
- has an adjacent clear floor space not less than 900 mm (35-1/2 in) along the entire length of the change table
- has reinforcement in the adjacent wall for future installation of the change table.

Exception: Where another universal washroom with space for an adult-sized change table is on the same floor level within 45m (147-1/2 ft.).

SIGNAGE:

Accessible universal washrooms shall be identified with the word "washroom" in raised tactile letters, accompanied by the universal symbol for accessibility. Signage shall comply with Section 4.4.7. Refer to Figure 4.2.7.2 for a sample sign with dimensions.

LEGISLATION REFERENCES

OBC 3.8.3.12

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.6 Doors
- 4.2.3 Toilets
- 4.2.4 Lavatories
- 4.2.5 Urinals
- 4.2.6 Washroom Accessories
- 4.2.9 Grab Bars
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.11 Card Access, Safety and Security Systems
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

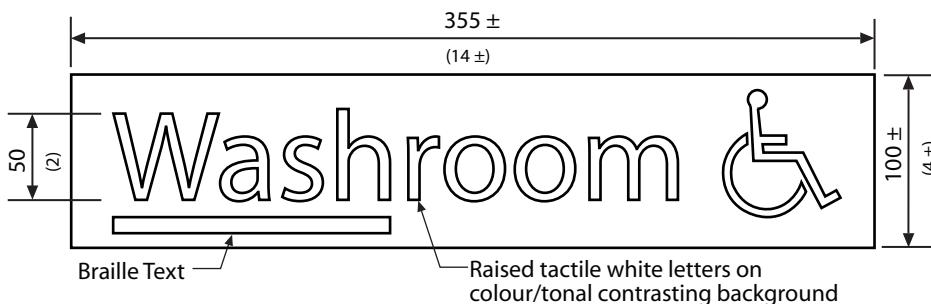


Figure 4.2.7.2
Universal washroom signage

4.2 WASHROOM FACILITIES

4.2.8 SHOWER STALLS

RATIONALE

Roll-in or curbless shower stalls eliminate the hazard of stepping over a threshold and are essential for persons with *disabilities* who use wheelchairs or other mobility devices in the shower. Grab bars and non-slip materials are safety measures which will support any individual. Additional equipment such as a hand-held shower head or a folding 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 will assist individuals with a visual *impairment*.

APPLICATION

Where shower stalls are provided, the number of *accessible* showers shall comply with Table 4.2.8.

Accessible showers 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 access to the shower is not restricted;
- 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
 - 450 mm (17-3/4 in.) wide and 400 mm (15 in.) deep;
 - mounted approximately 450 mm (17-3/4 in.) above the floor;
 - designed to carry a minimum load of 1.33 kN (300 lbs.); and

- be equipped with an L-shaped grab bar that

- conforms to 4.2.9;
- is mounted horizontally approximately 850 mm (33 in.) above the floor;
- is located between the shower head and the controls;
- has a horizontal component at least 920 mm (36 in.) long and a vertical component at least 760 mm (30 in.) long; and
- is mounted so that the horizontal component overlaps the seat by at least 300 mm (12 in.).
- be equipped with a vertical grab bar on the bench wall that
- is at least 760 mm (30 in.) in length;
- is mounted 80 - 120 mm (3-1/8 - 4-3/4 in.) from the front edge, starting between 700 and 800 mm (27-1/2 and 31-1/2 in.) from the floor; and
- conforms to section 4.2.9;
- be equipped with a pressure-equalizing or thermostatic-mixing valve in compliance with 4.4.2, located above the grab bar but no higher than 1000 mm (39-3/8 in.), maximum 685 mm (27 in.) from the seat wall;

| # of showers | # of showers required to be accessible |
|--|--|
| 1 | 1 |
| 2 - 7 | 1 |
| more than 7 | 1 plus 1 for each increment of 7 showers |
| where only 1 shower is provided it will comply with this section | |

Table 4.2.8
Number of Accessible Showers

4.2.8 SHOWER STALLS

- have soap holder(s) which can be reached from the seated position, fully recessed; and
- be equipped with a shower head with at least 1525 mm (60 in.) of flexible hose that can be used both as a fixed position shower head and as a hand held shower head. The shower spray unit shall be reachable from the seated positions and have an on/off control. **EXCEPTION:** The use of two fixed-height shower heads with the capability of adjusting the direction of water flow is permitted instead of a hand-held spray unit in *facilities* that may be subject to vandalism. The height of the higher shower head to be 1825 mm (72 in.). The height

of the lower shower head to be 1400 mm (55-1/8 in.). A valve to direct water between the shower heads, in compliance with 4.4.2, to be located adjacent to the shower control/mixing valve.

Where the showerhead 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 a mobility device onto the shower seat.

Measures shall be taken to contain water within the shower area.

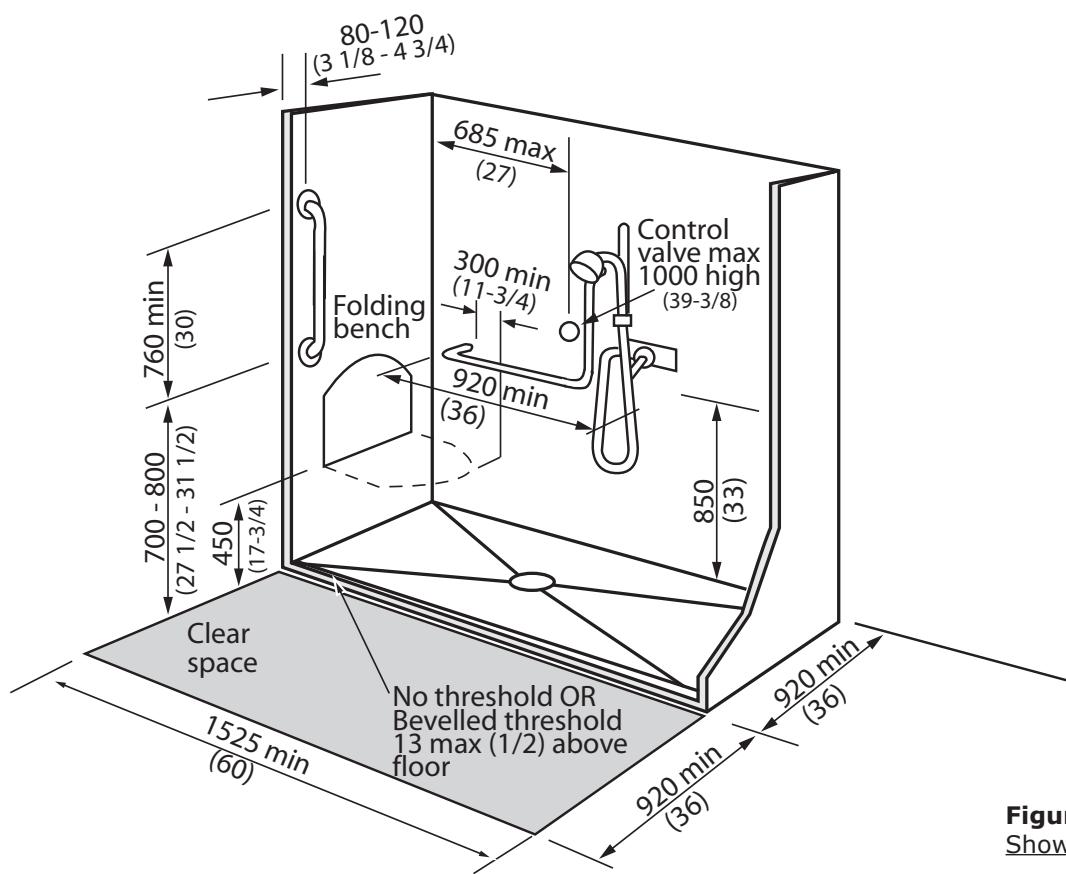


Figure 4.2.8.1
Shower Stall

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LEGISLATION REFERENCES

UBC 3.8.3.13

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.2.6 Washroom Accessories
- 4.2.9 Grab Bars
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

4.2 WASHROOM FACILITIES

4.2.9 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 or scooter may be another scenario where grab bars are utilized.

Consider higher loading capacity for grab bars to accommodate persons of large stature.

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 lb.), applied vertically or horizontally;
- be not less than 35 mm (1-3/8 in.) and not more than 40 mm (1-1/2 in.) in diameter;
- have a clearance of 50 mm (2 in.) to the wall;
- be free of any sharp or abrasive *elements*;
- be colour-contrasted with the surrounding environment; and
- have a slip-resistant surface.

Adjacent surfaces shall be free of any sharp or abrasive *elements*.

LEGISLATION REFERENCES

OBC 3.8.3.8

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.2.3 Toilets
- 4.2.5 Urinals
- 4.2.7 Universal washrooms
- 4.2.8 Shower Stalls
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

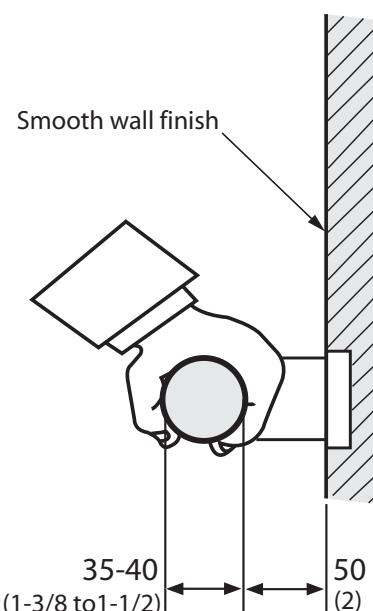


Figure 4.2.9.1
Grab Bar

4.3.1 DRINKING FOUNTAINS

4.3 OTHER AMENITIES

RATIONALE

When planning the design of drinking fountains, one should consider the limited height of children and that of a person using a wheelchair or scooter. 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. The placement of the fountain is also important. Fountains should be recessed, to avoid protruding into the path of travel, especially if they are wall mounted above the detectable height of a person using a cane. Angled recessed alcove designs allow more flexibility and less precision required by a person using a wheelchair or scooter.

APPLICATION

Where drinking fountains are provided on a floor level, at least one shall be *accessible* and shall comply with this section. Where more than one drinking fountain or water cooler is provided on a floor level, at least 50% shall be *accessible* and shall comply with this section.

Where only one drinking fountain is provided on a floor level, it shall incorporate components that are *accessible* to individuals who use mobility devices and to those who have difficulty stooping or bending.

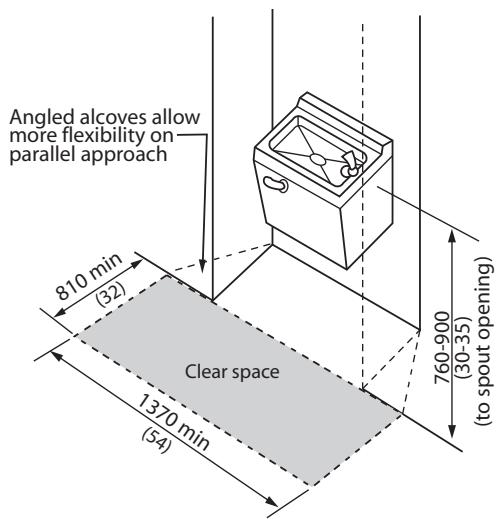


Figure 4.3.1.1
Parallel Approach

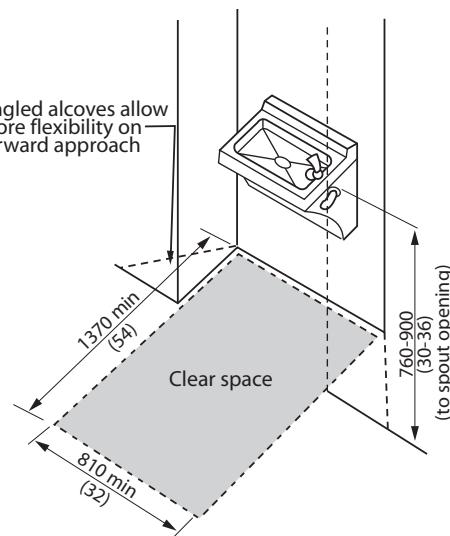


Figure 4.3.1.2
Forward Approach

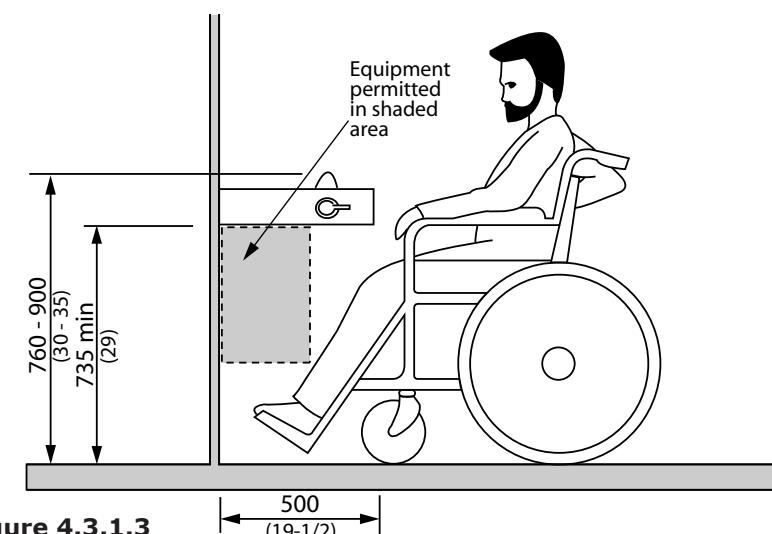


Figure 4.3.1.3
Clearances

4.3 OTHER AMENITIES

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 900 mm (35 in.) above the floor or ground surface;
- provide the water stream at a vertical angle of up to,
 - 30 degrees, where the spout is located less than 75 mm from the front of the fountain; or
 - 15 degrees, where the spout is located not less than 75 mm and not more than 125 mm from the front of the fountain;
- have a spout that provides a water flow at least 100 mm (4 in.) high;
- be equipped with controls that are located on the front of the unit, or on both sides of the unit, easily operated from a wheelchair or scooter using one hand with a force of not more than 22 N (4.9 lb.), or be automatically operable; and
- be detectable by a cane at a level at or below 680 mm from the finished floor.

4.3.1 DRINKING FOUNTAINS

Cantilevered drinking fountains shall

- have a *clear floor space* of at least 810 mm (32 in.) by 1370 mm (54 in.);
- have a knee space between the bottom of the unit and the floor of at least 810 mm (32 in.) wide, 500 mm (19-1/2 in.) deep and 735 mm (29 in.) high;
- be recessed or otherwise located out of the circulation route; and
- be mounted with the spout not more than 915 mm (36 in.) above the finished floor.

Freestanding or built-in fountains not having a knee space shall have a *clear floor space* at least 1370 mm (54 in.) wide by 810 mm (32 in.) deep in front of the unit to accommodate a parallel approach.

LEGISLATION REFERENCES

OBC 3.8.3.16

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.3.2 VIEWING POSITIONS

4.3 OTHER AMENITIES

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 or scooter. A choice of seating locations should be available.

Providing only one size of seating does not reflect the diversity of body types of our society. Offering seats with an increased width and weight capacity is helpful for persons of large stature. Seating with increased legroom will better suit individuals that are taller. Seats with removable armrests (*adaptable* seating) are helpful for persons of larger stature as well as individuals using wheelchairs that prefer to transfer to the seat.

APPLICATION

In assembly occupancies with fixed seating, spaces designated for wheelchair/scooter use and seats designated as *adaptable* seating shall be provided as per Table 4.3.2, and shall comply with this section.

Spaces for the storage of wheelchairs and other mobility assistive devices shall be provided to accommodate the minimum number of *adaptable* seats.

| Number of Fixed Seats in Seating Areas | Minimum number of Spaces Required for Wheelchairs | Minimum number of Adaptable Seats |
|--|---|-----------------------------------|
| Up to 20 | 2 | 1 |
| 21 - 40 | 2 | 2 |
| 41 - 60 | 2 | 3 |
| 61 - 80 | 2 | 4 |
| 81 - 100 | 3 | 5 |
| 101 - 200 | 6 | 5% of all aisle seating |
| 201 - 300 | 9 | |
| 301 - 400 | 12 | |
| 401 - 600 | 15 | |
| Over 600 | Not less than 3% of the seating capacity | |

Table 4.3.2
Wheelchair Viewing Locations

4.3 OTHER AMENITIES

DESIGN REQUIREMENTS

Accessible wheelchair/scooter and adaptable seating 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/scooter location shall be

- an integral part of any seating plan. Seats shall be distributed in a manner that provides people with physical disabilities a choice of location and lines of sight comparable to those for members of the general public;
- clear and level, or level with removable seats;
- if the wheelchair/scooter enters from a side approach, not less than 920 mm (36 in.) wide and 1525 mm (60 in.) long;
- if the wheelchair/scooter enters from a front or rear approach, not less than 920 mm (36 in.) wide and 1370 (54 in.) long;

4.3.2 VIEWING POSITIONS

- arranged so that at least two designated wheelchair/scooter locations are side by side;
- arranged so that at least one companion fixed seat is provided next to each wheelchair seating area (Note: Companion seating to be calculated in addition to the required accessible seating spaces identified in Table 4.3.2); and
- where the seating capacity exceeds 100, provided in more than one location

Storage facilities for wheelchairs and other assistive devices shall

- be provided in assembly occupancies with fixed seating;
- be located on the same level close to the adaptable seating locations; and
- provide a space of at least 810 mm (32 in.) wide and 1370 mm (54 in.) long for each device.

LEGISLATION REFERENCES

AODA 80.8
OBC 3.8.3.6

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.6 Assistive Listening Systems
- 4.4.7 Signage
- 4.4.9 Public Address System
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour
- 4.4.16 Acoustics

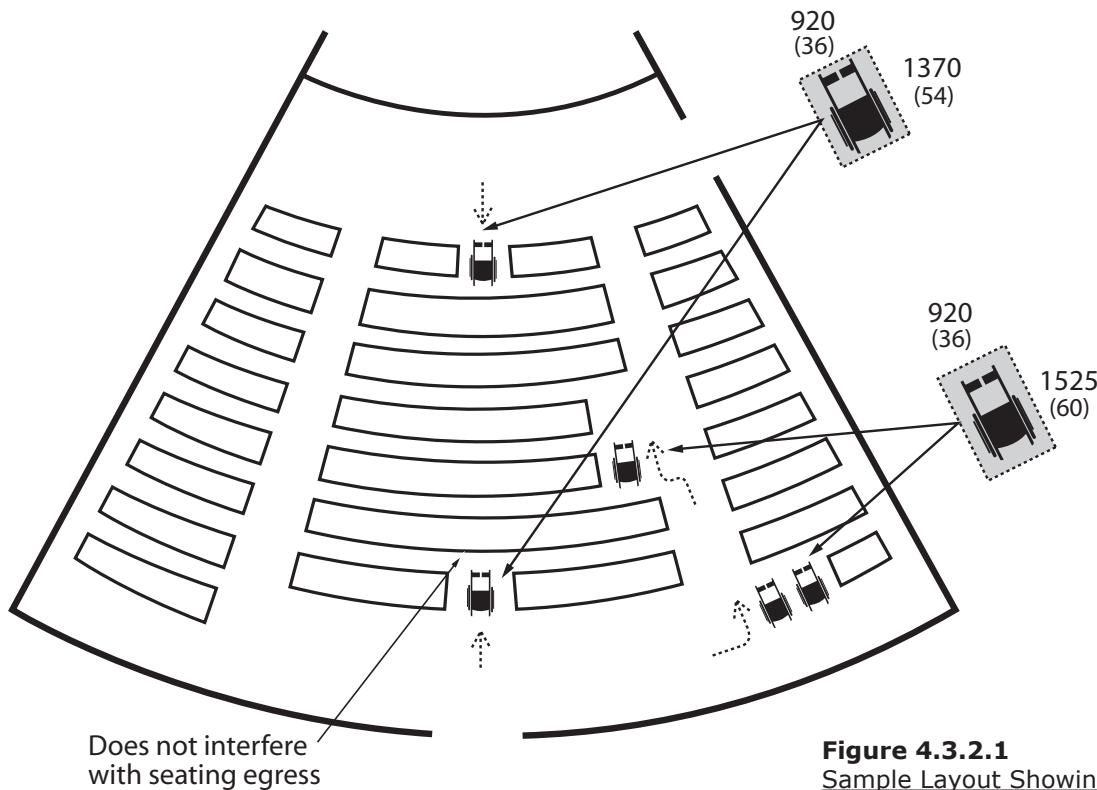


Figure 4.3.2.1
Sample Layout Showing Wheelchair Distribution Providing a Choice of Viewing Locations

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 lux (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
- where more than 250 mm (10 in.) above the ground or floor surface and not protected by a guard, have a flat-topped domes or cones *detectable warning surface*.
Exception: Front edges of stages.

The *detectable warning surface* on elevated platforms shall

- consist of flat-topped domes or cones in compliance with 4.4.8;
- be positioned parallel to the open platform edge, extending the full length of the platform; and
- extend 610 - 920 mm (24 - 36 in.) from the open edge of the platform.

4.3 OTHER AMENITIES

LEGISLATION REFERENCES

OBC 3.9.3.17

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.8 Detectable Warning Surfaces
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

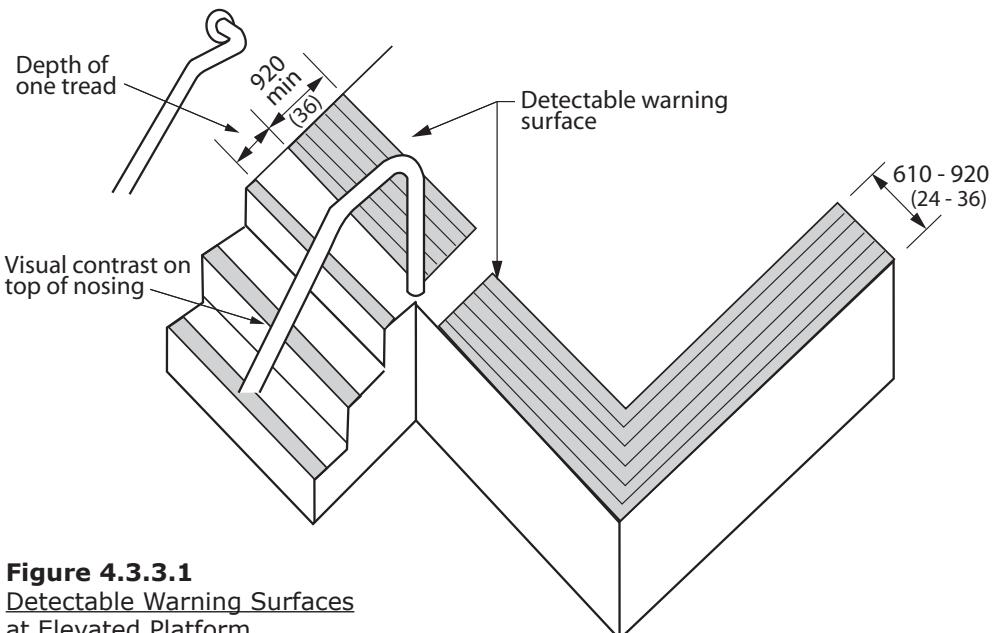


Figure 4.3.3.1
Detectable Warning Surfaces
at Elevated Platform

4.3 OTHER AMENITIES

RATIONALE

In addition to *accessible common use* dressing/change rooms, a separate unisex dressing/change room is useful. This is valuable in a scenario where an attendant of the opposite gender or a parent is assisting a child. Sufficient space should be allowed for two people and a wheelchair, along with benches and accessories.

The provision of *handrails* along circulation routes from dressing/change rooms to pool, gymnasium and other activity areas, will be of benefit to many *facility* users.

Consider higher loading capacity for change benches to accommodate persons of large stature.

APPLICATION

Where dressing/change rooms are provided for use by the general public, patients, customers or employees, they shall comply with this section. In a retrofit situation where it is *technically infeasible* to have all dressing/change rooms comply with this section, 10% of dressing/change rooms, but never less than one, for each type of use in each cluster of dressing rooms shall be *accessible* and comply with this section.

At least one private *accessible* dressing/change room shall be provided within *accessible* dressing/change rooms at pools and gymnasiums.

DESIGN REQUIREMENTS

Accessible dressing/change rooms, and *accessible* elements within *accessible* dressing/change rooms, shall be located on an *accessible route* complying with 4.1.4.

Private *accessible* dressing/change rooms shall incorporate a *clear floor space* allowing a person using a wheelchair or scooter to make a 180-degree turn, accessed through either a hinged or sliding door. No door shall swing into any part of the required turning space within the private *accessible* dressing/change room. Turning space is not required within a private *accessible*

4.3.4 DRESSING/CHANGE ROOMS

dressing/change room accessed through a curtained opening of at least 950 mm (37-1/2 in.) wide, if *clear floor space* complying with section 4.1.1 renders the dressing/change room usable by a person in a wheelchair or scooter.

All doors to *accessible* dressing/change rooms shall be in compliance with 4.1.6. Outward swinging doors shall not constitute a hazard to persons using adjacent circulation routes.

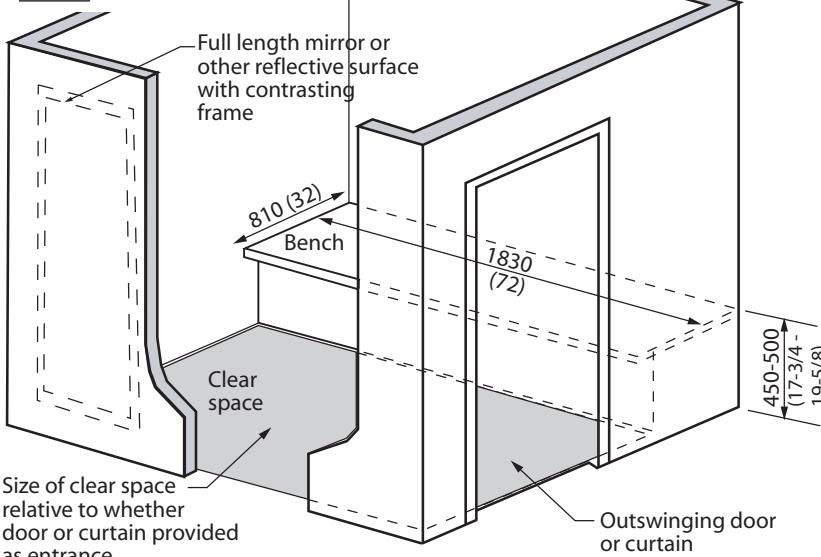
Every *accessible* dressing/change room shall have an 810 mm (32 in.) x 1830 mm (72 in.) bench fixed to the wall along the longer dimension. The bench shall

- be mounted 450 to 500 mm (17-3/4 in. to 19-5/8 in.) above the finished floor;
- have *clear floor space* at least 760 mm wide (30 in.) provided along the bench to allow a person using a wheelchair or scooter to make a parallel transfer onto the bench;
- be designed to carry a minimum load of 1.33 kN (300 lb.); and

Where coat hooks are provided, at least two collapsible coat hooks shall be provided, mounted no higher than 1200 mm (47 in.) above the floor, and immediately adjacent to the *accessible* bench. (Note: Coat hooks should NOT be located over the *accessible* bench)

Figure 4.3.4.1

Private Accessible Dressing/Change room



Where dressing/change rooms are provided in conjunction with showers, swimming pools, or other wet locations, they shall

- be designed with a slip-resistant floor surface that prevents the accumulation of standing water; and
- have a bench with a slip-resistant seat surface installed to prevent the accumulation of water.

Where mirrors, or other reflective surfaces, are provided in dressing/change rooms of the same use, *accessible* dressing/change rooms shall incorporate a full-length mirror or other reflective surface measuring at least 460 mm (18 in.) wide by 1370 mm (54 in.) high and shall be mounted in a position affording a view to a person on the bench, as well as to a person in a standing position.

Dressing/change rooms shall incorporate even illumination throughout of at least 100 lux (10 ft-candles).

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.3.5 OFFICES, WORK AREAS & 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 persons that are deaf, deafened or hard of hearing, would benefit from having a quiet acoustic environment - background noise from mechanical equipment such as fans, should be minimal. Telephone equipment for persons that are deaf, deafened or hard of hearing 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 locations where reflective glare may be problematic, such as large expanses of glass with reflective flooring, consideration should be given to providing blinds that can be louvred 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.

DESIGN REQUIREMENTS

Where offices, 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 using a wheelchair or scooter to make a 180-degree turn;
- incorporate an *accessible route* throughout the *space* that does not require a person using a wheelchair or scooter to travel backwards to enter/leave the *space*;
- incorporate an *accessible route* that connects the primary activity *elements* within the office, work area or *meeting room*;
- incorporate knee clearances below work surfaces that comply with 4.3.7;
- incorporate access to storage, shelving or display units in compliance with 4.3.9 for use by the general public, clients or customers;

4.3 OTHER AMENITIES

- provide a *clear floor space* that complies with 4.1.1 in front of all equipment such as photocopiers where such equipment is 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.
- coat hooks on the back of typical office doors are to be at 1625 mm (64 in.) on centre height. FADS compliant hooks will be installed as an accommodation.

LEGISLATION REFERENCES

| | |
|-----|---------|
| IBC | 3.8.2.1 |
| IBC | 3.8.3.6 |
| IBC | 3.8.3.7 |

RELATED SECTIONS

| | |
|--------|--|
| 4.1.1 | Space and Reach Requirements |
| 4.1.2 | Ground and Floor Surfaces |
| 4.1.4 | Accessible Routes, Paths and Corridors |
| 4.1.8 | Windows, Glazed Screens and Sidelights |
| 4.3.7 | Tables, Counters and Work Surfaces |
| 4.3.9 | Storage, Shelving and Display Units |
| 4.4.2 | Controls and Operating Mechanisms |
| 4.4.4 | Visual Alarms |
| 4.4.6 | Assistive Listening Systems |
| 4.4.12 | Glare and Light Sources |
| 4.4.13 | Lighting |
| 4.4.14 | Materials and Finishes |
| 4.4.15 | Texture and Colour |
| 4.4.16 | Acoustics |

4.3 OTHER AMENITIES

RATIONALE

Queuing areas for information, tickets or services should permit persons who use wheelchairs, scooters and other mobility devices as well as persons with a varying range of user ability 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.

4.3.6 WAITING AND QUEUING AREAS

DESIGN REQUIREMENTS

Barriers at queuing areas shall be laid out in parallel, logical lines, spaced a minimum of 1100 mm (43-1/4 in.) apart.

Provide sufficiently clear floor area to permit mobility aids to turn where queuing lines change direction. Suggested size would be in line with minimum ramp landing size of 2100 x 2100 mm (82-3/4 x 82-3/4 in.). Where possible, the ideal is for the dimensions to be 2440 x 2400 mm (96 x 96 in.).

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

Fixed queuing guides and/or barriers at queuing areas must be cane detectable.

Where floor slots or pockets are included to receive temporary or occasional supports, such slots or pockets shall be level with the floor finish and have an integral cover, so 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 guide persons with a visual *impairment*.

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

When constructing a new waiting area or redeveloping an existing waiting area, where the seating is fixed to the floor, a minimum of three percent of the new seating must be *accessible*, but in no case shall there be fewer than one *accessible* seating space.

For the purposes of this section, *accessible* seating is a space in the seating area where an individual using a mobility aid can wait.

LEGISLATION REFERENCES

AODA 80.42

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.5 Public Telephones
- 4.4.6 Assistive Listening Systems
- 4.4.7 Signage
- 4.4.9 Public Address Systems
- 4.4.10 Self-Service Kiosks and Information Systems
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour
- 4.4.16 Acoustics

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 and provide enough *clear space* for the wheelchair 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.

The selection of seating should reflect a diversity of body types. Some individuals may require seats

with an increased width and weight capacity. Booth-style or other fixed seating may not be appropriate for individuals wishing to remain in their wheelchair or individuals requiring more depth between the seat and table.

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.

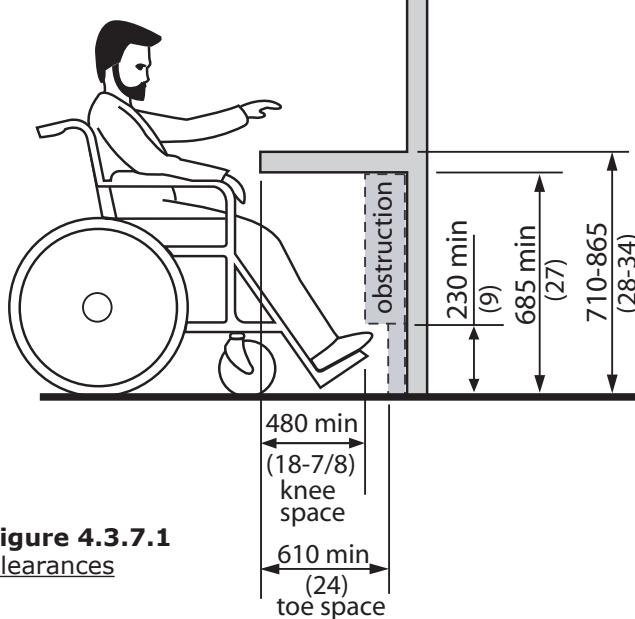


Figure 4.3.7.1
Clearances

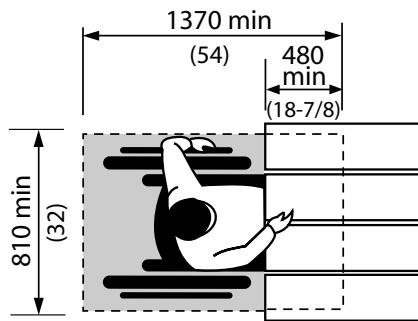


Figure 4.3.7.2
Frontal Approach

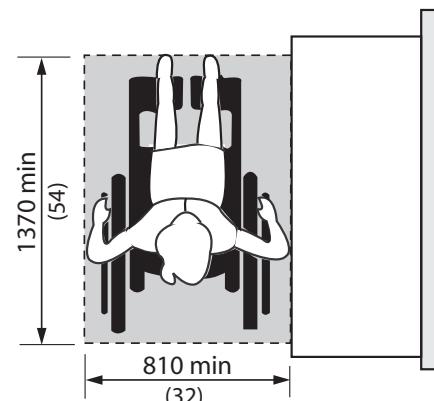


Figure 4.3.7.3
Parallel Approach

4.3 OTHER AMENITIES

Where fixed seating or booth seating is used in conjunction with tables, counters and work surfaces, at least 10%, but not less than one seat must not be fixed seating or booth seating.

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.

The top of *accessible* tables, counters and work surfaces shall be located between 710 mm (28 in.) to 865 mm (34 in.) above the finished floor or ground surface.

Wheelchair seating spaces at *accessible* tables, counters and work surfaces shall incorporate a *clear floor space* of not less than 810 mm (32 in.) by 1370 mm (54 in.). Up to 480 mm (18-7/8 in.) of the length of the *clear floor space* may extend under the table, counter, or work surface where a forward approach is used.

Where a forward approach is used to access a wheelchair seating space,

- a *clear knee space* of at least 810 mm (32 in.) wide, 480 mm (18-7/8 in.) deep and 685 mm (27 in.) high shall be provided; and
- a *clear toe space* at least 810 mm (32 in.) wide and 230 mm (18-7/8 in.) high shall be provided beyond the knee-space, extending to a depth of at least 610 mm (24 in.) from the front edge of the work surface.

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.4 Accessible Routes, Paths and Corridors

4.3 OTHER AMENITIES

RATIONALE

Information, reception and service counters should be *accessible* to the full range of visitors. A choice of counter heights is recommended to provide a range of options for a variety of persons. Lowered sections will serve children, persons of short stature and persons using mobility devices such as a wheelchair or scooter. The choice of heights should also extend to speaking ports and writing surfaces.

The provision of knee space under the counter facilitates use by a person using a wheelchair or a scooter.

The use of colour contrast, tactile difference or audio landmarks (e.g., receptionist voice or music source) can assist individuals with a visual *impairment* to more precisely locate service counters or speaking ports.

APPLICATION

Counters for information or service shall have at least one section *accessible* to persons who use a wheelchair or scooter.

4.3.8 INFORMATION, RECEPTION AND SERVICE COUNTERS

DESIGN REQUIREMENTS

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

There must be a minimum of one service counter for each type of service provided, and clearly identified by signage where there are multiple queuing lines and service counters.

Each information, reception, or service counter must accommodate a mobility aid where a single queuing line serves a single or multiple counters.

Accessible sections of counters for information, reception or service shall incorporate the following size and space requirements;

- a counter height located between 710 mm (28 in.) and 865 mm (34 in.) above the finished floor or ground;
- a counter surface width of at least 920 mm (36 in.); and
- knee space on both sides of the counter, below the counter surface, of at least 685 mm (27 in.) high by 480 mm (18-7/8 in.) deep by 810 mm (32 in.) wide.

Wheelchair seating spaces at *accessible* sections of information, reception and service counters shall incorporate a *clear floor space* not less than 810 mm (32 in.) by 1370 mm (54 in.). Up to 480 mm (18-7/8 in. of the length of the *clear floor space* may extend under the counter, where a forward approach is used.

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

LEGISLATION REFERENCES

AODA 80.41

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.6 Assistive Listening Systems
- 4.4.7 Signage
- 4.4.10 Self-Service Kiosks and Information Systems
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour
- 4.4.16 Acoustics

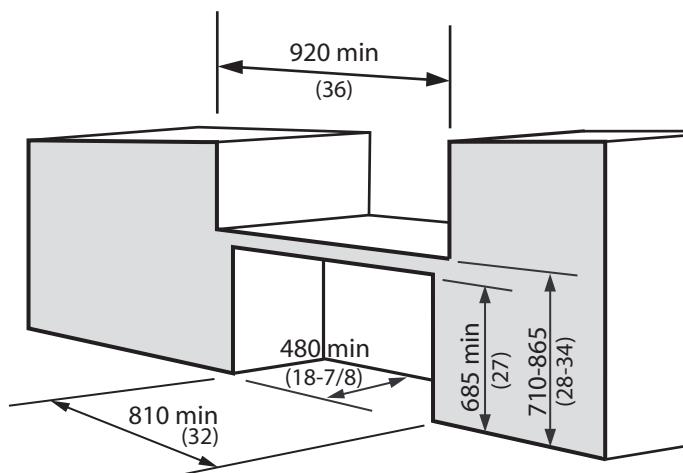


Figure 4.3.8.1
Service Counter

4.3.9 STORAGE, SHELVING AND DISPLAY UNITS

4.3 OTHER AMENITIES

RATIONALE

The heights of storage, shelving and display units should address a full range of vantage points including the lower sightlines of children or a person using a wheelchair or scooter. The lower heights also serve the lower reach of these individuals. Displays that are too low can be problematic for individuals that have difficulty bending down. Appropriate lighting and colour contrast is particularly important for persons with a visual impairment.

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* in compliance with this section.

Shelves or display units allowing self-service by customers in mercantile occupancies shall be located on an *accessible route* complying with 4.1.4.

DESIGN REQUIREMENTS

A *clear floor space* at least 810 mm (32 in.) by 1370 mm (54 in.) complying with 4.1.1 that allows either forward or parallel approach by a person using a wheelchair or a scooter shall be provided at *accessible storage facilities*.

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.).

Where coat hooks are provided, they shall all be collapsible coat hooks, mounted no higher than 1200 mm (47 in.) above the floor. (Note: Coat hooks should NOT be located over benches)

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

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.2 Controls and Operating Mechanisms

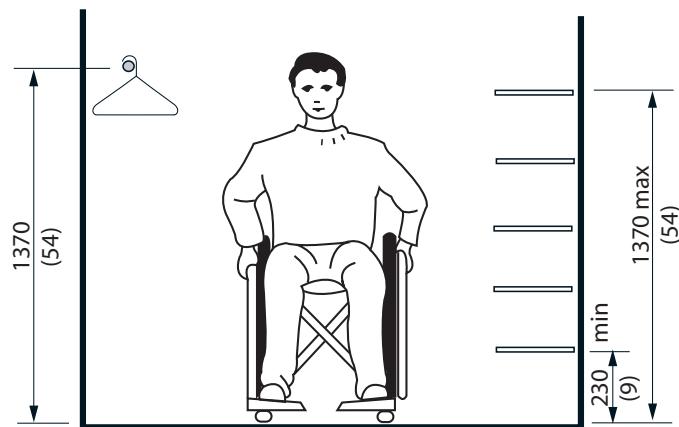


Figure 4.3.9.1
Reach Limits for Storage

4.3 OTHER AMENITIES

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 *accessible* by a person using a wheelchair or scooter.

The provision of lockers at lower heights serves the reach restrictions of children or a person using a wheelchair or scooter. 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 (15-3/4 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 a person using a wheelchair or scooter.

RELATED SECTIONS

4.1.1 Space and Reach Requirements

4.1.4 Accessible Routes, Paths and Corridors

4.4.2 Controls and Operating Mechanisms

4.4.7 Signage

4.4.13 Lighting

4.4.15 Texture and Colour

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. This is of benefit to individuals with varying tolerances for sun or heat. Doors to these spaces typically incorporate large expanses of glazing. These should be appropriately marked to increase their visibility. 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 2100 mm (82-3/4 in.). Where possible, the ideal is for the depth to be 2440 mm (96 in.). In retrofit situations where providing a depth of 2100 mm (82-3/4 in.) is *technically infeasible*, the minimum depth may be reduced to 1525 mm (60 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 *clear* vision below the rail for persons seated in a wheelchair or scooter; and
- incorporate pronounced colour contrast between the railings and *guards* and the surrounding environment.

Doors opening out onto balconies shall be located to open against a side wall or rail.

4.3 OTHER AMENITIES

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.3 OTHER AMENITIES

RATIONALE

The provision of parking spaces near the entrance to a *facility* is important to accommodate persons with a varying range of abilities as well as persons with limited mobility and those caring for small children. Medical conditions, such as arthritis or heart conditions, using crutches, pregnancy or the physical act of pushing 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 area to the entrance of a *facility* should be well marked and free of steps and curbs.

In addition to the proximity to entrances, the spatial requirements of *accessible parking spaces* is important. A person using a mobility aid such as a wheelchair requires a wider parking stall to accommodate the manoeuvring of the wheelchair beside the car or van. A van may also require additional space to deploy a lift or ramp through the side or back door. An individual would then require space for the deployment of the lift itself as well as additional space to manoeuvre on/off the lift.

Three types of *accessible parking spaces* are required. Type A spaces are large enough to also accommodate people who use vans with a mechanical lift on the side, which is used to get in and out of the vehicle. Type B spaces are configured to accommodate people who transfer in and out of their vehicles manually. Type C Limited Mobility/Caregivers spaces are designed for people who do not require a designated *access aisle* adjacent to a designated parking space but would still benefit from a wider space that is near an entrance. These spaces better accommodate persons with limited mobility, expectant mothers, caregivers and persons who use walkers, canes, crutches and strollers.

4.3.12 PARKING

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 to the greatest extent possible.

Parking facilities serving buildings of assembly occupancy shall have Type A, Type B, and Type C parking spaces in accordance with Table 4.3.12.

Parking facilities serving buildings other than assembly occupancies shall have Type A and Type B parking spaces in accordance with Table 4.3.12.

Designated parking spaces shall be located as close as possible to an *accessible entrance* to the facility that is served by the parking.

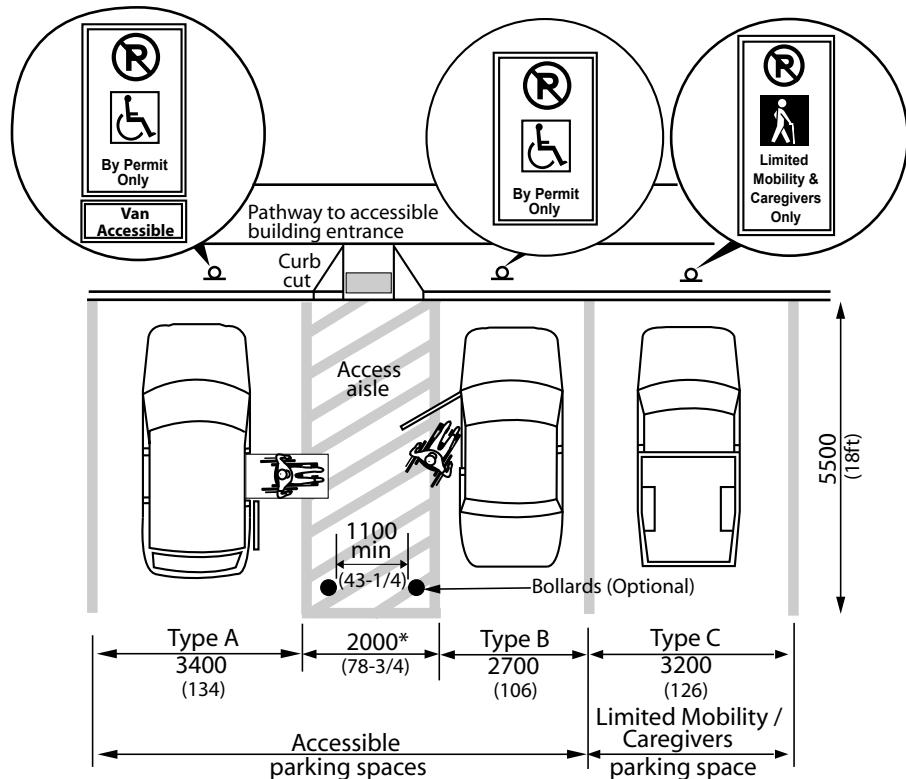


Figure 4.3.12.1
Side-by-side Parking Space

4.3.12 PARKING

Routes from designated parking spaces to *accessible* entrances shall not require persons with mobility impairments to travel along vehicle roadways.

In facilities with multiple *accessible* entrances where parking is provided adjacent to the *accessible* entrances, designated parking spaces shall be located close to each *accessible* entrance.

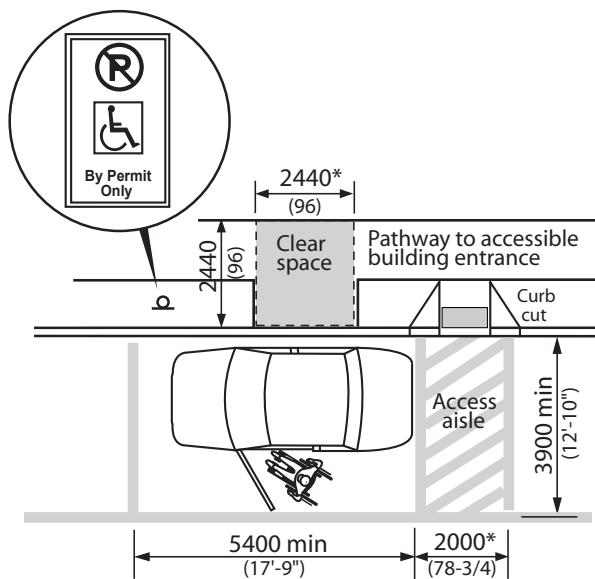
If more than one off-street parking facility is provided, parking requirements shall be calculated individually for each parking facility.

If more than one off-street parking facility is provided, the parking spaces for the use of persons with disabilities may be distributed among the multiple lots to provide equivalent or greater accessibility in terms of distance from an *accessible* entrance or user convenience (protection from weather, security, lighting, comparative maintenance).

Exceptions: Requirements for off-street parking do not apply to facilities that are used exclusively for parking for busses, delivery vehicles, law enforcement vehicles, medical transportation vehicles, or impounded vehicles.

The requirements for off-street parking do not apply to off-street parking facilities if;

- the off-street parking facilities are not served by an *accessible route*; AND
- there are multiple off-street parking facilities on a single site that serve a building or facility.



* NOTE: In a retrofit situation where it is *technically infeasible* to provide the required *access aisle* width, the aisle width may be reduced to 2000 mm (78-3/4 in.)

Figure 4.3.12.2
Parallel Parking Space

4.3 OTHER AMENITIES

DESIGN REQUIREMENTS

An *accessible route* shall be provided from each designated parking space to an *accessible entrance* into the facility.

Designated parking spaces shall

- be located on an *accessible route* complying with 4.1.4;
- have a firm, level surface with a maximum of 1.5% *running slope* for drainage;
- have a maximum *cross slope* of 1%;
- have a height clearance of at least 2750 mm (9 ft.) at the parking space and along the vehicle access and *egress* routes; and
- incorporate *signage* as outlined in this section.

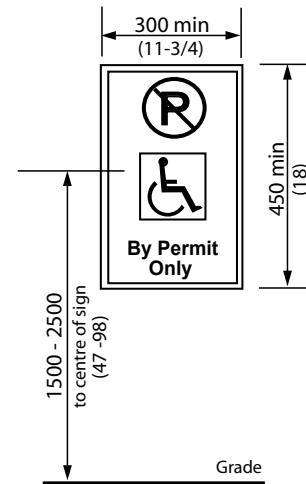


Figure 4.3.12.3
Designated Parking Signage

4.3 OTHER AMENITIES

DESIGN REQUIREMENTS

(Continued)

Accessible parking spaces shall

- if Type A, be at least 3400 mm (11 ft. 1-7/8 in.) wide; located adjacent to a designated *access aisle*;
- if Type B, be at least 2700mm (8 ft. 10 in.) wide; located adjacent to a designated *access aisle*;
- incorporate pavement markings containing the International Symbol of Access in accordance with Figure 4.4.7.4. Markings to include a 1525 x 1525 (5 ft. x 5 ft.) white border and symbol with a blue background field colour;
- have an adjacent *access aisle* at least 2000 mm (78-3/4 in.) wide, extending the full length of the parking space, which is clearly indicated by markings (Refer to Figures 4.3.12.1 and 4.3.12.2). In a retrofit situation where it is *technically infeasible* to provide a 2000 mm (78-3/4 in.) *access aisle*, the *access aisle* may be reduced to 1500 mm (60 in.); and
- have a height clearance at the parking space and along the vehicle access and egress routes,
 - at outdoor parking, of at least 2750 mm (8 ft. 10 in.); and
 - at indoor parking, of at least 2590 mm (8 ft. 2 in.), including vehicular entrances.

Accessible parking signage to be in accordance with section 11 of Regulation 581 of the Revised Regulations of Ontario, 1990 (Accessible Parking for Persons with Disabilities) made under the Highway Traffic Act. O. Reg. 413/12, s.6.

Type A parking spaces are to have signage specifying "Van Accessible" parking.

4.3.12 PARKING

Indoor parking facilities shall incorporate a sign at the vehicle entrance indicating the minimum overhead clearance at the parking space and along the vehicle access and egress routes.

Type C Limited Mobility & Caregivers
Only parking spaces shall be a minimum 3200 (10 ft. 6 in.) wide and incorporate signage in accordance with Figure 4.3.12.1.

| Number of Parking Spaces | Type A Accessible Space (Van) | Type B Accessible Space | Type C Limited Mobility/ Caregivers | |
|--|---|-------------------------|--|--|
| 1-25 | 1 | 0 | 1 | |
| 26-50 | 1 | 1 | 1 | |
| 51-75 | 1 | 2* | 2 | |
| 76-100 | 2 | 2 | 2 | |
| 101-133 | 2 | 3* | 2 | |
| 134-166 | 3 | 3 | 2 | |
| 167-200 | 3 | 4* | 2 | |
| 201-250 | 3 | 4* | 3 | |
| 251-300 | 4 | 4 | 3 | |
| 301-350 | 4 | 5* | 4 | |
| 351-400 | 5 | 5 | 4 | |
| 401-450 | 5 | 6* | 4 | |
| 451-500 | 6 | 6 | 4 | |
| 501-550 | 6 | 7* | 4 + 1 Limited Mobility spaces for each 100 standard spaces over 500. | |
| 551-600 | 7 | 7 | | |
| 601-650 | 7 | 8* | | |
| 651-700 | 8 | 8 | | |
| 701-750 | 8 | 9* | | |
| 751-800 | 9 | 9 | | |
| 801-850 | 9 | 10* | | |
| 851-900 | 10 | 10 | | |
| 901-950 | 10 | 11* | | |
| 951-1000 | 11 | 11 | | |
| 1001 and over | 11 + 1% of the total number of spaces (rounded up to the next whole number), divided equally between Types A and B. If an odd number of spaces is required, the extra space may be Type A | | | |
| * Where an uneven number of accessible parking spaces are required, the extra space may be a Type A or a Type B space. | | | | |

Table 4.3.12
Designated Parking Spaces Requirements

4.3.12 PARKING

Each *accessible* parking space shall be designated with *signage* that is

- mounted vertically on a post that is colour contrasted with the background environment;
- at least 300 mm (11-3/4 in.) wide x 450 mm (17-3/4 in.) high;
- installed at a height of 1500 mm (59 in.) to 2500 mm (98 in.) from the ground/floor surface to the centre line of the sign;
- for perpendicular parking, centred on the parking space; and
- for parallel parking, located toward the end of the parking space, on the opposite side from the *access aisle*.

Signs shall not be mounted on fences or building faces.

Where the location of designated parking *spaces* is not obvious or is distant from the approach viewpoints, directional signage shall be placed along the route leading to the designated parking *spaces*. Such directional *signage* shall incorporate the symbol of access and the appropriate directional arrows.

Where the location of the nearest *accessible entrance* is not obvious or is distant from the approach viewpoints, 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.

4.3 OTHER AMENITIES

LEGISLATION REFERENCES

AODA 80.32- 80.39
OBC 3.8.2.2(1)(2)

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.10 Curb Ramps
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.3 OTHER AMENITIES

RATIONALE

Passenger-loading zones are important features for individuals who may have difficulty in walking distances or those who use parallel transit systems. *Accessible* transit vehicles typically require space for the deployment of lifts or ramps and overhead clearances. Protection from the elements will be beneficial to all users and particularly those that may have difficulty with mobility.

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.

If the passenger-loading zone is a designated mobility transit stop zone, it shall comply with all relevant municipal bylaws.

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 7400 mm (24 ft.) long, adjacent and parallel to the vehicle pull-up *space*. (In a retrofit situation where

4.3.13 PASSENGER-LOADING ZONES

providing a 2440 mm (96 in.) wide *access aisle* is *technically infeasible*, the *access aisle* width may be reduced to 2000 mm (78-3/4 in.);

- 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 3600 mm (11 ft. 9 in.) at the loading zone and along the vehicle access route to such areas to and from the *site entrances*.

LEGISLATION REFERENCES

OBC 3.8.2.2(3)

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.10 Curb Ramps
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

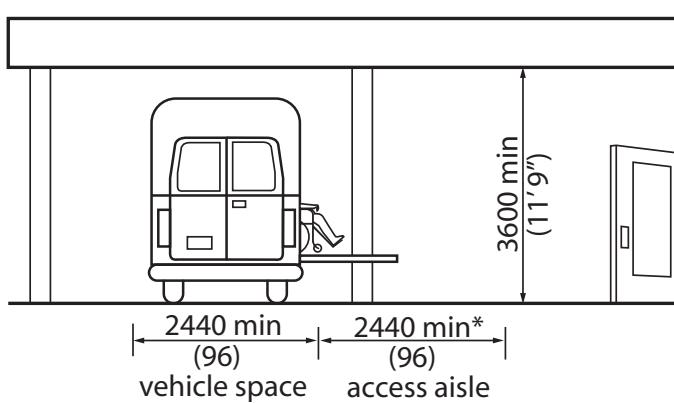


Figure 4.3.13.1
Clearances at
Passenger Loading Zone

* NOTE: In a retrofit situation where it is *technically infeasible* to provide the required *access aisle* width, the aisle width may be reduced to 2000 mm (78-3/4 in.)

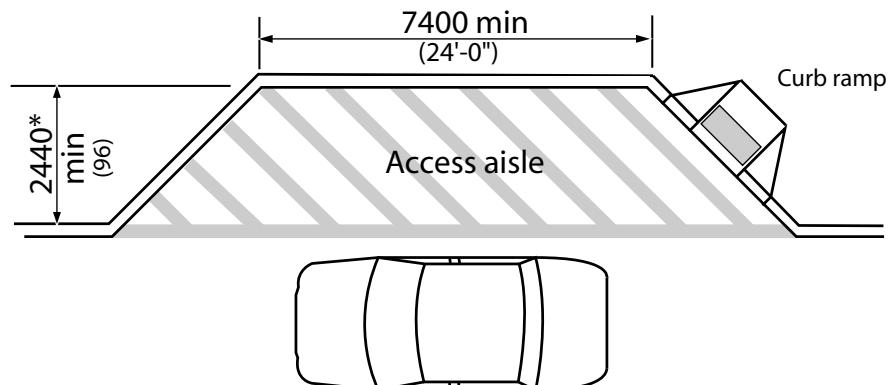


Figure 4.3.13.2
Passenger Loading Zone

4.3.14 LANDSCAPING MATERIALS AND PLANTINGS

4.3 OTHER AMENITIES

RATIONALE

Landscape materials, trees, shrubs and plants should be selected and located with a wide variety of users in mind. For instance, plants and shrubs with a variety of fragrances can provide an interesting orientation cue for persons with a visual *impairment*. Using contrasting flowers near walkways can also be helpful as a guide. Plants with thorns may constitute a walking hazard. Plants that drop large seed pods can present slipping hazards, as well as difficulties for pushing a wheelchair. Plantings and tree limbs that overhang pathways can impede all users and be a particular hazard to an individual with a visual *impairment*.

Raised beds can better accommodate persons who use a mobility device or those that have difficulty in bending to enjoy or tend to plantings however may create loitering problems with skateboarders.

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 75 mm (3 in.) high.

Shrubs with thorns and sharp edges shall be planted at least 920 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 guide wires shall not be used in any area which is intended for use by the general public, clients, customers or employees. Temporary guide wires, such as those used when planting new trees, shall be clearly identified using strong colour contrast.

Tree *guards* shall conform to 4.1.3.

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 2100 mm (82-3/4 in.).

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.8 Detectable Warning Surfaces
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

4.3 OTHER AMENITIES

4.3.15 BENCHES

RATIONALE

Benches provide convenient resting places for all individuals and are especially important for those 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. The provision of a clear and level space beside benches will allow a person in a stroller or wheelchair to 'park' next to the bench, out with the path of travel.

Appropriate seat heights can facilitate sitting and rising for individuals such as senior citizens. Armrests may also provide assistance in sitting and rising. Backrests provide support; a necessary requirement for some users and a comfort element for everyone.

A person with a visual *impairment* may 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.

Consider higher loading capacity for benches to accommodate persons of large stature.

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.

DESIGN REQUIREMENTS

Benches shall

- be adjacent to an *accessible route* complying with 4.1.4;
- be stable;
- have a seat height between 450 mm (17-3/4 in.) and 500 mm (19-5/8 in.) from the ground; and
- be of contrasting colour to their background.

LEGISLATION REFERENCES

AODA 80.8

RELATED SECTIONS

4.1.1 Space and Reach Requirements
 4.1.2 Ground and Floor Surfaces
 4.1.3 Protruding and Overhead Objects
 4.1.4 Accessible Routes, Paths and Corridors
 4.4.8 Detectable Warning Surfaces
 4.4.14 Materials and Finishes
 4.4.15 Texture and Colour

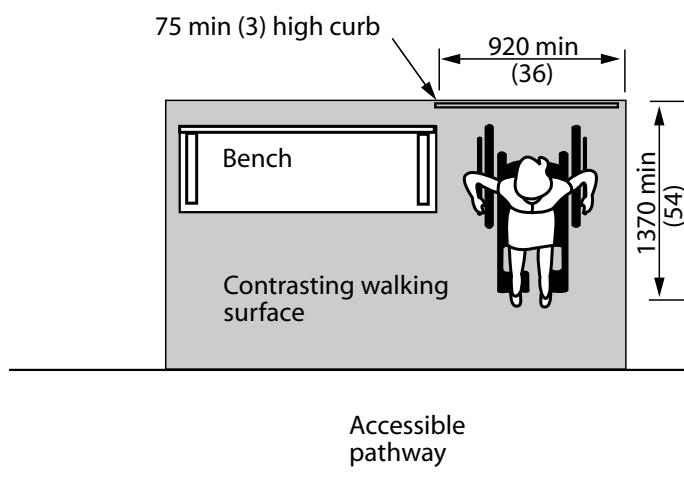


Figure 4.3.15.1
Exterior Rest Area

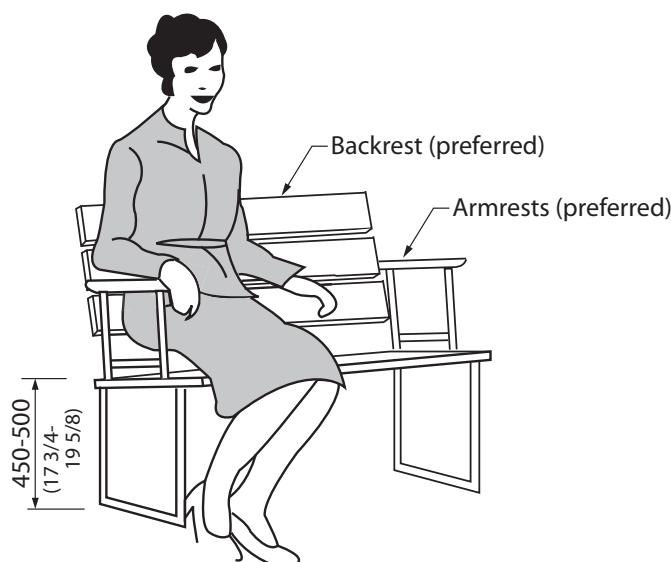


Figure 4.3.15.2
Bench Seating

4.3.16 PUBLIC USE EATING AREAS

RATIONALE

Tables with an extension of the table surface make them *accessible* to a person using a wheelchair. 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 person with a visual impairment.

Standard tables may not be appropriate for persons of larger stature. Providing alternative seating options will help to make outdoor dining enjoyable to a greater range of individuals.

APPLICATION

Where tables are provided in a public use eating area, at least 20%, but not less than one, for each cluster of tables shall comply with this section. It is preferable to have all tables comply with this section.

DESIGN REQUIREMENTS

Tables shall

- be adjacent to an *accessible route* complying with 4.1.4;
- have knee space under the table at least 810 mm (32 in.) wide by 480 mm (19 in.) deep and 685 mm (27 in.) high;
- have its top surface located between 710 mm (28 in.) to 865 mm (34 in.) above the finished floor or ground surface;
- be of contrasting colour to their background; and
- have a level, firm, stable ground surface extending min.

2000 mm (78-3/4 in.) where *accessible space* is provided at a picnic table for persons who use wheelchairs or scooters and min. 1220 mm (48 in.) on all the other sides. In a retrofit situation where it is *technically infeasible* to provide the required level surface, the dimensions may be reduced to min. 1220 mm (48 in.) on all sides.

4.3 OTHER AMENITIES

LEGISLATION REFERENCES

AODA 80.16
AODA 80.17

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.8 Detectable Warning Surfaces
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

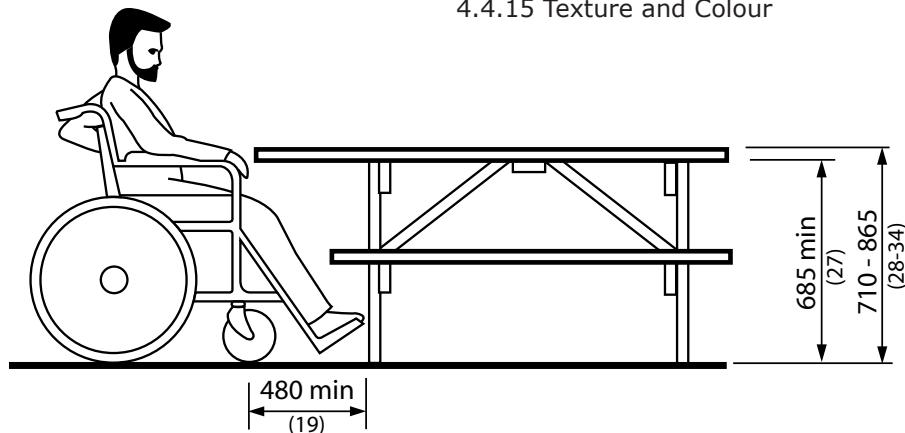


Figure 4.3.16.1
Height of Accessible Table

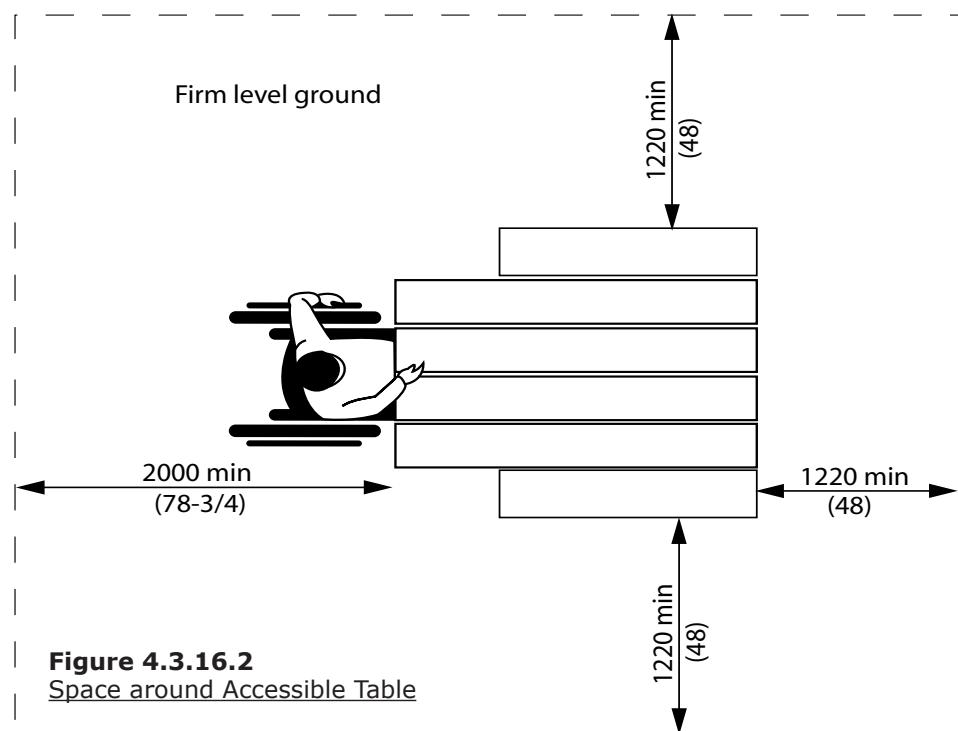


Figure 4.3.16.2
Space around Accessible Table

4.3 OTHER AMENITIES

4.3.17 STREETSCAPE

RATIONALE

Clear paths of travel are important to all individuals using pathways. *Streetcape elements* such as newspaper boxes, trash bins, outdoor patios and bus shelters present a barrier to all pedestrians, especially those that require additional space for use of wheelchairs, scooters, strollers or delivery carts. For persons with a visual *impairment*, unidentified obstructions within pathways can present a hazard.

Outdoor patios are increasingly encroaching on pedestrian pathways and ideally should incorporate features such as railings, indicator and pavement markings, that are easily distinguished both visually and by cane.

The efficient and thorough removal of snow and ice are also essential to outdoor pathways. Negotiating a wheelchair or stroller through a snow covered path is exceptionally difficult. Icy surfaces are hazardous to all pedestrians, especially individuals such as senior citizens that may not be sure-footed.

Benches can provide a resting place for an individual with difficulty in walking distances. Such furniture should incorporate strong *colour contrasts* and be located off pathways, to minimize its potential as an obstruction to pedestrians.

boxes, vending machines, benches, traffic signals and utility boxes contained within a sidewalk or other walking area, shall comply with this section, including *street elements* that are 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.

Provide waste receptacles at sidewalks and other walking areas for guide dog users, as well as for other pet owners.

APPLICATION

Street elements, including but not limited to, waste receptacles, light standards, signs, planters, mail

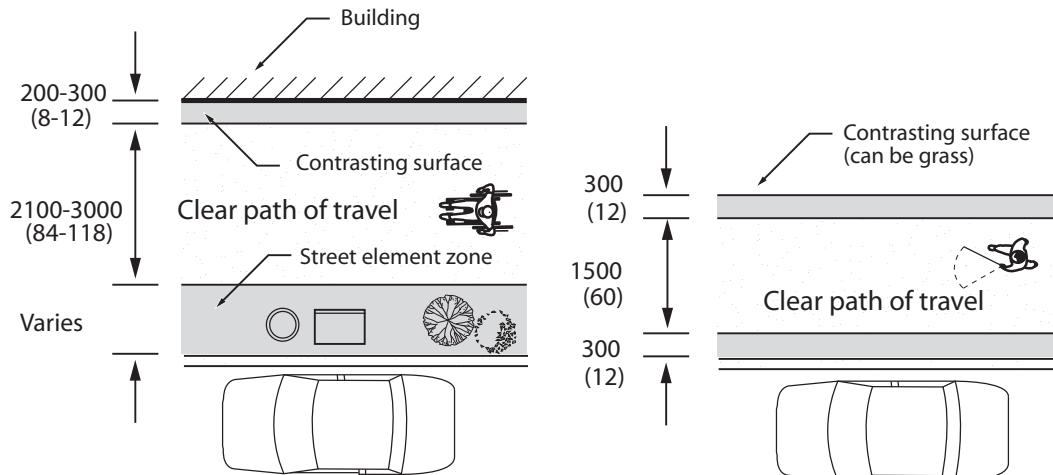


Figure 4.3.17.1
Typical Streetscape Configurations

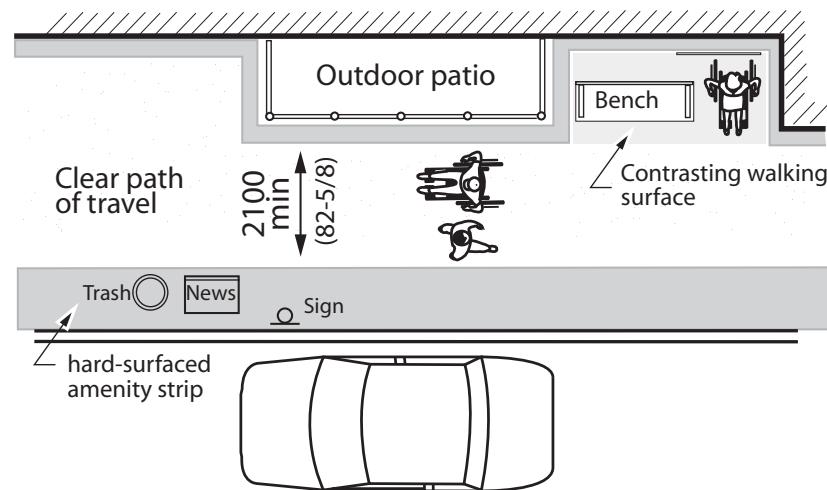


Figure 4.3.17.2
Streetscape

4.3.17 STREETSCAPE

DESIGN REQUIREMENTS

At primary pedestrian routes, an *accessible route* at least 2100 mm (82-5/8 in.) wide shall be maintained along the sidewalk.

At non-primary pedestrian routes, an *accessible route* at least 1500 mm (59 in.) wide shall be maintained along the sidewalk.

The *accessible routes* along primary pedestrian routes must be identified using a minimum 300 mm (11-3/4 in.) wide continuous *indicator surface* along each side of the *accessible route*.

Clearances along pedestrian routes must comply with 4.1.3.

Street elements shall

- not reduce the required width of the *accessible route*;
- be cane-detectable, in compliance with 4.1.3;
- be consistently located to one side of the *accessible route*, entirely within an amenity strip that is hard-surfaced, at least 600 mm (23-1/2 in.) wide, and

is identified using a *indicator surface*; and

- be securely mounted within an amenity strip, minimum 600 mm (23-5/8 in.) wide, located adjoining walkways, paths, sidewalks and other *accessible routes*.

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

Waste receptacles and recycling bins shall be large enough to contain the anticipated amount of waste, so that overflows do not cause a tripping hazard.

Waste receptacles and recycling bins in *accessible open areas*, such as parks, wilderness areas, beaches or picnic areas, shall be mounted on firm, level pads adjacent to the path or sidewalk (but not directly beside seating areas).

Waste receptacles and recycling bins shall be clearly identified by suitable lettering, in compliance with the relevant parts of 4.4.7.

4.3 OTHER AMENITIES

Where lids or openings are provided on waste receptacles and recycling bins, they shall be mounted no higher than 1060 mm (42 in.) above the adjacent floor or ground surface. Opening mechanisms shall comply with 4.4.2.

On street mailboxes and community mailboxes shall

- be located immediately adjacent to an *accessible route*;
- incorporate a *clear area* at least 760 mm (30 in.) wide x 1370 mm (54 in.) long in front of usable parts;
- where provided, have slots for posting mail located to be reachable from a seated position;
- where provided, have at least 10%, but no less than one, mailbox for collecting mail, located to be reachable from a seated position;
- have operating mechanisms in compliance with 4.4.2; and
- be kept *clear of snow*.

LEGISLATION REFERENCES

AODA 80.8
OBC 3.8.3.2

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.6 Doors
- 4.1.10 Curb Ramps
- 4.3.1 Drinking Fountains
- 4.3.11 Balconies, Porches, Terraces and Patios
- 4.3.12 Parking
- 4.3.13 Passenger Loading Zones
- 4.3.15 Benches
- 4.3.16 Picnic Tables
- 4.3.18 Traffic Signal Poles
- 4.3.19 Dog Relief Areas
- 4.4.4 Vending and Ticketing Machines
- 4.4.5 Public Telephones
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

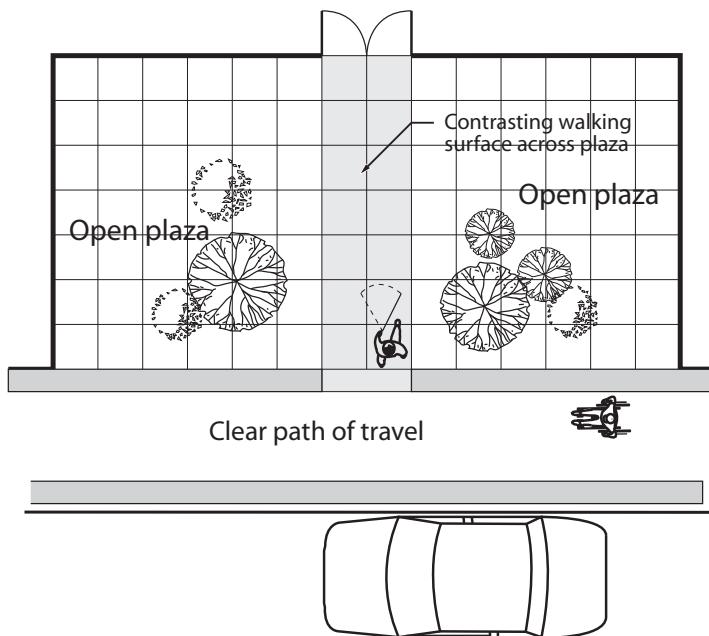


Figure 4.3.17.3
Pathway across Open Plaza

4.3 OTHER AMENITIES

RATIONALE

Persons who use mobility devices such as wheelchairs and scooters need to be able to reach and use the pushbuttons that control pedestrian signals at crosswalks. Access issues include the provision of appropriate space beside the pushbuttons, as well as the button configuration and mounting height.

APPLICATION

Signalized pedestrian crossings shall comply with this section.

In this section, "pedestrian crossover" means a pedestrian crossover as defined in subsection 1 (1) of the highway traffic act.

DESIGN REQUIREMENTS

Where new pedestrian signals are being installed or existing pedestrian signals are being replaced at signalized pedestrian crossovers, they must be accessible pedestrian signals.

Signal poles with pushbuttons to control pedestrian access to crossovers shall

- be adjacent to an *accessible route* complying with 4.1.4;
- have a locator tone that is distinct from a walk indicator tone;
- be parallel to the direction of the crossover controlled by the pushbutton;
- have tactile arrows that align with the direction of crossing;
- be 300-500 mm (11-3/4 - 19-5/8 in.) from the edge of the *curb ramp* ; and
- be 800-1500 mm (31-1/2 - 59 in.) from the back of the curb line. Note: The ideal location for the signal pole is 1000 mm (39-3/8 in.) from the back of the curb line.

4.3.18 PEDESTRIAN SIGNALS

Pushbuttons mounted on signal poles shall

- be mounted a maximum of 1100 mm (43-3/8 in.) above the sidewalk space for approach;
- have both manual and automatic activation features;
- include both audible and vibrotactile walk indicators;
- incorporate a painted yellow box on the post behind the activation button, that is at least twice the size of the pushbutton enclosure; and
- be operable
 - using one hand; and
 - with a force of less than 13 N (3 lbf.)

Where there are two pedestrian signals on the same corner, the push-buttons shall be mounted on poles separated by at least 3000 mm (118 in.). Refer to Figure 4.3.18.1.

Exception: If the requirements for separation cannot be met, two *accessible* pedestrian signal-related buttons may be installed on a single pole. The traffic signal pole shall be placed in the middle of the two *curb ramps*. If two push-buttons are installed on the same pole, the audible pedestrian signals shall be equipped to provide two sound messages facing the crosswalk that has the walk signal indication. Refer to Figure 4.3.18.2.

LEGISLATION REFERENCES

AODA 80.28

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.10 Curb Ramps
- 4.3.17 Streetscape
- 4.4.8 Detectable Warning Surfaces
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

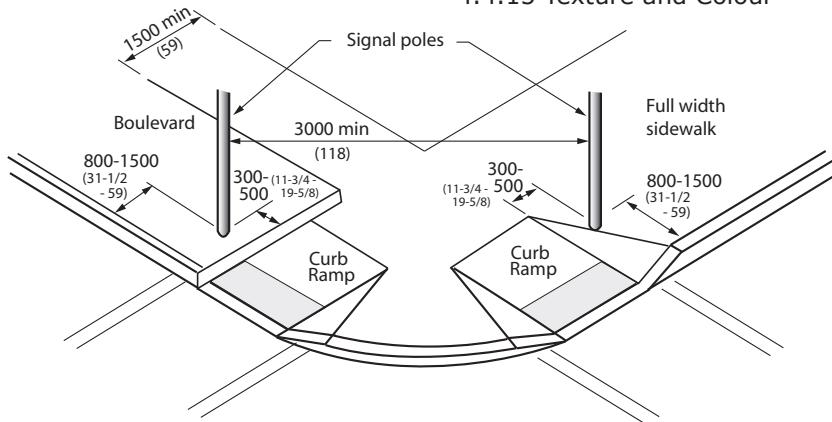


Figure 4.3.18.1
Corner with Two Traffic Signal Poles

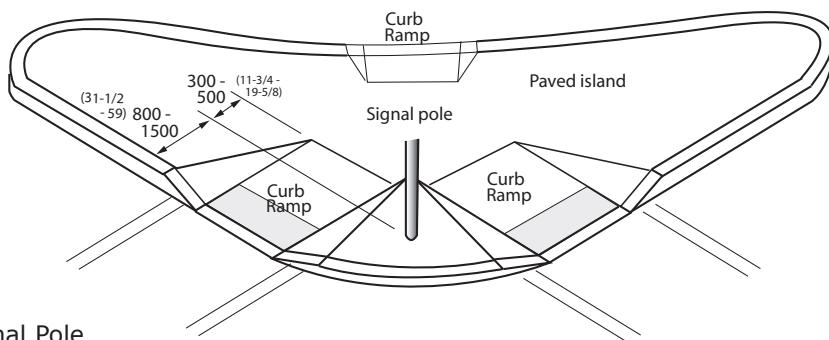


Figure 4.3.18.2
Corner with One Traffic Signal Pole

4.3.19 DOG RELIEF AREAS

4.3 OTHER AMENITIES

RATIONALE

Persons who are visually impaired and use a dog to assist with mobility, as well as other persons with working companion dogs, require access to an area for their dogs to relieve themselves. Such dog relief areas need to be in an *accessible* location, feature good drainage and a garbage can for waste disposal.

APPLICATION

Dog relief areas shall be provided in *buildings* of assembly occupancy which incorporate a meeting space for 50 or more people.

Dog relief areas shall comply with this section.

DESIGN REQUIREMENTS

Dog relief areas shall

- be adjacent to an *accessible route* complying with 4.1.4;
- be located within 30 metres (98 ft. 5 in.) of an *accessible entrance*;
- be an unobstructed, dedicated space at least 1500 x 1500 mm (59 x 59 in.) in size;
- incorporate a ground surface with drainage (Note: grass is preferable to gravel);
- incorporate an accessible garbage can; and
- be located away from busy traffic areas such as access routes and loading docks.

RELATED SECTIONS

4.1.4 Accessible Routes, Paths and Corridors

4.3.17 Streetscape

4.3 OTHER AMENITIES

RATIONALE

Kitchens, kitchenettes and coffee stations require an appropriate level of access to be useable by persons with disabilities. Adequate manoeuvring space is required for users of mobility equipment to approach and use work surfaces, storage elements and appliances. A frontal approach to work surfaces and appliances is generally preferred, except at refrigerators where a side approach is preferred. Where a frontal approach is used, knee space and toe space are required.

The use of colour contrast between kitchen elements will assist persons with low vision locate surfaces, appliances and controls.

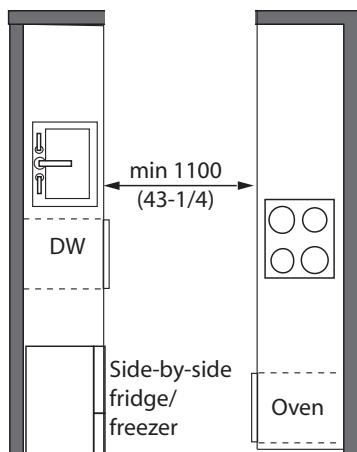


Figure 4.3.20.1
Pass-Through Kitchen

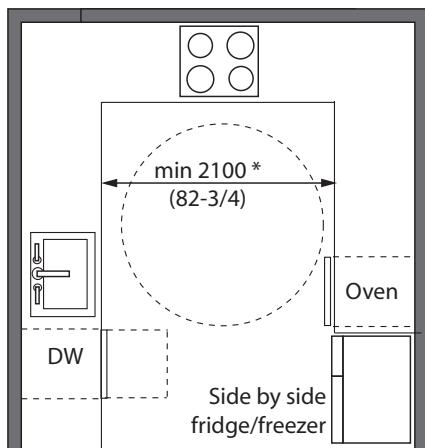


Figure 4.3.20.2
U-Shaped Kitchen

4.3.20 KITCHENS AND KITCHENETTES

Darker coloured work surfaces are preferable as they make it easier to identify objects located on them.

APPLICATION

Kitchens and kitchenettes intended for use by staff or the public shall comply with this section. Exception: Commercial kitchens.

At least 50% of shelf space in storage facilities shall comply with this section.

DESIGN REQUIREMENTS

Pass-through kitchens shall have

- where counters, appliances or cabinets are on two opposing sides, or when counters, appliances or cabinets are opposite a parallel wall, clearance between all opposing base cabinets, counter tops, appliances, or walls within a kitchen work area of 1100 mm (43-1/4 in.) minimum; and
- two entries.

U-shaped kitchens enclosed on three continuous sides shall have a minimum clearance of 2100 mm (82-3/4 in.) between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas. Where possible, the ideal is for the diameter to be 2440 mm (96 in.).

Storage elements shall

- be located on an *accessible route* with adjacent *clear floor space* in compliance with 4.1.1;
- comply with at least one of the reach ranges specified in 4.1.1; and
- incorporate *operable portions* in compliance with 4.4.2.

Kitchen sinks shall

- be located on an *accessible route* with adjacent *clear floor space* for a forward approach. Exceptions: A parallel approach is permitted to a kitchen sink where a cook top or conventional range is not provided and to wet bars;
- where a forward approach is provided, incorporate knee space below at least 810 mm (32 in.) wide, 480 mm (18-7/8 in.) deep, and 685 mm (27 in.) high;
- have the height of the rim or the counter top (whichever is higher) 710 – 856 mm (28 - 34 in.);
- incorporate faucets and other controls in compliance with 4.4.2;
- have water supply and drain pipes under the sink insulated or otherwise configured to protect against contact; and
- incorporate no sharp or abrasive surfaces under the sink.

Kitchen appliances shall

- be located on an *accessible route* with adjacent *clear floor space* in compliance with 4.1.1; and

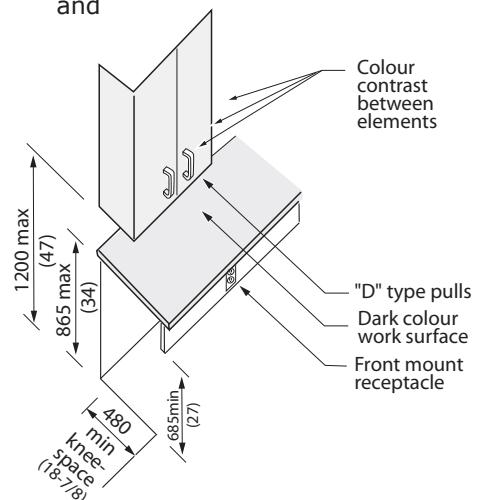


Figure 4.3.20.3
I-Shaped Kitchen with Island

Figure 4.3.20.4
Storage Elements

4.3.20 KITCHENS AND KITCHENETTES

- incorporate controls and *operable portions* in compliance with 4.4.2. Exceptions: Appliance doors and door latching devices.

Dishwashers shall incorporate *clear floor space* adjacent to the dishwasher door. The dishwasher door, in the open position, shall not obstruct the *clear floor space* for the dishwasher or the sink.

Ranges and cooktops shall

- incorporate controls that are located to avoid reaching across the burners; and
- where a forward approach is provided
 - incorporate knee space below at least 810 mm (32 in.) wide, 480 mm (18-7/8 in.) deep, and 685 mm (27 in.) high; and
 - insulate or otherwise configure the appliance to prevent burns, abrasions, or electrical shock.

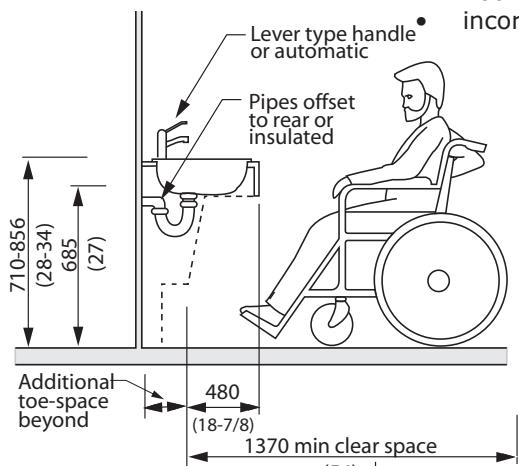


Figure 4.3.20.5
Kitchen Sink

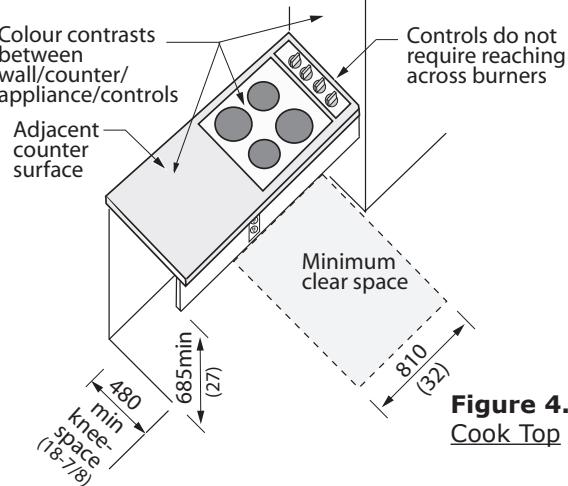


Figure 4.3.20.6
Cook Top

4.3.20 KITCHENS AND KITCHENETTES

Ovens shall

- have controls located on the front panels, mounted no higher than 1400 mm (55-1/8 in.);
- where side-hinged doors are used, be located
 - with an adjacent work surface positioned adjacent to the latch side of the door; and
 - incorporate a pull-out shelf below the oven; and
 - where bottom-hinged doors are used, be located with an adjacent work surface positioned adjacent to one side of the door.

In facilities with childrens' programs, ranges, cooktops and ovens shall be equipped a safety switch to de-activate appliance controls.

Refrigerators/freezers shall

- be configured with at least 50% of the freezer space maximum 1370 mm (54 in.) above the floor; and
- incorporate *clear floor space* in

front, positioned for a parallel approach immediately adjacent to the refrigerator/freezer, with the centre-line of the *clear floor space* offset 610 mm (24 in.) maximum from the front face of the refrigerator/freezer.

Kitchen elements shall incorporate colour contrast to visually differentiate the cabinets and appliances from adjacent wall and floor surfaces, the countertop from the cabinets and adjacent walls, and operable hardware on cabinets.

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.12 Glare and Light Sources
- 4.4.13 Lighting
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

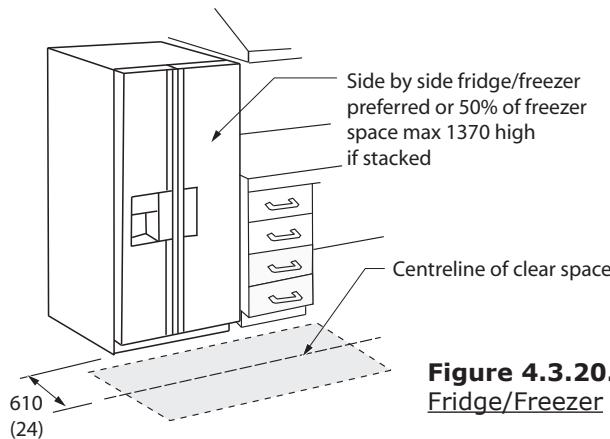


Figure 4.3.20.7
Fridge/Freezer

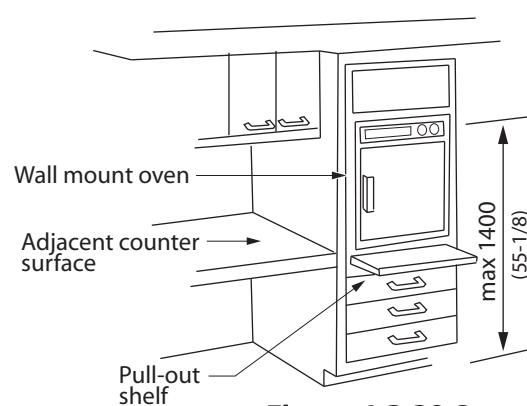


Figure 4.3.20.8
Wall-Mounted Oven

4.4 SYSTEMS AND CONTROLS

RATIONALE

In order to be *accessible* to all individuals, emergency exits must include the same accessibility features as other doors specified in 4.1.6. The doors and routes must also be marked in a way that is *accessible* to all individuals, including those who may have difficulty with literacy, such as children or persons speaking a different language. Persons with a visual *impairment* will need a means of quickly locating exits – audio or talking signs could assist. 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

In *facilities*, or portions of *facilities*, required to be *accessible*, *accessible means of egress* shall be provided in the same number as required for exits by the Ontario Building Code.

Where required exits from a floor level are not *accessible*, *areas of rescue assistance* shall be provided on the floor level in a number equal to that of the required exits.

Every *occupiable* level in non-residential occupancies above or below the first *storey* (as defined by the Ontario Building Code) that is *accessible*, shall

- be served by an elevator that has protection features, as specified in the Ontario Building Code; or
- be divided into at least two zones by fire separations, as specified in the Ontario Building Code.

In *occupiable* levels above or below the first *storey* in residential occupancies, the requirements for a protected elevator or two fire zones may be waived, if an appropriate balcony (as specified in the Ontario Building Code) is provided for each suite.

Areas of rescue assistance shall comply with this section.

A horizontal exit meeting the requirements of the Ontario Building Code shall satisfy the requirements for an *area of rescue assistance*.

4.4.1 EMERGENCY EXITS, FIRE EVACUATION AND AREAS OF RESCUE ASSISTANCE

DESIGN REQUIREMENTS

Where emergency warning systems are provided, 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* in compliance with the applicable provisions of 4.4.7.

Areas of rescue assistance shall

- be located on an *accessible route* complying with 4.1.4;
- incorporate the number of *rescue spaces* in accordance with Table 4.4.1;
- be of a size that allows a minimum floor space of 850 mm (33-1/2 in.) x 1370 mm (54 in.) per non-ambulatory occupant;
- be separated from the floor area by a fire separation having a fire-resistance rating at least equal to that required for an exit;
- be served by an exit or firefighters' elevator;
- be designated as an *area of rescue assistance* for persons with disabilities on the *facility* plans and in the *facility*;
- be smoke protected in *facilities* of more than three *storeys*;
- incorporate a 2-way voice communication system for use between each *area of rescue assistance* and the central alarm and control *facility*; and

- be identified with *signage* in compliance with the applicable provisions of 4.4.7, stating **AREA OF RESCUE ASSISTANCE** and incorporating the international symbol for accessibility for disabled persons.

LEGISLATION REFERENCES

OBC 3.3.1.7

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.2 Ground and Floor Surfaces
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.6 Doors
- 4.4.2 Controls and Operating Mechanisms
- 4.4.4 Visual Alarms
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.9 Public Address Systems
- 4.4.14 Materials and Finishes
- 4.4.15 Texture and Colour

Table 4.4.1
Number of Rescue Spaces

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

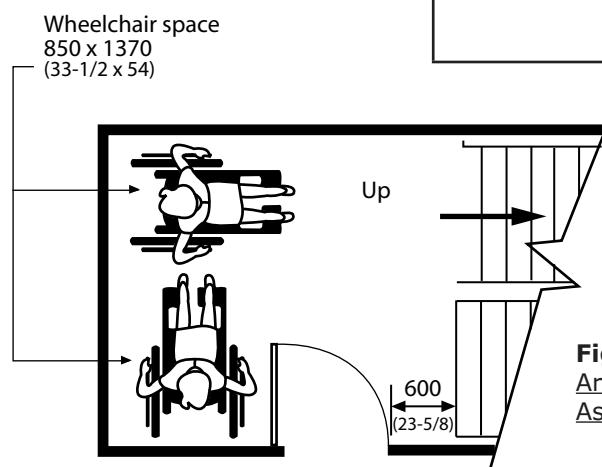


Figure 4.4.1.1
Area of Rescue Assistance

4.4.2 CONTROLS AND OPERATING MECHANISMS

RATIONALE

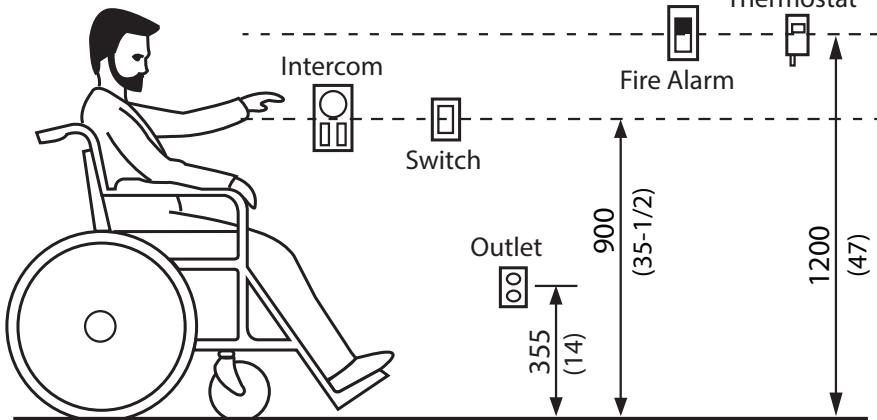
Operating mechanisms that require a high degree of dexterity or strength will be difficult for many people to use. They can also be obstacles for children, individuals with arthritis or even someone wearing gloves. Controls that require two hands to operate can also be difficult for some people, particularly 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 tactile markings. 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*. Persons with cognitive challenges may find counterintuitive controls or graphics difficult.

APPLICATION

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



DESIGN REQUIREMENTS

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

The *operable portions* of controls and operating mechanisms such as electrical switches and intercom switches, shall be located at 900 mm (35-1/2 in.) from the floor, and for thermostats and manual pull stations be located at 1200 mm (47 in.) from the floor. Exception: Elevators and power door operator controls - Refer to 4.1.6 and 4.1.14.

Electrical outlets and other types of devices shall be located at 355 mm (14 in.) to centre of the electrical box. Exception: Where electrical outlets are provided as components of systems furniture, or above work surfaces, these devices need not comply with this section provided they are installed in addition to electrical outlets required by the Authority having Jurisdiction.

Faucets and other controls shall be hand-operated or electronically controlled.

Hand-operated controls and mechanisms shall be operable

- with a closed fist;
- without tight grasping, pinching, or twisting of the wrist; and
- with a force of less than 22N (5 lbf.).

4.4 SYSTEMS AND CONTROLS

Controls and operating mechanisms shall be capable of being illuminated to at least a level of 100 lux (9.2 ft-candles).

Controls and operating mechanisms shall incorporate a pronounced colour contrast, to differentiate them from the surrounding environment.

LEGISLATION REFERENCES

OBC 3.8.1.5

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.3 Protruding Objects and Overhead
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.6 Doors
- 4.1.7 Gates, Turnstiles and Openings
- 4.1.8 Windows, Glazed Screens and sidelights
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.2 Toilet Stalls
- 4.2.3 Toilets
- 4.2.4 Lavatories
- 4.2.5 Urinals
- 4.2.6 Washroom Accessories
- 4.2.7 Universal washrooms
- 4.2.8 Shower Stalls
- 4.3.1 Drinking Fountains
- 4.3.4 Dressing/Change Rooms
- 4.3.5 Offices, Work Areas and Meeting Rooms
- 4.3.9 Storage, Shelving and Display Units
- 4.3.10 Lockers and Baggage Storage
- 4.3.17 Street Furniture
- 4.4.3 Vending and Ticketing Machines
- 4.4.5 Public Telephones
- 4.4.10 Self-Service Kiosks and Information Systems
- 4.4.11 Card Access, Safety and Security Systems
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

Figure 4.4.2.1
Reach Range for Accessible Controls

4.4 SYSTEMS AND CONTROLS

4.4.3 VENDING AND TICKETING MACHINES

RATIONALE

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 a wheelchair or scooter. The selection of the 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 including arthritis, or the need to stabilize oneself with a cane or a handful of bags. Lighting levels and colour contrasts make the machine more *accessible* to those with a visual *impairment*.

APPLICATION

Vending and ticketing machines shall comply with this section.

DESIGN REQUIREMENTS

Vending and ticketing machines shall be located on an *accessible route* in compliance with 4.1.4.

Clear floor space in front of vending and ticketing machines shall conform to 4.1.1.

The controls and operating mechanisms on vending and ticketing machines shall comply with 4.4.2.

Signage on vending and ticketing machines shall be in highly contrasting lettering, at least 13 mm (1/2 in.) high. Ideally, lettering and *signage* shall comply with relevant parts of 4.4.7.

LEGISLATION REFERENCES

OBC 3.8.1.5

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.2 Controls and Operating Mechanisms
- 4.4.15 Texture and Colour

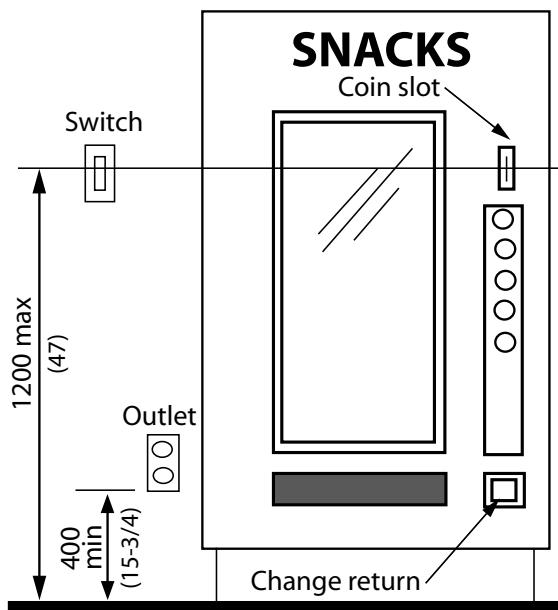


Figure 4.4.3.1
Vending Machine

4.4.4 VISUAL ALARMS

4.4 SYSTEMS AND CONTROLS

RATIONALE

Visual alarms are essential safety features for individuals who are deaf, deafened or hard of hearing such that they would not hear an audible alarm.

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*.

Visual alarm signal appliances shall be integrated into the *facility* alarm system. If single-station audible alarms are provided, then single-station visual alarms shall be provided.

DESIGN REQUIREMENTS

Visual alarm signals shall have the following minimum photometric and location features:

- the lamp shall be a Xenon strobe type or equivalent;
- the colour shall be *clear* or nominal white (i.e. unfiltered or clear filtered white light);
- the maximum pulse duration shall be two-tenths of one second (0.2 sec) with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final points of 10% of maximum signal;
- the intensity shall be a minimum of 75 candela;
- the flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz;
- the appliance shall be placed 2100 mm (82-3/4 in.) above the floor level within the *space* or 150 mm (5-7/8 in.) below the ceiling, whichever is lower;
- in general, no place in any room or *space* required to have a visual signal appliance, shall be more than 15 meters (50 ft.) from the signal (in the horizontal plane). In large rooms and *spaces* exceeding 30 meters (100 ft.) across, without obstructions 2000 mm (78-3/4 in.) above the finished floor, such as auditoriums, devices may be placed around the perimeter, spaced a maximum of 30 meters (100 ft.) apart, in lieu of suspending appliances from the ceiling; and
- no place in common corridors or hallways in which visual alarm signalling appliances are required shall be more than 15 m (50 ft.) from the signal.

LEGISLATION REFERENCES

OBC 3.2.4.19
OBC 3.2.4.22

RELATED SECTIONS

4.4.1 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance

4.4 SYSTEMS AND CONTROLS

RATIONALE

The placement of telephones should address the limited reach of children or persons in a seated position. 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 persons who are hard of hearing, as are 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.

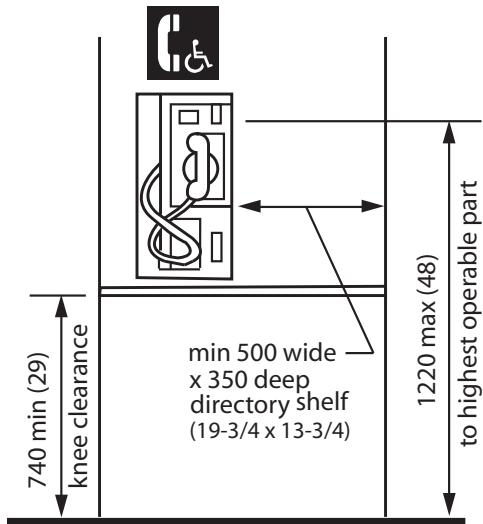


Figure 4.4.5.1
Accessible Telephone for Persons who use Wheelchairs or Scooters

4.4.5 PUBLIC TELEPHONES

APPLICATION

Where public pay phones, public closed-circuit phones, or other public telephones are provided, they shall comply with this section to the extent required by Table 4.4.5.

All telephones required to be *accessible* shall be equipped with a volume control. In addition, 25%, but never less than one, of all other public telephones provided shall be equipped with a volume control and shall be dispersed among all types of public telephones, including *closed-circuit telephones*, throughout the *facility*.

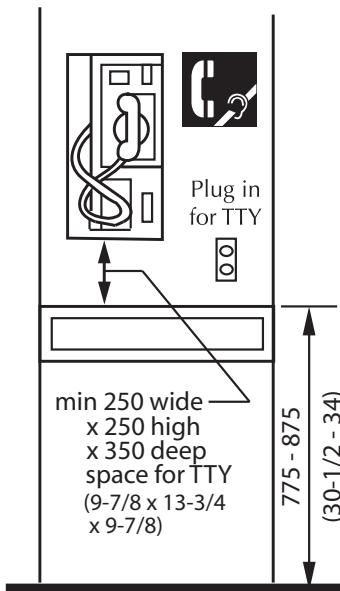


Figure 4.4.5.2
Accessible Telephone for Persons who are deaf, deafened, hard of hearing, or speech-impaired

Signage complying with applicable provisions of 4.4.7 shall be provided.

Where an interior public pay telephone is provided, then at least one interior public *text telephone* (TTY) shall be provided in the *facility* in a *public use area*.

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 (39-3/8 in.).

The minimum illumination level at operating mechanisms, the directory, and shelf of *accessible* telephones shall be 200 lux (18.4 ft-candles).

| Number of each type of telephone provided on each floor | Number of accessible telephones required for persons who use wheelchairs or scooters | Number of accessible telephones required for persons who are deaf, deafened or hard of hearing |
|---|--|--|
| 1 or more single units | 1 per floor | 1 per floor |
| 1 bank | 1 per floor | 1 per floor |
| 2 or more banks | 1 per bank (Accessible phones may be installed as single units in proximity to the bank (ie. either visible or with signage). At least one public telephone per floor shall meet the requirements for a forward reach telephone. | 1 per bank (Accessible phones may be installed as single units in proximity to the bank (ie. either visible or with signage). At least one public telephone per floor shall meet the requirements for a forward reach telephone. |

Table 4.4.5

Number of Accessible Telephones Required

Note: A bank consists of two or more adjacent public telephones, often installed as a unit.

4.4.5 PUBLIC TELEPHONES

Accessible telephones provided for persons who use a wheelchair or scooter shall

- have the maximum height of *operable portions*, including the coin slot, 1220 mm (48 in.) above the floor;
- have *operable portions* within the reach ranges specified in 4.1.1;
- have a *clear floor space* of not less than 810 mm (32 in.) wide by 1370 mm (54 in.) deep in front of the telephone;
- have a level telephone directory shelf at least 500 mm (19-3/4 in.) wide and 350 mm (13-3/4 in.) deep located 775 - 875 mm (30-1/2 - 34 in.) above finished floor with no obstruction within 250 mm (10 in.) above the surface for portable TTY machines; and
- provide knee space clearance under shelf of 740mm (29 in.) above finished floor.

Text telephones (TTY's) 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 telephones are for use by persons who are deaf, deafened, hard of hearing or speech-impaired, the telephones shall

- be a separate telephone from those provided for persons who use wheelchairs or scooters;
- 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.

4.4 SYSTEMS AND CONTROLS

LEGISLATION REFERENCES

OBC 3.8.3.15

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.4.2 Controls and Operating Mechanisms
- 4.4.7 Signage
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

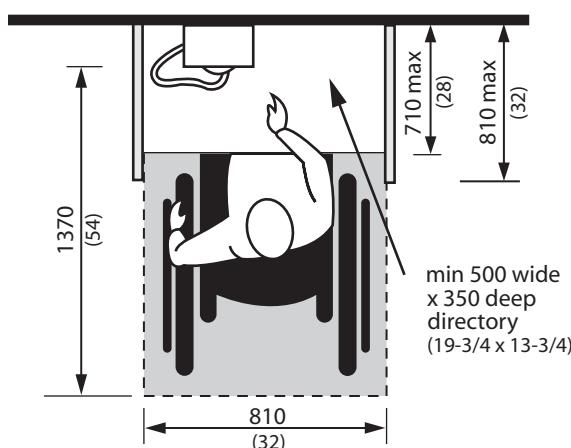


Figure 4.4.5.4
Frontal Approach to a Telephone for Persons who use Wheelchairs or Scooters

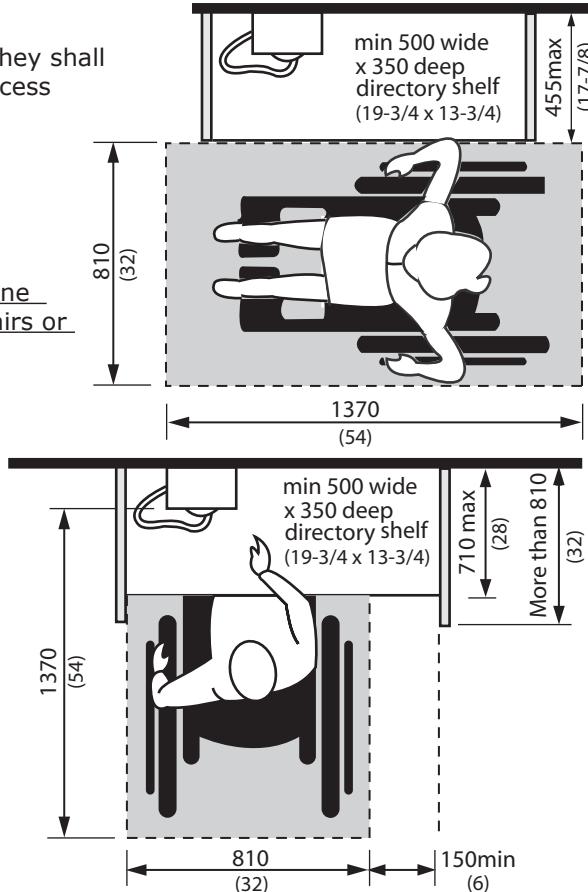


Figure 4.4.5.5
Frontal Approach to a Telephone for Persons who use Wheelchairs or Scooters

4.4 SYSTEMS AND CONTROLS

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 a visual *impairment*.

APPLICATION

Assistive listening systems shall comply with this section.

This section applies to *assembly areas* where audible communication is integral to the use of the *space* (e.g., concert theatres, *meeting rooms*, classrooms, auditoria, etc.). Such *assembly areas* shall have a permanently installed listening system in compliance with this section where:

- (1) they accommodate at least 50 persons or where they have audio amplification systems or where greater than 100 sq.m. (1080 sq.ft.) in floor area; and
- (2) they have fixed seating.

For other *assembly areas*, a permanently installed listening system or an adequate number of electrical outlets or other supplementary wiring necessary to support a portable assistive listening system shall be provided. The minimum number of receivers to be provided shall be equal to 4% of the total number of seats, but no less than two.

DESIGN REQUIREMENTS

Signage complying with applicable provisions of 4.4.7 shall be installed to notify patrons of the availability of a listening system.

Induction loops, infrared systems and FM radio frequency systems shall be considered acceptable types of assistive listening systems for persons who are hard of hearing.

Where an induction loop system is installed, dimmer switches and other controls that incorporate transformer coils shall be located so as not to interfere with the audio induction loop.

Where infrared assistive listening devices are used, overhead incandescent lights shall be located so as not to cancel out the infrared signal at the receiver.

Where an FM loop system or other assistive listening devices are available in public *facilities* or meeting areas, portable headsets that are compatible with personal hearing aids shall be made available.

Where an induction loop system is utilized, at least half the seating area shall be encompassed.

Where the listening system provided serves individual fixed seats, such seats shall be located within a 15 m (50-ft.) viewing distance of the stage or playing area and shall have a complete view of the stage or playing area.

RELATED SECTIONS

4.4.7 Signage
4.4.13 Lighting
4.4.16 Acoustics

4.4.7 SIGNAGE

RATIONALE

Signage should be simple, uncluttered and incorporate plain language. The use of graphic symbols is helpful for individuals such as children; those with a limited literacy level; or those who speak a different language.

Sharp contrasts in colour make signage easier for anyone to read, particularly someone with a visual impairment. The intent of the symbol must be evident, culturally universal and not counterintuitive. 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 that shall be identified by the International Symbol of Accessibility are

- parking spaces, designated as reserved for individuals with disabilities;
- accessible passenger loading zones;
- accessible entrances when not all are accessible (inaccessible entrances shall have directional signage to indicate the route to the nearest accessible entrance);
- accessible toilet and bathing facilities, including single-use portable units, when not all are accessible;
- accessible telephones;
- accessible elevators and other elevating devices;
- accessible means of egress; and
- areas of rescue assistance.

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

DESIGN REQUIREMENTS

Letters and numbers on signs shall

- be sans serif;*
- have Arabic numbers;
- have a width-to-height ratio between 3:5 and 1:1; and
- have a stroke-width-to-height ratio between 1:5 and 1:10.

4.4 SYSTEMS AND CONTROLS

Character height dimensions for viewing distance shall comply with Table 4.4.7.

Characters, symbols and backgrounds of signs shall have an eggshell, matte or other glare-free finish.

Characters and symbols shall contrast with their background; either light characters on a dark background or dark characters on a light background.

Where signs are required to be *tactile*, letters and numerals shall be

- raised at least 0.8 mm (1/32 in.), not sharply edged;

This is a **serif** font face

* This is a **sans serif** font face



Figure 4.4.7.1
Colour Contrast on Signs

| Minimum character height, mm | Maximum viewing distance, mm |
|------------------------------|------------------------------|
| 200 (7-7/8 in.) | 6000 (19 ft. 8 in.) |
| 150 (5-7/8 in.) | 4600 (15 ft. 0 in.) |
| 100 (3-15/16 in.) | 2500 (8 ft. 2-1/2 in.) |
| 75 (2-15/16 in.) | 2300 (7 ft. 2-1/2 in.) |
| 50 (2 in.) | 1500 (4 ft. 11 in.) |
| 25 (1 in.) | 750 (2 ft. 5-1/2 in.) |

Table 4.4.7
Character Height on Signs

4.4 SYSTEMS AND CONTROLS

DESIGN REQUIREMENTS

(Continued)

- be between 16 mm (5/8 in.) and 50 mm (2 in.) high; and
- be sans serif*, accompanied by Grade 2 Braille.

Braille translation of signs to be verified at the design stage by an independent Braille specialist.

Pictograms shall be accompanied by an equivalent visual and *tactile* verbal description, placed directly below the pictogram. The border dimension of the pictogram shall be 150 mm (6 in.) minimum in height.



Figure 4.4.7.2
Pictograms

(Note: Must incorporate equivalent verbal description)

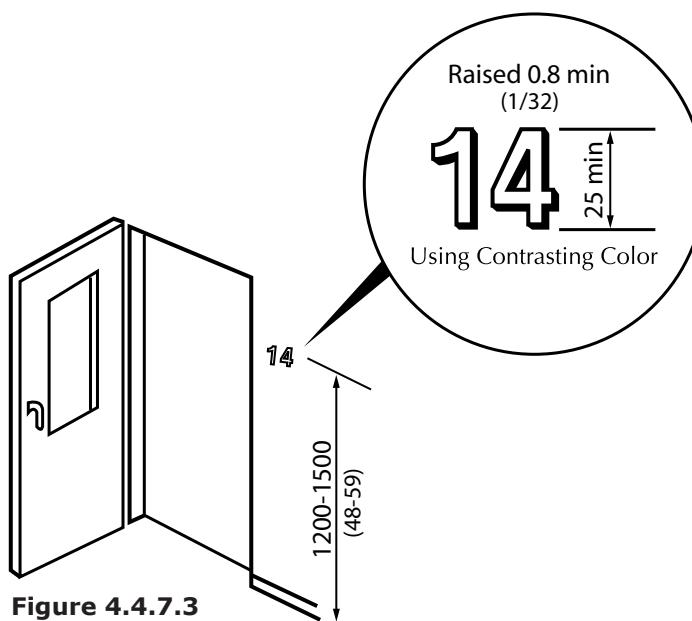


Figure 4.4.7.3
Tactile Lettering

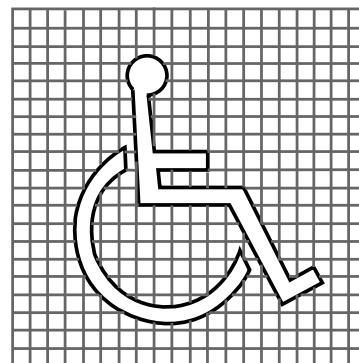
4.4.7 SIGNAGE

LEGISLATION REFERENCES

AODA 80.28
OBC 3.8.3.1

RELATED SECTIONS

- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible, Routes, Paths and Corridors
- 4.1.5 Entrances
- 4.1.6 Doors
- 4.1.7 Gates, Turnstiles and Openings
- 4.1.9 Ramps
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.1 Toilet and Bathing Facilities
- 4.2.7 Universal washrooms
- 4.3.2 Viewing Positions
- 4.3.4 Dressing/Change Rooms
- 4.3.12 Parking
- 4.3.13 Passenger-Loading Zones
- 4.4.1 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance
- 4.4.5 Public Telephones
- 4.4.13 Lighting
- 4.4.15 Texture and Colour



Grid for reference only

Figure 4.4.7.4
International Symbol of Access



Figure 4.4.7.5
Pictogram for Limited Mobility & Caregiver Parking Space

4.4.8 DETECTABLE WARNING SURFACES

RATIONALE

Detectable warning surfaces provide important navigational cues for persons with a visual *impairment*. These surfaces alert all pedestrians to potential hazards, such as crosswalks or stairs. Suitable surfaces include a change in texture and high colour contrast but should not present a tripping hazard.

Detectable warning surfaces should be used consistently throughout a facility.

APPLICATION

Detectable warning surfaces at walkways, curb ramps, stairs and elevated platforms, escalators and potential hazards shall comply with this section.

DESIGN REQUIREMENTS

All textured surfaces used as *detectable warning surfaces* shall be clearly detectable by walking upon as being different from the surrounding surface. (Refer also to 4.4.15). Note: Applying a paint finish to a concrete surface does not provide appropriate detectability.

Detectable warning surfaces shall contrast visually with adjoining surfaces, being either light on dark or dark on light. Refer also to Section 4.3.3.

Figure 4.4.8.1
Detectable Warning
Surfaces at Stairs

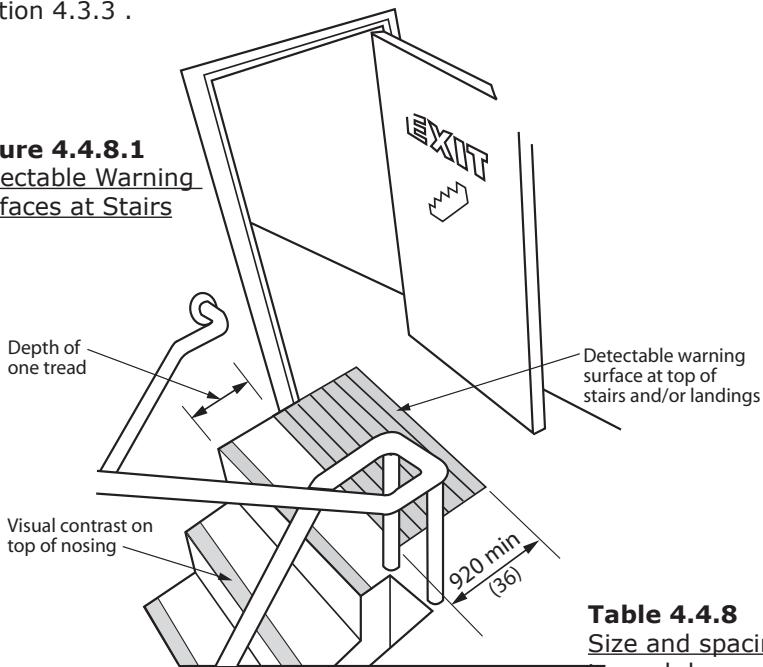


Table 4.4.8
Size and spacing of flat-topped domes or cones

4.4 SYSTEMS AND CONTROLS

Detectable warning surfaces shall be slip-resistant.

Detectable warning surfaces at stairs shall

- be provided at the top of the stairs and at landings with entry points; and
- extend the full width of the stair for a depth of at least 920 mm (36 in.) commencing one tread depth back from the stair.

Refer also to section 4.1.11.

Detectable warning surfaces at interior stairs shall be not more than 3mm above or below adjacent surfaces.

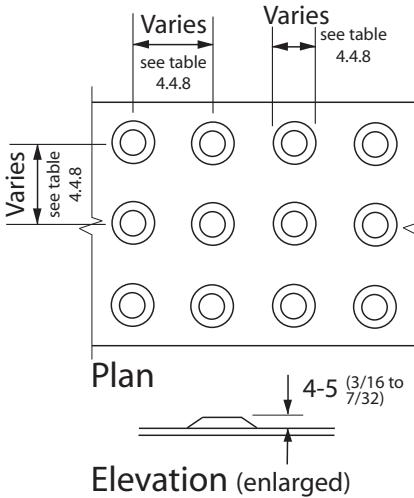


Figure 4.4.8.2
Flat-topped domes or cones
Detectable Warning Surface

Detectable warning surfaces at curb ramps, depressed curbs, exit stairs, exterior stairs and elevated platforms shall be composed of flat-topped domes or cones that

- are 4 - 5 mm (0.16 - 0.20 in.) high;
- have top and bottom dimensions as shown in Table 4.4.8; and
- are arranged in a regular pattern with spacing as shown in Table 4.4.8.

If a *walk* crosses or joins a *vehicular way* 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*, flat-topped domes or cones which is minimum 920 mm (36 in.) wide. Refer also to section 4.1.10.

LEGISLATION REFERENCES

OBC 3.8.3.17
OBC 3.8.3.18(1)

RELATED SECTIONS

- 4.1.3 Protruding and Overhead Objects
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.9 Ramps
- 4.1.10 Curb Ramps
- 4.1.11 Stairs
- 4.1.12 Escalators
- 4.3.1 Drinking Fountains
- 4.3.3 Elevated Platforms
- 4.3.12 Parking
- 4.3.13 Passenger-Loading Zones
- 4.4.15 Texture and Colour

| Top diameter of flat-topped domes or cones | Spacing |
|--|---------------------|
| 12 (0.5) | 42 - 61 (1.7 - 2.4) |
| 15 (0.6) | 45 - 63 (1.8 - 2.5) |
| 18 (0.7) | 48 - 65 (1.9 - 2.6) |
| 20 (0.8) | 50 - 68 (2.0 - 2.7) |
| 25 (1.0) | 55 - 70 (2.2 - 2.8) |

Bottom diameter of flat-topped domes or cones 10 ±1 greater than the top diameter.

4.4 SYSTEMS AND CONTROLS

4.4.9 PUBLIC ADDRESS SYSTEMS

RATIONALE

Public address systems should be designed to best accommodate all users, especially those that may be hard of hearing. They should be easy to hear above the ambient background noise of the environment and there should be no distortion or feedback. Background noise should be minimized.

Visual equivalents should be made available for persons that are deaf, deafened or hard of hearing 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.

RELATED SECTIONS

4.4.1 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance
4.4.16 Acoustics

4.4.10 SELF-SERVICE KIOSKS AND INFORMATION SYSTEMS

RATIONALE

Information should be accessible to all facility users. Where universally accessible formats are technically not feasible alternate formats should be available. Video display terminals may present particular difficulties for persons with vision impairments. Alternate technology or audio interfaces are required. To ensure that a person using a wheelchair can access an information terminal, consideration should be given to the lower vantage point and reach ranges.

APPLICATION

Information systems, such as display kiosks, video display terminals, and interpretive/informational panels 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 alternative format, such as audio, Braille and large-text print. The minimum font size for large-text print shall be 16 point. Refer to the Canadian National Institute of the Blind "Clear Print Guidelines" for further detail.

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 a person using a wheelchair or scooter (Refer to 4.4.2).

Essential print information shall be printed 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 with a visual impairment.

Tactile identification shall comply with 4.4.15.

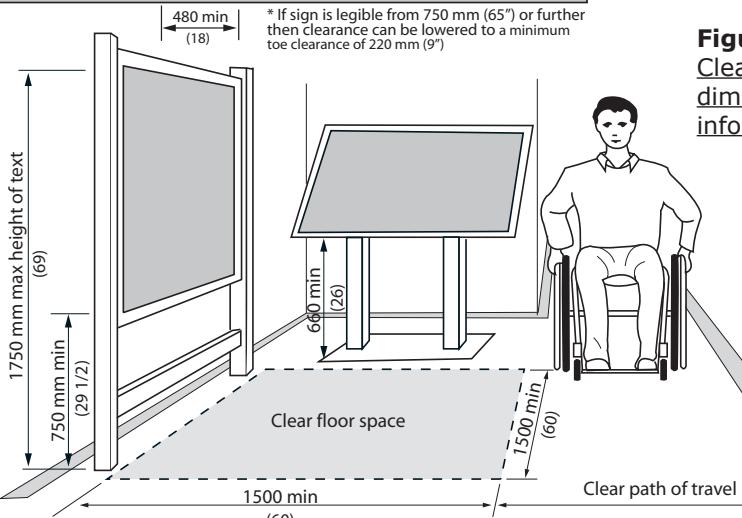
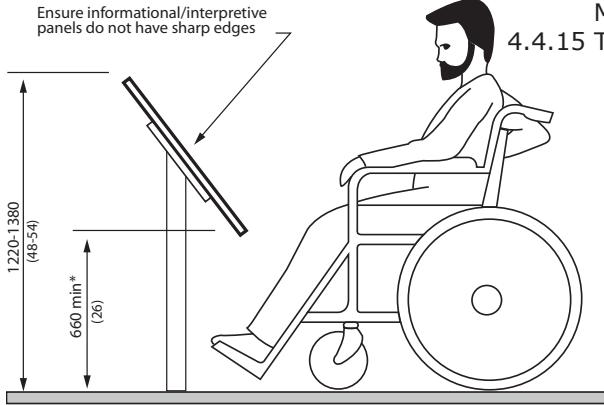
Exhibits that include important artefacts, labels and graphics, shall be placed 1000 - 1200 mm (39 3/8 - 47 in.) from the floor.

Labels and descriptive signage shall be inclined from horizontal for easier reading.

Inclined informational/interpretive panels that can not be read from 750 mm (30 in.) away shall have at least 660 mm (26 in.) of knee clearance and at least 470 mm (18 in.) depth. If displays are intended for viewing from 750 mm (30 in.) or further, less clearance is permitted to a minimum height of 220 mm (9 in.) for toe kick clearance. The top of the panel shall be not more than 1220 mm - 1380 mm (48 in. - 54 in.) high.

Vertical informational/interpretive panels shall have text located no higher than 1750 mm (69 in.). Text shall not be lower than 750 mm (29 1/2 in.) above the floor.

No part of the sign shall encroach on the path of travel.



4.4 SYSTEMS AND CONTROLS

If encroachment is unavoidable, cane-detection through colour and texture change shall be provided on the ground.

A minimum 1500 mm x 1500 mm (60 in. x 60 in.) clear space directly in front of the sign is required for its approach and use. The clear space must be of a hard surface material.

Automated banking machines shall comply with Canadian Standards Association B651.1 Barrier-Free Design for Automated Banking Machines (latest edition).

Self-service interactive devices shall comply with Canadian Standards Association B651.2 Accessible Design for Self-Service Interactive Devices (latest edition).

LEGISLATION REFERENCES

AODA Part 1 - 6

RELATED SECTIONS

4.4.2 Controls and Operating Mechanisms
4.4.15 Texture and Colour

Figure 4.4.10.1
Critical dimensions for information systems and displays

Figure 4.4.10.2
Clear space and dimensions around information systems

4.4 SYSTEMS AND CONTROLS

RATIONALE

In many cases, persons such as seniors and persons with *disabilities* may be considered to have a higher degree of vulnerability and therefore seek more reassurance and inherent security. Items such as adequate lighting and *accessible* signalling devices promote this security.

Emergency signalling devices are important in universal washrooms where the potential for a fall is increased and an individual may be alone.

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 person who is blind.

APPLICATION

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

4.4.11 CARD ACCESS, SAFETY AND SECURITY SYSTEMS

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.

Where public telephones are installed, an *accessible* public telephone complying with 4.4.5 shall be located at, or close to an *accessible entrance*, for the use of persons requiring assistance.

Where *accessible* universal washrooms in compliance with 4.2.7 are provided in larger public *facilities*, such as recreation *facilities*, the washroom shall incorporate an emergency call system linked to a central location (e.g., office or switchboard).

Card-entry systems shall

- be wall-mounted, no higher than 1060 mm (42 in.) above the floor or ground, adjacent to the door and free of the door swing;
- be colour-contrasted from the surface on which they are mounted;
- incorporate a card slot that is illuminated or colour contrasted from the mounting plate; 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 1060 mm (42 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.

LEGISLATION REFERENCES

OBC 3.8.1.5

RELATED SECTIONS

- 4.1.1 Space and Reach Requirements
- 4.1.4 Accessible Routes Paths and Corridors
- 4.1.5 Entrances
- 4.1.6 Doors
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.7 Universal washrooms
- 4.3.5 Offices, Work Areas and Meeting Rooms
- 4.4.2 Controls and Operating Mechanisms
- 4.4.13 Lighting
- 4.4.15 Texture and Colour

4.4.12 GLARE AND LIGHT SOURCES

RATIONALE

Direct or reflected glare from floors, walls or work surfaces is uncomfortable for all users and a barrier to 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.

The strategic use of lighting is valuable to all individuals, and especially important for individuals with some form of visual *impairment*. 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 comply with this section.

DESIGN REQUIREMENTS

Extensive high gloss floor and wall finishes are not acceptable, but high-gloss materials may be incorporated into floor and wall finish details, as long as they do not result in large reflective surfaces.

Monolithic floor surfaces, such as stone, granite, marble or terrazzo, shall have a matte or honed finish, to minimize reflected glare.

Finishes such as vinyl, other composition materials, quarry tile, glazed tile or mosaics, used on horizontal surfaces, such as floors and work surfaces, shall be in matte or satin finishes.

Finishes such as vinyl wall coverings, stone, marble, wood, metals, plastic laminate, etc., used on vertical surfaces, such as walls and columns, shall have matte or satin finishes. Paint finishes are permitted to have a semi-gloss finish, for cleaning and durability purposes.

Curtains, blinds or other sun-screening systems shall be provided at windows and other places where direct sunlight can adversely affect the level of lighting and/or reflected glare.

Light fixtures shall be selected with diffusers, lenses or recessed light sources, so that no glare is created.

Where surface-mounted fluorescent ceiling fixtures are mounted below 2440 mm (96 in.), they shall have darkened sides (i.e., not wrap-around lenses) and be positioned perpendicular to the dominant direction of travel, or used in valance-type lighting along the perimeter of a space, resulting in indirect lighting.

The location of special features and key orientation *elements* shall be enhanced through the use of supplementary lighting. Such lighting shall have upward or downward components only.

4.4 SYSTEMS AND CONTROLS

LEGISLATION REFERENCES

OBC 3.8.1.6

RELATED SECTIONS

- 4.1.2 Ground and Floor Surfaces
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.5 Entrances
- 4.1.8 Windows, Glazed Screens and Sidelights
- 4.1.9 Ramps
- 4.1.10 Curb Ramps
- 4.1.11 Stairs
- 4.1.13 Escalators
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.1 Toilet and Bathing Facilities
- 4.3.8 Information, Reception and Service Counters
- 4.4.13 Lighting

4.4 SYSTEMS AND CONTROLS

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 Illuminating Engineering Society of North America 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 *site* amenities.

At pedestrian *entrances*, frequently used pedestrian routes (including walkways, paths, stairs and *ramps*), designated parking *spaces* (including *accessible spaces* and *limited mobility/caregivers spaces*), and at passenger drop-off areas, lighting levels should be consistent over the route, area or space, 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

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

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

4.4.13 LIGHTING

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

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

INTERIOR LIGHTING

Light sources and fixtures shall be selected to minimize direct glare or indirect glare on nearby reflective surfaces.

Light sources shall provide as full a spectrum of light as possible, as an aid to edge and colour definition.

Lighting shall be configured to create an even distribution at floor level and to minimize pools of light and areas of shadow.

The leading edge of stairs, steps, *ramps* or escalators shall be evenly lit to minimize tripping hazards.

Lighting levels in elevator lobbies shall be similar to the lighting levels in elevator cabs, to minimize tripping hazards, and in no case shall be less than 200 lux (20 ft-candles)

Lighting levels in washrooms and dressing rooms shall be evenly distributed and no less than 200 lux (20 ft-candles)

Lighting levels in office areas shall be evenly distributed and no less than 300 lux (30 ft-candles)

Emergency lighting over stairs and *ramps*, in an exit or path of travel, shall be at least 100 lux (10 ft-candles), generally at the walking surface, and in no place less than 50 lux (5 ft-candles).

Lighting over directional or informational *signage*, or highlighting other orientation features, at public telephones, information or service counters, and card or keypad security systems, shall be no less than 200 lux (20 ft-candles) measured at the working surface.

Lighting in *meeting rooms* and *assembly areas* shall be evenly distributed, and shall be capable of being adjusted (e.g., dimmers).

Lighting at lecterns, podiums/ platforms or other speaker locations shall be capable of being enhanced, even when other lighting is dimmed, to permit ease of lip-reading and/or viewing of the hand actions of a nearby signer for persons who are deaf.

RELATED SECTIONS

- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.5 Entrances
- 4.1.9 Ramps
- 4.1.10 Curb Ramps
- 4.1.11 Stairs
- 4.1.12 Escalators
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.1 Toilet and Bathing Facilities
- 4.3.1 Drinking Fountains
- 4.3.3 Elevated Platforms
- 4.3.4 Dressing/Change Rooms
- 4.3.5 Office, Work Areas and Meeting Rooms
- 4.3.8 Information, Reception and Service Counters
- 4.4.2 Controls and Operating Mechanisms
- 4.4.5 Public Telephones
- 4.4.7 Signage
- 4.4.12 Glare and Light Sources

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 that are slip-resistant and not highly reflective promote safe travel.

APPLICATION

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

DESIGN REQUIREMENTS

EXTERIOR FINISH MATERIALS

Suitable walkway paving surfaces include macadam, concrete, compacted gravel screenings, interlocking brick and patio stones. Such materials used as walkways shall

- have joints that are no greater than 6 mm (1/4 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 openings of no greater than 13 mm (1/2 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 (1/4 in.) and should be flush.

Wall surfaces in corridors shall be non-abrasive from the floor level to a minimum of 2000 mm (78-3/4 in.) above the finished floor.

4.4 SYSTEMS AND CONTROLS

RELATED SECTIONS

- 4.1.2 Ground and Floor Surfaces
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.5 Entrances
- 4.1.9 Ramps
- 4.1.10 Curb Ramps
- 4.1.11 Stairs
- 4.1.13 Escalators
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.1 Toilet and Bathing Facilities
- 4.3.4 Dressing/Change Rooms
- 4.3.5 Office, Work Areas and Meeting Rooms
- 4.4.12 Glare and Light Sources

4.4 SYSTEMS AND CONTROLS

RATIONALE

The ability of an individual with a visual *impairment* to navigate an environment can be enhanced through the strategic 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 that 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

Exterior colour schemes shall incorporate a pronounced colour contrast, to differentiate boundaries of objects, distinguish objects from their background, and to generally enhance spatial orientation. Generally, for seniors and persons with low vision, colours in the warm end of the spectrum (yellow, orange, bright red, etc.) are easier to recognize than those at the cool end of the spectrum.

Signs shall incorporate pronounced glare-free colour contrast. A minimum contrast of 70% light reflectance is required. For signs, the most visible colours are white or yellow on a black, charcoal or 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 contrast shall be used as a safety measure to define edges or boundaries of objects (e.g., stair nosings, doors, *handrails*,

4.4.15 TEXTURE AND COLOUR

etc.). Colour or tone shall be used to visually define the boundaries of a room (i.e., 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 a highly contrasting tone shall be used to assist with wayfinding. (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 surfaces* shall be clearly detectable by walking upon as being different from the surrounding surface.

Supplementary textural cues shall also be provided (e.g., by using different floor textures or materials, in major and minor routes).

Clearly defined boundaries of materials like carpeting or floor tiles shall enhance wayfinding by defining such as the junction between walls and floors, doorway recesses and corridor intersections.

The same texture shall be used consistently throughout any one *site* to identify the same type of hazard.

RELATED SECTIONS

- 4.1.2 Ground and Floor Surfaces
- 4.1.4 Accessible Routes, Paths and Corridors
- 4.1.6 Doors
- 4.1.7 Gates, Turnstiles and Openings
- 4.1.8 Windows, Glazed Screens and Sidelights
- 4.1.9 Ramps
- 4.1.10 Curb Ramps
- 4.1.11 Stairs
- 4.1.12 Handrails
- 4.1.13 Escalators
- 4.1.14 Elevators
- 4.1.15 Platform Lifts
- 4.2.2 Toilet Stalls
- 4.2.3 Toilets
- 4.2.4 Lavatories
- 4.2.5 Urinals
- 4.2.6 Washroom Accessories
- 4.2.7 Universal washrooms
- 4.2.8 Shower Stalls
- 4.2.9 Grab Bars
- 4.3.1 Drinking Fountains
- 4.3.3 Elevated Platforms
- 4.3.4 Dressing/Change Rooms
- 4.3.5 Office, Work Areas and Meeting Rooms
- 4.3.6 Waiting and Queuing Areas
- 4.3.8 Information, Reception and Service Counters
- 4.3.9 Storage, Shelving and Display Units
- 4.3.10 Lockers and Baggage Storage
- 4.3.11 Balconies, Porches, Terraces and Patios
- 4.3.14 Landscaping Materials and Plantings
- 4.3.15 Benches
- 4.3.16 Picnic Tables
- 4.3.17 Street Furniture
- 4.4.1 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance
- 4.4.2 Controls and Operating Mechanisms
- 4.4.5 Public Telephones
- 4.4.7 Signage
- 4.4.8 Detectable Warning Surfaces
- 4.4.11 Card Access, Safety and Security Systems

4.4.16 ACOUSTICS

RATIONALE

The acoustic environment of public buildings and *spaces* should accommodate the unique needs of persons who are hard of hearing and who need to differentiate essential sounds from general background noise. The sound transmissions of different areas can be used as an orientation cue and help to navigate a *space*. A well designed acoustical environment is to everyone's advantage.

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 ceilings shall be selected so that occasional noise is not unduly amplified. (e.g., Hard surfaces such as marble or terrazzo will allow each foot step to be heard by persons who are visually impaired, but add another level of confusion for persons who are hearing impaired.)

At *accessible routes* in large *facilities* where wayfinding is problematic, the sound transmission/reflection characteristics of finish materials shall aurally differentiate major and secondary paths of travel.

Ceiling shapes shall be designed so that echoes do not occur, unless an alternate acoustical treatment is incorporated. (Note: domed shapes tend to distort sound.)

Public address and call systems shall be capable of being zoned to key areas, rather than blanketing all areas of a *facility* at all times. (Refer to 4.4.9.)

In *meeting rooms and assembly areas* where the spoken word is key to comprehending the proceedings, all unnecessary background noise (e.g., from fans or other mechanical equipment, air diffusers, etc.) shall be dampened and/or the room shall include adequate sound insulation.

4.4 SYSTEMS AND CONTROLS

RELATED SECTIONS

- 4.3.5 Office, Work Areas and Meeting Rooms
- 4.3.8 Information, Reception and Service Counters
- 4.4.5 Public Telephones
- 4.4.6 Assistive Listening Systems
- 4.4.9 Public Address Systems

4.5 FACILITY-SPECIFIC REQUIREMENTS

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, dressing/change rooms and showers. Persons with a *disability* 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 never 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*.

4.5.1 ARENAS, HALLS AND OTHER INDOOR RECREATIONAL FACILITIES

DESIGN REQUIREMENTS

Arenas, halls and other indoor recreation *facilities* shall

- where visitor, spectator and/or participant seating is provided,
 - have *accessible* seating options in compliance with 4.3.2; and
 - incorporate *detectable warning surfaces* in compliance with 4.4.8. where seating is accessed by stairs.
- provide an *accessible route* in compliance with 4.1.4 to the arena/*facility* floor and/or ice surface, including access panels or gates providing at least 950 mm (37-1/2 in.) *clear width*;
- where *facilities* are provided for performances and other events, have a direct *accessible route* in compliance with 4.1.4 from the lobby/*entrances* and viewing locations to all performing areas, including stages, dressing rooms, washrooms and all other spaces used by performers;
- where stairs are provided, have stairs that comply with 4.1.11, including appropriate tactile and colour-contrasting features;
- where dressing *facilities* are provided, have dressing *facilities* that comply with 4.3.4;
- where lockers or shelving is provided, have lockers and shelving that comply with 4.3.9 and 4.3.10;
- where coat hooks are provided, have at least 10%, but never less than one, within the reach ranges specified in 4.1.1;
- where toilets and bathing *facilities* are provided, have toilets and bathing *facilities* that comply with 4.2.1;
- where concessions or other service counters are provided, comply with 4.1.3 and 4.3.8;
- where swimming pool, hot pools or therapy pools are provided, comply with 4.5.3; and
- where staff accommodation and related support areas, offices or *meeting rooms* are provided, comply with all relevant sections of 4.1 to 4.4.

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

4.5.2 OUTDOOR ATHLETIC AND RECREATIONAL FACILITIES

RATIONALE

Opportunities for recreation, leisure and active sport participation should be available to all members of the university community. Access should be provided throughout the campus including to; playing fields and other sports *facilities*, all activity areas, outdoor trails, swimming areas, play spaces, lockers, dressing/change rooms and showers. Persons with a *disability* may be active participants, as well as spectators, volunteers faculty 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 change *facilities* are provided to support the use of outdoor recreational *facilities* by the general public, clients, customers, performers or staff, at least 50%, but never 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 change *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 for all persons with a varying level of ability.

BOARDWALKS

Where boardwalks are provided, they shall

- have a minimum width of 2000 mm (78-3/4 in.);
- incorporate surfaces constructed of firm, stable, 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 (1/4 in.) wide;

- incorporate a continuous curbed edge where the grade drop-off on any side of the boardwalk is greater than 200 mm (7-7/8 in.). The curbed edge shall be at least 75 mm (3 in.) high and of a contrasting colour to the surrounding terrain;
- *handrails*, *guards* or other suitable barriers on both sides where the grade drop-off is greater than 450 mm (17-3/4 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.)

OUTDOOR POOLS

Outdoor swimming pools shall comply with 4.5.3.

TRAILS AND FOOTBRIDGES

When designing trails, refer to ONTARIO REGULATION 413/12 made under the ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT, PART IV.1 DESIGN OF PUBLIC SPACES STANDARDS (ACCESSIBILITY STANDARDS FOR THE BUILT ENVIRONMENT)

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.

4.5 FACILITY-SPECIFIC REQUIREMENTS

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 (Refer also to 4.4.15.):

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

PLANTING AND TREES

Planting and trees along *accessible* pathways shall comply with 4.3.14.

REST AREAS

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 campus shall be *accessible* to a person using a wheelchair or scooter.

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

4.5 FACILITY-SPECIFIC REQUIREMENTS

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 levels of ability. 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 m (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-candle);
- 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.)

4.5.2 OUTDOOR ATHLETIC AND RECREATIONAL FACILITIES

WASHROOMS

Where washrooms are provided to support the use of outdoor recreation *facilities* by students, faculty, staff, visitors and the general public, they shall comply with all applicable sections of 4.2.

WATERFRONT AREAS

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

Seating shall be provided along paths and at lookout points, in compliance with 4.3.15.

Where parking is provided, it shall be located as close as possible to waterfront area. An *accessible route* shall be provided from the parking area to paths and/or lookout 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 interpretive *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 a person using a wheelchair or scooter. (e.g., Where turnstiles are used, an adjacent *accessible* gate shall be provided in compliance with 4.1.7.)

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 dressing/change rooms shall comply with 4.2.1, 4.2.9 and 4.3.4.

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

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 an immersive water environment can be enabling in themselves. Primary considerations 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, splash pads, spray pads 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 dressing/change rooms;
- a direct *accessible route* in compliance with 4.1.4 from the dressing/change rooms to the pool deck;
- access from the pool deck into the water, provided by a *ramp* sloped no steeper than 1:12. In retrofit situations where it is *technically infeasible* to provide a *ramp*, a mechanical pool lift may be used;
- a shower chair available at each *facility* for use in transferring into the water and/or shower;

- where steps are provided into the pool,
 - steps shall be marked with a colour-contrasting strip of at least 50 mm (2 in.) wide, at both the riser and the tread; and
 - colour-contrasting *handrails* on both sides of the steps. Such *handrails* shall extend at least 300 mm (11-3/4 in.) beyond the pool edge;
- where a curbed edge is provided, it shall be a minimum of 200 mm (7-7/8 in.) and a maximum of 400 mm (15-3/4 in.) in height;
- 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 be a minimum of 2100 mm (82-3/4 in.) or shall be 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;

4.5 FACILITY-SPECIFIC REQUIREMENTS

- 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.

Swimming pools shall be of 'level-deck' design.

LEGISLATION REFERENCES

- OBC 3.11.1
- OBC 3.11.3
- OBC 3.11.5
- OBC 3.12.3.2

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

4.5 FACILITY-SPECIFIC REQUIREMENTS

RATIONALE

Cafeteria serving lines and seating area designs need to reflect the lower sight lines, reduced reach, knee-space and manoeuvring requirements of a person using a wheelchair or scooter. Patrons using mobility devices may not be able to hold a tray or food items while supporting themselves on canes or while manoeuvring a wheelchair. Tray slides should be designed to move trays with minimal effort.

Features such as colour contrasts and large print menus may assist persons with a visual *impairment*.

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.

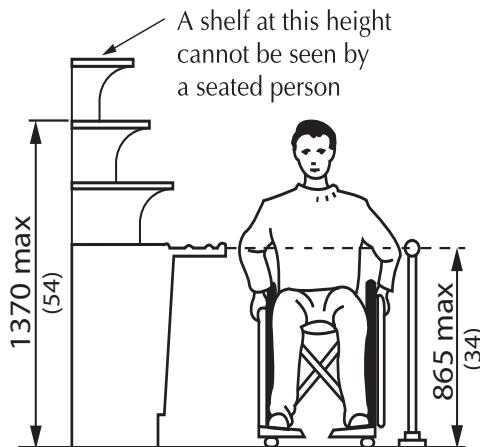


Figure 4.5.4.1
Self Serve Counter

4.5.4 CAFETERIAS

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 and counters are for use by customers seated on stools or standing at the counter, a minimum of 1525 mm (60 in.) length of the counter shall be constructed in compliance with 4.3.8. Service may also be made available at *accessible* tables within the same area.

Access aisles at least 1100 mm (43-1/4 in.) shall be provided up to and around all *accessible* fixed tables. The *access aisle* shall be measured 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*. In a retrofit situation where it is *technically infeasible* to provide access to all levels within a dining area, or to all parts of outdoor seating areas, at least one dining area shall be *accessible*. The *accessible* area must feature the same level of service and décor as the rest of the dining area and it must not be restricted to use by persons with *disabilities*.

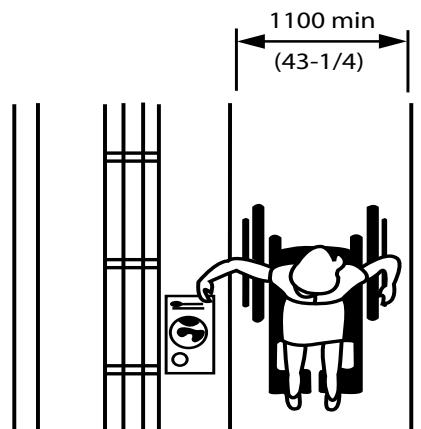


Figure 4.5.4.2
Aisle Width

Access to outdoor eating areas shall comply with 4.3.11.

Food service lines shall have a minimum *clear width* of 1100 mm (43-1/4 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.

Cashier locations should feature at least one *access aisle*, which is a minimum of 1100 mm (43-1/4 in.) wide. It is preferable to have all aisles *accessible*.

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.

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

Queuing areas shall comply with 4.3.6.

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

4.5.5 CHURCHES, CHAPELS AND OTHER PLACES OF WORSHIP

4.5 FACILITY-SPECIFIC REQUIREMENTS

RATIONALE

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

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

APPLICATION

In addition to the design requirements specified in 4.1 to 4.4, churches, chapels and other places of worship and/or reflection shall comply with this section.

DESIGN REQUIREMENTS

All areas in churches, chapels and other places of worship and/or reflection shall be *accessible* to persons with *disabilities*, including main areas of worship, *meeting rooms*, washrooms, coatrooms and offices.

Accessible seating shall be provided in compliance with 4.3.2.

Pulpits, altars, daises and choir areas shall comply with 4.3.3.

Public address systems shall comply with 4.4.9.

Assistive listening systems shall comply with 4.4.6.

4.5 FACILITY-SPECIFIC REQUIREMENTS

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.

APPLICATION

In addition to the design requirements specified in 4.1 to 4.4, business, mercantile and civic *facilities* shall comply with this section.

In areas used for transactions where counters have cash registers and are provided for sales and distribution of goods or services to the public, at least one of each type shall have a portion of the counter *accessible* and in compliance with this section. Such counters shall include, but not be limited to, counters in retail stores and distribution centres.

Where counters are dispersed throughout the *facility*, the *accessible* counters must also be dispersed throughout the *facility*.

In public *facilities* where counters or teller windows have solid partitions or security glazing to separate personnel from the public, at least one of each type shall provide a method to facilitate voice communication. Such methods may include, but are not limited to, grills, slats, talk-through baffles, intercoms or telephone handset devices.

The number of *accessible* checkout aisles provided shall be in conformance with Table 4.5.6.

4.5.6 BUSINESS AND MERCANTILE

DESIGN REQUIREMENTS

All *accessible* sales and service counters shall be on an *accessible route* that complies with 4.1.4.

In areas used for transactions where counters have cash registers and are provided for sales and distribution of goods or services to the public, the counter shall have at least one portion that is at least 920 mm (36 in.) in length, with a maximum surface height of 865 mm (34 in.) above the finished floor and shall have adjacent *clear floor space* of at least 1370 mm x 760 mm (54 x 30 in.) to allow for parallel approach by a person using a wheelchair or scooter.

In areas used for transactions that may not have a cash register but at which goods and services are sold, including, but not limited to, ticketing counters, teller stations, registration counters, information counters, box office counters and library check-out areas either a portion of the main counter shall be a minimum of 865 mm (34 in.) in length, with a maximum height of 865 mm (34 in.) or an auxiliary counter with the required minimum dimensions shall be provided in close proximity to the main counter.

In public *facilities* where counters or teller windows have solid partitions or security glazing to

separate personnel from the public, the method of communication provided shall be *accessible* to both individuals who use a wheelchair or scooter and individuals who have difficulty bending.

The *clear width* of *accessible* checkout lines shall comply with 4.1.4, and the maximum adjoining counter height shall not exceed 965 mm (38 in.) above the finished floor. The top of any counter edge protection shall be no more than 50 mm (2 in.) above the top of the counter surface on the aisle side of the check-out counter.

Signage identifying *accessible* checkout aisles shall incorporate the International Symbol of Access and shall be mounted above the checkout aisle in the same location where the checkout number or type of checkout is displayed.

Any devices used to prevent the removal of shopping carts from store premises shall not prevent access or egress to persons who use a wheelchair or scooter. An alternate *entrance* that is equally convenient to that provided for ambulatory persons is acceptable.

LEGISLATION REFERENCES

AODA 80.41

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

| Total checkout aisles of each design | Minimum number of accessible checkout aisles of each design |
|--------------------------------------|---|
| 1 - 4 | 1 |
| 5 - 8 | 2 |
| 9 - 15 | 3 |
| Over 15 | 3 plus 20% of additional aisles |

Table 4.5.6
Required Number of *Accessible* Checkout Aisles

4.5.7 LIBRARIES

4.5 FACILITY-SPECIFIC REQUIREMENTS

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 a person using a wheelchair. 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 of many ages and sizes.

The provision of workstations equipped with assistive technology such as large displays, screen readers, etc. will increase the accessibility of a library.

The provision of book drop-off slots at different heights for standing and seated use will enhance usability.

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% but no less than one shall be *accessible* and in compliance with this section. It is preferable to have all fixed seating, tables and study carrels *accessible*.

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

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.

Minimum *clear aisle width* at card catalogues and at stacks shall be 1100 mm (43-1/4 in.) at primary

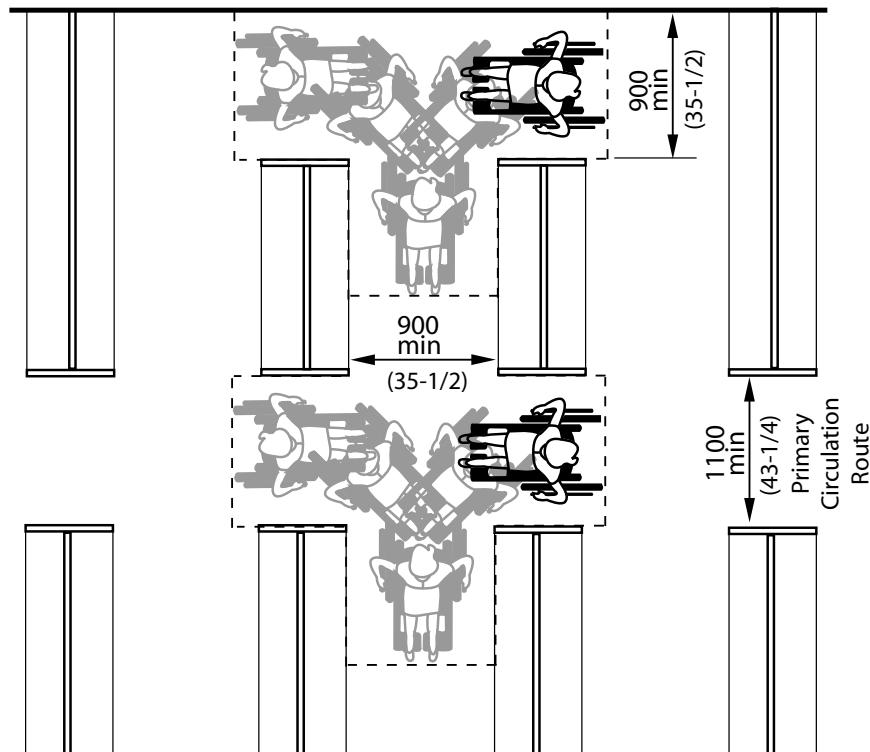


Figure 4.5.7.1
Aisle Width

4.5 FACILITY-SPECIFIC REQUIREMENTS

DESIGN REQUIREMENTS (Continued)

circulation routes and never less than 900 mm (35-1/2 in.) elsewhere.

Aisle configurations shall incorporate a *clear floor space* allowing a person in a wheelchair to make a 180 degree turn in compliance with 4.1.1.

Maximum reach heights at card catalogues shall comply with 4.1.1.

Shelf height in stack areas is unrestricted.

4.5.7 LIBRARIES

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

Where provided, computer catalogues and computer workstations shall incorporate

- knee and toe space below the work surface 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 915 mm (36 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 2100 by 2100 mm (82-3/4 by 82-3/4 in.) level *clear floor space*. Where possible, the ideal is for the dimensions to be 2440 x 2400 mm (96 x 96 in.). In a retrofit situation where it is *technically infeasible* to create a 2100 by 2100 mm (82-3/4 by 82-3/4 in.) *clear floor space*, the space may be reduced to 1525 x 1525 mm (60 by 60 in.); and
- 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.).

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.

LEGISLATION REFERENCES

AODA Part 2 - 18

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

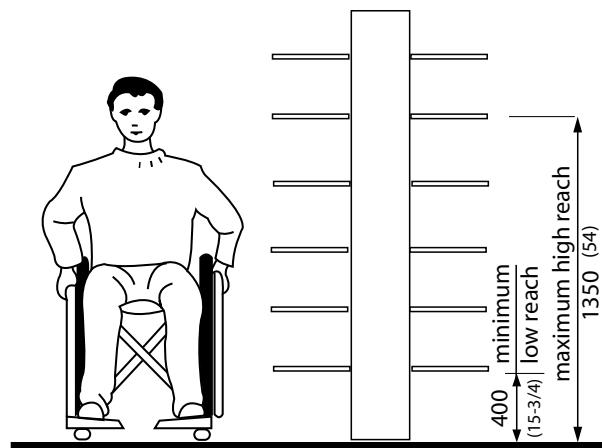


Figure 4.5.7.2
Reach Heights

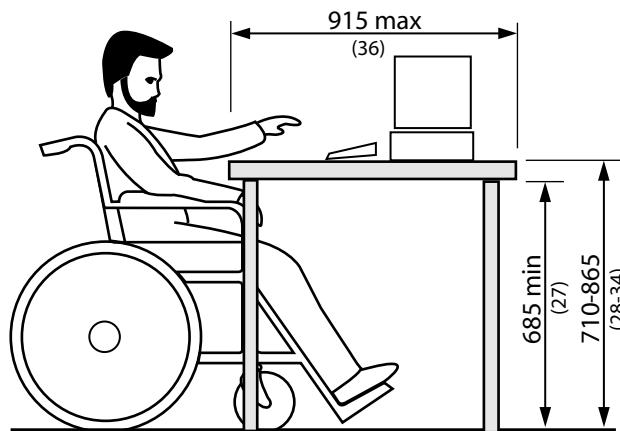


Figure 4.5.7.3
Work Surfaces

4.5.8 TEACHING SPACES

RATIONALE

Students, professors, teachers and staff with *disabilities* should have equitable access to university facilities.

Students with disabilities should be able to participate in all drawing and painting activities, including persons with low vision. Accessible drawing and painting classrooms should also accommodate instructors with disabilities.

This section of the manual identifies general accessibility requirements that are applicable to all teaching spaces, including teaching computer labs. Additional considerations may be necessary for *spaces* and/or features specifically designated for the use of students with *disabilities* - such a special needs classroom or a washroom required to accommodate complex personal care needs.

Students, professors, teachers and staff with *disabilities* should be accommodated in all teaching spaces throughout the university. Basic accommodation includes the ability to enter and move freely throughout the *space*, as well as use the various built-in *elements* within (i.e. blackboards, switches, computer stations, sinks, etc). Individual students with a *disability* may require additional accommodations beyond those identified within this section.

Individuals with disabilities frequently use learning aids and other assistive devices that require a power supply. The provision of additional electrical outlets throughout teaching spaces will better-accommodate the use of such equipment.

Where built-in *elements* are duplicated within an individual teaching *spaces*, such as benches or pinboards, at least one of each type of *element* should be *accessible* to students, faculty, teaching assistants and staff with *disabilities*.

Wherever possible, fixtures, fittings, furniture and equipment should be specified for teaching *spaces*, which is usable by students, faculty, teaching assistants and staff with *disabilities*. However, it is recognized that not all equipment found in teaching *spaces* is usable by all persons with *disabilities*.

Providing only one size of seating does not reflect the diversity of body types of our society. Offering seats with an increased width and weight capacity is helpful for persons of large stature. Seating with increased legroom will better suit individuals that are taller. Removable armrests can be helpful for persons of larger stature as well as individuals using wheelchairs that prefer to transfer to the seat.

Seating with built-in writing surfaces should accommodate both left and right handed users.

Accessible classrooms will feature an assistive listening system and acoustic control surfaces to allow students who are deaf, deafened or hard of hearing to fully participate. Lighting is also provided for sign language interpretation when the classroom lights are dimmed for a presentation.

4.5 FACILITY-SPECIFIC REQUIREMENTS

APPLICATION

All Teaching Spaces

All teaching *spaces*, including teaching computer labs and open access computing labs, shall be *accessible* and shall comply with this section.

At least 2% of the seating shall be wider seats with a load capacity of at least 227kg (500lbs).

Where built-in *elements* such as fixed seating, tables or benches are provided within a teaching *space*, at least 10% but no less than one, shall be *accessible* and in compliance with this section.

At least 50% of shelf space in storage facilities in teaching *spaces* shall comply with this section.

Where writing surfaces are integrated into teaching space seating, 10% but no less than one shall accommodate persons who are left-handed.

An assistive listening system shall be provided.

Drawing/Painting Classrooms

At least 3% of work tables shall be height adjustable tables with knee space below.

The instructor water table shall be height adjustable with knee space below.

Lecture/Studio Classrooms

At least 3% of drawing/painting stations shall be height adjustable tables with knee space below.

An accessible instructor podium shall be provided.

Examination/Critique Classrooms

At least 3% of the seating capacity shall be accessible wheelchair seating spaces.

An accessible instructor podium shall be provided.

4.5 FACILITY-SPECIFIC REQUIREMENTS

DESIGN REQUIREMENTS

Teaching spaces shall incorporate

- at least one entry/egress door in compliance with 4.1.6;
- floor surfaces throughout in compliance with 4.1.2;
- primary circulation routes in compliance with 4.1.4, linking all functional areas and *elements* within the *space*;
- secondary circulation routes no less than 920 mm (36 in.) wide;
- controls and operating mechanisms in compliance with 4.4.2; and
- where provided, windows, glazed screens and sidelights in compliance with 4.1.8.

Classrooms, auditoria, *assembly areas* and other teaching spaces that incorporate fixed seating shall

- incorporate no less than two separate *accessible* seating locations; and
- incorporate *accessible* seating locations in compliance with 4.3.2.

Where applicable, classrooms, auditoria, *assembly areas* and other teaching spaces shall incorporate assistive listening systems in compliance with 4.4.6.

Tiered classrooms shall be configured to allow

- students with disabilities to access at least two separate seating areas in compliance with 4.3.4; and
- to allow faculty and students with disabilities to access the primary presentation area.

Where teaching spaces incorporate safety equipment such as fire extinguishers, such equipment shall be *accessible* to and usable by persons with *disabilities*.

4.5.8 TEACHING SPACES

Accessible work surfaces and other built-in *elements* within teaching spaces shall

- comply with 4.3.7;
- where applicable, incorporate controls and operating mechanisms in compliance with 4.4.2; and
- be large enough to accommodate an assistant and extra equipment.

Work surfaces shall incorporate non-glare finishes.

Accessible storage *elements* within teaching spaces shall

- be located on an *accessible route* with adjacent *clear floor space* in compliance with 4.1.1;
- comply with at least one of the reach ranges specified in 4.1.1; and
- incorporate *operable portions* that comply with 4.4.2

Where pin boards, blackboards, or other display systems are provided within teaching spaces, at least one of each type shall

- be located on an *accessible route* with adjacent *clear floor space* in compliance with 4.1.1; and
- have its lowest edge minimum 760 mm (30 in.) above the floor and the highest edge maximum 2285 mm (90 in.).

Where teaching spaces incorporate demonstration areas such as benches or computer stations, provisions must be made to facilitate viewing from a variety of eye-levels. The installation of mirrors over the demonstration areas is one way to provide such access.

Where provided, sinks, shall comply with 4.3.20.

Signage shall comply with 4.4.7.

Where provided windows, glazed screens and sidelights shall comply with 4.1.8.

Where speaker podiums are provided they shall

- be located on an accessible route in compliance with 4.1.4;
- be height-adjustable for use from a seated or standing position;
- incorporate *clear floor space* of at least 810 mm (32 in.) by 1370 mm (54 in.), configured for forward approach;
- incorporate *clear knee space* of at least 810 mm (32 in.) wide, 480 mm (18-7/8 in.) deep and 685 mm (27 in.) high; and
- incorporate controls and operating mechanisms in compliance with 4.4.2.

Spaces intended for general teaching and study shall feature a background noise level no higher than 30 dB(A).

LEGISLATION REFERENCES

OBC 3.8.2.1

OBC 3.8.3.6

OBC 3.8.3.7

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

4.5.9 LABORATORIES

RATIONALE

Students, professors, teachers and staff with *disabilities* should have equitable access to university facilities.

This section identifies general accessibility requirements that are applicable to all laboratory spaces. Additional considerations may be necessary for *spaces* and/or features specifically designated for the use of students with *disabilities*.

Students, professors, teachers and staff with *disabilities* should be accommodated in all laboratories. Basic accommodation includes the ability to enter and move freely throughout the *space*, as well as use the various built-in *elements* within (i.e. blackboards, switches, benches, sinks, etc). Individual students with a *disability* may require additional accommodations beyond those identified within this section.

Where built-in *elements* are duplicated within a laboratory, such as benches or pinboards, at least one of each type of *element* should be *accessible* to students, professors, teachers and staff with *disabilities*.

Wherever possible, fixtures, fittings, furniture and equipment should be specified for laboratories, which is usable by students, professors, teachers and staff with *disabilities*. However, it is recognized that not all equipment found in laboratories is usable by persons with *disabilities*.

APPLICATION

All laboratories shall be *accessible* and shall comply with this section.

Where built-in *elements* such as fixed seating, tables, benches or fume hoods are provided within a laboratory, at least 3% but no less than one, shall be *accessible* and in compliance with this section.

At least 50% of shelf space in storage facilities in laboratories shall comply with this section.

DESIGN REQUIREMENTS

Laboratories shall incorporate

- at least one entry/egress door in compliance with 4.1.6;
- floor surfaces throughout in compliance with 4.1.2;
- primary circulation routes in compliance with 4.1.4, linking all functional areas and *elements* within the *space*;
- secondary circulation routes no less than 920 mm (36 in.) wide;
- controls and operating mechanisms in compliance with 4.4.2; and
- where provided, windows, glazed screens and sidelights in compliance with 4.1.8.

Accessible built-in *elements* such as tables and benches shall

- have work surfaces in compliance with section 4.3.7; and
- be large enough to accommodate additional assistive equipment, as well as an assistant.

Work surfaces shall incorporate non-glare finishes.

Wherever practical, controls and operating mechanism associated with built-in elements and equipment shall be mounted on the front face of the built-in element or equipment, or in an equivalent location that is reachable by a seated user. All other characteristics of controls and operating mechanisms shall comply with 4.4.2.

Areas intended for demonstration purposes, such as benches, fume cabinets or computer stations, shall facilitate viewing from a variety of eye levels. The installation of mirrors over the demonstration area is one way to provide such access.

Where provided, at least one of each type of laboratory sink shall

- be located on an *accessible* route with adjacent *clear floor space*;
- where a forward approach is provided, incorporate knee space below at least 810

4.5 FACILITY-SPECIFIC REQUIREMENTS

mm (32 in.) wide, 480 mm (18-7/8 in.) deep, and 685 mm (27 in.) high;

- have the height of the rim or the counter top (whichever is higher) 710 – 856 mm (28 - 34 in.);
- incorporate faucets mounted at the side of the sink, and other controls in compliance with 4.4.2
- where designed for forward approach, have water supply and drain pipes under the sink insulated or otherwise configured to protect against contact; and
- incorporate no sharp or abrasive surfaces under the sink.

Accessible storage elements shall

- be located on an *accessible* route with adjacent *clear floor space* in compliance with 4.1.1;
- comply with at least one of the reach ranges specified in 4.1.1; and
- incorporate operable portions that comply with 4.4.2.

Safety equipment such as fire extinguishers, eye baths and deluge showers shall be *accessible* to and useable by persons with disabilities.

Where pin boards, blackboards, or other display systems are provided within laboratories, at least one of each type shall

- be located on an *accessible* route with adjacent *clear floor space* in compliance with 4.1.1; and
- have its lowest edge located no higher than 760 mm (30 in.).

Where provided, all fume hoods shall have base surface mounted no higher than 865 mm (34 in.) above the floor. At least one fume hood shall have knee-space below, at least 685 mm high (27 in.) by 480 mm deep (18-7/8 in.) by 760 mm wide (30 in.).

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4

4.5 FACILITY-SPECIFIC REQUIREMENTS

RATIONALE

Students with disabilities should have equitable access to housing choices. They should also have the opportunity to visit fellow students living in their own residences.

Accessible housing provides the features required to allow a person with a disability to live as independently as possible. Consideration is given to full accessibility in all areas of the home including parking, entrances, kitchens, washrooms, living areas and storage areas.

Visitable housing provides basic accessibility features to accommodate visitors with disabilities. The features are also advantageous to those that have temporary disabilities or are elderly. Basic access includes the ability to safely enter and maneuver through the main level and access a toilet. The concept of *visitable* housing would be important to fully integrate a person with a disability in the experience of 'residence life'.

Persons with disabilities should also have the same opportunity to utilize *common use* areas typical of student residences. Accessibility features need to be extended to areas such as lounges, shared kitchens and laundry facilities.

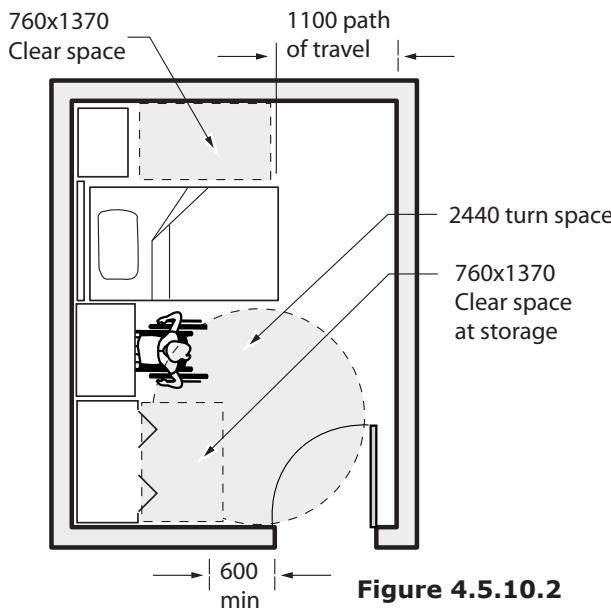


Figure 4.5.10.2
Residence - Sample Room Plan

4.5.10 RESIDENCES

APPLICATION

No less than 15% of the total number of residence beds shall be located in *accessible residence rooms* that comply with this section

All *residence rooms* in university residences shall be *visitable* and comply with this section.

Common-use areas of university residences shall comply with all relevant sections of this standard.

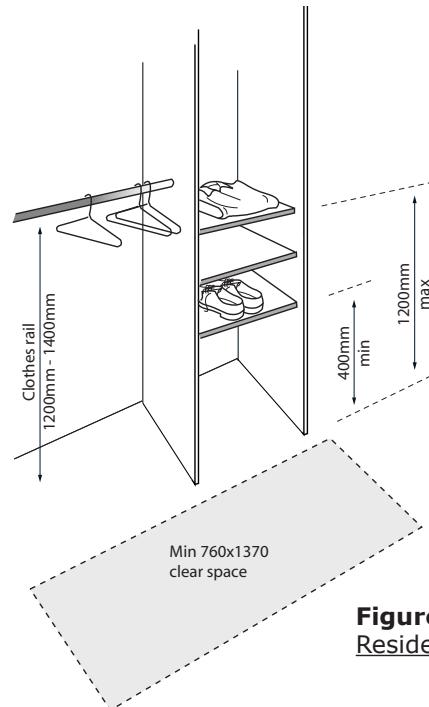


Figure 4.5.10.1
Residence Storage

DESIGN REQUIREMENTS

Visitable residence rooms shall comply with the 'Visitable dwelling units' section of CAN/CSA B651: Accessible design for the built environment (most current version).

Accessible residence rooms shall comply with the 'Accessible dwelling units' section of CAN/CSA B651: Accessible design for the built environment (most current version), and the requirement of Sentence 3.8.2.1.(5) of the Ontario Building Code (most current edition).

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

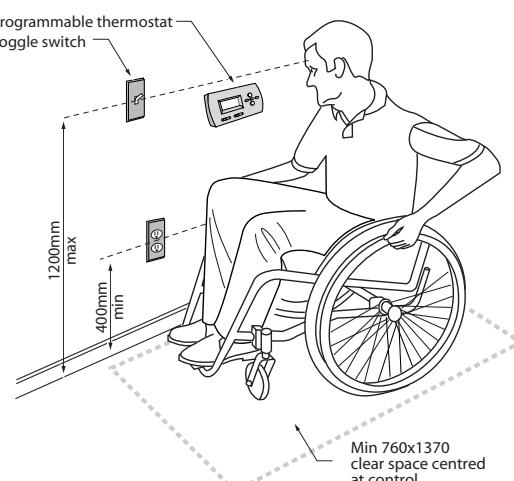


Figure 4.5.10.3
Residence Controls

4.5.11 TRANSIT FACILITIES

RATIONALE

Links to usable transportation should be *accessible* to all members of a community.

Alternatives to audio- and/or visual-only presentation of scheduling information should be available.

A large bus stop platform is required where *accessible* buses are used. The large platform will accommodate the deploying (lowering) of a wheelchair *ramp* from a bus and to allow for wheelchair movement on and off the *ramp*, as well as alighting from the rear door.

If not properly placed and maintained, street furniture such as trees, newspaper boxes, waste and recycling receptacles can restrict access to bus stops.

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 STOP PLATFORMS

Bus stop platforms shall

- be located on an *accessible route* in compliance with 4.1.4;
- be a minimum of 8500 mm (27 ft.) long and 2100 mm (84 in.) wide;
- be *clear* of all obstacles (including trees, newspaper boxes, waste and recycling receptacles); and
- maintain clearances as specified in 4.1.3.

4.5 FACILITY-SPECIFIC REQUIREMENTS

Where a bus stop platform does not meet the sidewalk, two paved connections from the sidewalk to the platform shall be provided which

- are at least 1500 mm (47 in.) wide;
- incorporate ground surfaces that comply with 4.1.2;
- are *clear* of all obstacles (including trees, newspaper boxes, waste and recycling receptacles); and
- maintain clearances as specified in 4.1.3.

BUS PASSENGER SHELTERS

Bus passenger shelters shall

- be located on an *accessible route* in compliance with 4.1.4;
- provide a *clear view* of oncoming traffic;
- be located on firm, level pads approximately at the same elevation as the sidewalk or walkway;
- incorporate access openings at least 950 mm (37-1/2 in.) wide;
- incorporate *clear floor space* in compliance with 4.1.1 to accommodate a person using a wheelchair or scooter;
- where glazed, incorporate a continuous horizontal safety strip decal which
 - is minimum 75 mm (3 in.) wide;
 - blue-coloured; and
 - located 1400 - 1600 mm (55 - 63 in.) above ground level
- where frameless glass is used adjacent to an access opening, incorporate a vertical colour-contrasting safety stripe, applied to cap the end of the glass panel; and
- feature at least one seat with armrests and a seat height between 400 mm and 450 mm (15-3/4 in. and 17-3/4 in.).

RELATED SECTIONS

All relevant parts of Sections 4.1, 4.2, 4.3 and 4.4.

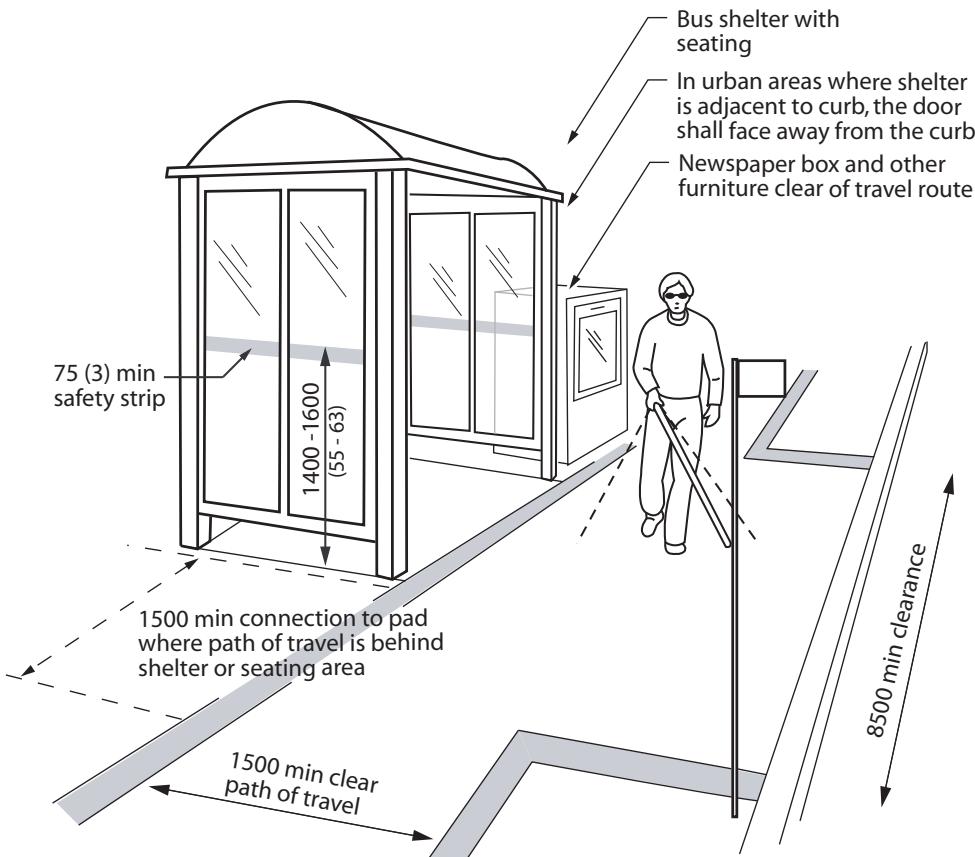


Figure 4.5.11.1
Bus Stop Platform with Shelter

UNIVERSAL DESIGN PRINCIPLES AND GUIDELINES

Version 2.0 - 4/1/97

Compiled by advocates of universal design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden

Major funding provided by: The National Institute on Disability and Rehabilitation Research, U.S. Department of Education

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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 for adaptation or specialized design.

The authors, a working group of architects, product designers, engineers and environmental design researchers, collaborated to establish the following Principles of Universal Design to guide a wide range of design disciplines, including environments, products, and communications. These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

The Principles of Universal Design are presented here, in the following format: name of the principle, intended to be a concise and easily remembered statement of the key concept embodied in the principle; definition of the principle, a brief description of the principle's primary directive for design; and guidelines, a list of the key elements that should be present in a design which adheres to the principle. (Note: all guidelines may not be relevant to all designs.)

PRINCIPLE ONE: Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines:

- 1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Provisions for privacy, security,

and safety should be equally available to all users.

- 1d. Make the design appealing to all users.

PRINCIPLE TWO: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

PRINCIPLE THREE: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

PRINCIPLE FOUR: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize "legibility" of essential information.
- 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

PRINCIPLE FIVE: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail-safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

PRINCIPLE SIX: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

PRINCIPLE SEVEN: Size and Space for Approach and Use

Appropriate size and space are provided for approach, reach, manipulation, and use, regardless of user's body size, posture, or mobility.

Guidelines:

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

Please note that the Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations, such as economic, engineering, cultural, gender, and environmental concerns, in their design processes. These principles offer designers guidance to better integrate features that meet the needs of as many users as possible.

APPENDIX B

REPRESENTATIVE CLASSROOM TEMPLATES

The following Classroom Room Data Sheets has been developed to provide a breakdown of various classroom accessibility requirements.

Different types of classrooms may have various unique configurations and uses that require more detailed design and accessibility requirements.

The table lists a number of criteria for various classrooms, and provides base design criteria as well as additional key universal design criteria in one location to aid in the development of these spaces.

This document is to be read in conjunction with Purchasing Policy and Procedures Manual - Accessibility Section 4.12 and Appendix I: Documentation of Incorporation of Accessibility Form.

Classroom Room Data Sheets

| Element | Base Design Criteria | Additional Key Universal Design Criteria | OCADU-FADS Reference |
|----------|---|---|----------------------|
| Capacity | <u>Drawing Classroom:</u> 28 students plus 1 faculty. <u>Painting Classroom:</u> 28 students plus 1 faculty. <u>Studio/Lecture Classroom:</u> 28 students plus 1 faculty. <u>Examination/Critique Classroom:</u> 70 students plus 1 faculty. | + 1 note-taker, companion, sign-language interpreter, or intervener. 1 of the students may have reduced mobility and use a wheelchair or scooter. 1 of the students may have low vision and have a seeing-eye dog. 1 of the students may be blind and use a cane for mobility. 1 of the students may be deaf and use a sign-language interpreter. 1 of the students may be hard-of-hearing and use a hearing aid. 1 of the students may have environmental sensitivities. 1 of the students may be of small stature. 1 of the students may be of large stature. 1 of the students may have a neurological or psychological disability. 1 of the students may have a perceptual disability The instructor may have reduced functional abilities, reflecting any of the scenarios noted above. | 4.5.8 |

REPRESENTATIVE CLASSROOM TEMPLATES

APPENDIX B

| Classroom Room Data Sheets | | | |
|----------------------------|--|--|----------------------|
| Element | Base Design Criteria | Additional Key Universal Design Criteria | OCADU-FADS Reference |
| Size | To be derived from applicable OCADU Space Standards - DESIGN BRIEF DMRII | <p>From minimum anthropometric requirements for access, circulation and use, based on criteria below.</p> <p>Accommodate physical characteristics of people ranging in size from the 5th percentile female (1499 mm (4'-11") tall and 51.26 kg. (113 lb.)) to the 95th percentile male (6'-2" tall and 111.58 kg. (246 lb.)).</p> <p>Accommodate physical characteristics of people who use mobility aids such as wheelchairs and scooters; up to the 95th percentile for manual wheelchairs and power-wheelchairs (800 x 1350 mm (31-1/2" x 53-1/8") footprint and 2100 mm (82-5/8") diameter turning space); and the 50th percentile for scooters (800 x 1350 mm (31-1/2" x 53-1/8") footprint and 2100 mm (82-5/8") diameter turning space).</p> <p>At least 2% of facilities to accommodate bariatric persons 136-227 kg. (300-500 lb.).</p> | 4.1.1 |
| Shape | <p>Generally, classrooms should be sized in a 2:3 or 3:4 ratio. Long, narrow classrooms are unacceptable.</p> <p>Ideally, the distance to the first row of seating should be 1-2 times the height of any projection screen.</p> <p>All seats should be located within a 90 degree viewing angle from the centre of any projection screen, in the horizontal plane.</p> | - | - |
| | | | |

APPENDIX B

REPRESENTATIVE CLASSROOM TEMPLATES

Classroom Room Data Sheets

| Element | Base Design Criteria | Additional Key Universal Design Criteria | OCADU-FADS Reference |
|-----------------------|---|--|---|
| Entry/ Circulation | <p>OBC-compliant door - 860 mm (32 in.) minimum clear width.</p> <p>Ideally entry should be located in the back of the classroom to minimize interruptions by student entering the classroom late or leaving early. (However, entry at the front of the room is more space-efficient because the entry space is incorporated into the instructor area).</p> | <p>950 mm (37-3/8") minimum clear width.</p> <p>Clear manoeuvring space on either side of the door.</p> <p>Sidelight or vision panel with lowest edge no higher than 760 mm (30"). If sidelight used which does not have any clearly-discernable horizontal elements 800-1500 mm (31-1/2" x 59") above the floor, it shall have banding or a distraction pattern with a tonal/luminance contrast of at least 50% to the background environment.</p> <p>Open-able using a closed fist with a force of no more than 22.2 N (5 lb.).</p> <p>Hardware used should muffle sound when opening and closing.</p> <p>At least 50% tonal/luminance contrast between door and adjacent wall surfaces, as well as between door surface and the opening hardware.</p> <p>Non recessed doors that open into hallways should be avoided. If this is not possible, some kind of visual identification (such as a tile pattern on the floor) should be used to indicate the amount of space the door will occupy when it swings open.</p> <p>Provide accessible path of travel at least 920 mm (36") wide throughout the classroom, and to each amenity area. An instructor with a disability should be able to reach every student at a drawing or painting station.</p> | <p>4.1.6</p> <p>4.1.6</p> <p>4.1.8</p> <p>4.1.6</p> <p>4.4.15</p> <p>4.1.6</p> <p>4.1.1</p> |
| Height | <p>Ideally 3650 mm (12'-0"), to accommodate lighting and technology requirements.</p> <p>Ceilings should be high enough to accommodate a projection screen where the bottom edge of the screen is no lower than 1000 mm (39-3/8") and the screen height is at least 0.25 x the distance from the front wall to the last row of seating.</p> | <p>-</p> | <p>-</p> |

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| Element | Base Design Criteria | Additional Key Universal Design Criteria | OCADU-FADS Reference |
| Support Spaces | <p><u>Drawing and Painting Classrooms only:</u></p> <p>Prop storage room.</p> <p>Change room for models.</p> | <p>Large enough to accommodate people who use a wheelchair or scooter.</p> <p>OCADU-compliant door.</p> <p>50 % of storage shelving to be within reach range of 400 – 1200 mm (15-3/4" – 47-1/4").</p> <p>Accessible change bench in change room.</p> | <p>4.1.1</p> <p>4.1.6</p> <p>4.3.9</p> <p>4.3.4</p> |
| Day Lighting | <p>Where provided, windows should be located at the sides of the room, not at the front or back.</p> <p>Provide suitable light control, at each window to support drawing spot-lighting and media projection.</p> | <p>If window intended for viewing, sill height no higher than 760 mm (30").</p> <p>If open-able, operating controls located 900-1100 mm (33-1/2"x 43-1/4"), open-able using a closed fist with a force of no more than 22.2 N (5 lb.), with clear space in front of the controls to allow access from a wheelchair.</p> <p>High windows (such as floor-to-ceiling configuration) which do not have any clearly-discriminable horizontal elements 800-1500 mm (31-1/2" x 59") above the floor, to have banding or a distraction pattern with a tonal/luminance contrast of at least 50% to the background environment.</p> | <p>4.1.8</p> <p>4.1.8</p> <p>4.1.8</p> |

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| Artificial Lighting | <p>There shall be at least 2 lighting zones, controlled from the instructor's podium area. One zone over the student area that can allow note taking during media presentations and the second zone in the front of the room that can be darkened for presentation.</p> <p>General lighting should be uniformly distributed and throughout the room, with no noticeable pooling or hot spots.</p> <p>The instructor's podium shall also have task lighting for the instructor to operate the media during presentations.</p> <p>Fixtures should be installed to provide even light on the front writing surface, on its own circuit.</p> <p>Density of light to be 500-700 lux (46.5 – 65 footcandle) at working level.</p> <p>Lighting grid for Model/Prop podium with adjustable and dimmable track lighting.</p> <p>The lights shall not reflect onto the projection screen.</p> | <p>Provide dimmable lights at the front of the room that can be darkened for presentation.</p> <p>Provide fluorescent lights over the remainder of the room.</p> <p>Provide dimmable pot lighting for note-taking when the room is darkened for presentation.</p> <p>A separate spot light should be provided for a sign language interpreter, adjacent to the teaching podium at the front of the room.</p> <p>Choose light fixtures that reduce glare.</p> <p>Use full spectrum lights.</p> <p>Lighting grid shall be capable of being lowered to adjust the track lights. Controls used to lower grid shall be accessible.</p> | <p>4.4.13</p> <p>4.4.13</p> <p>4.4.13</p> <p>4.4.13</p> <p>4.4.13</p> <p>4.4.13</p> <p>4.4.2</p> |

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| Element | Base Design Criteria | Additional Key Universal Design Criteria | OCADU-FADS Reference |
| Acoustics | <p>Walls should extend to the floor or roof construction and not stop at the ceiling above.</p> <p>Walls between classrooms should have a Sound Transmission Class (STC) rating of at least 50. Walls separating classrooms from common spaces of washrooms should have an STC rating of at least 53. Walls separating classrooms from mechanical spaces should have an STC rating of at least 60.</p> <p>Ambient noise level should not exceed 35 decibels when measured with the A-scale of a sound level meter.</p> <p>Reverberation time in rooms with under 283.17 cubic metres (10,000 cubic feet) of space should not exceed .5 seconds. Spaces larger than 283.17 cubic metres (10,000 cubic feet) should be designed for maximum reverberation time of .7 seconds.</p> <p>Materials at the front of the room should be reflective to project sound to the back of the room.</p> <p>Ceiling should be designed to accommodate the required acoustical properties of the room.</p> | <p>Portable voice amplification system should be available. Built-in voice amplification is required for classrooms with more than 70 seats.</p> <p>The ceiling should act as a sound mirror, reflecting sound downward to blend with the direct sound. 3650 mm (12'-0") height, ceilings should incorporate 40-50% hard surface and 50-60% acoustic-tile-type surface. The acoustic-tile-type surface should be arranged in a horseshoe configuration around the perimeter of the room, with the hard-surface area to the front.</p> <p>An assistive listening system shall be provided in all classrooms – audio loop preferred.</p> | <p>4.4.16</p> <p>4.4.6</p> |
| Water | <p><u>Drawing and Painting Classrooms only:</u></p> <p>Sink with counter space.</p> | <p>Provide minimum 1500 mm (59") wide sink unit with a single bowl. Counter height to be 865 mm (34") with clear knee-space below at least 685 mm (27") high. Faucets to be operable using a closed fist with a force of no more than 22.2 N (5 lb.).</p> <p>Soap and paper towel dispensers shall be reachable from a standing or seated position. Any operating controls shall open-able using a closed fist with a force of no more than 22.2 N (5 lb.).</p> | <p>4.3.20</p> <p>4.4.2</p> |

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| Technology | Classrooms should be equipped with data projector, speakers and projection screen. Wireless service should be provided. | Screen height should be at least 0.25 x the distance from the front wall to the last row of seating. Ideally, the first row of seats should be 1-2 times the screen width. | 4.5.8 |
| | <u>Studio/Lecture and Examination/Critique Classrooms only:</u> Provide presentation podium including power and video access. | Podium should be height-adjustable and have knee-space below. Controls should be simple and intuitive, operable using a closed fist, and usable by persons with reduced vision. | 4.5.8 |
| | <u>Drawing and Painting Classrooms only:</u> Power and video access to be provided at the instructor area. | | - |
| Materials | Materials with recycled content are preferred. Re-use of existing materials is encouraged. | Choose construction materials with no or low off-gassing of VOC*. Any product used in the day to day operation, cleaning and maintenance of the facility should be fragrance-free and contain no or low volatile organic compounds (VOC*s). * Volatile Organic Compounds (VOC) should be formaldehyde free, with no petroleum-based solvents. | - |
| Finishes | Reflectance value of 80% or higher should be considered for ceilings. Reflectance value of 20-40% should be considered for floors. Reflectance value of 50-70% should be considered for non-accent walls. | Matt finishes should be used throughout to minimize reflective glare. Distinct luminance contrast should be provided to clearly differentiate the wall and floor planes of rooms. Ideally, luminance contrast should be at least 50%. Luminance contrast of at least 50% should be provided to clearly differentiate doors from the wall they are located on. Exception: Doors to service spaces, such as electrical closets, may be the same colour as the wall. Patterned floors should be avoided. | 4.4.14 |

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| Element | Base Design Criteria | Additional Key Universal Design Criteria | OCADU-FADS Reference |
| Furniture | <p>Reflectance value of 25-45% should be considered for desktops and work surfaces.</p> <p>Instructor table.</p> <p>Movable Blackboard</p> | Provide seating in the hallway adjacent to classroom entrance doors, to provide a rest areas for persons with low stamina. | 4.3.15 |
| | <p><u>Drawing and Painting Classrooms only:</u></p> <p>Moveable Model / Prop Podium.</p> <p>Drawing horse, easel or taboret for each student.</p> | Provide no less than 3% accessible adjustable-height drawing/painting tables, with knee-space below. | 4.3.7 |
| | <p><u>Studio/Lecture Classrooms only:</u></p> <p>Provide a table space and movable seat for each student (2 students share 1 table).</p> | <p>Provide no less than 3% accessible adjustable-height tables, with knee-space below.</p> <p>Provide no less than 2% wider seats, with a load capacity suitable for use by bariatric persons.</p> | 4.3.7 |
| | <p><u>Studio/Lecture and Examination/Critique Classrooms only:</u></p> <p>Provide a movable seat, equipped with a fold-up writing surface, for each student.</p> | <p>Provide no less than 10% seats with writing surfaces configured for use by persons who are left-handed.</p> <p>Provide no less than 2% wider seats, with a load capacity suitable for use by bariatric persons.</p> | 4.3.7 |
| Switches/Controls | Room lighting should be conveniently controllable from the teaching area, as well as any lights that are dimmable during projection, as well as whiteboard lights. | <p>Provide back-lit switches at the entrance to every room, to provide minimal illumination.</p> <p>Standardization of lighting controls among instructional spaces is recommended.</p> <p>Simple and intuitive lighting controls should make it easily apparent on how to control the lights.</p> | 4.4.2 |

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| Signage | Room numbers should identify all classrooms at the door entrance and be consistent with building signage. | <p>Signage should feature colour contrast, appropriate font height and style, as well as tactile information and Braille.</p> <p>Signage at doors to be located beside the door on the latch side, with its centreline 1500 mm (59") above the finished floor.</p> <p>Wherever possible, pictograms are preferred to text.</p> <p>Room layout sign showing recommended furniture arrangement.</p> | 4.4.7 4.4.7 4.4.7 4.4.7 |
| Fire and Life Safety | OCADU's Emergency Response procedures must be displayed in the front of all classrooms, adjacent to the instructor's station. | <p>Emergency signage should feature colour contrast, appropriate font height and style, as well as tactile information and Braille.</p> <p>Visual signalling devices to be provided in addition to audible devices.</p> | 4.4.1 |
| Waste and Recycling | Waste and recycling containers should be provided in all classrooms. | Waste and recycling containers shall be reachable from a standing or seated position. Any operating controls shall open-able using a closed fist with a force of no more than 22.2 N (5 lb.). | 4.1.1 4.4.2 |