Hamilton
Public Works

City of Hamilton

Barrier-Free Design Guidelines

VERSION 1.1

2006

Hamilton Public Works ~ Providing services that bring our City to life!

Hamilton

February 14, 2006

Message from the City Manager

On behalf of the City of Hamilton, I am pleased to present to you the newly revised City of Hamilton's Barrier-Free Design Guidelines 2006 which are to be used by all Departments and/or Divisions currently involved in the planning, design, or construction of all newly constructed and/or renovated City of Hamilton owned, leased, or operated facilities, parks and open spaces, and infrastructure (including urban design, traffic, roads etc.)

The original Barrier-Free Design Standards were completed in 1994 by the Barrier-Free Design Standards Sub-Committee. Their mandate to the City of Hamilton was as follows:

"To provide the community with a set of design standards that will lead to the elimination of barriers facing persons with various disabilities in the built environment."

I am very pleased to say that these newly revised Guidelines have maintained the original intent of this mandate, in providing an up-to-date set of standards which will assist in the reduction or elimination of all barriers faced by persons with disabilities within our Community.

As there was a tremendous effort by all parties involved in the production of this document, including Staff from a variety of Departments and Divisions, R.F. Lintack Architect Inc., the Advisory Committee for Persons with Disabilities, and the Barrier-Free Design Standards Committee, I would like to express my appreciation to everyone involved on this project.

Sincerely,

Glen Peace
City Manager

Hamilton

City of Hamilton
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Hamilton, Ontario,
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Advisory Committee for Persons with Disabilities
c/o Customer Service, Access & Equity Division

February 7, 2006

Mr. Clark Euale
Public Works Department
Capital Planning & Implementation
City of Hamilton
Suite 320 – 77 James St North
Hamilton ON   L8R 2K3

RE: Barrier-Free Design Guidelines Report

This letter will acknowledge that on December 6, 2005, staff from R.F. Lintack Architect and the City of Hamilton's Capital Planning & Implementation Division attended the Advisory Committee for Persons with Disabilities for the City of Hamilton's meeting to present the draft and consult with the Committee on revisions made to the Barrier-Free Design Guidelines document.

The Advisory Committee provided comments at the meeting. It was agreed that the Committee's comments and suggestions would be incorporated into the Barrier-Free Design Guidelines document and that a copy of the final document would be provided to the Committee for their information.

I would like to take this opportunity to thank the staff and consultants for their extensive consultation process, which included a number of our committee members, and note that we are looking forward to working with the new standards and to further consultation as updates become necessary.

The approval and implementation of the revised Barrier-Free Design Guidelines document is a very important City initiative towards the elimination of barriers for persons with disabilities, and a significant move towards enabling a higher level of participation in civic and community life for all members of our community.

Sincerely,

Tim Nolan, Chair
Advisory Committee for Persons with Disabilities
for the City of Hamilton

Guideline Developments

The City Of Hamilton's Barrier-Free Design Guidelines – 2006 were developed by R. F. Lintack Architect Incorporated with the support and direction from the City of Hamilton Department of Public Works, Capital Planning and Implementation Division, along with numerous Project Stakeholders including representation from many City Departments and their respective Divisions; the Barrier-Free Guidelines Committee; and the Advisory Committee for Persons with Disabilities (see Appendix A – Acknowledgements, page 213).

Table of Contents

Building types not included in this Section are not exempt from applicable criteria within this guideline

Introduction 1.0

The City Of Hamilton has historically been proactive in accommodating the needs of persons with disabilities.

Originating in 1985, as a response to provincial employment equity legislation, the Barrier Free Design Sub-Committee was formed. Its Mission Statement was to "provide the community with a set of design guidelines that will lead to the elimination of barriers facing persons with various disabilities in the built environment."

Unable to find a single Standard that was complete or satisfactory, the Sub-Committee's mandate was transformed to put together a set of guidelines which, when applied, "shall provide the Region and the City with a complete and satisfactory set of Barrier Free Design Guidelines." It was adopted by Hamilton-Wentworth Regional Council and Hamilton City Council in 1994 and was to be applied to all city-owned and leased facilities. It was to be reviewed every 3 to 5 years in order to maintain its status with advances in technology.

In 2001, the Province of Ontario passed the Ontarians with Disabilities Act. The purpose of the act is to "improve opportunities for persons with disabilities and to provide for their involvement in the identification, removal and prevention of barriers to their full participation in the life of the province." The ODA defines a disability as:

- Any degree of physical disability, infirmity, malformation or disfigurement that is caused by bodily harm, birth defect or illness and, without limiting the generality of the foregoing, includes diabetes mellitus, epilepsy, a brain injury, any degree of paralysis, amputation, lack of physical coordination, blindness or visual impediment, deafness or hearing impediment, muteness or speech impediment, or physical reliance on a guide dog or other animal or on a wheelchair or other remedial appliance of device.
- A condition of mental impairment or
- A developmental disability,
- A learning disability, or a dysfunction in one or more of the processes involved in understanding or using symbols or spoken language
- A mental disorder, or
- An injury of disability for which benefits were claimed or received under the insurance plan established under the Workplace Safety and Insurance Act, 1997;("handicap")

The ODA defines a barrier as:" anything that prevents a person with a disability from fully participating in all aspects of society because of his or her disability, including a physical barrier, an architectural barrier, an informational or communications barrier, an attitudinal barrier, a technological barrier, a policy or a practice; (obstacle).

In response to the ODA the City of Hamilton established the Advisory Committee for Persons with Disabilities. Among its many recommendations the Committee has recommended the update of the City's Barrier-Free Design Guidelines. Recognizing that the Guidelines are over 10 years old, and that augmentative and support equipment for persons with disabilities has changed over that timeframe. New alternatives may be available to accommodate the needs of persons with disabilities and guidelines may need to change to accommodate these changes in the technical and functional supports for persons with disabilities.

The Barrier-Free Design Guidelines 2006 is intended for use by all Departments and Divisions of the City of Hamilton; involved in the planning, design, construction, and maintenance of physical facilities, including buildings, parks and open spaces, infrastructure, and any other space that is to be open and fully accessible to the Public. It is envisaged that the Guideline will be utilized by building owners, architects, engineers, designers and those interested in the reduction or elimination of barriers faced by persons with disabilities within the built environment. In light of this, this Guideline was developed to be a flexible, ever changing document, which may be utilized as a reference by both the Public and Private Sectors.

The Guideline identifies barriers and obstacles, and presents design requirements that, consistent with the Ontario Building Code (O.B.C. 1997), should be considered as a minimum requirement for all City of Hamilton projects.

Users of this Guideline are encouraged to consider it a "performance guideline" and to provide alternate design solutions that are equivalent or exceed the ability to access a public space.

Inherent in the Guideline is the concept of 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. In this spirit, the Guideline is intended to meet the access requirements for not only the physically disabled, but also the older people, the parent with a stroller, the person delivering a large package, and the young child.

The City of Hamilton will be updating this document on a yearly basis. Users are encouraged to utilize the Change Request Form in Appendix C (page 221) of this document, and submit all change requests to the attention of:

The City of Hamilton's
Customer Service,
Access & Equity,
Corporate Services Department

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.

GENERAL

The City of Hamilton's Barrier-Free Design Guideline 2006, was developed to be a flexible, ever changing document, which illustrates multiple levels of accessibility, beginning with the preferred option, and working down gradually to the lowest guideline; being the O.B.C. (1997). It is hoped that by providing multiple levels of accessibility within this document, it will encourage its use by both Public and Private Sectors, thus promoting an accessible community for persons with disabilities.

The requirements of this guideline shall be

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

Exceptions: This guideline does not apply to

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

GENERAL APPLICATION

All areas of newly designed or newly constructed facilities and altered portions of existing facilities shall comply with Sections 5.0 to 7.0 of this guideline, unless otherwise provided in this section or as modified in Section 8.0, Special Facilities and Areas.

Exceptions: The requirements of Sections 5.0 to 7.0 do not apply to the following:

- 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 8.0 shall, as well as complying with this document, fulfil the more stringent restrictions within additional design requirements specified in any other governing documents.

SECTION 8.0.

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 guideline.

TEMPORARY FACILITIES

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

RETROFITTNG, 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 guideline.

Except where the provision of accessible features is deemed infeasible, no alteration shall decrease or have the effect of decreasing accessibility or usability of an existing facility to below the requirements for new construction at the time of alteration.

If existing elements, spaces or common areas are altered, then each such altered element/space/feature/area shall comply with all applicable provisions. If the applicable provision for new construction requires that an element/space/feature/area be on an accessible route and the altered element/space/feature/area is not on an accessible route, this route shall be altered to become accessible.

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

No alteration of an existing element, space or area of a facility shall impose a requirement for greater accessibility than that which would be required for new construction.

If an escalator or stairs are proposed as a means of access where none existed previously, and major structural modifications are necessary for such installations, then a means of accessible access shall also be provided.

If a planned alteration entails alterations to an entrance, and the facility has an accessible entrance, the entrance being altered is required to be accessible.

If the alteration work is limited solely to the electrical, mechanical or plumbing system, 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 guideline does not apply (except for alarms, public telephones and assistive listening systems).

An alteration that affects the usability of or access to an area containing a primary function shall be made to ensure that, to the maximum extent feasible, the path of travel to the altered area, the restrooms, telephones and drinking fountains serving the altered area are readily accessible to and usable by individuals with disabilities.

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

HERITAGE FACILITIES

This guideline will generally 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 guidelines on an individual basis, to determine the most effective and least disruptive means of retrofit, where required. Consider the following general guidelines:

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

If retrofit for accessibility of a main public entrance in a Heritage Facility would substantially threaten or destroy the historic significance of the facility, access shall be provided at an alterative 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.

ENFORCEMENT

In general, the City of Hamilton, through the project management function, shall ensure compliance to this Guideline during the pre-planning, design, construction documents preparation, and contract administration.

The previous version of this document (1994) has been fully incorporated into all City of Hamilton, procurement and contract documentation. Therefore, all documentation will be updated to reflect this new Guideline going forward.

The requirements contained in this Guideline are to be considered recommendations only, and cannot be imposed on buildings, except where they are specifically required in the Ontario Building Code. Construction or alterations in all City of Hamilton owned, operated, or leased facilities that are deemed open and accessible to the Public must meet the full extent of the requirements in this Guideline, unless it can be shown that a requirement cannot be reasonably complied with (see Definitions: infeasible or infeasibility).

GRAPHIC CONVENTIONS

Dimensions that are not marked maximum or minimum are absolute, unless otherwise indicated. All dimensions are noted in mm and (in.) unless noted otherwise.

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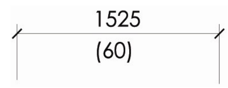
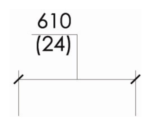
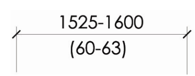
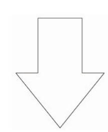
<tr><td>Dimension showing Metric units (in millimeters unless otherwise stated) above the line and Imperial Units (in inches unless otherwise stated) below the line in parentheses</td><td></td></tr>
<tr><td>Dimension for small measurements</td><td></td></tr>
<tr><td>Dimension showing a range with minimum - maximum</td><td></td></tr>
<tr><td>Minimum</td><td>min</td></tr>
<tr><td>Maximum</td><td>max</td></tr>
<tr><td>A wall, floor, ceiling or other element cut in section or plan</td><td></td></tr>
<tr><td>Direction of travel or approach</td><td></td></tr>
</table>

GENERAL TERMINOLOGY

comply with: Meet one or more specification of this guideline.

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

may: Denotes an option or an 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 guideline.

Accessible element: An element specified by this guideline (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 guideline.

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)

Boardroom, or **conference room** or **meeting room:** Room used for meetings, which accommodates more than six people.

Building: A structure occupying an area greater than ten square metres, consisting of a wall, roof, and floor or any of them, or a structural system serving the function thereof, including all plumbing, fixtures and service systems appurtenant thereto; or a structure occupying an area of ten square meters 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).

Cross slope: The slope that is perpendicular to the direction of travel (see running slope).

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

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

Disability: Any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being.

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 guideline and does not include stairs, steps or escalators. Areas of rescue assistance, protected lobbies or protected elevators may be included as part of an accessible means of egress.

Element: An architectural or mechanical component of a building, facility, space or site (e.g., telephone, curb ramp, door, drinking fountain, seating or water closet).

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

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

Ground floor: Any occupiable floor less than one storey above or below grade with direct access to grade.
A facility always has at least one ground floor and may have more than one ground floor, as where a split-level entrance has been provided or where a facility is built into a hillside.

Heritage facility: Facility or portions thereof designated under the Ontario Heritage Act (See Public Heritage Facility)

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

Infeasible or **Infeasibility**: Means, with respect to an alteration, building or facility, that it has little likelihood of being accomplished, due to one, or any combination of the following:

- existing structural conditions would require moving or altering a load-bearing member which is an essential part of the structural frame;
- other existing physical or site constraints prohibit the modification or addition of necessary elements, spaces or features which are in full and strict compliance with the minimum requirements for accessibility as set out in this document;
- it is determined that the proposed alteration cannot be modified to reflect this Guideline due to the limitation of project scope as defined by the project stakeholders at the onset of the project; or
- it is determined that the proposed alteration cannot be modified to reflect this Guideline due to pre-existing conditions present at the location of the proposed modification.

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.

Private open space: Privately owned land areas within a subdivision, generally smaller in scale than open space, which have been left free from structures, parking lots and roads. These types of areas generally benefit only the residents or employees of the particular subdivision and usually remain in private ownership.

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

Operable portion: A part of a piece of equipment or appliance used to insert or withdraw objects, or to activate, deactivate, or adjust the equipment or appliance (for example, coin slot, push button, handle).

Park: Land that is privately or publicly held that has been developed for multiple recreational and leisure-time uses. This land benefits the entire community and balances the demands of the public for outdoor recreational facilities and other amenities, such as pathways, plazas, picnic areas, playgrounds, water features, spaces for free play and leisure.

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

Public Sector: For the purposes of this document only, this includes any person employed, residing, visiting, or accessing any public space within the boundaries of the City of Hamilton.

Public Heritage Facility: A facility designated under the Ontario Heritage Act that is open and accessible to the public. (See Heritage Facility)

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

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

Running slope: The slope that is parallel to the direction of travel. *(See Cross slope)*

Semi public spaces: An area that is contained on private property, but becomes a continuation of the community fabric by virtue of its use by the pedestrian public (e.g., malls, campuses).

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.

Shore lines: Bands of contrasting colour and/or texture used to delineate an area (e.g., a clearway) or define the edge of a curb.

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, and recreational facilities added to a site.

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

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

Storey: That portion of a building included between the upper surface of a floor and the upper surface of the floor next above. If such portion of a building does not include occupiable space, it is not considered a storey for the purposes of this guideline. 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.

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 guideline include, but are not limited to, viewing 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 guideline 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.

Urban Braille: A leading edge, user driven approach to planning and design of public spaces. It is a system of tactile information serving the needs of the visually impaired. By utilizing both colour and texture contrast it provides warning signals and clues related to orientation. Any reference to

Urban Braille used in this Guideline is strictly for reference purposes only and does not supersede the current Urban Braille System prepared and utilized by the City of Hamilton.

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

Walk: An exterior pathway with a prepared surface intended for pedestrian use, including general pedestrian areas, such as plazas and courts, within the boundary of the site.

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 5.0 Physical Accessibility or as accepted below.

The requirements of this section apply to all facilities except

- residential occupancies;
- buildings of Group F Division 1 occupancy, as defined by the Ontario Building Code (latest edition with all amendments); and
- buildings which are not intended to be occupied on a daily or fulltime 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

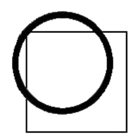
To facilitate ease of reference, specific design requirements have been categorized as follows:

5.0 Physical Accessibility

6.0 Visual Accessibility

7.0 Audible Accessibility

8.0 Special Facilities and Areas Accessibility



Sub-sections

5.1 **Access and Circulation**
– e.g., pathways, ramps, elevators, etc.

5.2 **Washroom Facilities**
– e.g., lavatory heights, washroom stalls, etc.

5.3 **Amenities**
– e.g., public telephone, furniture, etc.

5.4 **Systems and Controls**
- e.g., Emergency exits, areas of rescue assistance, etc.

Access and Circulation 5.1

Historically our buildings have been designed for the able bodied adult, however with technological and cultural advancements we have recognised the need for universal access.

We now recognise and have to plan for the changing variety of physical aids and conditions, and provide for their spatial and ergonomic impact.

This section deals with the design, and provision of requirements for physical access to spaces by all persons, notwithstanding their physical condition.

Barriers and Obstacles

Our buildings have historically been designed only for the able bodied adult. The invention of the wheelchair redefined the circulation requirements. Accordingly, Building Codes have adapted and been modified to accommodate the requirements of an average user in an average wheelchair.

Technological advances have since brought us the electric wheelchair and the motorised scooter; while cultural advances have allowed people with various forms of disabilities to become more active participants in our society. The Ontario Building Code minimum requirements do not allow for this inclusiveness, and herein.

Design Requirements

Space and reach range provisions for persons who use wheelchairs, scooters and other mobility devices shall comply with the following:

1) Required space for a wheelchair to make a 360° turn: 1930 mm (6 ft. 4 in.) - **Figure 5.1.1(a)**.
2) Required minimum clear floor or ground space required to accommodate a single, stationary wheelchair or scooter and occupant: 760 mm x 1370 mm (30 in. x 54 in.) - **Figures 5.1.1(b) and 5.1.1(c)**.
3) The minimum clear floor or ground space for wheelchairs or scooters may be positioned for forward or parallel approach to an object.
4) Clear floor or ground space for wheelchairs may be part of the knee space required under some objects.

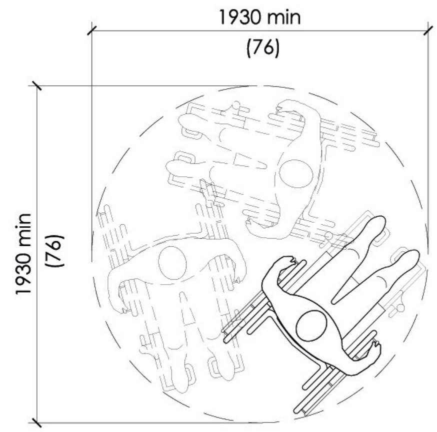


Figure 5.1.1(a)
360° Turning Space

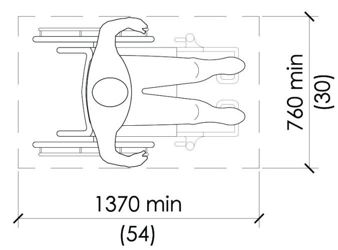


Figure 5.1.1(b)
Clear Floor Space for Wheelchair

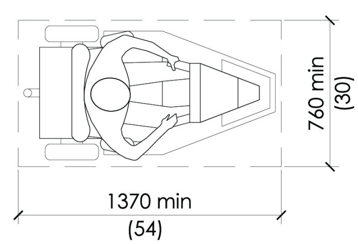


Figure 5.1.1(c)
Clear Floor Space for Scooter

Space and Reach Requirements 5.1.1

5) One full, unobstructed side of the clear floor or ground space for a wheelchair or scooter shall adjoin or overlap an accessible route or adjoin another wheelchair clear floor space. If a clear space is located in an alcove or otherwise confined on all or part of three sides, additional manoeuvring clearances shall be provided - **Figures 5.1.1(d), 5.1.1(e), 5.1.1(f) and 5.1.1(g)**.

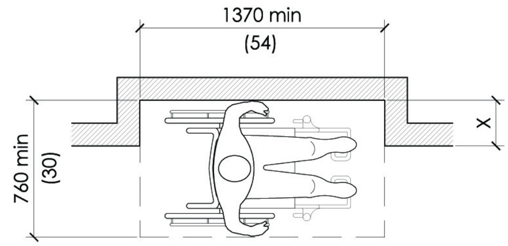


Figure 5.1.1(d)
Clearances at Alcove

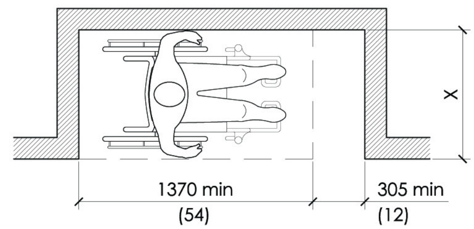


Figure 5.1.1(e)
Clearances at Alcove

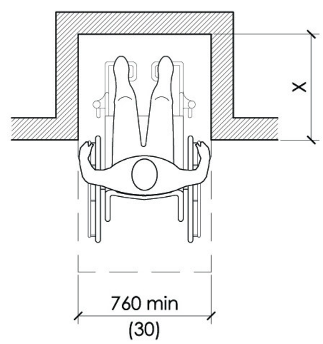


Figure 5.1.1(f)
Clearances at Alcove

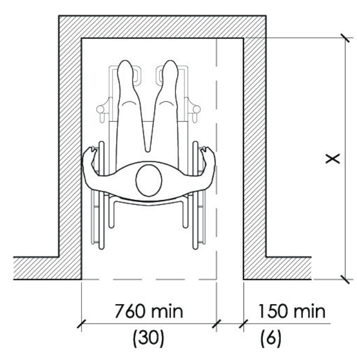


Figure 5.1.1(g)
Clearances at Alcove

Space and Reach Requirements 5.1.1

6) Surface of clear floor spaces for wheelchairs and scooters shall comply with section *5.1.2 Ground and Floor Surfaces*.
   a) If the clear floor space only allows forward approach to an object:
      i) the maximum high forward reach allowed shall be 1220 mm (48 in.); and
      ii) the minimum low forward reach is 400 mm (15-3/4 in.) - **Figure 5.1.1(h)**.
   b) If the high forward reach is over an obstruction, reach and clearances shall be as shown in - **Figure 5.1.1(i)**.

NOTE: In **Figure 5.1.1(i)**

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 mm (20 in.) to 635 mm (25 in.) then Y shall be 1120 mm (44 in.) maximum

   c) If the side reach is over an obstruction, the reach and clearances shall be as shown in - **Figures 5.1.1(j)**.

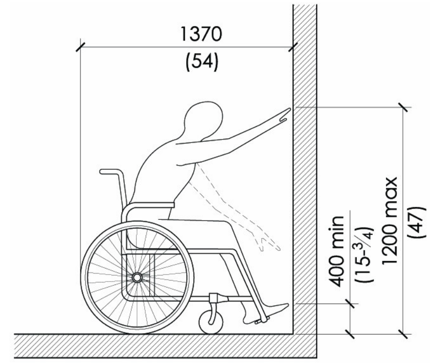


Figure 5.1.1(h)
Forward Reach

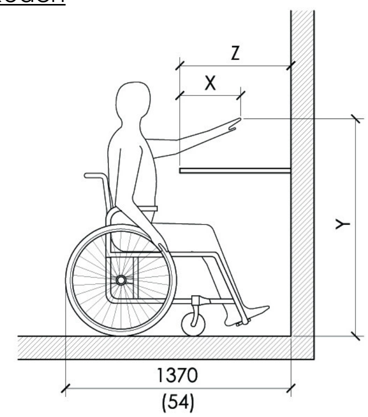


Figure 5.1.1(i)
Forward Reach over an Obstruction (Refer to Note for measurements)

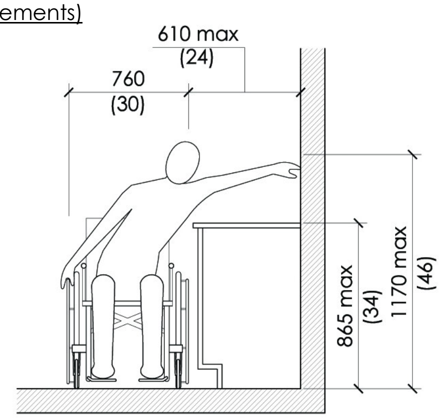


Figure 5.1.1(j)
Side Reach – Maximum Distance to Wheelchair

Space and Reach Requirements 5.1.1

d) If the clear floor space allows parallel approach to an object:
   i) the maximum high side reach is 1370 mm (54 in.); and
   ii) the minimum low side reach is 230 mm (9 in.) above the floor - **Figure 5.1.1(k)**.

e) Notwithstanding these requirements, the Ontario Building Code requires all controls for the operation of facility services or safety devices, including electrical switches, thermostats and intercom switches, be mounted at not more than 1220 mm (48 in.) above the floor.

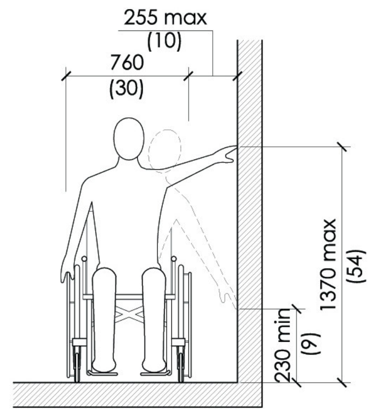


Figure 5.1.1(k)
Side Reach

Ground and Floor Surfaces 5.1.2

Barriers and Obstacles

For seniors, young children, and people with physical and visual impairments; small and uneven changes in floor level; irregular floor surfaces (e.g., cobblestone or pea-gravel) and thick pile carpeting can be difficult.

For people with visual impairments, glare from polished floor surfaces is a particular obstacle. It can obscure important orientation and safety features, and cause people to be unsure of the location of the ground.

In addition, heavily patterned floors can create visual confusion.

Design Requirements

1) Ground and floor surfaces shall be stable, firm, slip-resistant and glare-free.
2) Changes in level, except for elevators and other elevating devices shall conform to **Table 5.1.2** and **Figure 5.1.2(a)** and be provided with a high contrast strip to assist people with visual impairments.
3) Carpets or carpet tile shall:
    a) be securely fixed;
    b) have a firm cushion, pad or backing, where used;
    c) 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
    d) have exposed edges fastened to floor surfaces with trim conforming to **Table 5.1.2**.
4) Gratings located in walking surfaces shall:
    a) have spaces not greater than 13 mm (1/2 in.) wide in one direction;
    b) be placed so that the long dimension is perpendicular to the dominant direction of travel - **Figures 5.1.2(b)** and **5.1.2(c)**; and
    c) where possible, minimise the length of spaces.

Related Sections

5.1.4 Accessible Routes, Paths and Corridors
6.3 Materials and Finishes
6.4 Texture and Colour
6.8 Detectable Warning Surfaces

Vertical Rise	Edge Treatment
0 to 6 mm (0 -¼ in.)	May be vertical
6.1 mm to 13 mm (9/32 in. -½ in.)	Bevel, maximum slope 1:2
over 13 mm (over ½ in.)	Treat as a sloped floor, ramp or curb ramp

Table 5.1.2
Changes in Level

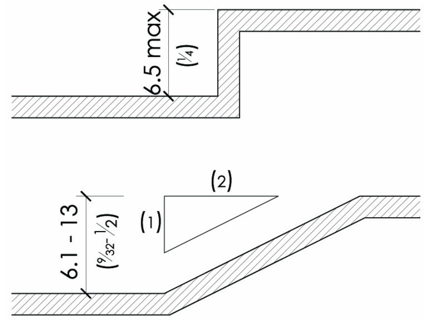


Figure 5.1.2(a)
Changes in Level

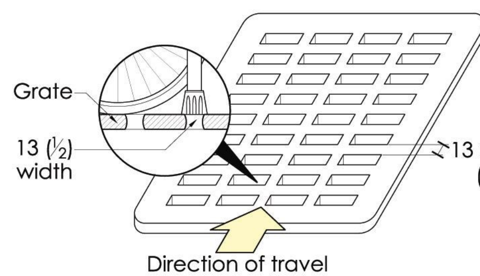


Figure 5.1.2(b)
Grills and Gratings

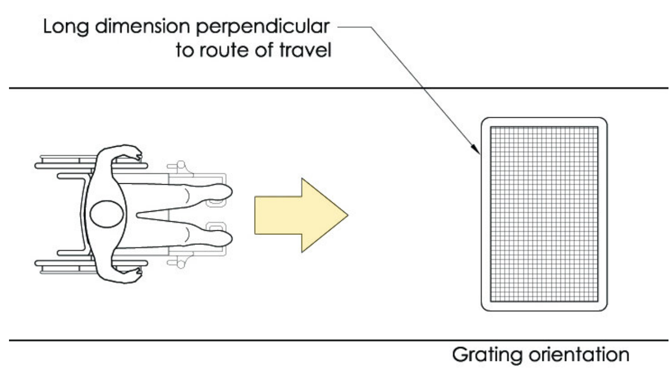


Figure 5.1.2(c)
Grills and Gratings

Protruding Objects 5.1.3

Barriers and Obstacles

Pathways are to be clear of any obstacles in order to provide universal accessibility and general safety.

A protruding object that is above the detection range of a cane, can be hazardous not only to someone with visual impairments, but can also cause injury to a person who is distracted.

Design Requirements

1) Objects protruding from walls with their leading edges between 680 mm and 2100 mm (26-3/4 in. and 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 - **Figures 5.1.3.(a) and 5.1.3(b).**
2) 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 - **Figure 5.1.3(c)**.
3) Freestanding objects shall not have any overhang of more than 305 mm (12 in.) between 680 mm and 2100 mm (26-3/4 in. and 82-3/4 in.) from the ground or floor.
4) The maximum height of the bottom edge of freestanding objects with a space of more than 305 mm (12 in.) between supports shall be 680 mm (26-3/4 in.) from the ground or floor.
5) Protruding objects shall not reduce the clear width required for an accessible route or manoeuvring space – **Figure 5.1.3(c)**

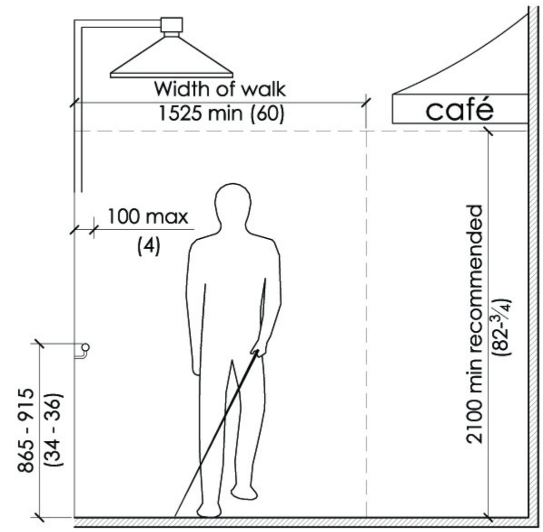


Figure 5.1.3(a)
Limits of Protruding Objects

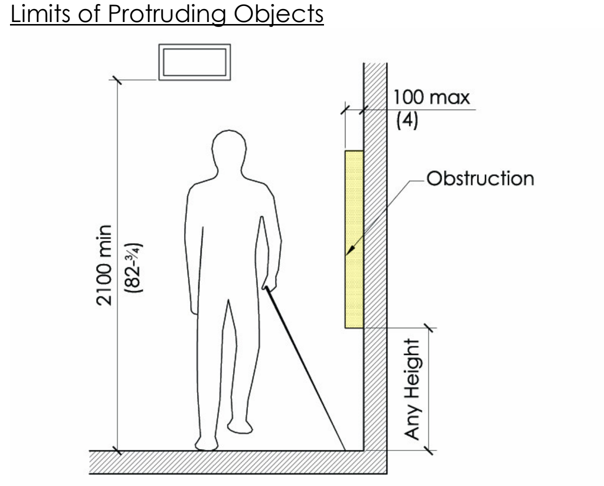


Figure 5.1.3(b)
Limits of Protruding Objects

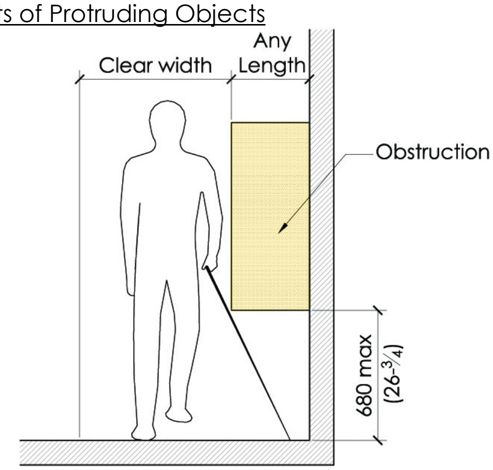


Figure 5.1.3(c)
Limits of Protruding Objects

Protruding Objects 5.1.3

6) The minimum clear headroom in pedestrian areas, such as walkways, halls, corridors, passageways, or aisles, shall be 2100 mm (82-3/4 in.) - **Figure 5.1.3(d)**.

7) A detectable guard, a 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.) - **Figure 5.1.3(d)**.

Related Sections

5.1.4 Accessible Routes, Paths and Corridors
6.3 Materials and finishes
6.4 Texture and Colour
6.8 Detectable Warning Surfaces

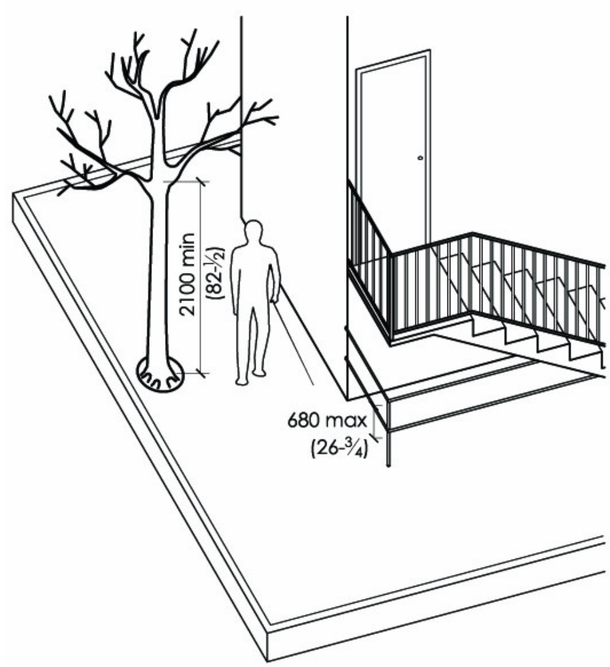


Figure 5.1.3(d)
Overhead Obstructions

Barriers and Obstacles

An accessible route of travel throughout a facility or an accessible site is required to maintain universal access. Consideration should be given to the size and ergonomic use of the wide variety of physical aids (e.g., wheelchairs, scooters, canes and crutches).

Consideration should also be given to the contrast of colours and light, and changes in texture, as these also delineate a clear route for persons with visual impairments.

Design Requirements

1) Wherever possible, all routes, paths or corridors shall comply with this section.
2) Accessible routes shall comply with this section.
3) Within a given site, at least one accessible route shall be provided to an accessible entrance as per section *5.1.8 Entrances*.
4) An accessible route shall interconnect all accessible entrances, all accessible spaces and accessible elements within a facility, except where such a route would be hazardous.
5) An accessible route shall be provided within all occupiable floor areas, except to:
    a) service rooms;
    b) elevator machine rooms;
    c) janitor rooms;
    d) service spaces;
    e) crawl spaces;
    f) attic or roof spaces;
    g) high-hazard industrial occupancies within portions of a floor area;
    h) assembly occupancies with fixed seats where these portions are not part of an accessible route to spaces designated for wheelchair use; or
    i) within a suite of residential occupancy.

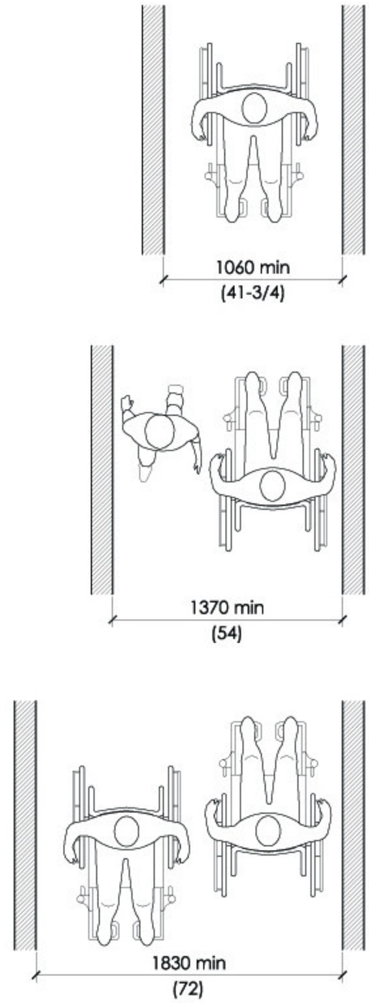


Figure 5.1.4(a)
Access Widths

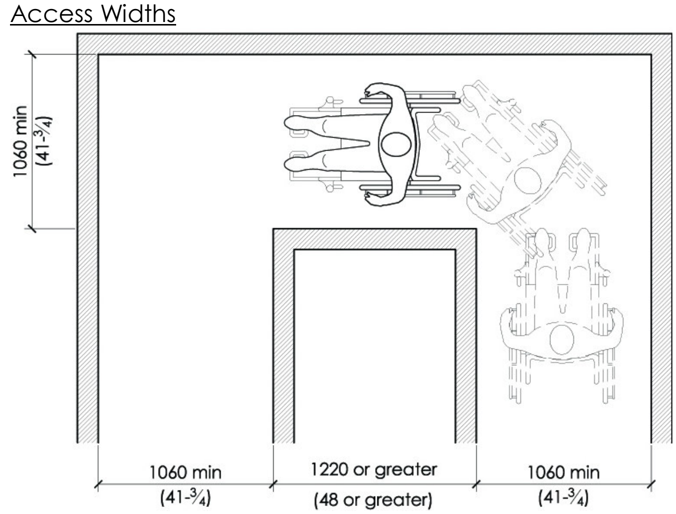


Figure 5.1.4.b
Turn around an Obstacle

Accessible Routes, Paths and Corridors 5.1.4

6) Accessible routes are permitted to include ramps, curb ramps, stairs, elevators or other elevating devices (as permitted in section *5.1.17 Platform Lifts*) where there exists a difference in elevation.
7) The minimum clear width of accessible routes shall be 1060 mm (41-3/4 in.) - **Figures 5.1.4(a)** and **5.1.4(b)**, except:
   a) at doors, it shall be 950 mm (37-1/2 in.);
   b) where additional manoeuvring space is required at doorways (See section *5.1.9 Doors*);
   c) at U-turns around obstacles less than 1220 mm (48 in.) wide, it shall be 1220 mm (48 in.) - **Figure 5.1.4(c)**;
   d) for exterior routes, it shall be 1220 mm (48 in.); and
   e) where space is required for two wheelchairs to pass, it shall be 1830 mm (72 in.) - **Figure 5.1.4(a)**.
8) Accessible routes shall
   a) have a running slope not steeper than 1:20; and
   b) have a cross slope not steeper than 1:50.
9) Every accessible route less than 1830 mm (72 in.) wide shall be provided with an unobstructed space of not less than 1830 mm (72 in.) in width and 1830 mm (72 in.) in length, located not more than 30 m (98 ft. 5 in.) apart.
10) Except at stairs and at elevated platforms such as performance areas or loading docks, where the edges of accessible routes, paths or corridors are not level with the adjacent surface, they shall be protected by:
   a) a colour contrasting curb at least 75 mm (3 in.) high, where the change in level is more than 200 mm to 610 mm (8 in. to 24 in.) below the route, path or corridor - **Figure 5.1.4.d**; and
   b) a guard which meets the requirements listed in section *5.1.12 Ramps* where the change in level is greater than 610 mm (24 in.).

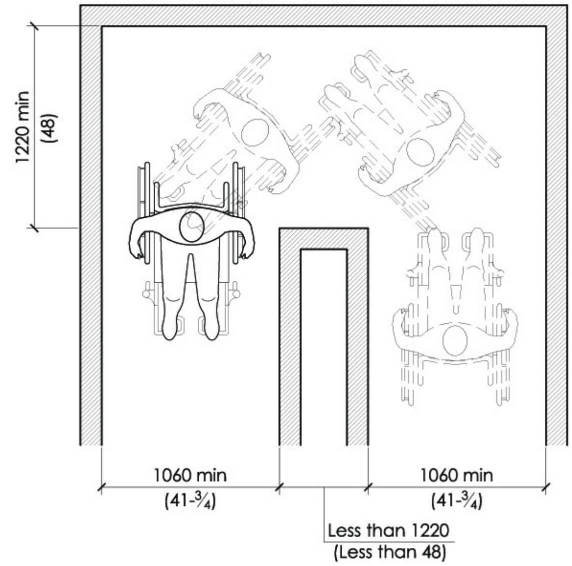


Figure 5.1.4(c)
Turn around an Obstacle

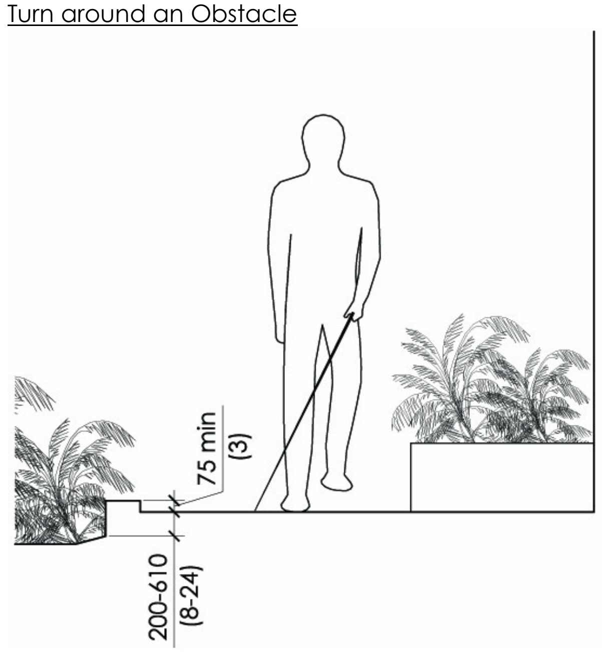


Figure 5.1.4(d)
Edge Protection

11) Where there is a change in direction along an accessible route and the intended destination of the route is not evident, directional signage and/or detectable warning surfaces shall be provided.
12) All portions of accessible routes shall be equipped to provide a level of illumination of at least 50 lux (4.6 ft-candles).

Exception: Outdoor park settings where routes are not normally illuminated.

Related Sections

5.1.2 Ground and Floor Surfaces
5.1.5.6 Snow Accumulation and Removal
5.1.11 Interior Routes
5.2.1 Glare and Light Sources
5.2.2 Lighting
5.2.3 Materials and Finishes
5.2.4 Texture and Colour
5.2.7 Signage and Wayfinding
5.2.8 Detectable Warning Surfaces

Barriers and Obstacles

Provision of universal access within a controlled environment, such as a building, becomes a heightened task when faced with providing such access outside. Additional factors now have to be considered such a vehicles, weather, animals, natural obstacles etc.

Provisions for the following have been considered:

- Crosswalks;
- Curb ramps/curb cuts on public right of way;
- Grades and elevation changes;
- Pedestrian routes: paths, sidewalks and walkways;
- Traffic islands on public right of way; and
- Snow accumulation and removal.

Design Requirements

1) Wherever possible, **crosswalks** shall:
   a) be located at right angles to the sidewalk;
   b) be free of obstacles (e.g., signal supports, garbage bins, mailboxes, etc.) (See section *5.1.7 Signals at Crosswalks*);
   c) have suitable curb ramps at each end of the crosswalk or where level differences of 19 mm (3/4 in.) or more occur - **Figure 5.1.5(a)**;
   d) have a minimum width of 3000 mm (9 ft. 10 in.) - **Figure 5.1.5(b)**;
   e) be clearly marked by 100 mm (4 in.) white painted lines or by using distinctive highly contrasting paving materials;
   f) not contain manhole covers, storm gratings or other obstacles that limit free movement and where catch basins are necessary they should be positioned wherever possible on the upstream side of the crosswalk;
   g) where located between intersections:
      i) have suitable curb ramps (See section *5.1.5.2 Exterior Pedestrian Routes – Curb Ramps/Curb Cuts on Public Right of Way)*;
      ii) be located in clear view of oncoming traffic in all directions;
      iii) clearly indicate a point for vehicles to stop at a sufficient and safe distance from the crosswalk;
      iv) be a sufficient distance from the intersection to permit a safe crossing;

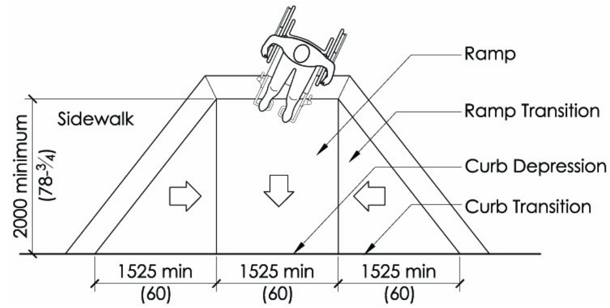


Figure 5.1.5(a)
Curb ramp

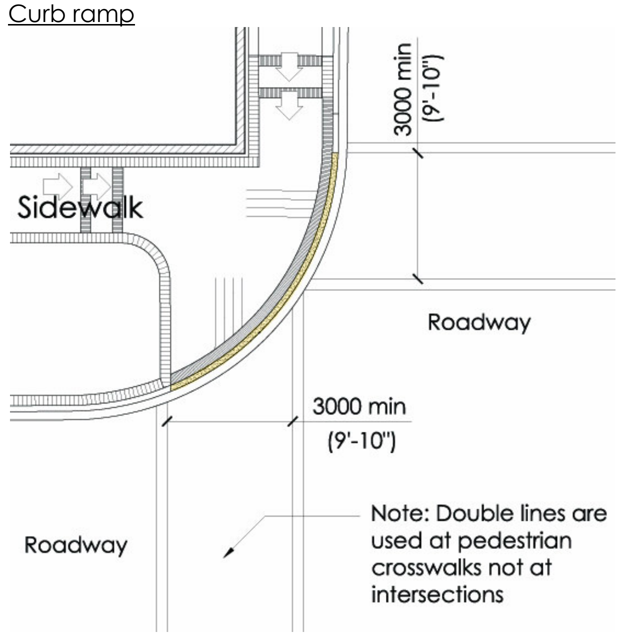


Figure 5.1.5(b)
Curb ramp at Crosswalk

h) have a yellow strip at the edge of the sidewalk/curb ramp and the road surface.

i) where "pedestrian activated crossovers" are provided:

   i) push buttons (or any other type of activation device) shall be clearly identifiable - **Figure 5.1.5(c)**;

   ii) be adjacent to the crosswalk;

   iii) be mounted on a nearby post at a height of 1065 mm (42 in.); and paving at the post shall have a level and clear area of 915 mm x 1220 mm (36 in. x 48 in.); and

j) where a traffic island is incorporated - be provided with appropriate curb ramps and markings **Figure 5.1.5(c)**.

2) Wherever possible **curb ramps/curb cuts on public right of way** shall:

a) be provided wherever there is a level change between the pedestrian route and the road surface at all street corners and where crosswalks are provided where the pedestrian path is protected from motorists by a stop sign or signal - **Figure 5.1.5(c)**;

b) have a minimum length of 2000 mm (78-3/4 in.) for safer sidewalk ramp transition - **Figure 5.1.5(a)**;

c) have a minimum width of 1525 mm (60 in.) when the curb ramp is located on a public thoroughfare – **Figure 5.1.5(d)**;

d) have flared non-slip sides;

e) be at right angles to the path of travel;

f) be of a clearly different and cane detectable texture (e.g., 13 mm (1/2 in.) deep incised lines at 100 mm (4 in.) on centre);

g) have the lower edge finished with a cane detectable rounded edge of 13mm (1/2 in.) in height;

h) have the lower edge marked with a yellow band at the edge of the road surface;

i) be located so that they are generally free of accumulated rainwater or melting snow;

j) be free and clear of obstacles (See Section *5.3.1 Street Furniture*); and

k) have a clear and level landing of 1065 mm to 1525 mm (42 in. to 60 in.) at the top of the ramp to allow for the manoeuvring of mobility aids.

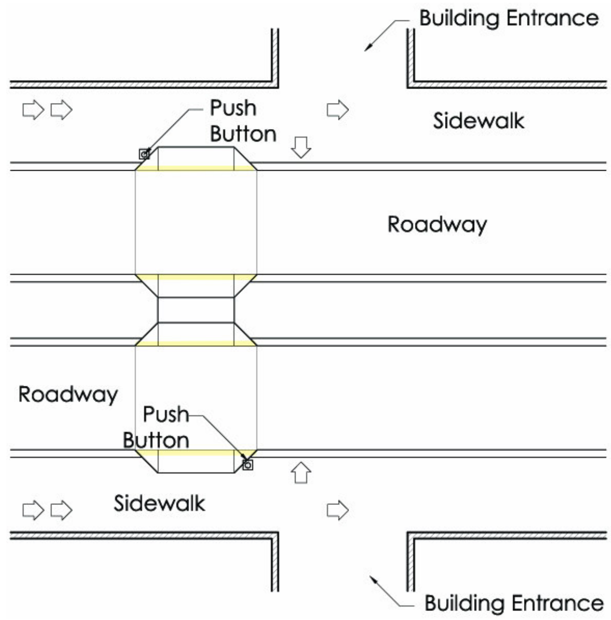


Figure 5.1.5(c)
Signals at Crosswalks

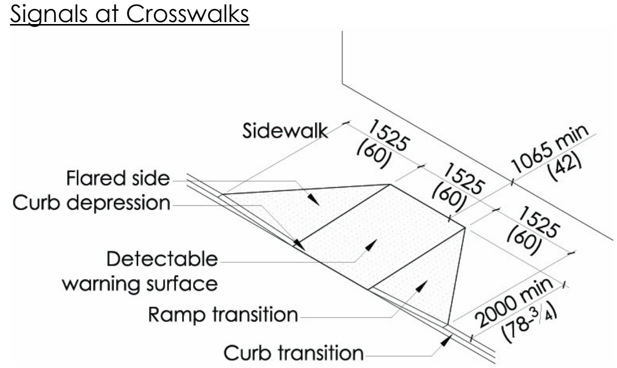


Figure 5.1.5(d)
Curb ramp

3) Grades and Elevation Changes:

a) shall, whenever possible, not exceed a 1:20 slope on pedestrian routes;

b) shall, whenever possible, be minimised in order to maintain a level path of travel;

c) shall provide accessible ramps close to where an elevation change of 1:20 or greater may not be avoided;

d) where unavoidable, exterior stairs should conform as much as possible to section *5.1.13 Stairs*;

e) occurring at landscaped areas sloped at 3:1 (horizontal to vertical) or more, adjacent to pedestrian routes, shall have a clear boundary of 150 mm (6 in.) minimum in height to aid persons with visual impairments - **Figures 5.1.5(e)** and **5.1.5(f)**;

f) greater than 460 mm (18 in.) that are adjacent to pedestrian routes should be provided with a handrail/guardrail - **Figure 5.1.5(g)** and section *5.1.14 Handrails*.

4) **Pedestrian Routes**: Paths, Sidewalks and Walkways

a) Public pedestrian routes shall be designed for universal access. All active pedestrian routes wherever possible shall be:

i) a minimum of 1525 mm (60 in.) wide (1650 mm (65 in.) preferred width); and

ii) free of protruding obstacles such as overhanging signs, branches, etc. - (See *section 5.1.3 Protruding Objects*

b) Exterior pedestrian entrance routes in a public right of way shall conform to *5.1.8.1 Entrances - Accessible Routes to Entrances*.

c) Where possible, pedestrian routes shall:

i) be 1100 mm (43-1/4 in.) minimum and widened to 1600 mm (63 in.) minimum at 30 m (98 ft. 5 in.) intervals when on private property to accommodate persons using mobility aids;

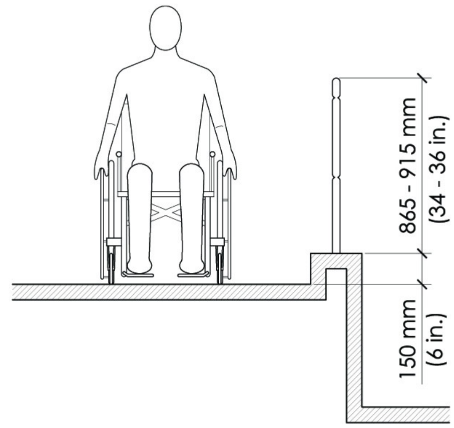


Figure 5.1.5(e)
Elevation Changes

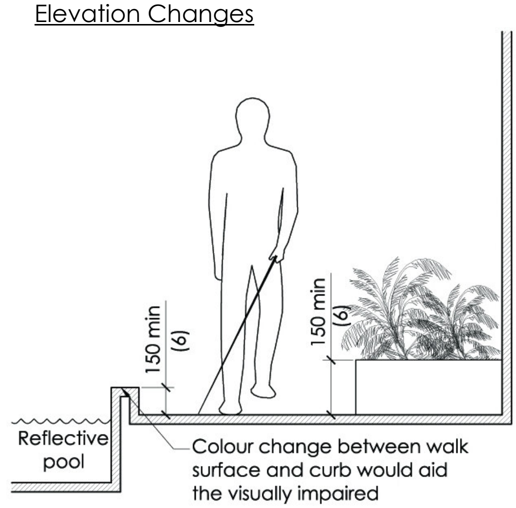


Figure 5.1.5(f)
Walkways with Landscaped Areas

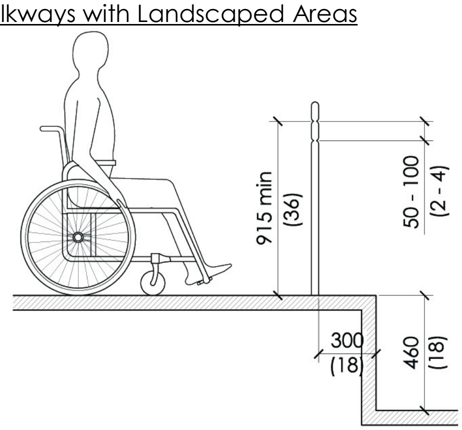


Figure 5.1.5(g)
Elevation Change greater than 460 mm (18 in.)

ii) be constructed with firm and levelled unit paving with joints no greater than 6 mm (1/4 in.) wide - **Figure 5.1.5(h)**;

iii) be constructed with grating where water accumulation is a problem. The grating shall not have any openings wider than 13 mm (1/2 in.) and the smaller dimension of the grate shall be perpendicular to the path of travel (See section *5.1.2 Ground and Floor Surfaces*);

iv) be provided with a 610 mm (24 in.) wide minimum amenity strip directly adjacent to the route (to accommodate vending machines, mailboxes, trees, etc.) This amenity strip shall be separated from the pedestrian route by a shore line; and

v) not be crossed or coincide with emergency vehicular routes.

5) **Traffic Islands on Public Right of Way:**

a) should be built with materials and finishes that are easily distinguishable from the surrounding paving;

b) shall be at least 2500 mm (98-1/2 in.) wide to provide persons using mobility aids and seniors with a safe resting zone - **Figure 5.1.5(i)**; and

c) which are incorporated into a cross walk shall:

i) include appropriate curb ramps at each end in the area of the crosswalk;

ii) be level with the street pavement; and

iii) be clear of obstacles as per section *5.1.5.1(d) Exterior Pedestrian Routes – Crosswalks*.

6) Snow Accumulation and Removal:

Snow and ice accumulation and/or drifting snow are major problems for persons using mobility aids or persons with physical limitations and it drastically impedes their independence during the winter months.

a) At entrance canopies or at accessible entrances, use radiant heating to automatically clear ice and snow, where timely maintenance and snow clearing may be problematic.

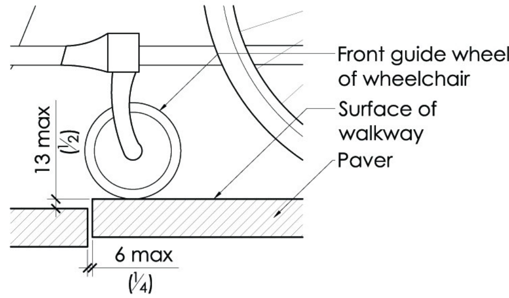


Figure 5.1.5(h)
Unit Pavement Joints

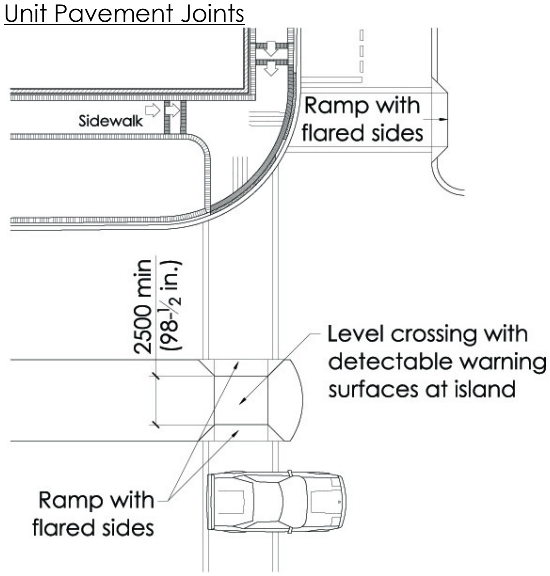


Figure 5.1.5(i)
Traffic Islands on Public Right of Way

b) Where possible, remove snow to expose edges of the sidewalk at the curb to avoid mobility aids catching the edge and rolling.

c) Regularly used pedestrian routes from the site boundary to the main entrance should be kept clear of snow and ice.

d) Regularly used pedestrian routes from the site boundary to public transportation stops, taxi stands and curb cuts should be kept clear of snow and ice.

e) Provide and plan for designated areas for snow piling.

Related Sections

5.1.8 Entrances
5.1.12 Ramps
5.1.13 Stairs
5.1.14 Handrails
5.3.1 Street Furniture
6.5 Urban Braille

Barriers and Obstacles

In as much as provisions are made for universal access to a facility, we should also consider access through the community via the private motorcar. (For public transportation, refer to 8.17 Transit Facilities)

Provisions for the following have been considered:

- Parking
- Passenger pick-up/drop-off areas

Design Requirements

1) **Parking**- number and location of designated spaces
   a) Designated parking spaces shall be provided as a part of the shortest accessible route to the main accessible entrance, but no further than 30 m (98 ft. 5 in.).
   b) Provide an accessible route from designated parking spaces to all accessible entrances (See section *5.1.8 Entrances*).
      i) In separate parking structures or lots that do not serve a particular building, designated parking spaces should be located on the shortest possible circulation route to an accessible pedestrian entrance of the parking facility.
      ii) the accessible route should not require people to pass behind vehicles that may be backing out.
   c) Provide 4 accessible parking spaces for the first 100 parking spaces (1:25)
      i) provide 1 accessible parking space for each additional 50 parking spaces (1:50)
      ii) provide 1 accessible parking space where 25 (or less) parking spaces occur.
   d) In multi-storey or underground parking garages, at least one level of parking should include designated parking spaces, with signage clearly indicating level and route. Provision of designated parking space(s) at each level is preferred.

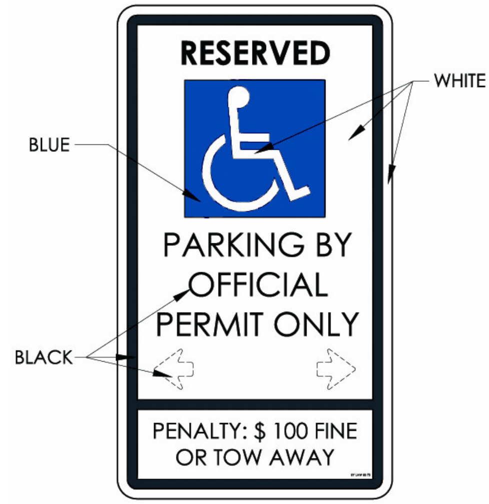


Figure 5.1.6(a)
Acceptable Vertical Parking Sign

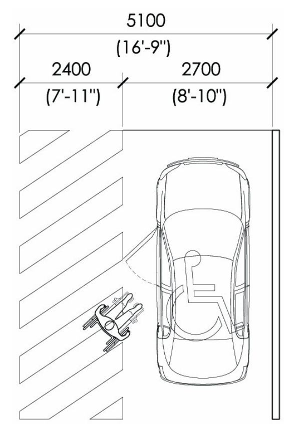


Figure 5.1.6(b)
Vertical Single Space Designated Parking

2) At designated parking spaces provide the following with regard to signage:
   a) The International Symbol of Access painted on the pavement of the stall. Symbol of access on the pavement shall be:
      i) at least 1000 mm (3 ft. 4 in.) long
      ii) located at the centre of the stall
      iii) in white painted on a background filed of blue.
   b) Official designated disabled parking space sign - **Figure 5.1.6(a)** developed by the Ministry of Transportation (1991) mounted vertically. Vertical signs shall be
      i) at least 450 mm (18 in.) x 750 mm (30 in.) and
      ii) be installed at a height of 2100 mm to 2200 mm (7 ft. 0 in. to 7 ft. 4 in.) from the ground/floor surface to the bottom of the sign.
   c) Where the location of the designated parking spaces is not clear or obvious, provide directional signs along the route leading to them.
3) Designated stalls shall:
   a) measure 2700 mm (8 ft. 10 in.) wide with an adjacent aisle of at least 2400 mm (7 ft. 11 in.)
   b) have a stable, firm and slip resistant surface
   c) the access aisle shall have diagonal markings.
   d) have a height clearance of 2750 mm (9 ft. 0 in.) minimum but 2900 mm (9 ft. 6 in.) is preferred – **Figures 5.1.6(b), (c), (d)** and **(e)**.
4) Provide a suitable curb ramp from the <u>accessible</u> parking area to any adjacent sidewalk or pedestrian area where the difference in elevation is greater than 13 mm (1/2 in.) – **Figures 5.1.6(c), (d)** and **(e)**.
5) Where covered or underground parking spaces for cars are provided, all access and exit routes, including <u>ramps</u> serving such spaces, should have <u>clear</u> headroom of 2100 mm (6 ft. 9 in.) below beams, pipes, or sprinkler heads, however 2285 mm (7 ft. 6 in.) is recommended.
6) Parking meters are to be <u>accessible</u> for persons with <u>disabilities</u> - **Figures 5.1.6(e)** (See section 5.1.1 Space and Reach Requirements).
7) Provide clearly marked and safe pedestrian walkways.
8) Passenger pick-up/drop-off areas
   a) Shall be located on the shortest possible circulation route to an <u>accessible</u> <u>entrance</u>, preferably the main <u>entrance</u>.

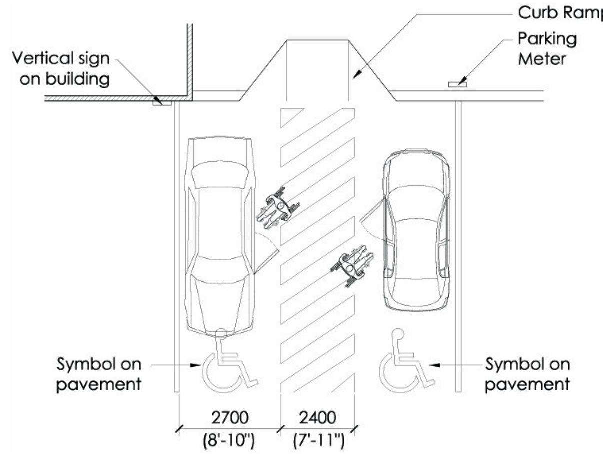


Figure 5.1.6(c)
<u>Vertical Multi Space Designated Parking</u>

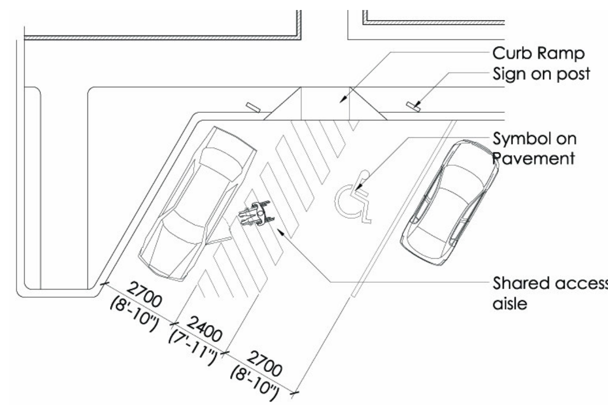


Figure 5.1.6(d)
<u>Diagonal Designated Parking</u>

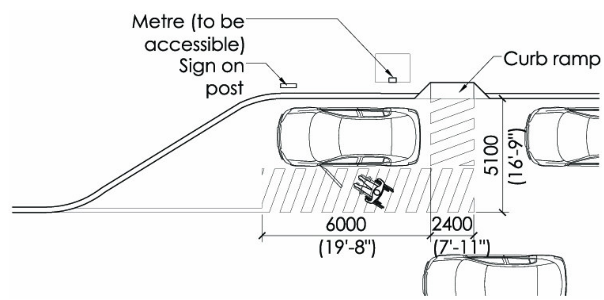


Figure 5.1.6(e)
<u>Parallel Designated Parking</u>

b) Covered passenger pick-up/drop-off areas are recommended;
   i) height clearance for car passenger zones is a minimum of 2750 mm (9 ft. 0 in,) but 3000 mm (10 ft. 0 in.) is recommended – **Figure 5.1.6(f)**.
   ii) for special transit vehicles, such as DARTS buses, the headroom clearance is recommended to be 3650 mm (12 ft. 0 in.)

c) Provide an access aisle – **Figure 5.1.6(g)** on the roadway that is
   i) parallel and adjacent to the pedestrian walkway
   ii) at least 2400 mm (7 ft. 10 in.) wide x 7300 mm (24 ft. 0 in.) long
   iii) separated from the walkway by a curb containing a curb ramp that complies with section 5.1.5 Exterior Pedestrian routes.

d) All designated passenger pick-up/drop-off areas should be marked with appropriate signage utilizing the "International Symbol of Accessibility".

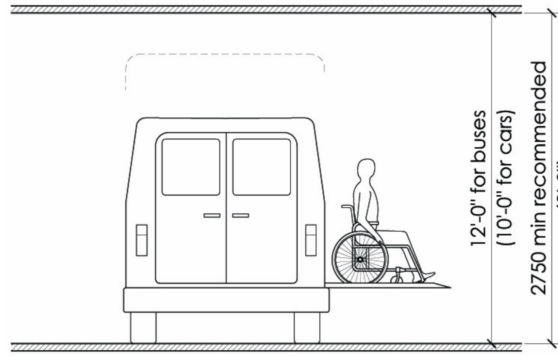


Figure 5.1.6(f)
Height Clearances at Pick-up/Drop-off Areas

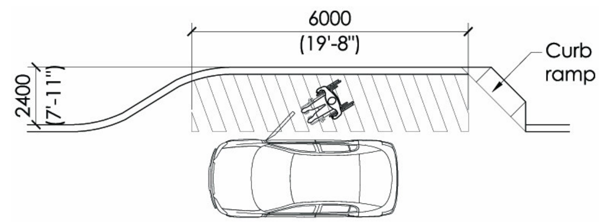


Figure 5.1.6(g)
Access aisle at passenger pick-up/drop-off

Related Sections:

5.1.4 Accessible Routes, Paths and Corridors
5.1.5 Exterior Pedestrian Routes
6.3 Materials and Finishes
6.4 Texture and Colour
6.5 Urban Braille
6.8 Detectable Warning Surfaces

Signals at Crosswalks 5.1.7

Barriers and Obstacles

When crossing traffic at busy intersections, persons with varying physical limitations require different types of support in order to safely cross (e.g., audible signals, sufficient time, clear route, etc.).

Design Requirements

1) Signals at pedestrian crosswalks should be designed generally in accordance with requirements of the Highway Traffic Act and the Ontario Traffic Manual Book 12 - Traffic Signals - **Figure 5.1.7**. LED lights are preferred as they are brighter in daylight.
2) Both audible and flashing crossing signals should be provided as an aid to persons who have hearing or visual impairments.
3) Audible pedestrian signals should be loud enough to be heard clearly above the ambient noise (e.g., at least 15 decibels louder than ambient noise).
4) Two different audible pedestrian signals, identifying when it is safe to cross either direction, (as indicated by a separate tone) are required for persons with visual impairments.
5) Where the crossing distance is larger than usual, or the traffic flow determines it; a 3 stage crossing may be provided; whereby a safe area is provided (such as a traffic island) to traverse the distance in stages.
6) Tactile features should be provided as an aid to persons who have both hearing and vision limitations (e.g., a tactile or vibro-tactile feature on pushbuttons.).
7) In locations frequently used by seniors or persons with disabilities, crossing timing should be provided to permit pedestrians or persons in wheelchairs to cross safely.
8) Where pedestrian activated buttons are provided, they shall be clearly indicated.
9) Where possible, crosswalks and signals should be of a consistent design to promote familiarity of use.

Related Sections

5.1.5 Exterior Pedestrian Routes

Pedestrian head

Standard head traffic signal

Highway head traffic signal

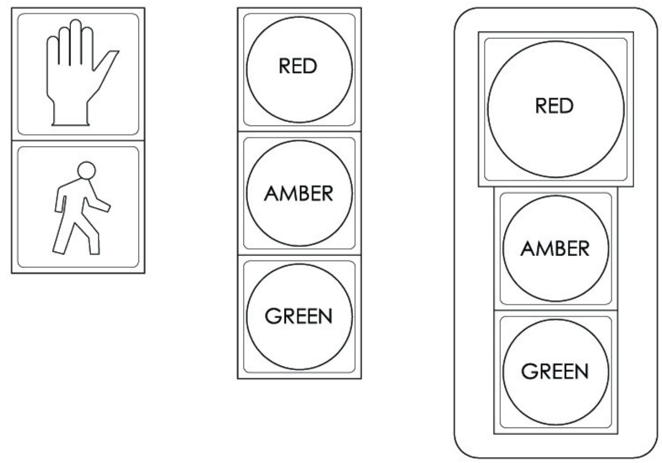


Figure 5.1.7
Traffic Symbols

Barriers and Obstacles

When designing entrances, consideration should be given to:

- the effects of weather and the speed at which a person with physical impairments can access the building;
- the conspicuousness of the entrance to assist someone with cognitive and or visual limitations; and
- the fact that these areas may serve many functions (e.g., waiting areas, etc.).

Design Requirements

1) **Accessible Routes to Entrances**

a) Provide an accessible route from

i) the site boundary;

ii) accessible parking areas; and

iii) lay-bys and drop off zones to the main entrance and/or other accessible entrances.

b) An accessible route to an entrance shall be 1525 mm (60 in.) minimum width (1675 mm (66 in.) width is preferred) constructed of a firm non-slip material.

c) Accessible pedestrian routes to entrances should be designed so they do not cross into vehicular routes.

In situations where accessible pedestrian routes cross into vehicular routes - crossings with suitable curb ramps identified by bright yellow or white lines and/or distinct paving should be provided.

d) On private property, provide rest areas every 30 meters, at least 1220 mm (48 in.) deep, located to one side of walkways. Where possible include space for a bench, and wheelchair, or scooter.

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

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

2) **Canopies and Weather Protection**

a) Where possible, all main entrances and other accessible entrances should be protected by a suitable canopy or overhang.

b) Where canopies project over passenger loading zones, provide sufficient headroom clearance (See section *5.1.6 Vehicular Access*).

c) Canopies of a distinctive size and contrasting colour may serve to help signify an entrance.

3) **Entrance Design Considerations**

a) Accessible entrances provide direct access to persons using wheelchairs or scooters and are also frequently used as waiting areas for persons requiring assistance (e.g., waiting for a ride from special transit, taxis, family members, attendants or others) - **Figure 5.1.8(a)**.

b) There should be enough waiting space inside the main accessible entrance, either in the vestibule or adjacent lobby, for at least two persons using wheelchairs. Such waiting areas should provide a clear view of the entrance and arrival area for taxis, buses and private vehicles.

c) Accessible entrances should provide basic protection from the weather and include doors and vestibules that are useable autonomously by persons with varying disabilities.

d) Where accessible entrances include security locks or other locking devices, a nearby call bell (or information telephone) should be available for persons requiring information or assistance.

e) In public buildings, an accessible public telephone should be available near the accessible entrance to provide seniors and persons with varying disabilities with suitable telephone access (e.g., calling for a taxi or a ride).

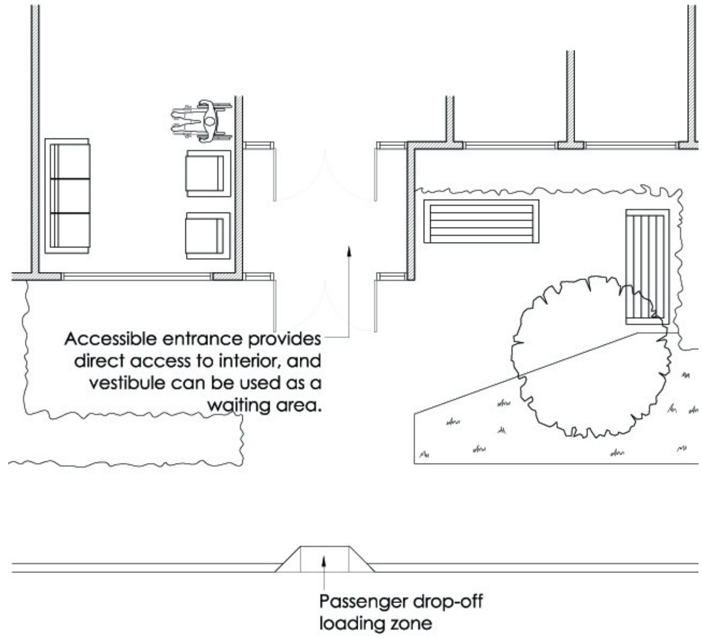


Figure 5.1.8(a)
Accessible Entrance

4) **Entrance Requirements**

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

i) In retrofit situations where it is deemed 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.

ii) In retrofit situations where it is deemed infeasible to make all public entrances accessible, the primary entrances used by staff and the public shall be accessible.

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

c) Public entrances that are secured shall be accessible, as required (e.g., police stations (See section *5.4.12 Police Stations*) and municipal courts (See section *5.4.4 Municipal Courts*)).

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

e) Entrances which are not accessible shall have directional signage complying with section *5.2.7 Signage and Wayfinding* which indicates the nearest accessible entrance.

f) Accessible entrances shall be identified with signage complying with applicable provisions of section *5.2.7 Signage and Wayfinding*.

5) **Vestibules**

a) See section *5.1.9 Doors* for vestibules at accessible entrances.

b) Interior vestibules to washrooms or other special areas should be fully accessible to persons using mobility aids.

c) Vestibule depths should provide at least 1220 mm (48 in.) floor space, clear of door swings and/or other obstacles, for manoeuvring of mobility aids.

d) Where interior doors swing towards a person using a wheelchair, at least 610 mm (24 in.) clear space should be available at the jamb, on the opening edge of the door, to allow persons using mobility aids easy access to the door (See section *5.1.9 Doors*).

e) Where doors swing away from a person using a mobility aid, at least 305 mm (12 in.) clear space should be available adjacent to the jamb on the opening edge of the door, for ease of use by persons using mobility aids.

6) **Waiting Areas**

a) For persons requiring information or services of assistance, waiting areas with loose furniture should be large enough to accommodate at least two persons using wheelchairs or scooters, in addition to other members of the public.

b) Waiting areas with fixed seating should include enough clear space for a minimum of two persons using wheelchairs or scooters.

Related Sections

5.1.1 Space and Reach Requirements
5.1.9 Doors
5.1.10 Gates, Turnstiles and Openings
5.4.1 Controls and Operating Mechanisms
6.2 Lighting
6.5 Urban Braille
6.6 Information Systems
6.7 Signage and Wayfinding
6.9 Windows, Glazed Screens and Sidelights

Barriers and Obstacles

Doors are an integral part of our buildings and facilities, and as such, much consideration should be given to their function for universal access: sufficient width, level floor transitions, direction of door swings, hardware, material and colours.

Design Requirements

1) Doors shall comply with this section where:
   a) they are an element of an accessible route or an accessible entrance.
   b) They are required under section *5.4.2 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance*.
2) **Opening Widths:** the clear opening width of doorways shall be at least 950 mm (37-1/2 in.)
   a) Swinging doors; when measured between the face of the door or the panic hardware and the face of the stop, with the door open 90° - **Figures 5.1.9(a)**, **(b)** and **(c)**.
   b) Sliding doors; when measured between the edge of the open door and the doorframe - **Figure 5.1.9(d)**.
   c) Retrofit situations: Door openings may be reduced to 810 mm (32 in.), where it is deemed infeasible to provide the above clearance.

Exception: Doors not requiring full user passage i.e. shallow closets may be reduced to 510 mm (20 in.).

3) **Manoeuvring areas** at doorways:
   a) Doorways shall have
      i) a level manoeuvring area on the push and pull sides of a door.
      ii) A clear floor area beside the latch edge (extending the full height of the door) complying with **table 5.1.9**. - **Figures 5.1.9(e)**, **(f)**, **(g)** and **(h)**.
      iii) The width of the clear floor area required in **Table 5.1.9** is measured from the inside of the doorframe.
   b) Where a door leads to a ramp landing, an additional area may be required.
4) **Multiple leaf doorways**:
   a) If doorways have more than one independently operated leaf, at least one active leaf shall
      i) Comply with sections *5.1.9.2 Opening Widths* and *5.1.9.3 Manoeuvring Areas;* and

Context	Floor space required		
	Depth	Width	Space beside latch
Side-hinged door - Front approach (Figure 4.1.6.4)			
Pull side	1525 (60 in.)	1600 (63 in.) (*1525 (60 in.))	600 (24 in.)
Push side	1370 (54 in.)	1250 (49-¼ in.) (*1220 (48 in.))	300 (12 in.)
Side-hinged door - Latch-side approach (Figure 4.1.6.3)			
Pull side	1370 (54 in.) (*1220 (48 in.))	1600 (63 in.) (*1525 (60 in.))	600 (24 in.)
Push side	1370 (54 in.) (*1060 (42 in.))	1525 (60 in.)	600 (24 in.)
Side-hinged door - Hinge-side approach (Figure 4.1.6.2)			
Pull side	1930 (76 in.) (*1525 (60 in.))	1930 (76 in.) (*1525 (60 in.))	600 (24 in.)
Push side	1370 (54 in.) (*1060 (42 in.))	1830 (72 in.)	450 (18 in.)
Sliding door (Figure 4.1.6.5)			
Front approach	1370 (54 in.)	1060 (42 in.) (*920 (36 in.))	50 (2 in.)
Side approach	1370 (54 in.) (*1060 (42 in.))	1550 (61 in.) (*1370 (54 in.))	540 (21-½ in.)

In retrofit situations where it is technically infeasible to provide to provide the required clearances at doors, the clearances may be reduced as shown by the *.

Table 5.1.9
Space at Doors

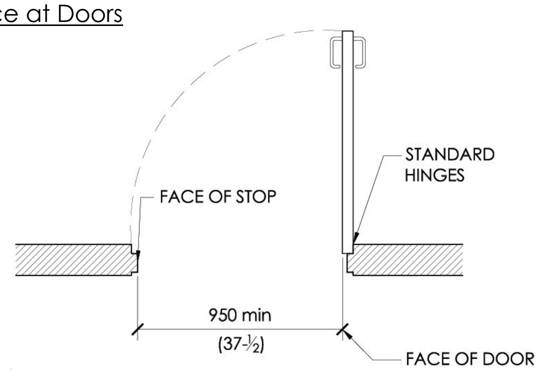


Figure 5.1.9(a)
Minimum Clear Width at Doors

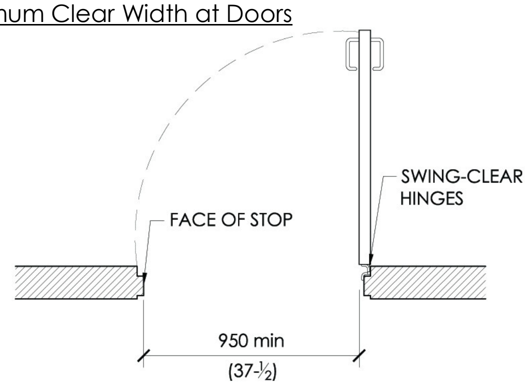


Figure 5.1.9(b)
Minimum Clear Width at Doors

ii) where only one door is accessible in a bank of doors, be identified by the International Symbol of Access.

b) Double doors; avoid the use of a centre post.

c) It is preferable if all doors are accessible.

5) **Revolving Doors:** Where revolving doors are used, an adjacent door shall be provided that complies with section *5.1.9 Doors*.

6) **Two doors in series:** The distance between two swinging doors in series shall be at least 1370 mm (54 in.) plus the width of any doors swinging into the space - **Figures 5.1.9(i)** and **5.1.9(j)**.

7) **Thresholds:**

a) Thresholds shall:

i) be not more than 13 mm (1/2 in.) high, except as permitted by b)

ii) at exterior sliding doors, be not more than 19 mm (3/4 in.) high, and

iii) wherever over 6 mm high, be bevelled at a slope not steeper than a ratio of 1:2 (50%).

b) Level thresholds are preferred.

8) **Operating Devices:**

a) Operating devices such as handles, pulls, latches or locks shall:

i) comply with *section 5.4.1 Controls and Operating Mechanisms*.

ii) be mounted 800 mm (31-1/2 in.) to 1200 mm (47-1/4 in.) from the floor

iii) on a sliding door, be exposed and usable from both sides.

b) Provide:

ii) lever handles on doors with latches - **Figure 5.1.9(i)**.

iii) 'U' shaped door levers (reduces the risk of clothes catching or injury from the exposed lever end) - **Figure 5.1.9(i)**.

iv) panic hardware that does not interfere with passage through a doorway.

v) kick plates at least 250 mm (10 in.) high on the push side of doors in high traffic areas.

9) **Door Closers:**

The sweep period of door closers shall be adjusted so that the door will take 3 seconds or move from an open position of 90° to a semi-closed position of approximately 12°.

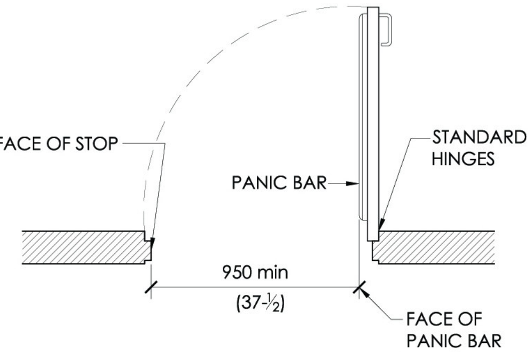


Table 5.1.9(c)
Minimum Clear Width at Doors

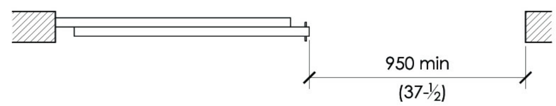


Figure 5.1.9(d)
Minimum Clear Width at Doors

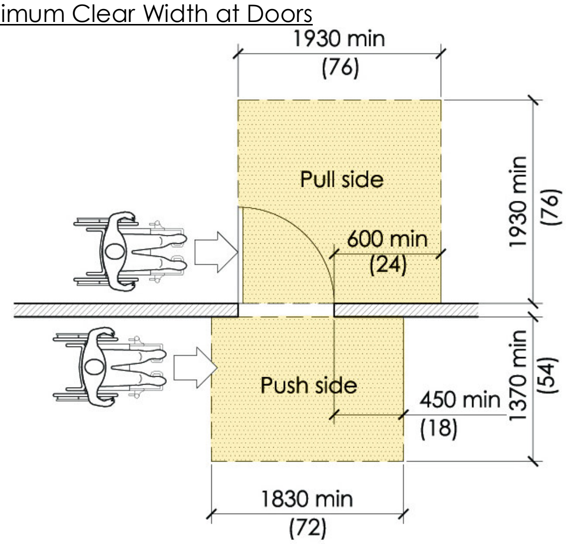


Figure 5.1.9(e)
Hinge Side Approach at Hinged Doors

10) **Door-Opening force:** The maximum force for pushing or pulling a door shall be:

a) 38N for exterior swinging doors;

b) 22N for interior swinging doors; and

c) 22N for sliding or folding doors.

11) **Power assisted doors**

a) General

i) Power assisted swinging doors shall:

- take 3 seconds or more to move from a closed position to a fully open position;
- remain fully open for a minimum of 5 seconds, the length of time is affected by the distance between the manual power assist control and the door);
- require a force of not more than 66N to stop door movement; and
- where they open in a route of travel, have cane detectable guard rails or other barriers at right angles to the wall containing the door - **Figure 5.1.9(h)**, and should have minimum clearance of 305 mm (12 in.) from the door.

ii) Power assisted glass sliding doors are preferred for the following reasons:

- Manual activation is not required;
- Do not require guard rails for door-swing protection;
- Maintains the flow of traffic; and
- Automatic sliding doors are available that meet the requirements for an exit as defined by the Ontario Building Code.

iii) At least one power-operated door should be provided at the main entrances to buildings.

iv) Power-operated doors should be considered for high traffic areas e.g. individual and public washrooms.

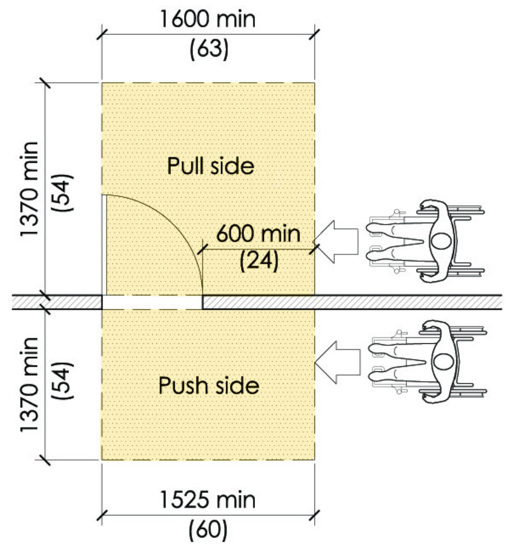


Figure 5.1.9(f)
Latch Side Approach at Hinged Doors

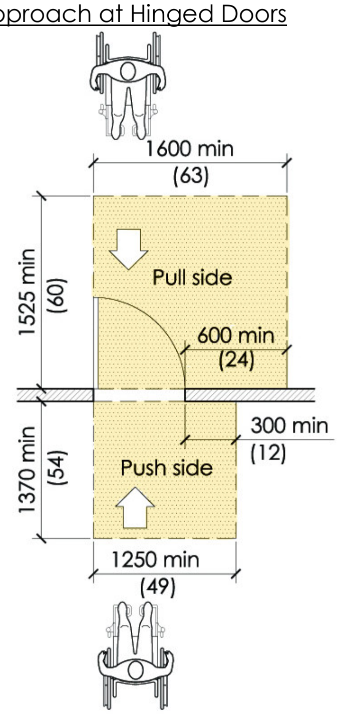


Figure 5.1.9(g)
Front Approach at Hinged Doors

b) Location of controls

For doors that are not automatically activated, controls to open power-assisted doors shall:

i) be located along the route of travel be clearly visible before reaching the door;

ii) have a clear floor area of 750 mm x 1200 mm (29-1/2 in. x 47-1/4 in.) in front of them;

iii) be clear of the door swing or any other fixture; and

iv) be located at a height of 800 mm to 1200 mm (31-1/2 in. to 47-1/4 in.) from the floor.

c) Controls

The controls for power assisted doors shall consist of activation pads that:

i) comply with section *5.4.1 Controls and Operating Mechanisms*;

ii) have dimensions of at least 25 mm x 75 mm (1 in. x 3 in.). 100 mm (4 in.) diameter buttons are preferred;

iii) are operable by touching any part of surface with a fist or an arm;

iv) are marked with the International Symbol of Access; and

v) where pressure-sensitive mats, overhead beams or proximity scanners are used to detect traffic, the layout of mat, beam or scanner coverage shall ensure that wheelchair users are detected.

12) **Transparent Glazing**

a) Where transparent glazing is incorporated in a door see section *5.2.9 Windows, Glazed screens and Sidelights*.

b) Doors made entirely of transparent glazing shall have a bright colour contrasting horizontal strip and a vertical strip to indicate the leading edge (See section *5.2.9 Windows, Glazed Screens and Sidelights*).

c) Where a transparent door occurs in a system or series of transparent units, it is recommended that the entrance be clearly identified, so that a person with limited vision can recognize the operable unit (i.e. the door).

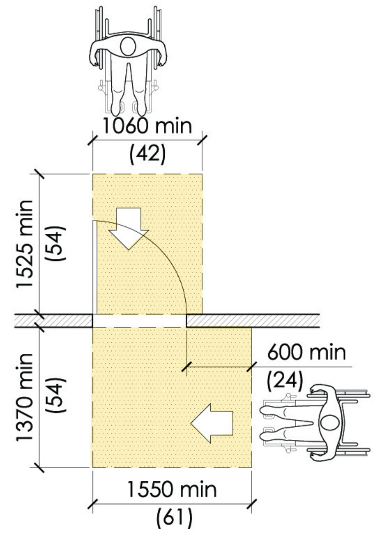


Figure 5.1.9(h)
Front and Side Approach at Sliding Doors

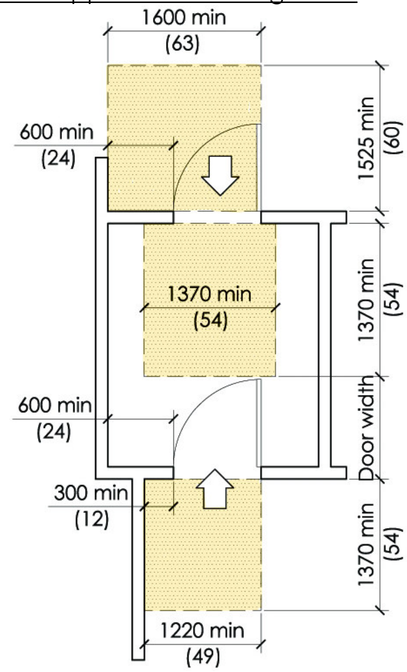


Figure 5.1.9(i)
Manoeuvring Space at Doors in Series

13) **Colour Contrasting**

a) Doors shall incorporate pronounced colour contrast or visible feature to differentiate them from the surrounding environment.

b) Door handles and other operating mechanisms shall incorporate pronounced colour contrast to differentiate them from the door itself.

14) **Mats and Mat Sinkages**

a) 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.

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

c) Runners used to define a preferred route (e.g., to information desks) should lead directly to the desired objective with no obstacles encroaching into the required route.

d) Runners should be continuous where possible and colour/tone differentiated from the floor.

Related Sections

5.1.1 Space and Reach Requirements
5.1.3 Protruding Objects
5.1.4 Accessible Routes, Paths and Corridors
5.1.8 Entrances
5.2.1 Toilet and Bathing Facilities
5.4.2 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance
6.9 Windows, Glazed Screens and Sidelights

Figure 5.1.9(j)
Manoeuvring Space at Doors in Series

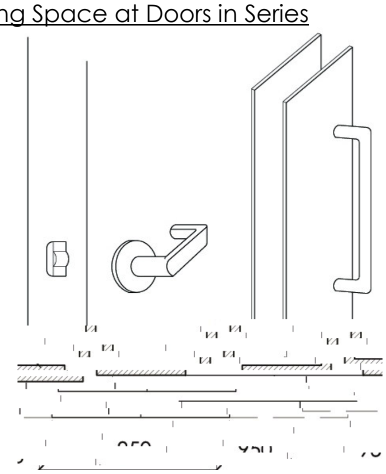


Figure 5.1.9(k)
Examples of Accessible Hardware

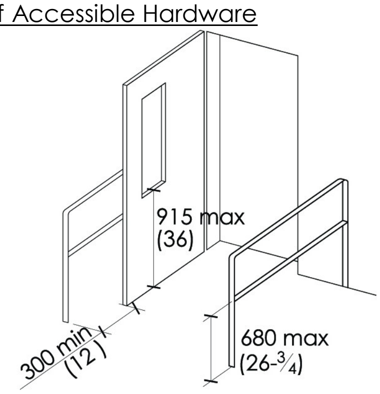


Figure 5.1.9(m)
Detectable Safety Guards

3) Accessible elevators shall be on an accessible route complying with section *5.1.4 Accessible Routes, Paths and Corridors.*

4) Accessible elevators shall be identified with signage complying with applicable provisions of section 6.7 *Signage and Wayfinding*.

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

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

7) The clear width for elevator doors shall be at least 950 mm (37-1/2 in.). In a retrofit situation where it is deemed infeasible to provide a clear elevator door width of 950 mm (37-1/2 in.), the clear elevator door width may be reduced to 915 mm (36 in.).

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

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

10) The minimum distance between the walls or between wall and door, excluding return panels, shall not be less than 1725 mm x 1525 mm (68 in. x 60 in.) - **Figure 5.1.16(a)**. 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 mm x 1525 mm (80 in. x 60 in.) - **Figure 5.1.16(b)**.

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

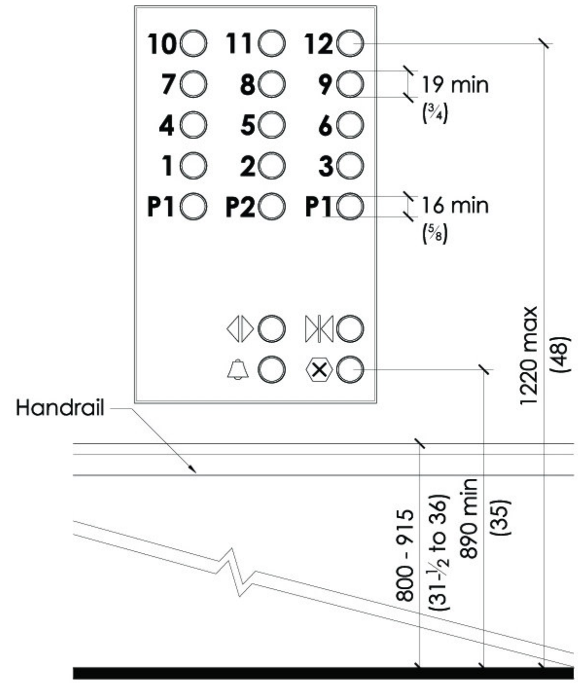


Figure 5.1.16(c)
Control Panel

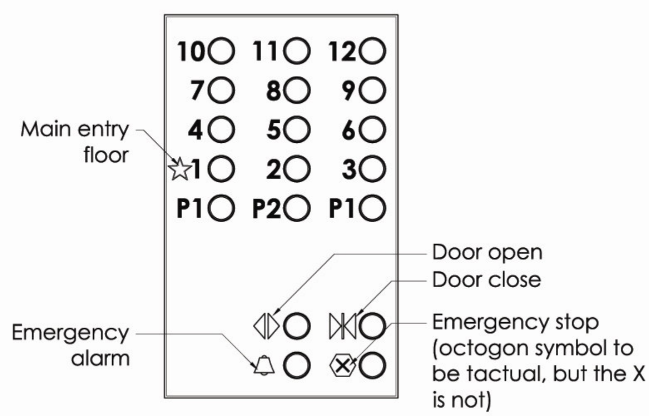


Figure 5.1.16(d)
Tactile Symbols

12) Floor register buttons in elevator cabs shall:
    a) 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.) - **Figure 5.1.16(c)**; and
    b) be provided with visual and momentary audible indicators to signal when each call is registered. The visual indicators shall be extinguished when each call is answered.
13) 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 - **Figure 5.1.16(d)**.

Exception: Where the call buttons are mechanical, the raised markings may be on the buttons.

14) Emergency car controls and door-operating buttons shall be grouped together at the bottom of the control panel. The centre line of the alarm button and the emergency stop switch shall be not less than 890 mm (35 in.) from the floor and no higher than 1220 mm (48 in.). Other controls may be located where it is convenient - **Figure 5.1.16(c)**.
15) 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.
16) Floors of elevator cabs shall have a firm and slip-resistant surface that permits easy movement of wheelchairs.
17) Handrails shall be provided on all non-access walls at a height of 800 mm to 915 mm (31-1/2 in. to 36 in.) with a <u>space</u> of 40 mm to 45 mm (1-1/2 in. to 1-3/4 in.) between the rails and wall.
18) The illumination at the car controls and landing sill shall not be less than 100 lux (10 ft-candles).

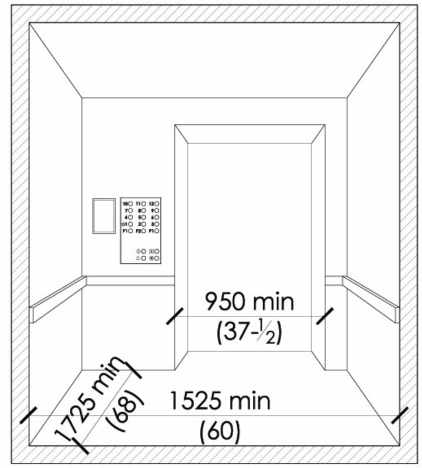


Figure 5.1.16(e)
<u>Elevator Cab</u>

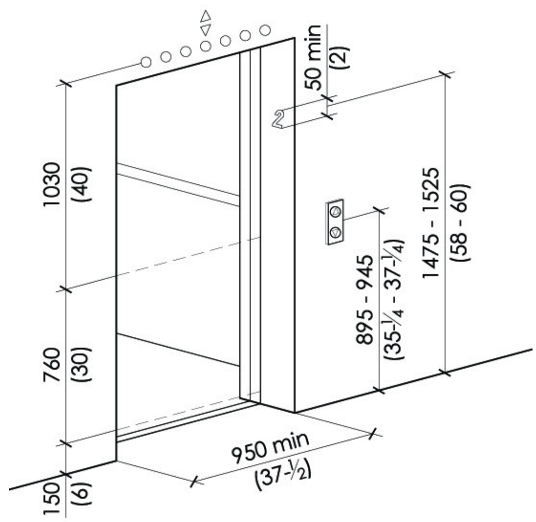


Figure 5.1.16(f)
<u>Elevator Entry</u>

19) The centre line of hall call buttons shall be between 895 mm (35 in.) and 945 mm (37 in.) above the floor. Buttons shall be a minimum of 19 mm (3/4 in.) in size, mounted one above the other **- Figure 5.1.16(f)**.

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

21) Hall or in-car lanterns shall be provided. The centre line of the fixture shall be a minimum of 1940 mm (76-1/2 in.) above the floor. An audible signal shall be provided when the elevator stops at the landing. Visual elements shall be a minimum of 50 mm (2 in.) in the smallest direction - **Figure 5.1.16(f)**.

22) All elevator hoist way entrances shall have raised Arabic numerals and Braille floor designations provided on both jambs. The characters shall be a minimum of 50 mm (2 in.) high and at least 0.75 mm (1/32 in.) thick shall be placed on both sides of the doorjambs, with the centre line between 1475 mm and 1550 mm (58 in. and 61 in.) from the floor.

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

24) 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 1220 mm (48 in.) from the floor of the car. It shall be identified by a raised symbol and lettering located adjacent to the device. The symbol shall be a minimum of 38 mm (1-1/2 in.) high and raised a minimum of 0.75 mm (1/32 in.). Permanently attached plates are acceptable. If the system uses a handset, then the length of the cord from the panel to the handset shall be at least 735 mm (29 in.). Additionally, the handset shall be equipped with a receiver that generates a magnetic field in the area of the receiver cap, and the handset shall have a volume control and shall comply with CSA Standard T515. If the system is located in a dosed compartment, the compartment door and hardware shall conform to section *5.4.1 Controls and Operating Mechanisms*. The emergency intercommunication system shall not require voice communication.

25) Lighting in elevator cabs shall be at least 100 lux (9.2 ft-candles), measured at the floor level and at the same lighting level as the adjacent lobby space.
26) Mirror shall not be used within elevator cabs as a finish material on the wall opposite the door, unless the area of the elevator makes it difficult for a person in a wheelchair to turn around to view the door.
27) Floor finishes within elevator cabs shall comply with section *5.1.2 Ground and Floor Surfaces*.
28) Elevator doors shall incorporate pronounced colour contrast, to differentiate them from the surrounding environment.
29) There shall be a pronounced colour contrast between the car sill and the facility floor.

Related Sections

5.1.1 Space and Reach Requirements
5.1.2 Ground and Floor Surfaces
5.1.9 Doors
5.1.14 Handrails
5.1.17 Platform Lifts
5.4.1 Controls and Operating Mechanisms
6.1 Glare and Light Sources
6.2 Lighting
6.3 Materials and Finishes
6.4 Texture and Colour
6.7 Signage and Wayfinding
7.2 Public Address Systems

Barriers and Obstacles

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

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

Design Requirements

1) Platform lifts may only be used in lieu of an elevator or ramp where allowable under section *5.1.16 Elevators* - **Figures 5.1.17(a)**, **5.1.17(b)**, and **5.1.17(c)**.
2) Accessible platform lifts shall
   a) be on an accessible route complying with *5.1.4 Accessible Routes, Paths and Corridors*;
   b) be identified with signage complying with applicable provisions of section *6.7 Signage and Wayfinding*;
   c) comply with CSA standard CAN/CSA B355; and
   d) facilitate unassisted entry, operation, and exit from the lift.
3) The platform size shall be no less than 1220 mm x 1525 mm (48 in. x 60 in.).
4) The doors to the platform lift shall comply with section *5.1.9 Doors*.
5) Controls and operating mechanisms shall comply with section *5.1.1 Space and Reach Requirements*.
6) 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 1220 mm (48 in.) from the floor of the car. If the system uses a handset, then the length of the cord from the panel to the handset shall be at least 735 mm (29 in.). If the system is located in a closed compartment, the compartment door and hardware shall conform to section *5.1.4 Accessible Routes, Paths and Corridors*.
7) Floor finishes within platform lifts shall comply with section *5.1.2 Ground and Floor Surfaces* and section *6.3 Materials and Finishes*.

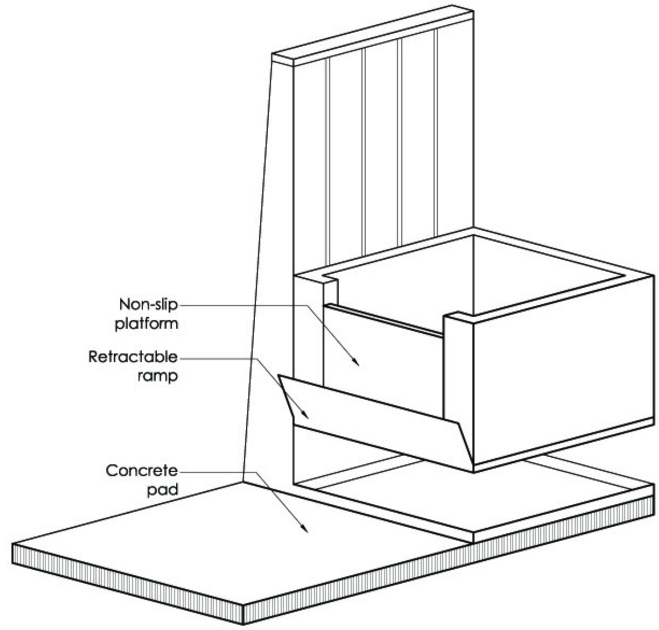


Figure 5.1.17(a)
Vertical Platform Lift

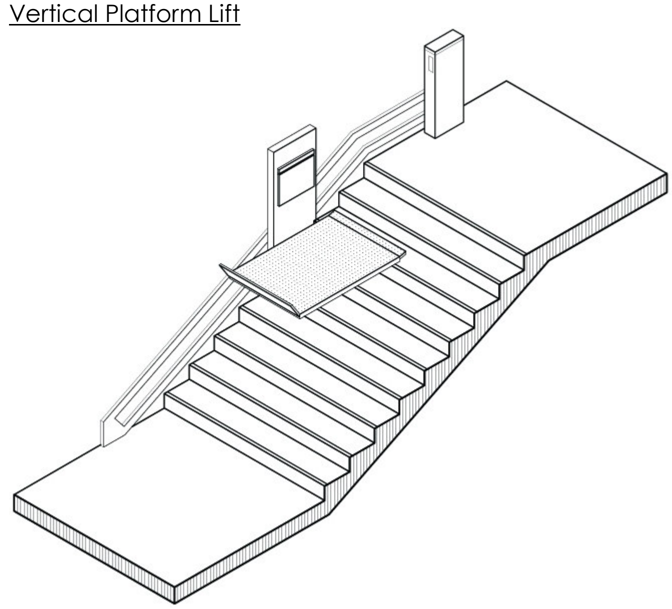


Figure 5.1.17(b)
Inclined Platform Stair-Lift

Platform Lifts 5.1.17

Related Sections

5.1.1 Space and Reach Requirements
5.1.2 Ground and Floor Surfaces
5.1.9 Doors
5.1.14 Handrails
5.1.16 Elevators
5.4.1 Controls and Operating Mechanisms
5.2.1 Glare and Light Sources
5.2.2 Lighting
5.2.3 Materials and Finishes
5.2.5 Texture and Colour
5.2.7 Signage and Wayfinding
5.3.2 Public Address Systems

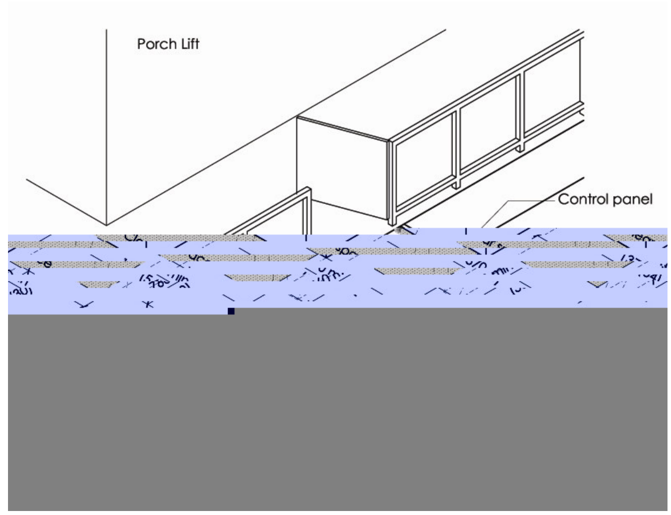


Figure 5.1.17(c)
Exterior Lift

d) Faucets and other controls shall:
   i) comply with section *5.2.4 Lavatories;*
   ii) be located at the foot of the bathtub between the centre line of the bathtub and the <u>clear floor space</u> (closer to the open side of the tub is preferred); and
   iii) be not more than 450 mm (17-3/4 in.) above the rim - **Figures 5.2.8(a)** and **5.2.8(a)**.

e) Enclosures: sliding doors shall not be provided on bathtubs.

f) Slip resistant bases shall be provided.

2) Where it is deemed <u>infeasible</u> to have all bathtubs comply with this section, at least 10% but never less than one in each bathing area shall comply with this section.

Related Sections

5.1.1 Space and Reach Requirements
5.2.7 Washroom Accessories
5.2.10 Grab Bars
5.4.1 Controls and Operating Mechanism
6.4 Texture and Colour

Barriers and Obstacles

The accessibility of shower stalls requires that consideration be given to:

- safety supports such as grab bars and slip-resistant floors;
- assistive equipment such as benches and hand held showerheads allowing flexibility of use;
- colour contrasting of controls and stalls to assist persons with visual impairments;
- elimination of hazards and obstacles such as curbs or shower doors with thresholds; and
- manoeuvrability from chair to shower where chairs cannot get wet or space provided where a chair can be used in the shower.

There are 2 types of shower stalls;

- **Roll-in shower stalls**:
    - can accommodate the use of a wheeled shower chair; and
    - can be flexible if provided with a fold away seat or requirements for a portable seat.
- **Shower stalls with curbs**:
    - may be used where space is limited; and
    - are more suitable to wood frame construction.

Flexible roll-in stalls are preferred but are not always possible due to space limitations and building technology.

Design Requirements

Where shower stalls are provided they shall comply with this section:

1) Shower stalls shall be on an accessible route complying with section *5.1.4 Accessible Routes, Paths and Corridors*.
2) Where it is deemed infeasible to have all shower stalls comply with this section, at least 10%, but never less than one, in each bathing area shall comply with this section.
3) The temperature of the water supplied to the shower stall shall:
    a) not exceed 55°C; and
    b) be controlled:
        i) thermostatically; or
        ii) by a pressure equalizing valve.

4) A **showerhead** - **Figure 5.2.9(a)** - shall:
   a) be of the handheld type;
   b) be provided with a hose at least 1525 mm (60 in.) long;
   c) allow use in a fixed position;
   d) be mounted to be adjustable but at a maximum height of 1200 mm (47 in.) from the floor; and
   e) where mounted on a vertical bar, not have the location of the bar obstruct the use of the grab bars.
5) **Enclosures**:
   a) Doors or curtains for shower stalls shall not obstruct the controls or the transfer space.
6) **Shower stall floors** shall:
   a) be slip-resistant even when wet; and
   b) slope minimally to provide positive drainage.
7) **Shower seat**:
   a) Style/Type:
      i) a wall-mounted, folding seat that is not spring loaded; or
      ii) requirements for a portable seat; or
      iii) a permanent seat.
   b) Locate where a seated person can operate controls.
   c) Size: at least 410 mm (16 in.) deep, and where possible, extending the full depth of the stall, but not less than 710 mm (28 in.) long, (less a space allowed for the shower curtain);
   d) Height: 430 mm to 480 mm (17 in. to 19 in.) from the floor - **Figure 5.2.9(a)**;
   e) Provide a smooth non-slip surface without rough edges;
   f) Colour: a contrasting colour to improve its visibility;
   g) Design to carry a minimum load of 1.33 kN (300 lbs) - **Figure 5.2.9(b)**.
8) Drain should be located beneath the seat or off to one side.
9) Where **roll-in shower stalls** are provided they shall comply with parameters below - **Figure 5.2.9(a)**:
   a) **Shower Area**:
      Have an interior clear area of at least 920 mm x 1525 mm (36 in. x 60 in.). Where possible increase the 920 mm (36 in.) dimension.

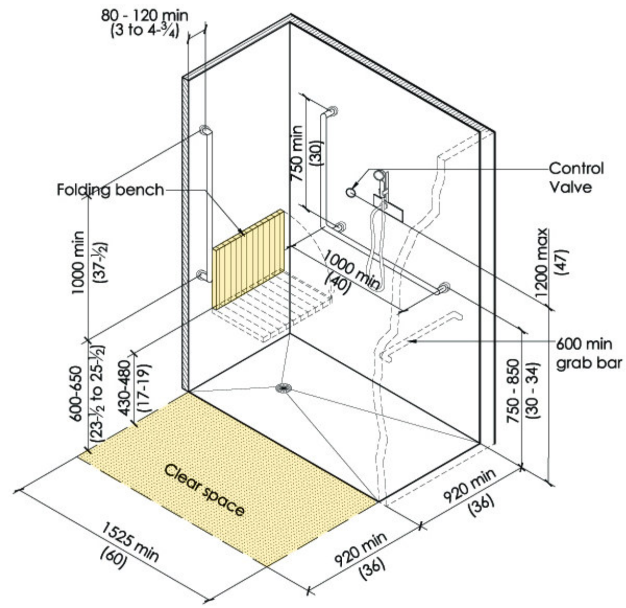


Figure 5.2.9(a)
Roll-in Shower Stall

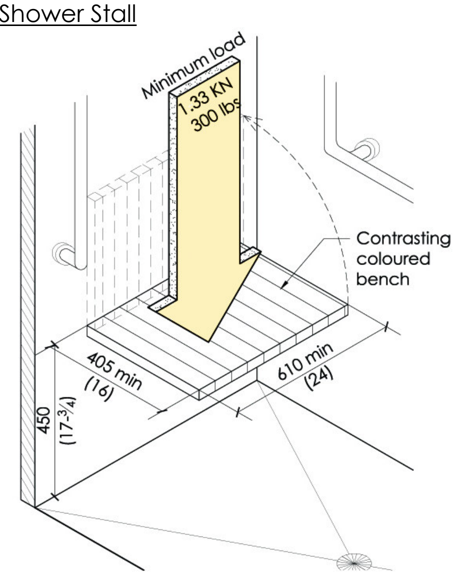


Figure 5.2.9(b)
Maximum Load Capacity for Fold Down Bench

b) **Access Area**:

A <u>clear</u> floor area in front of the shower <u>entrance</u> shall be at least 920 mm x 1525 mm (36 in. x 60 in.), with the 1525 mm (60 in.) dimension parallel to the shower entrance.

c) **Grab bars** - **Figures 5.2.9(a)**, **5.2.9(c)** and **5.2.9(d)**:

In roll-in showers, four grab bars that comply with section *5.2.10 Grab Bars* shall be mounted as follows:

One horizontally on a side wall:

i) at least 600 mm (23-3/4 in.) in length; and

ii) 750 to 850 mm (29-1/2 to 33-1/2 in.) from the floor;

One vertically on the opposite side wall:

i) at least 1000 mm (39-1/2 in.) in length;

ii) with the lower end 600 mm to 650 mm (23-3/4 in. to 25-1/2 in.) from the floor; and

iii) at 50 mm to 80 mm (2 to 3-1/4 in.) from the outside edge of the shower stall;

One horizontally on the back wall:

i) at least 1000 mm (39-1/2 in.) in length; and

ii) 750 mm to 850 mm (29-1/2 – 33-1/2 in.) from the floor; and

One vertically on the back wall:

i) at least 750 mm (29-1/2 in.) in length;

ii) with the lower edge 50 mm to 60 mm (2 in. to 2-1/2 in.) above the horizontal grab bar in item (c) or use continuous "L" shape grab bar; and

iii) located 400 mm to 500 mm (15-3/4 in. to 19-3/4 in.) from the side wall on which the other vertical grab bar is mounted.

d) **Seat**:

In a roll-in shower a seat is optional. Where one is provided refer to item 7 above.

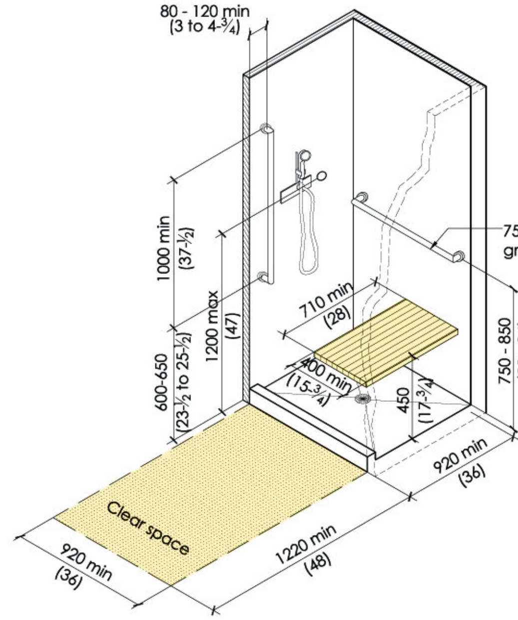


Figure 5.2.9(c)
<u>Shower Stall</u>

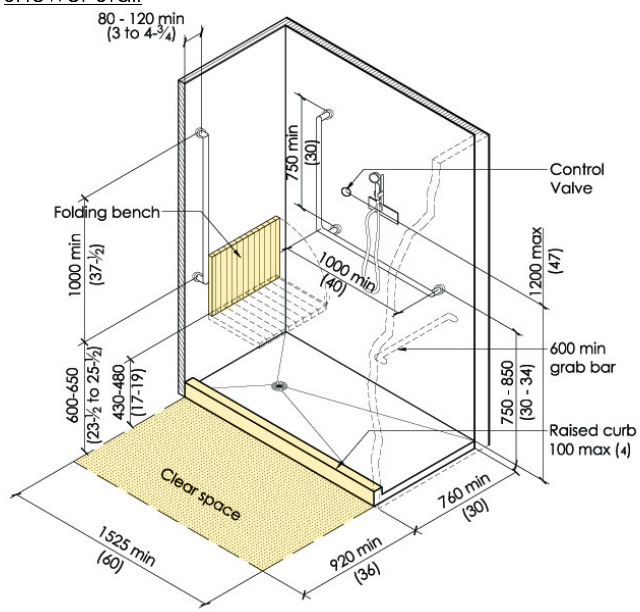


Figure 5.2.9(d)
<u>Shower Stall</u>

e) **Thresholds:**
A threshold at the <u>entrance</u> to a roll-in shower shall:

i) not exceed 13 mm (1/2 in.) in height; and

ii) if between 7 mm and 13 mm (1/4 in. and 1/2 in.) in height, be bevelled at a slope no steeper than the ratio of 1:2 (50%).

f) **Controls:**
Faucets and controls for roll-in shower stalls shall:

i) comply with section *5.4.1 Controls and Operating Mechanisms*;

ii) be mounted in the centre on the back wall above the grab bar; and

iii) be no more than 1220 mm (48 in.) from the floor.

10) Where **shower stalls with curbs** are provided, they shall comply with the parameters below - **Figure 5.2.9(c)** and **5.2.9(d)**.

a) **Shower Area**:
Shower stalls with a curb shall have an interior <u>clear</u> <u>space</u> of at least 920 mm x 920 mm (36 in. x 36 in.) - **Figure 5.2.9(c)**.

b) **Access Area**:
The <u>clear</u> floor area in front of the shower <u>entrance</u> shall be at least 920 mm x 1220 mm (36 in. x 48 in.), with the 1220 mm (48 in.) dimension parallel to the shower <u>entrance</u>, starting from the stall wall opposite the seat.

c) **Seat**:

In shower stalls with a curb, a seat shall be provided (refer to point 7 above).

d) **Grab Bars**:

Two grab bars that comply with section *5.2.10 Grab Bars* shall be mounted as follows:

One horizontally, on the back wall, that is

i) 750 mm to 850 mm (29-1/2 in. to 33-1/2 in.) from the shower floor; and

ii) at least 750 mm (29-1/2 in.) in length; and

One vertically, on the same wall as the controls, that is:

i) 80 mm to 120 mm (3 in. to 5 in.) from the outside edge;

ii) with the lower end 610 mm to 650 mm (24 in. to 25-1/2 in.) from the floor; and

iii) at least 1000 mm (39 in.) in length.

Shower Stalls 5.2.9

e) **Faucets and controls** shall:
   i) comply with *5.4.1 Controls and Operating Mechanisms;*
   ii) be mounted within reach of the seat;
   iii) be mounted not more than 1200 mm (47 in.) from the floor; and
   iv) be accessible from outside the stall.

f) **Shower Curbs** shall:
   i) not be higher than 100 mm (4 in.);
   ii) have a width less than 100 mm (4 in.); and
   iii) be colour contrasted to improve visibility.

Related Sections

5.1.1 Space and Reach Requirements
5.2.7 Washroom Accessories
5.2.10 Grab Bars
5.4.1 Controls and Operating Mechanisms
6.4 Texture and Colour

Barriers and Obstacles

Grab bars are essential for many individuals who require assistance in activities such as getting up, sitting down or standing for extended periods of time.

Design Requirements

1) Grab bars shall - **Figure 5.2.10(a)**:
   a) resist a horizontal or vertical load of at least 1.3 kN (300 lb.) when installed;
   b) be a minimum of 30 mm (1-3/16 in.) and a maximum of 40 mm (1-9/16 In.) in diameter;
   c) have a clearance of 30 mm to 40 mm (1-3/16 in. to 1-9/16 in.) from the wall;
   d) be free of any sharp or abrasive elements;
   e) be of contrasting colour with the surrounding environment;
   f) be slip resistant; and
   g) not rotate within fittings.
2) Surrounding surfaces shall be free of sharp elements.
3) Horizontal grab bars should be on three sides of a shower or bathtub.

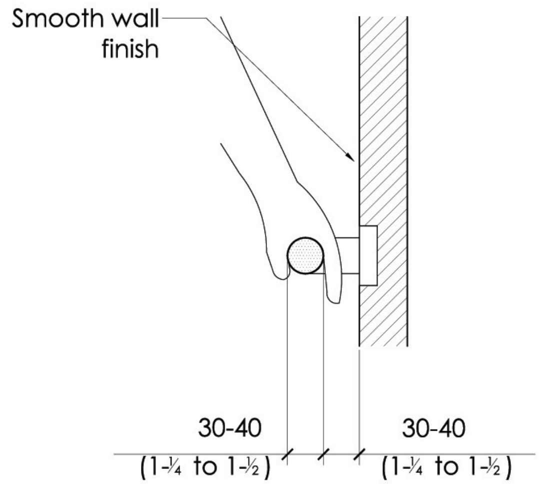


Figure 5.2.10(a)
Handrail

Related Sections

5.1.1 Space and Reach Requirements
5.2.3 Toilets
5.2.5 Urinals
5.2.6 Individual Washrooms
5.2.8 Bathtubs
5.2.9 Shower Stalls
6.4 Texture and Colour

Amenities 5.3

Amenities are usually provided as pre-designed units, e.g. pay phones, vending machines, drinking fountains, etc. Consideration should be given to issues such as mounting heights and reach requirements for a divergent population, so as to be inclusive.

This section deals with the design, provision of requirements for universally accessible comforts that improve the quality of life of a population e.g. park benches, water fountains etc.

Street Furniture 5.3.1

Barriers and Obstacles

Street furniture, which provides a resting place for persons who have difficulty walking long distances, should be located off of the path of travel.

Street furniture includes but is not limited to:

- benches;
- light standards;
- mail boxes;
- planters;
- signs;
- waste receptacles; and
- vending machines.

Design Requirements

1) **Street furniture** wherever possible shall:
   a) not reduce the required width of an accessible route as specified in section *5.1.4 Accessible Routes, Paths and Corridors*;
   b) be indicated by a cane-detectable strip, in compliance with section *5.1.3 Protruding Objects*;
   c) be located to one side of the clear way;
   d) be securely mounted on an amenity strip with a minimum width of 610 mm (24 in.), located adjoining walkways, paths sidewalks and other accessible routes; and
   e) be of contrasting colour to the surrounding environment.
2) **Waste receptacles** shall:
   a) be of a sufficient size to contain the anticipated waste;
   b) be mounted on level, firm pads when located in open areas, such as wilderness areas, parks, beaches or picnic areas;
   c) be identified using suitable lettering in compliance with section *6.7 Signage and Wayfinding*;
   d) have lids or openings that are mounted no higher than 1065 mm (42 in.) above the adjacent floor or ground surface, in compliance with section *5.4.1 Controls and Operating Mechanisms*; and
   e) be provided near each accessible public entrance.
   f) include shaped openings to differentiate between waste, paper, and cans a glass where recycling receptacles are provided.

3) **Benches** wherever possible shall:
   a) be adjacent to an accessible route in compliance with section *5.1.4 Accessible Routes, Paths and Corridors*;
   b) be located on a level and firm surface;
   c) be provided with an adjacent space 1015 mm x 1220 mm (40 in. x 48 in.) for at least one person using a scooter or a wheelchair; and
   d) have a seat height of 450 mm to 500 mm (17-3/4 in. to 19-3/4 in.) from the ground.
   e) include suitable back and arm supports to allow for easy transfers for persons with physical limitations.

Related Sections

5.1.1 Space and Reach Requirements
5.1.2 Ground and Floor Surfaces
5.1.3 Protruding Objects
5.1.4 Accessible Routes, Paths and Corridors
5.1.5 Exterior Pedestrian Routes
6.3 Materials and Finishes
6.4 Texture and Colour
6.5 Urban Braille
6.8 Detectable Warning Surfaces

Barriers and Obstacles

When placing a public telephone, the following factors should be taken into consideration:

- limited reach of children and individuals in wheelchairs, or very tall persons;
- longer phone cords for those who can not get close to the telephone due to mobility devices;
- volume controls; and
- shelves for TDD (Telecommunications Device for the Deaf).

Design Requirements

1) Where public telephones are provided in an exterior area, a minimum of one telephone should be designed to be accessible from a wheelchair or other mobility aids.
2) Controls or coin slots should be mounted at a maximum of 1200 mm (47 in.) from the ground or floor - **Figure 5.3.2(a)**.
3) Public telephones that are in an enclosure or are recessed should have a knee space of at least 760 mm (30 in.) wide and 685 mm (27 in.) clear height under the telephone or shelf - **Figure 5.3.2(a)**.
4) Telephones should be mounted clear of door swings or other obstacles, and to one side of the path of travel with enough open space for access by persons using wheelchairs or other mobility aids.
5) Lighting at public telephones should be at a level of at least 200 lux (18.6 ft-candles).
6) Public telephones which are accessible should be clearly identified by the "International Symbol of Accessibility" (See Section 6.7 *Signage and Wayfinding*).
7) Where multiple telephones are provided, one should be available that may accommodate persons who are deaf, deafened, or hard of hearing. These devices include but are not limited to: an acoustic coupler, volume control etc. Telephones equipped with these devices must be clearly identified with the "international symbol" for persons who are deaf, deafened or hard of hearing.

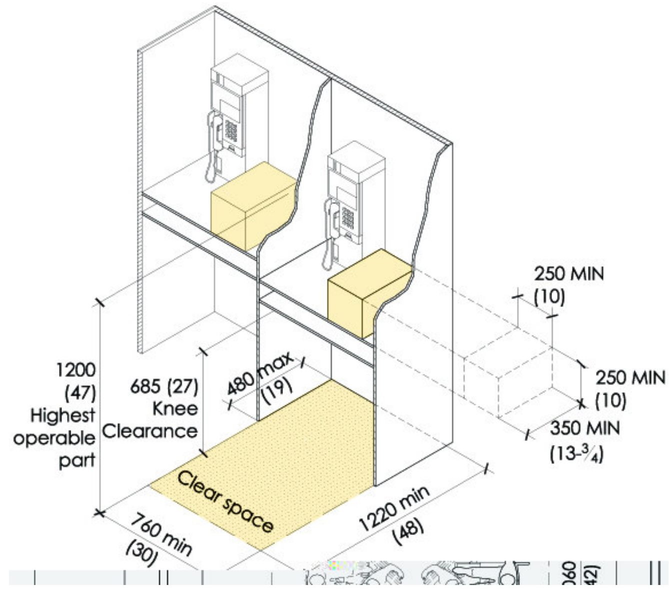


Figure 5.3.2(a)
Public Telephones

9) There shall be a minimum of one moveable chair at every computer catalogue, computer workstation, or information or service counter.
10) Shelving over work areas should be a maximum of 1200 mm (47 in.) above the finished floor.
11) Study carrels should have:
    a) knee clearance of 700 mm (27-1/2 in.) above finished floor;
    b) an electrical outlet; and
    c) a minimum light intensity of 100 lux (10 ft-candles) at the counter surface.
12) Computer catalogue or computer workstations should include:
    a) a clear space for a person's knees and feet that complies with sections *5.1.1 Space and Reach Requirements*, and *5.3.6 Tables, Counters and Work Surfaces*;
    b) a work surface at a maximum height of 865 mm (34 in.); and
    c) a maximum table depth of 900 mm (35-1/2 in.).
13) In libraries where audio books, CDs, tapes, etc. are provided there should be a designated area where these materials may be used without disturbing others. Appropriate signage should clearly indicate this area.
14) A library's acoustic quality should be free of any unnecessary background noise that would compromise the comprehension of persons with hearing impairments.
15) All information or service desks shall comply with section *5.3.4 Information, Reception and Service Counters*.
16) A minimum of one accessible lane shall be provided at each check out area. Where possible, all lanes should be accessible.
17) Traffic control or book security gates shall comply with section *5.1.10 Gates, Turnstiles and Openings*.
18) Book drop slots shall be:
    a) located on an accessible route complying with section *5.1.1 Accessible Routes, Paths and Corridors*;
    b) adjacent to a 2440 mm by 2440 mm (96 in. by 96 in.) level platform. In a retrofit situation where it is deemed infeasible to create a platform of this size, the dimensions may be reduced to 1525 mm by 1525 mm (60 in. by 60 in.);

c) positioned between 860 mm and 915 mm (34 in. and 36 in.) above the floor; and

d) operable with one hand.

Related Sections

5.1.1	Space and Reach Requirements
5.1.4	Accessible Routes, Paths and Corridors
5.1.10	Gates, Turnstiles and Openings
5.3.3	Waiting and Queuing Areas
5.3.4	Information, Reception and Service Counters
5.3.6	Tables, Counters and Work Surfaces
6.2	Lighting
6.7	Signage and Wayfinding
7.1	Acoustics

Barriers and Obstacles

When designing and planning for bars, restaurants and cafeterias, one should consider that everyone has equal right to services (as defined by the law); the young and the aged, the able bodied and persons with disabilities. With this in mind consider :

- lower sight lines;
- reduced reach;
- knee space and manoeuvring requirements of persons using wheelchairs or scooters;
- flexibility and options of seating;
- noise and lighting levels; and
- ease of use.

Design Requirements

1) All dining areas including raised or sunken dining areas, loggias, and outdoor seating areas:
   a) shall be accessible; and
   b) in buildings not equipped with elevators, an accessible means of vertical access to the mezzanine is not required under the following conditions:
      i) the are of the mezzanine seating measures no more than 33 percent of the area of the total accessible seating area;
      ii) the same services and décor are provided in an accessible space usable by the general public; and
      iii) the accessible areas are not restricted to use by people with disabilities;
   c) in retrofit situations, are not required to be accessible provided the same services and décor are provided in an accessible space usable by the general public and are not restricted to use by people with disabilities.
2) Fixed tables (or dining counters where food is consumed but there is no service) where provided:
   a) at least 5 percent, but not less than one of the fixed tables (or a portion of the dining counter) shall be accessible.
   b) shall be accessible by means of an accessible aisle between parallel edges of tables or between a wall and the table edges.

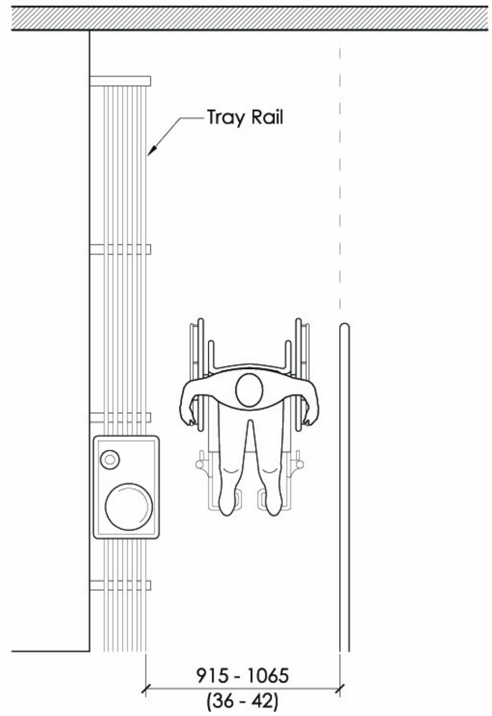


Figure 8.7(a)
Cafeteria Aisle Width

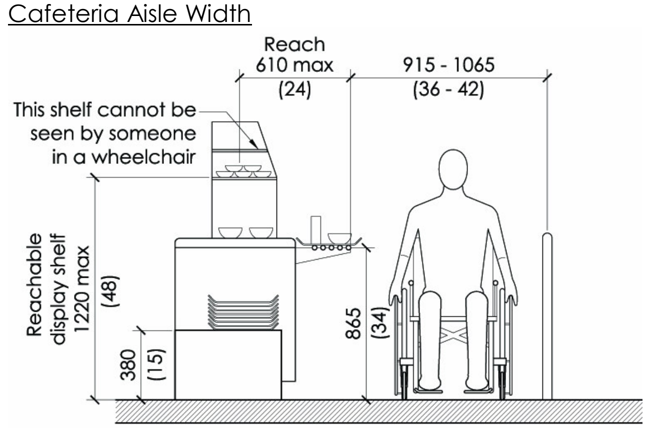


Figure 8.7(b)
Cafeteria Counters

3) Beverage dispensing machine areas should be accessible to individuals using mobility aids, and should be operable with one hand.
4) Food service lines shall incorporate the following:
    a) a minimum clear width of 915 mm (36 in.), with a preferred clear width of 1065 mm (42 in.) to allow passage around a person using a wheelchair or scooter – **Figure 8.7(a) and 8.7(b)**; and
    b) tray rails should be continuous to allow a tray to slide along easily, and should be mounted no higher than 865 mm (34 in.) above the floor – **Figure 8.7(b)**.
5) Cashier locations should include accessible aisles with clear resting surfaces for trays, etc.
6) A portion of counters and bars of a minimum 1525 mm (60 in.) in length, and exceeding 865mm (34 in.) in height, for consumption by customers seated on stools, or standing at the counter shall be provided in compliance with *5.3.4 Information, Reception and Services Counters* – **Figure 8.7(b)**.
7) Self serve functions such as self-service shelves, dispensing devices for tableware, dishware, condiments, food, and beverages shall be installed to comply with *5.1.1 Space and Reach Requirements*.

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audible Accessibility

Barriers and Obstacles

Individuals should be able to access and use arena facilities regardless of their abilities or age. Wherever possible, support should be available by the facilities staff to assist individuals with varying disabilities use the arena to its fullest potential.

Design Requirements

1) Sporting arenas shall be accessible to all members of the general public
2) Accessible seating shall be provided with clear sight lines in conformance with section *7.1 Meeting Rooms, Assembly Areas and Theatres*, and shall include:
   a) a minimum of two accessible seats for the first 100 seats, with an additional seat for each successive 100 seats.
3) Access panels to the arena floor shall be a minimum clear width of 865 mm (34 in.).
4) Locker rooms and changing rooms shall be able to accommodate all individuals with disabilities including those who use mobility aids.
5) Public washrooms shall conform to section *5.2 Washroom Facilities.*

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audible Accessibility

Barriers and Obstacles

Ice rinks are an intrinsic part of Canadian culture and are constantly in demand and visited by a wide variety of people, including:

- families for recreation;
- seniors going to see a grandchild's hockey game or for a leisurely skate; or
- audiences going to see a figure skating pageant.

Some facilities are in such high demand, that they operate 24 hours on weekends.

Careful consideration should be given to:

- lighting levels – for different times of the day;
- wayfinding techniques, and colour contrasting, as visual aids should be employed;
- clear signage; and
- flexible and accessible dressing rooms, for all ages and genders.

Design Requirements

1) Indoor and outdoor ice rinks shall be accessible and usable by persons with varying disabilities.
2) Where viewing areas are provided they shall be accessible.
3) All public amenities shall be accessible.
4) At outdoor rinks provide:
   a) an accessible pedestrian route from any parking areas or bus routes;
   b) a clear space with a smooth hard surface at the entrance to the rink; and
   c) a bench on an accessible pedestrian route, so that persons can watch or put on their skates.

Related Sections

5.1 Exterior Pedestrian Access
5.2 Washroom Facilities
6.0 Visual Accessibility

Barriers and Obstacles

Swimming pools are used by a wide variety of people, for a variety of reasons; the very young, seniors, for recreation, fitness, sports clubs, private parties, therapeutic programs etc. Important considerations for the disabled are:

- fully accessible change facilities;
- access into the pool – ramps are preferred as it promotes integration and independence;
- colour contrasts and changes in texture to help guide the visually impaired, (e.g., textural cues along primary travel routes and bright contrasting colours to indicate level changes or the edge of the pool); and
- consideration of warning systems for the hearing impaired (e.g., flashing lights as an alarm to evacuate the pool).

Wading pools are primarily used by young children and families. Consideration should be given to:

- access for wheelchairs and strollers on the wet surface;
- the slip resistance of the surface; and
- clear signage, and warning systems.

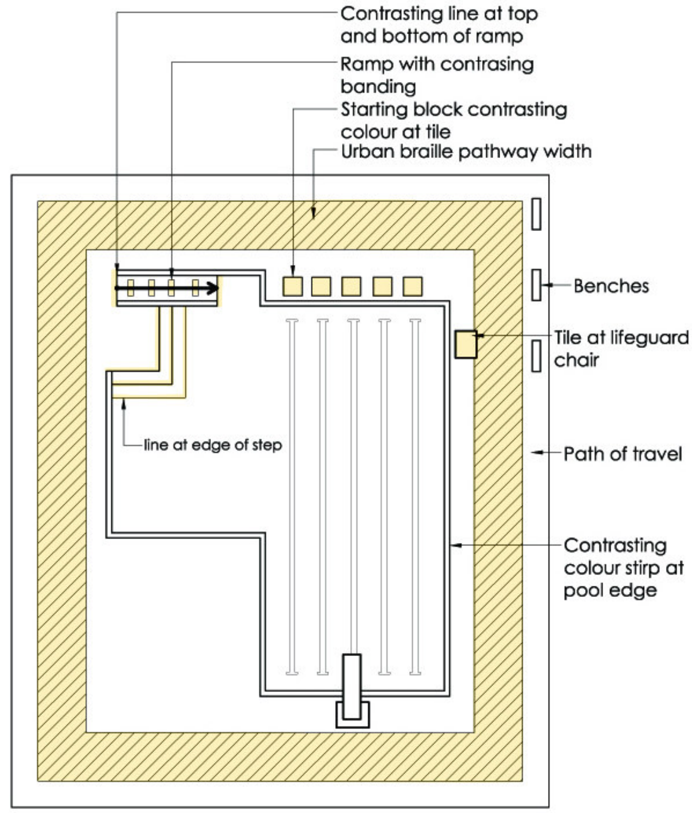


Figure 8.10(a)
Accessible Swimming Pool

Design Requirements

1) Newly designed or newly constructed and altered swimming pools and wading pools shall comply with this section.

> **Exception**: An accessible route shall not be required to serve raised diving boards or diving platforms.

2) Access:
   a) An accessible route shall be provided from
      i) the front entrance to the change facilities;
      ii) the change facilities to the deck; and
      iii) the front entrance to the viewing area (wherever applicable).
   b) A ramp shall be provided into the pool - **Figure 8.10(a)** – with the following considerations;
      i) sloped no steeper than 1:8 and extending to a depth of between 610 mm minimum and 762 mm maximum below the stationary water level. This depth is necessary for individuals using the sloped entry to become buoyant

ii) a colour-contrasting indicator at the top and bottom of the ramp;

iii) a high contrasting colour/pattern to differentiate the surface of the ramp from the tank;

iv) in a retrofit situation where the provision of a ramp is not feasible, some provision for transferring persons into the water should be provided;

v) clear deck space of at least 1524 mm x 1524 mm (60 in. x 60 in.) provided at all transfer areas;

vi) handrails that shall:

- be provided on both sides not more than 1220 mm (48 in.) apart; and
- shall extend at least 305 mm (12 in.) beyond the pool edge;

vii) positioned where it does not interfere with swimming lanes.

c) Where stairs are provided into the pool:

i) handrails shall extend at least 305 mm (12 in.) beyond the pool edge;

ii) be positioned where they do not interfere with swimming lanes; and

iii) be marked with a colour contrasting strip at least 50 mm (2 in.) wide at both the riser and the tread.

d) Wading pool access should be gradual so that wheelchairs can access the pool area.

2) Colour Contrasting - **Figure 8.10(a)**:

a) shall indicate pool boundaries – a high contrast colour at the edge of the pool to define the edge of the tank:

b) may be used to indicate the path of travel to change facilities and around obstacles on the deck;

c) may be used to indicate stationary objects on the pool deck with a contrasting floor pattern/ colour or the item itself being brightly coloured. These items may include:

i) life guard chairs;

ii) starting blocks;

iii) tie off devices; and

iv) diving boards;

d) the pool tank shall be of a light colour and contrasting to the pool deck.

3) Lighting
   a) Light Fixtures at the pool shall be:
      i) selected and positioned to minimise reflected glare on the surface; and
      ii) positioned for easy maintenance and re-lamping.
   b) Natural daylight should be controllable to minimise glare off the surface of the water, especially from the south and west.
   c) Lighting levels at the pool, pool deck and change facilities shall be a minimum of 20 Lux (2 ft. candles).
4) Signage shall be:
   a) suitable for persons with low vision; and
   b) symbols wherever possible.
5) Pool Deck
   a) Swimming pools should be generally of 'Level deck design" to allow for easy access. Where up-stand edges are provided they should be a minimum of 205 mm (8 in.) and a maximum of 400 mm (15-3/4 in.) in height.
   b) All materials and finishes on the pool deck or paved area around the pool should be of firm non-slip material.
   c) Pool perimeter tiles should be non-abrasive to minimise skin damage.
   d) Adequate drainage should be provided on the deck to quickly remove water at all times.
   e) Drainage tiles, scuppers or trenches should be placed to minimise tripping hazards and have no openings greater than 13 mm (1/2 in.).

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audial Accessibility

Barriers and Obstacles

Police stations should accommodate all individuals whether they are members of the general public, detainees, members of council, or police staff. While all public areas need to be fully accessible, secure areas need only provisions for accessibility.

Except as specified in this section, all common use areas shall comply with sections *5.1 Access and Circulation, 5.2 Washroom Facilities, 5.3 Amenities, 5.4 Systems and Controls, 6.0 Visual Accessibility* and *7.0 Audible Accessibility*.

Design Requirements

1) Requirements in section *5.4.2 Emergency Exits, Fire Evacuation and Areas of Rescue Assistance* for areas of rescue assistance need not be applied under this section.
2) Elevators and stairs need not comply in multi-storey housing facilities where accessible cells or rooms, all common use areas serving and all public use areas are located on an accessible route.
3) Entrances used by the general public shall comply with section *5.1.8 Entrances*.
    a) Secured entrance doors and doorways are not required to have accessible door hardware if operated only by security personnel.
4) An accessible route shall be provided through security systems and entrances.
    a) Where security systems, such as metal detectors, do not allow for an accessible route, an adjacent route shall be provided which is accessible.
5) Non-contact visiting areas shall, where provided, have the following accessible elements on an accessible route:
    a) 5% of cubicles or counters, but not less than one, shall be accessible in conformance with section *5.3.6 Tables, Counters and Work Surfaces* on both the visitor and detainee side. This is not required if a non-contact visiting area does not serve an accessible cell or room.
    b) systems that allow communication through a solid partition or security glazing shall be accessible to both individuals using mobility aids and individuals who have difficulty bending.

   c) where telephone communication systems are provided, at least one shall be equipped with volume control.

6) A minimum of 2%, but not less than one cell shall be accessible:
   a) At least one of each type of special cell, such as orientation, protective custody etc. shall be accessible.
   b) A minimum of 2%, but not less than one general cell shall be equipped with audible emergency warning system, or permanently installed telephone with in the cell.
7) Where provided to serve accessible cells, the following elements or spaces shall be accessible and connected by an accessible route:
   a) all doors and doorways;
      i) secured entrances, doors and doorways only to be operated by security personnel need not be accessible;
   b) a minimum of one toilet and one bathing facility;
   c) a minimum of one drinking fountain;
   d) fixed or built in tables, counters or work surfaces;
   e) a minimum of one fixed bench;
   f) fixed or built in storage; and
   g) all controls intended for operation by detainees.
8) Accessible beds shall have manoeuvring space of at least 915 mm (36 in.) wide along one side.
9) Permanently installed telephones within cells shall have volume controls.
10) Visual alarms shall be provided where audible emergency warning systems serve occupants of cells.
   a) Visual alarms are not required where detainees are not allowed independent means of egress.

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audible Accessibility

Long Term Care Facilities & Senior's Housing

Barriers and Obstacles

Long-term care facilities try to provide a home-like environment for individuals who require long-term care. Senior housing allows individuals who need some assistance to live their lives with minimal support.

Design Requirements

1) Long-term facilities that cater to seniors or individuals with various disabilities shall be fully accessible.
2) Equipment and other components that provide support to individuals with physical disabilities or intellectual disabilities should be integrated as subtly as possible.
3) Within individual apartments, hallways to bedroom and bathroom doorways should be a minimum of 1065 mm (42 in.)

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audible Accessibility

Barriers and Obstacles

For seniors, people with varying disabilities and parents with small children, going to clinics and doctor's offices may be a regular activity. To make these visits quick and easy, all interior routes should be accessible and doors should allow for the free movement of persons in wheelchairs or pushing strollers.

Design Requirements

1) All facilities providing health care to the public should be fully accessible to seniors, persons with disabilities, and persons using mobility devices. These facilities include but are not limited to:
   - doctor's offices;
   - dental offices;
   - out-patient physiotherapists;
   - chiropractic clinics;
   - diagnostic centres; and
   - treatment centres.
2) All interior routes which may need to accommodate users of wheelchairs or other mobility aids should comply with section *5.1.4 Accessible Routes, Paths and Corridors*.
3) Doors should be in accordance with section *5.1.9 Doors*.

Related Sections

5.1.4 Accessible Routes, Paths and Corridors
5.1.9 Doors
5.1.11 Interior Routes

Barriers and Obstacles

The height of work surfaces and cooking and other appliances in typical kitchens may be too high for persons in wheelchairs or scooters to utilise. It is also important to provide enhanced lighting in areas such as over stoves or working surfaces where people, especially those with limited vision, may otherwise injure themselves.

Design Requirements

1) All kitchens, kitchenettes or counter areas used for food preparation should be made accessible with:
   a) a space of no less than 1930 mm (76 in.) between counters;
   b) a turning space of 1930 mm (76 in.) for wheelchairs and other mobility devices where kitchens have dead ends; and
   c) clear knee space of 750 mm (29 1/2 in.) wide by 480 mm (18 3/4 in.) deep by 680 mm (26 3/4 in.) high under counters.
2) Cupboards and pantries shall have:
   a) upper shelves no higher than 1370 mm (54 in.) from the floor;
   b) if base cupboards, a toe space no less than 150 mm by 230 mm (6 in. by 9 1/4 in.); and
   c) "D"-style handles mounted at:
      i) the bottom of upper cabinets; and
      ii) the top of base cabinets.
3) Side-by-side refrigerator and freezer units provide easier access for persons using mobility devices.
4) Cooking ranges should have:
   a) controls on front or side panels to avoid burns; and
   b) automatic off switches to control unattended burners.
5) A clear counter space of 305 mm (12 in.) wide should be provided on each side of cooking ranges for safe operation.
6) Microwaves should:
   a) be installed at counter height;
   b) have a clear space in front to allow easy transfer of food; and
   c) be larger models where possible.
7) Where hot water pipes below sinks may interfere with the space occupied by a person's legs, the pipes should be insulated.

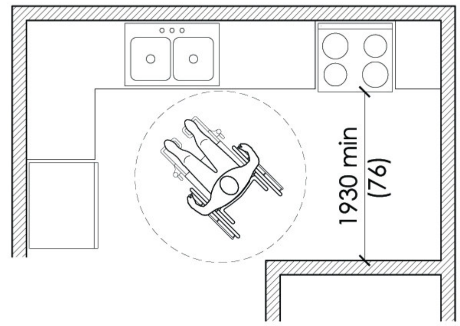


Figure 8.14(a)
"Dead End" Kitchen Layout

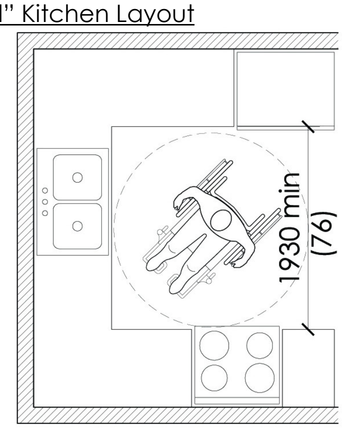


Figure 8.14(b)
"Dead end" Kitchen Layout

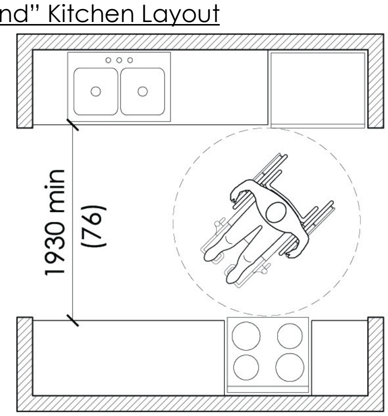


Figure 8.14(c)
"Galley" Forward Reach

8) Duplex receptacles should be mounted no higher than 1065 mm (42 in.) when located above the counter.
9) Additional lighting should be provided over the sink, cooking range, and work surfaces.

Related Sections

5.1.1 Space and Reach Requirements
5.1.4 Accessible Routes, Paths andCorridors
5.3.6 Tables, Counters and Work Surfaces
6.2 Lighting

Barriers and Obstacles

While residential bathrooms should comply with earlier sections of this document, some variations may occur.

Design Requirements

1) Residential bathrooms - **Figure 8.15(a)** - shall accommodate the use of mobility aids and commode chairs.
2) Where possible, space for wheelchair access to a shower should be used instead of a standard bathtub.
3) Where a bathtub is used:
   a) it should be a minimum of 1500 mm (59 in.) long – **Figure 8.15(a)**;
   b) a clear floor space of at least 750 mm (29 1/2 in.) in width shall be provided along the full length of the open side of the tub;
   c) a transfer seat shall be provided level with the tub rim:
      i) 380mm (15 in.) deep transfer seat is recommended; and
      ii) transfer seat should be provided at the opposite end of the bathtub as the controls;
   d) grab bars in compliance with section *5.2.10 Grab Bars* should be installed, however, it is often preferable to install such aids to suit a specific person's needs, after they have moved into the space.
4) Bathtubs and showers shall have non-slip surfaces in the standing area.

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audible Accessibility

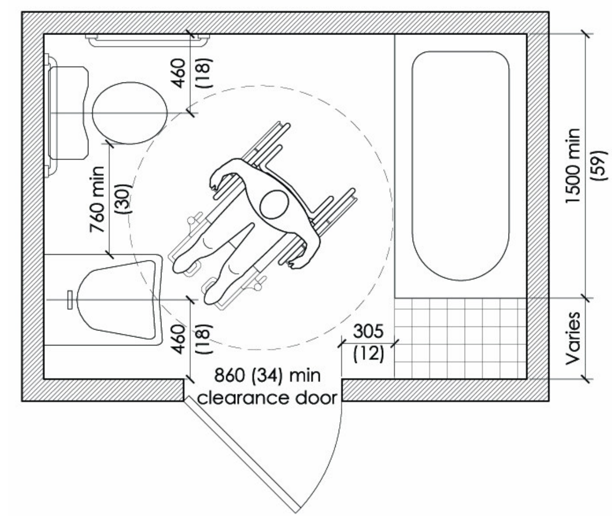


Figure 8.15(a)
Residential Bathroom

Barriers and Obstacles

A typical bedroom's area may not allow for ease of turning of mobility devices. It is also important to allow enough space for persons using mobility devices to transfer from aids to the bed.

Design Requirements

1) Provide enough turning space for persons using wheelchairs or scooters in the master bedroom at specific spots such as:
   - doorways;
   - closets; and
   - beside the bed.
2) Hardware on doors, closets, cabinet work, and windows should be easy to operate and not require fine finger control, tight grasping, pinching, or twisting of the wrist to operate.

Related Sections

5.1.4 Accessible Routes, Paths and Corridors
5.1.9 Doors
5.1.11 Interior Routes

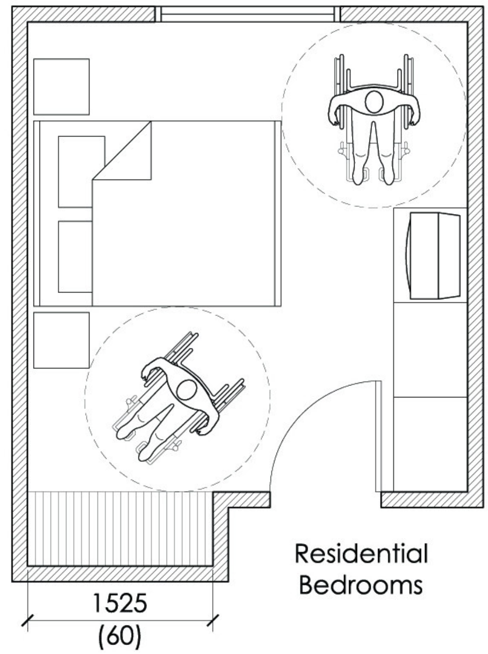


Figure 8.16(a)
Residential Bedroom

Barriers and Obstacles

Transportation is essential to all members of a community. Forms of transportation include:

- public bus;
- private bus;
- taxi;
- train; and
- airplane.

Design Requirements

1) Transit facilities serving one or more modes of transit, such as a GO station, should at all levels, facilities and amenities be accessible to all individuals
2) Train platforms or boarding platforms, where used, should allow individuals using mobility aids safe access.
3) Platform edges shall be marked with a continuous detectable warning surface in compliance with section 6.8 *Detectable Warning Surfaces*.
4) Platform and boarding service level lighting should be a minimum of 100 lux (10 ft. - candles).
5) Ticketing areas should have a minimum lighting level of 200 lux (20 ft.-candles).
6) Where special lifting devices are used to aid individuals using mobility aids, sufficient area should be provided for waiting passengers who use mobility aids.
7) Seating should be provided on platforms or close to boarding areas for seniors or individuals with limited stamina.
8) Bus shelters shall:
    a) be located on firm, level surface at the same level as the surrounding sidewalk or walkway;
    b) have a minimum clearance of 1220 mm (48 in.) on at least two sides of the shelter; and
    c) provide a clear view of oncoming traffic.
9) Surrounding street furniture shall not impede bus stops.

Related Sections

5.1 Access and Circulation
5.2 Washroom Facilities
5.3 Amenities
5.4 Systems and Controls
6.0 Visual Accessibility
7.0 Audible Accessibility

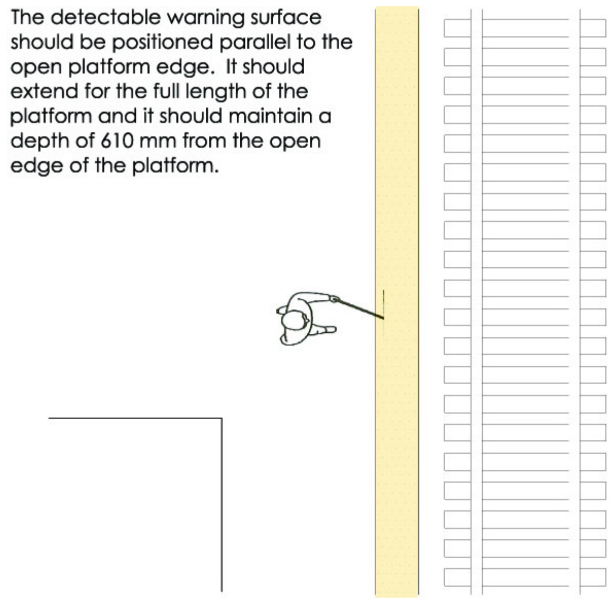


Figure 8.17(a)
Train Boarding Platform

Barriers and Obstacles

Air transportation is becoming more attainable with the rise of globalisation and increased demand from the developing world. Airports are becoming a hub for diversity, with regard to cultural expectations, age, language, physical abilities and much more.

Such a specialised building obviously takes great planning on many levels, and issues pertaining to universal access can be further affected by developing technologies (e.g., handrails that can communicate through sound).

Design Requirements

In addition to related sections, it is suggested that airports incorporate:

1) amplified handsets at ticket and service counters;
2) visual paging systems along with the audible paging system;
3) closed caption decoders at all information kiosks;
4) facilities for guide dogs, such as dog runs; and
5) access to wheelchair lifts when boarding a ground loaded aircraft.

Related Sections

5.0 Physical Accessibility
6.0 Visual Accessibility
7.0 Audible Accessibility

Appendices

Appendix A - Acknowledgements

The City of Hamilton would like to acknowledge and thank all of the individuals who have participated in the preparation of the newly revised City of Hamilton's Barrier-Free Design Guidelines 2006.

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Mayor Larry Di Ianni
Office of the Mayor

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Councillor Bob Bratina
WARD 2

Councillor Bernie Morelli
WARD 3

Councillor Sam Merulla
WARD 4

Councillor Chad Collins
WARD 5

Councillor Tom Jackson
WARD 6

Councillor Bill Kelly
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Councillor Terry Whitehead
WARD 8

Councillor Phil Bruckler
WARD 9

Councillor Maria Pearson
WARD 10

Councillor David Mitchell
WARD 11

Councillor Murray Ferguson
WARD 12

Councillor Art Sampson
WARD 13

Councillor Dave Braden
WARD 14

Councillor Margaret McCarthy
WARD 15

Appendix A - Acknowledgements

Barrier-Free Design Guidelines 2006 Committee

The City of Hamilton would like to extend a very special thank you to the Barrier-Free Design Guidelines Committee as listed below. This group met on a monthly basis and dedicated much of their personal time on this project. Their assistance was very much appreciated and their involvement led to a marked improvement to the final product.

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Consultants:

R.F. Lintack Architect Incorporated

Appendix A - Acknowledgements

<u>City of Hamilton Advisory Committee for Persons with Disabilities</u>

In addition, the City of Hamilton would like to extend appreciation to the City of Hamilton Advisory Committee for Persons with Disabilities who provided input during the preparation of the guidelines, and who continue to provide valuable advice to the City on behalf of persons with disabilities.

Tim Nolan, Chair

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John Fuca

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Appendix B – Bibliography

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REQUEST FOR CHANGE(S) TO THE
CITY OF HAMILTON
BARRIER-FREE DESIGN GUIDELINES

Mail to: Corporate Services Dept.
Customer Service, Access & Equity
Attention: BARRIER-FREE DESIGN GUIDELINES
City of Hamilton
71 Main Street West
Hamilton, Ontario, L8P 4Y5

Name: ________________________ Phone: ( ) ________________

Address: ____

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Company or Organization: ______________________________

Email Address: ______________________________________

PROPOSED CHANGE:
PLEASE INCLUDE SECTION, SUB-SECTION, AND PAGE NUMBER IN ORDER TO ALLOW US TO ACCURATELY LOCATE THE REQUESTED REVISION. PLEASE INCLUDE THE REVISED WORDING OR DIMENSIONS OR PROVIDE A DETAILED SUMMARY OF YOUR SUGGESTION. THIS MAY ALSO BE ATTACHED SEPARATELY. THE CITY OF HAMILTON WILL NOT GUARANTEE THAT THESE COMMENTS WILL BE INCLUDED IN THE NEXT VERSION OF THIS GUIDELINE. WE WILL REVIEW THESE COMMENTS ON AN ANNUAL BASIS AND WILL TAKE YOUR COMMENTS INTO CONSIDERATION WHEN UPDATING. THANK YOU FOR YOUR INTEREST IN IMPROVING OUR BARRIER-FREE GUIDELINES.

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(attach additional information if required)