Building Standards Guide

Promoting construction of safe, healthy, habitable buildings

Barrier-Free Design

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Saskatchewan

This guide was prepared with the participation and assistance of the following:

- Saskatchewan Human Rights Commission
- Ministry of Social Services
- Barrier-free Saskatchewan

Building Standards and Licensing Branch 100 – 1855 Victoria Avenue Regina, Saskatchewan S4P 3T2 (306) 787-4113 Phone (306) 798-4172 Fax building.standards@gov.sk.ca www.saskatchewan.ca/buildingstandards	Building Standards Advisory Barrier-free Accessibility April 2019 Original approved and signed by: Wm. Hawkins, Executive Director/Chief Building Official

This advisory is published by the Saskatchewan Ministry of Government Relations for purposes of providing information to users on the topic contained herein. In case of conflict between *The Uniform Building and Accessibility Standards Act* (the UBAS Act) and Regulations, the National Building Code of Canada (NBC) 2015, CSA B651-12 "Accessible Design for the Built Environment" and this advisory, provisions of the Acts, Regulations, NBC 2015, and CSA B651 shall apply.

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Introduction

This guide is intended to provide advice to owners, building occupants, designers, building officials, and other stakeholders regarding the various requirements for barrier-free design applicable to buildings in Saskatchewan. While every attempt has been made to be as thorough as possible, this guide is not intended to address every situation which a building owner may encounter; it is strongly recommended that building owners contact their local municipality to discuss specific situations.

This guide has been developed through collaboration between officials from the Ministry of Government Relations, the Ministry of Social Services, and the Saskatchewan Human Rights Commission.

Scope

Barrier-free is defined in the National Building Code of Canada (NBC) 2015 as "a building and its facilities that can be approached, entered and used by persons with physical or sensory disabilities."

This guide represents the minimum accessibility standards for accessibility in buildings as legislated by *The Uniform Building and Accessibility Standards Act* (the UBAS Act) and as referenced in the NBC.

The minimum accessibility standards are found in the NBC. Building owners are given the option within The NBC to use the requirements of CSA B651 "Accessible Design for the Built Environment" (CSA B651) for compliance. Either the NBC requirements or the CSA B651 requirement for the design and installation of barrier-free building components will demonstrate compliance with the NBC.

The three appendices in this guide can be used to support a review of barrier-free requirements for site specific conditions.

Definitions

Appeal Board – The Saskatchewan Building and Accessibility Standards Appeal Board. (The UBAS Act)

Approved – Acceptable to the authority having jurisdiction (CSA B651)

Appropriate local authority – Means the local authority that has jurisdiction over the geographical area in which a building is or is to be situated. (The UBAS Act)

Authority having jurisdiction – When used in the Code, means the appropriate local authority or a building official appointed by the appropriate local authority. (The UBAS Regulations)

In Saskatchewan, this includes:

- The Government of Saskatchewan referred to as the 'Crown' as defined by the UBAS Act
- Municipalities who are the 'local authority' as referenced in the UBAS Act
- A regional park authority within *The Regional Parks Act, 2013*
- Park land within the meaning of *The Parks Act,* and the Global Transportation Hub

Barrier-free – Means a building and its facilities can be approached, entered, and used by persons with physical or sensory disabilities. (NBC)

The Building and Accessibility Standards Administration Regulations – Regulates the licensing of building officials, the licence classifications of building officials, and the different types of buildings each building official classification is authorized to inspect. (The BASA Regulations)

Owner – Means any person, firm or corporation that controls the property under consideration. (The UBAS Act)

The Uniform Building and Accessibility Standards Act – Governs building construction, accessibility, and energy standards in Saskatchewan. (The UBAS Act)

The Uniform Building and Accessibility Standards Regulations – Adopts the National Building Code and the National Energy Code in Saskatchewan, including Saskatchewan specific amendments. (The UBAS Regulations)

Legislative and Regulatory Framework

The Uniform Building and Accessibility Standards Act

The UBAS Act and associated Regulations provide the framework for which buildings are constructed or renovated in Saskatchewan, including when accessibility and energy efficiency standards apply. This framework is guided by the five principles:

- Building owners are responsible for compliance.
- Municipalities are responsible for administration and enforcement of the UBAS Act in their jurisdiction.
- The Government of Saskatchewan is responsible for the legislative, regulatory and high level policy framework.
- Building officials work for municipalities.
- Professional designers and contractors work for building owners.

No person who is required to comply with the UBAS Act and the Regulations shall fail to comply with the NBC, as adopted by Saskatchewan, that is in force at the time the permit for the work was issued.

The Uniform Building and Accessibility Standards Regulations

The UBAS Regulations provide for the adoption of the NBC, which includes accessibility standards, for the province of Saskatchewan. The edition of the NBC that is applicable to a building is the edition of the NBC which is in effect on the day the permit for construction is issued. The UBAS Regulations may also contain any amendments to the NBC which are specific to buildings in Saskatchewan.

Prior to 2018, new editions of the NBC were adopted by Order in Council on specific dates; going forward, new editions of the NBC will be adopted one year after the date of publication by the National Research Council of Canada. To determine which edition was in effect for a specific building on the date of construction/renovation, please contact your municipality or Building Standards and Licensing Branch.

The Building and Accessibility Standards Administration Regulations

The BASA Regulations provide the framework for the licensing of building officials, including the licence classifications of building officials, and the different types of buildings each building official classification is authorized to inspect.

Roles and Responsibilities

The UBAS Act provides the framework for ensuring buildings in Saskatchewan are constructed in a safe, healthy, habitable manner. An overview of the roles and responsibilities of each party in the construction process are described here.

Owner

An owner is defined in the UBAS Act as "any person, firm, or corporation which controls the property under consideration". As the owner of a building controls the property and is responsible for employing contractors and design professionals, the building owner is ultimately responsible for compliance with the requirements adopted by the UBAS Act, including accessibility, energy efficiency, and minimum building standards.

Work done or not done by a municipality or building official to enforce the requirements of the UBAS Act or the issuance of a permit by a local authority in violation of the UBAS Act does not relieve a building owner from their obligation to comply with the requirements of the UBAS Act.

Local Authority

A local authority (including a municipality) is responsible for enforcing the UBAS Act, associated Regulations, and all provisions of the NBC, including barrier-free standards which are applicable to a building. Local authorities often use bylaws to administer building standards but the lack of a building bylaw does not absolve a local authority from its responsibility to enforce the UBAS Act.

Government of Saskatchewan

The Government of Saskatchewan is responsible for establishing the legislative framework, high-level policy development, licensing of building officials, and providing support to stakeholders. The Ministry of Government Relations is assigned responsibility for administering the UBAS Act and associated Regulations. The ministry provides support to owners, industry, local authorities, building officials, the fire service, and other code users on the application of the NBC, the National Energy Code of Canada for Buildings, and accessibility standards.

The Government of Saskatchewan is also responsible for supporting the Saskatchewan Building and Accessibility Standards Appeal Board, which hears appeals of building official orders and requests from building owners for exemptions from accessibility standards.

Building Official

A building official is appointed by and works for a local authority to provide plan review, inspection, and enforcement services of the minimum standards required by the UBAS Act. Building officials must be licensed by the Government of Saskatchewan prior to providing building official services.

Building officials have the following powers under the UBAS Act:

- entering a building at a reasonable hour;
- ordering the production of documents, tests, certificates, etc. related to a building;
- taking material samples;
- issuing notices to owners that order actions within a prescribed time;
- eliminating unsafe conditions;
- completing actions, upon an owner's non-compliance with an order, and adding the expenses incurred to the tax payable on the property; and,
- obtaining restraining orders.

Design Professional

A design professional (a licensed architect or professional engineer) is required to provide the design or design review of large buildings or a specific building component. Design professionals provide services either directly or indirectly to building owners. All buildings falling within the scope of Part 3 of the NBC must have the design or design review completed by a design professional.

Smaller buildings (i.e. those that are three storeys or less and less than 600 m^2 in building area an of specific occupancy classification) may be designed by a competent person acceptable to the local authority. A competent person is a person who is fluent in NBC requirements found in Part 9 of the NBC and is experienced in building design.

Buildings which are subject to the accessibility standards must have the accessibility components designed by a design professional, or have the design reviewed by a design professional.

Constructor

A building constructor, including a contractor and sub-trades, are employed by a building owner to complete construction and/or renovation of buildings. All work must be completed to comply with the design of the building and in compliance with the NBC and, if applicable, barrier-free design/construction.

Background

The distinct needs of people with disabilities has continued to gain awareness in recent decades as a human rights issue. Building owners need to ensure that their structures do not present unnecessary barriers to all people who will be using those structures, including individuals with disabilities. With the exception of personal residences, nearly all new buildings in Saskatchewan are required to meet minimum accessibility standards found in the NBC.

In Saskatchewan, the adoption of the 1985 edition of the NBC, effective June 6, 1988, provided the first provincial building code which outlined provisions for barrier-free design of structures. Many of these initial provisions are similar to provisions in more recent editions of the NBC. As awareness of the needs of individuals with disabilities continues to grow, it is expected future editions of the NBC will continue to incorporate best building practices to address these needs.

Legislation and Regulations

Minimum construction standards for buildings in Saskatchewan is governed by the legislative requirements of the Government of Saskatchewan. The UBAS Act, the UBAS Regulations, and the NBC 2015 establish the minimum barrier-free requirements.

The UBAS Act provides for the adoption of the NBC, which is the minimum standard applicable to the design, construction, renovation, alteration and addition to buildings, which may involve barrier-free requirements. The UBAS Regulations provide for the particular edition of the NBC which applicable to a building as well as for any Saskatchewan specific amendments.

The NBC, in combination with amendments made under the UBAS Regulations, provide the owner of the building the minimum parameters for compliance with the legislative requirements of the Province of Saskatchewan.

The Appeal Board

The Appeal Board is delegated authority under the UBAS Act to allow exemptions to accessibility standards where a building owner is able to demonstrate (show evidence) to the Appeal Board's satisfaction that at least one of the following four conditions has been met:

1. Compliance with provincial accessibility standards would cause undue hardship to the building owner;
2. Compliance with provincial accessibility standards would prevent optimum utilization of the land;
3. Compliance with provincial accessibility standards is impractical or inappropriate; or,
4. The building owner submits a proposal for accessibility which is equal to or better than standards required or intended by accessibility standards.

It is important to note that decisions of the Appeal Board are subject to review by the Saskatchewan Human Rights Commission. As such, in a situation where the Appeal Board has granted an exemption from accessibility standards to a building owner, this decision could be appealed to the Saskatchewan Human Rights Commission to have the exemption overturned and to have the accessibility standards reinstated.

National Building Code Requirements for Barrier-free Design

The NBC Division B, Section 3.8. accessibility includes the primary requirements for barrier-free design of buildings. It should be noted that other sections of the NBC provide requirements for when barrier-free design is required; however, the Saskatchewan Human Rights Commission has the authority to override minimum requirements found within the NBC and place stricter guidelines for when barrier-free designs are to be applied. For example, in a situation where a ramp slope may meet the minimum design criteria of the NBC but is found to be impractical for a person with a disability to use, the Saskatchewan Human Rights Commission can require a different ramp slope to be applied.

It should be noted that within NBC Division B, Section 3.8., there is a subsection that allows for compliance with CSA Standard B651 – "Accessible Design for the Built Environment". The NBC does outline that the owner is able to choose compliance from either NBC Division B, Subsection 3.8.3. or CSA-B651 in its entirety but not a combination of provisions from both documents.

For example, if a lavatory is to be installed, the rim height could not exceed 865 mm from the floor in accordance with NBC Division B, Article 3.8.3.15., whereas in CSA B651 the rim height of the lavatory has a range of 810 mm and 860 mm. In this example, the NBC does not have a minimum height but a set maximum, whereas the CSA B651 has a range of height that the lavatory is allowed.

Below is a chart (Figure 1) showing the corresponding Articles of the NBC with CSA B651:

Barrier-free Application	NBC Provision	Applicable CSA B651 Provisions
Interior accessible routes	3.8.3.2.	4.3 and 5.1
Exterior accessible routes	3.8.3.3.	8.2.1 to 8.2.5 and 8.2.7
Passenger pickup areas	3.8.3.4.	9.3
Ramps	3.8.3.5.	5.3 and 5.5
Doors and doorways	3.8.3.6.	5.2
Passenger-elevating devices	3.8.3.7.	5.6.2
Operating controls	3.8.3.8.	4.2
Signage	3.8.3.9.	4.5 and 9.4
Drinking fountains	3.8.3.10.	6.1
Washroom facilities	3.8.3.11 to 3.8.3.15.	6.2 and 6.3
Bathing facilities	3.8.3.16. and 3.8.3.17.	6.5
Communication	3.8.3.18. and 3.8.3.20.	6.6
Counters	3.8.3.19. and 3.8.3.20.	6.7.1
Spaces in seating areas	3.8.3.21.	6.7.2

Figure 1 – NBC and CSA B651 Barrier-Free Application Chart

The Uniform Building and Accessibility Act and Regulations Requirements for Barrier-free Design

The UBAS Act and Regulations provide the framework for barrier-free design in Part III, subsection 10(1) which states:

> "Subject to subsection (2), the owner of each building in Saskatchewan shall ensure that the building meets the accessibility standards."

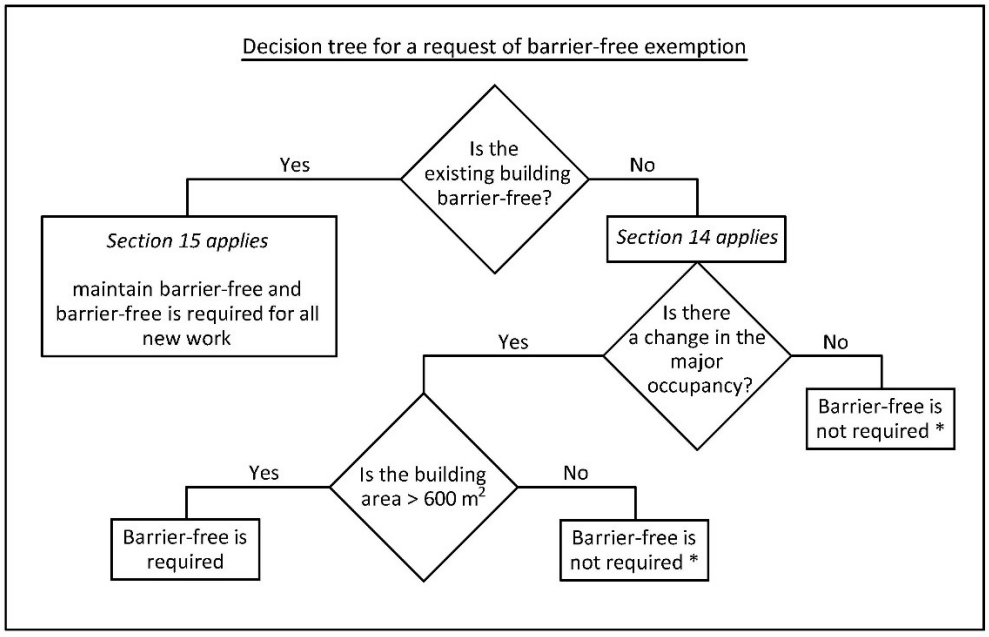
While subsection 10(1) outlines the need to comply with barrier-free requirements for new and extensively renovated buildings, owners need to consider if their building is exempt from barrier-free design. The NBC allows for exceptions from application of barrier-free requirements in some cases (NBC Division B, Article 3.8.2.1.). The following buildings are not required to comply with barrier-free design:

- houses (detached, semi-detached, houses with a secondary suite, duplexes, triplexes, townhouses, row houses, and boarding houses);
- buildings of F1 occupancy; or,
- buildings that are not intended to be occupied on a daily or full-time basis, including automatic telephone exchanges, pumphouses, and substations.

The UBAS Act also provides some exceptions from the need to comply with barrier-free requirements. Under the UBAS Act, Part 1, clause 2(1)(c)

> ""existing building" means a building:
>
> i) on which construction was commenced or completed prior to June 6, 1988; or
>
> ii) for which a building permit was issued pursuant to a bylaw of the appropriate local authority prior to June 6, 1988."

Figure 2 illustrates the process for determining barrier-free compliance for design in existing buildings:



* A complaint lodged on the basis of discrimination under The Saskatchewan Human Rights Code, 2018 could overrule this exemption

Figure 2 – Compliance Path with Existing Buildings

Saskatchewan has made amendments to NBC Division B, Section 3.8. through the UBAS Regulations. For amendments to the NBC, the UBAS Regulations has added two articles to NBC Division B, Section 3.8. the first amendment to NBC Division B, Section 3.8. is Article 3.8.2.12., which states:

1) Notwithstanding Clause 3.8.2.8.(2)(a), in a building of residential occupancy, except where dwelling units are intended to be individually controlled by separate owners, at least the greater of
   a) one, or
   b) 5%

   of the suites required to be accessible by a barrier-free path of travel shall be barrier-free in conformance with Article 3.8.3.22. (see Article 9.5.2.3.).

The second amendment for NBC Division B, Section 3.8. is Article 3.8.3.22., which state requirements for the barrier-free design of the suites within residential occupancies.

1) Except as provided in this Article, suites within a residential occupancy that are required to be barrier-free shall conform to the applicable requirements of this Article.
2) In washrooms there shall be: (Figures 3a & 3b)
   a) a floor space of at least 1500 mm and 1500 mm with no encroachment other than the water closet,
   b) a door that:
      i) swings outward, unless sufficient room is provided within the washroom to permit the door to be closed without interfering with a wheelchair,
      ii) slides, or
      iii) is a solid folding door.
   c) a water closet that conforms to Clauses 3.8.3.11.(1)(d) and (e) and Sentence 3.8.3.13.(1),
   d) a lavatory that conforms to Article 3.8.3.15.,
   e) where a bathtub is provided, a bathtub equipped with:
      i) faucet handles of the lever type without spring loading,
      ii) a pressure equalizing valve or an automatic thermostatic mixing valve controlled by a lever or other device operable with a closed fist from the seated position,
      iii) a recessed soap holder that is within reach of a person in a seated position,
      iv) an integral slip-resistant bottom,
      v) grab bars that have:
         A) a horizontal section not less than 900 mm in length mounted on the back wall not less than 150 mm nor more than 300 mm above the rim of the bathtub, and
         B) a vertical section continued from the horizontal section to rise not less than 600 mm from the horizontal section and located not less than 275 mm nor more than 325 mm from the end of the bathtub at which the controls are located, and
      vi) where a shower is provided, a shower equipped:
         A) without shower doors, and
         B) with a hand-held shower head with not less than 1500 mm of flexible hose, located adjacent to the faucets and controls so that it can be reached from the seated position and equipped with a support so that it can operate as a fixed shower head.
3) in kitchens there shall be:
   a) a clearance of not less than 1500 mm between counters and all opposing base cabinets, countertops, appliances or walls, and
   b) a clear turning circle of not less than 1500 mm in diameter below countertop height.
4) in sleeping rooms there shall be a clear turning circle of not less than 1500 mm in diameter on one side of the bed.
5) balconies shall be barrier-free and shall conform to the size requirements of Sentence 3.3.1.7.(4).

6) kitchen sinks, laundry sinks, and other types of sinks shall have:
   a) faucet handles of the lever type without spring loading,
   b) no sharp edges or rough corners, and
   c) all exposed pipes 1200 mm or less above the floor insulated or otherwise protected where they may constitute a burn hazard.

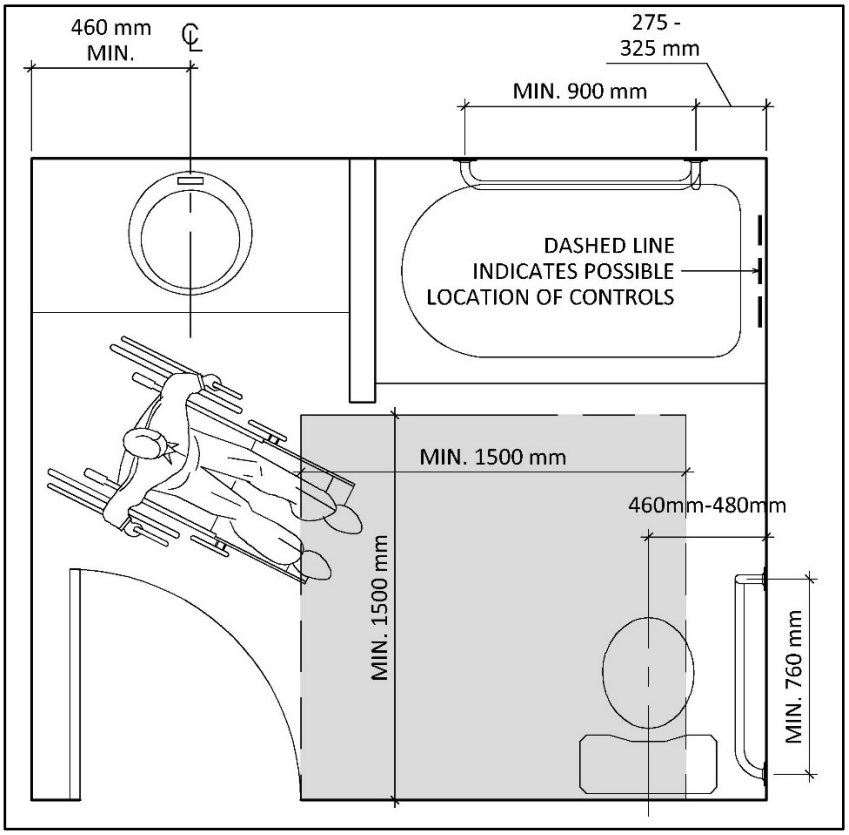


Figure 3a – Washroom Requirements for Sask Amendments

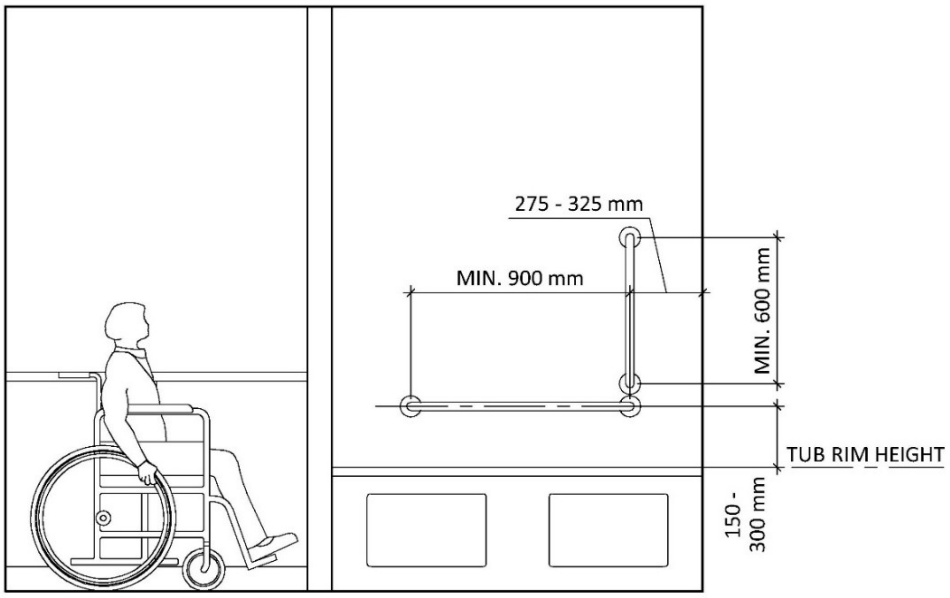


Figure 3b – Washroom Requirements for Saskatchewan Amendments

National Building Code Accessibility Requirements

NBC Division B, Section 3.8. – Accessibility

NBC Division B, Section 3.8. is the basis for applying barrier-free design to buildings. Specifically, NBC Division B, Subsection 3.8.2. – 'Application' provides the parameters for the application of the design requirements for either NBC Division B, Subsection 3.8.3. or CSA B651 for compliance.

The following requirements must be met for compliance with the NBC and are prerequisites to the design requirements for both NBC Division B, Subsection 3.8.3. and CSA B651:

- Exceptions
- Entrances
- Areas Requiring a Barrier-Free Path of Travel
- Access to Storeys Served by Escalators and Moving Walks
- Access to Parking Areas and Exterior Passenger-Loading Zones
- Controls
- Power Door Operators
- Plumbing Facilities
- Assistive Listening Devices
- Signs and Indicators
- Counters and Counters for Telephones
- Residential Occupancies (Saskatchewan Amendment)

Exceptions (NBC Division B, Article 3.8.2.1.)

Exemptions for the application of barrier-free requirements are provided in NBC Division B, Article 3.8.2.1. – Exceptions, in addition to the exemptions provided in the UBAS Act and Regulations (see page 13). The NBC barrier-free application is to all buildings except for:

- houses (detached, semi-detached, houses with a secondary suite, duplexes, triplexes, townhouses, row houses and boarding houses),
- F1 occupancy buildings, and
- buildings not intended to be occupied on a daily or full-time basis (i.e. telephone exchanges, pump houses, substations, etc.).

Entrances (NBC Division B, Article 3.8.2.2.)

Entrances are a basic requirement of all buildings constructed, therefore having an accessible entrance is key for compliance of the NBC. Below are the requirements for the NBC with respect to entrances.

There shall be at least 50% of all entrances to a building shall be barrier-free which shall lead from:

- the sidewalk level, outdoors, or
- a ramp complying to the design requirements (see page 27 for design compliance).

In addition to the requirements listed above, any entrance that is on the first storey or in a storey that has a barrier-free path of travel where there is no other access to that suite shall have a barrier-free entrance. This applies to the following suites of occupancy that is the following:

- Assembly (theatres, arenas, clubs, restaurants, etc.)
- Business and Personal Services (banks, offices, dental/medical offices, etc.)
- Mercantile (markets, shops, stores, etc.)

All entrances shall meet the design requirements (see page 34 for design compliance).

Where there is more than one doorway at an entrance, only one doorway is required to meet the design requirements.

When there is a walkway or pedestrian bridge connecting two barrier-free storeys in different buildings, the path of travel from one storey to the other storey shall be barrier-free.

Areas Requiring a Barrier-Free Path of Travel (NBC Division B, Article 3.8.2.3.)

A barrier-free path of travel shall be provided for the entrance storey and all other normally occupied floor areas that are served by an elevator, or other such passenger elevating device (escalator, inclined moving walk, etc.).

Note: There are some requirements for those floor areas that are above or below the first storey in a building that is not sprinklered throughout and also contains a barrier-free path of travel. (Refer to NBC Division B, Article 3.3.1.7. – Protection on Floor Areas with a Barrier-Free Path of Travel).

There are some exemptions for barrier-free paths of travel. The following areas are not required to have the barrier-free path of travel:

- service rooms,
- elevator machine rooms,
- janitor's rooms,
- service spaces,
- crawl spaces,
- attic or roof spaces,
- floor levels not served by a passenger elevating device,
- high-hazard industrial occupancies (distilleries, grain elevators, waste paper processing plants, etc.)
- portions of floor areas in an assembly occupancy (theatres, arenas, clubs, restaurants, etc.) where there are no paths of travel serving spaces designated for wheelchair use,
- suite of residential occupancy that are not on the same level as the entry level to the suite,
- within the suite of residential occupancy that has not been by the authority having jurisdiction to be accessible for use by persons with disabilities, or
- floor areas that are not on the same level as the entry level, provided that any amenities that are on the raised or sunken level are accessible on the entry level that has a barrier-free path of travel.

Finally, the requirement for a barrier-free path of travel applies to assembly occupancies (theatres, arenas, clubs, restaurants, etc.) that have a minimum required number of wheelchair accessible seats (see page 89 for design requirement and clarification).

Access to Storeys Served by Escalators and Moving Walks (NBC Division B, Article 3.8.2.4.)

Any building that has an escalator or inclined moving walk that provides access to any level above or below the entry level shall have an interior barrier-free path of travel on those levels. In addition, there shall be appropriate signs indicating which levels have barrier-free access.

Access to Parking Areas and Exterior Passenger-Loading Zones (NBC Division B, Article 3.8.2.5.)

One key component to barrier-free design is the access from passenger loading zones or parking areas. The following requirements are needed for barrier-free compliance:

- A barrier-free path of travel must be provided between an exterior parking area and a barrier-free entrance.
- Where an elevator serves one or more indoor parking levels, a barrier-free path of travel is required to a building where there are barrier-free paths of travel within, and
- Exterior passenger-loading zones shall comply with the design requirements. (see page 25)

Controls (NBC Division B, Article 3.8.2.6.)

All controls which are designed to be used by the occupants of the building shall conform to the design requirements listed in NBC Division B, Subsection 3.8.3. – Design including, but not limited to:

- thermostats,
- electrical switches,
- door hardware,
- faucets, etc.

Power Door Operators (NBC Division B, Article 3.8.2.7.)

Every door that that is part of a barrier-free path of travel, including interior doors of vestibules, shall be equipped with a power door operator that complies with NBC Division B, Subsection 3.8.3. or CSA B651, allowing the person to activate the opening of the door in the intended direction of travel in the following locations:

- hotels,
- any building of B2 occupancy (hospitals, nursing homes with treatment, etc.),
- a building of Group A (theatres, arenas, clubs, restaurants, etc.), Group B, Division 3 (group homes, respite centres, nursing homes without treatment, etc.), Group D (banks, offices, dental/medical offices, etc.) or Group E (markets, shops, stores, etc.) major occupancy more than 500 m^2 in building area. If the area of an individual suite is less than 500 m^2 and there is no access from the remainder of the building, this requirement does not apply.

Only the active leaf of a multiple leaf door in a barrier-free path of travel shall need to comply with the requirements listed above.

Plumbing Facilities (NBC Division B, Article 3.8.2.8.)

Washrooms are required to be barrier-free when they are installed in a storey where a barrier-free path of travel is required.

Washrooms are not required to be barrier-free when:

- located in a suite of residential occupancy, or a suite of care occupancy,
- other barrier-free washrooms are provided on the same floor area within 45 m (approximately 148 feet),
- located in an individual suite that is:
  - business and personal services (banks, offices, dental/medical offices, etc.), mercantile (markets, shops, stores, etc.), or industrial occupancy (repair garage, factories, salesrooms, warehouses, etc.),
  - less than 500 m^2 in area, and
  - completely separated from the remainder of the building, without any access from one suite to another.

At least one water closet (toilet) is required to be barrier-free and provided in the entrance storey unless:

- there is a barrier-free path of travel to a barrier-free water closet somewhere else in the building, or
- it is in a dwelling unit.

Where alterations are made to an existing building, a universal washroom may be an alternative to facilities normally required to meet the design requirements found on page 56. This option could benefit owners of existing buildings which may have insufficient area to accommodate the design requirements for the barrier-free plumbing facilities in existing washrooms.

Lavatories that are installed in barrier-free washrooms shall meet the design requirements. (see page 69)

Where the following items are installed, at least one shall comply with the barrier-free requirements:

- water closet stall/enclosure in a barrier-free washroom, (see page 64)
- urinals in a barrier-free washroom, (see page 66)
- mirror in a barrier-free washroom, (see page 69) and
- drinking fountains. (see page 52)

Except for suites of either care or residential occupancy, where showers are provided in a building at least one shower of a group of showers shall meet the requirements of barrier-free access. (see page 74)

Where a bathtub is installed in a suite of residential occupancy that is to be barrier-free accessible, it shall meet the barrier-free design requirements. (see page 78)

Assistive Listening Devices (NBC Division B, Article 3.8.2.9.)

In a building of assembly occupancy, all classrooms, auditoria, meeting rooms, and theatres with an area of more than 100 m^2 shall be equipped with an assistive listening device. (see page 82)

Signs and Indicators (NBC Division B, Article 3.8.2.10.)

Signs that comply with the requirements of NBC Division B, Section 3.8. (see page 49) shall be installed in the following locations:

- barrier-free entrances,
- barrier-free washrooms,
- barrier-free showers,
- barrier-free elevators,
- barrier-free parking spaces, and
- facilities for persons with hearing disabilities.

Where a washroom is designed to accommodate persons with physical disabilities in a storey where a barrier-free path of travel is required, signs shall be provided to indicated the location of the barrier-free facilities.

Counters and Counters for Telephones (NBC Division B, Article 3.8.2.11.)

- Every counter more than 2 m long at which the public is served shall comply with Subsection 3.8.3.
- Built-in shelves and counters provided for public telephones shall comply with Subsection 3.8.3.

Residential Occupancies (The UBAS Regulations, Appendix, Article 3.8.2.12.)

1) Notwithstanding Clause 3.8.2.8.(2)(a), in a building of residential occupancy, except where dwelling units are intended to be individually controlled by separate owners, at least the greater of
   a) one, or
   b) 5%
   of the suites required to be accessible by a barrier-free path of travel shall be barrier-free in conformance with Article 3.8.3.22. (see Article 9.5.2.3).

   Clause 3.8.2.8.(2)(a) of Division B is amended by adding the words “except as required in Article 3.8.2.12.” after “a suite of residential occupancy or a suite of care occupancy”.

Barrier-free Design Requirements (NBC Division B, Subsection 3.8.3. & CSA B651)

Barrier-free design requirements apply to all buildings except the following:

- detached houses, semi-detached houses, houses with a secondary suite, duplexes, triplexes, townhouses, row houses, and boarding houses,
- buildings of Group F, Division 1 major occupancy – high-hazard industrial occupancy (i.e. chemical manufacturing/processing plant, distilleries, etc.), and
- buildings not intended to be occupied on a daily or full-time basis, including automatic telephone exchanges, pump houses, and substation.

As mentioned earlier in this guide, the UBAS Act and Regulations outline other buildings that the barrier-free design requirements are to be applied to, refer to page 13 for clarification.

For the purposes of this guide each heading represents the applicable Code requirements and is in numerical order as outlined in the NBC (see Figure 1 on page 13 for clarification) the both the NBC and CSA B651 requirements will be shown for clarity in illustrations.

Barrier Free Path of Travel

NBC Division B, Article 3.8.3.2. – Barrier-Free Path of Travel & Article 3.8.3.3. – Exterior Walks

A barrier-free path of travel is permitted to include ramps, passenger elevators or other platform equipped passenger-elevating devices to overcome any difference in level.

Except for doors and doorways, the unobstructed width of a barrier-free path of travel shall not be less than 920 mm (36 inches). The width of a barrier-free path of travel that is more than 30 m long shall be increased to not less than 1500 mm for a length of 1500 mm at intervals not exceeding 30 m in length. (see Figure 4)

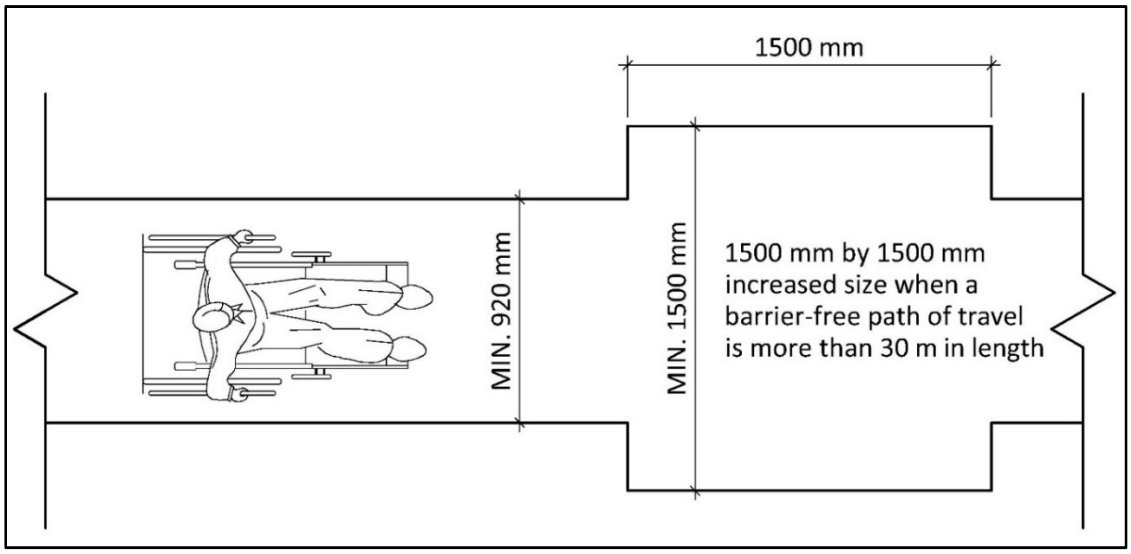


Figure 4 – Barrier-Free Path of Travel Increased Area

Other requirements for barrier-free paths of travel include the following, specifically relating to the surfaces shall:

- have no opening that will permit the passage of a sphere more than 13 mm in diameter (Figure 5a),
- have any elongated opening oriented approximately perpendicular to the direction of travel (Figure 5b),
- be stable and slip-resistant,
- have a cross slope no steeper than 1 in 50 (Figure 6),
- be beveled at a maximum slope of 1 in 2 at changes in level between 6 mm and 13 mm (Figure 7), and
- be provided with sloped floors or ramps at changes in level more than 13 mm.

Note that any changes in level greater than 13 mm should be handled with sloped floors or ramps. (see 'Ramps' on page 27)

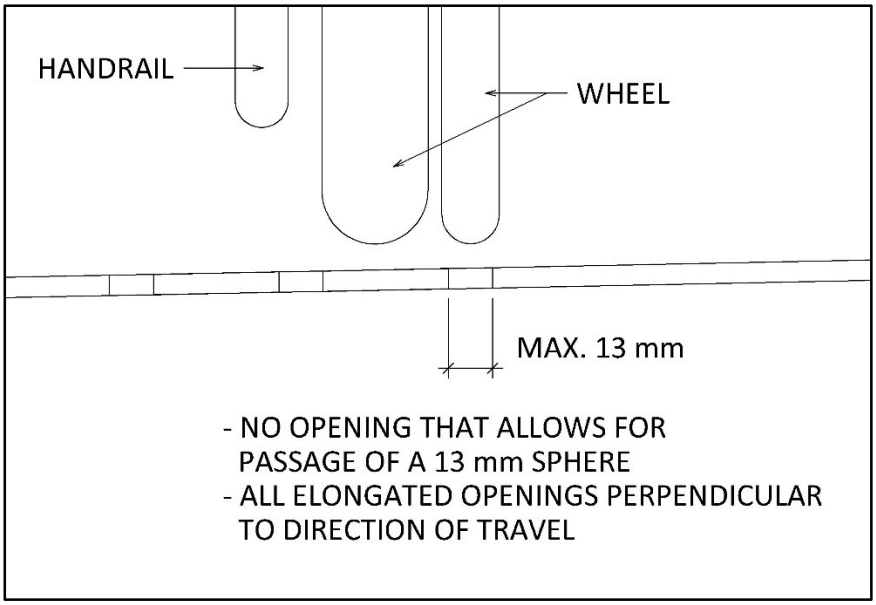


Figure 5a – Allowable Openings in a Barrier-Free Path of Travel Surface

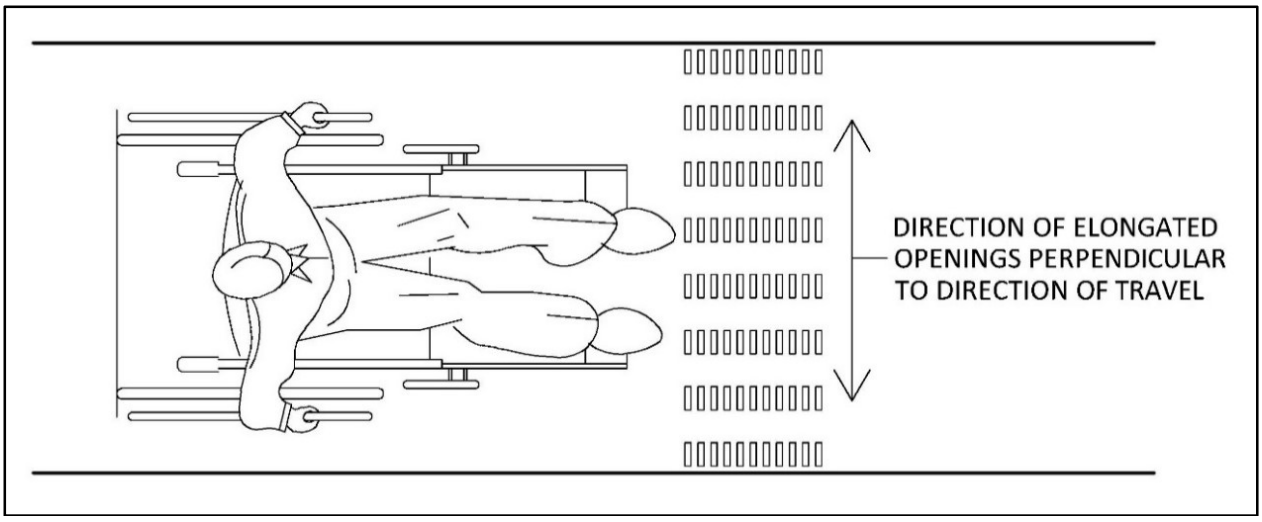


Figure 5b - Direction of Elongated Openings in a Barrier-Free Path of Travel Surface

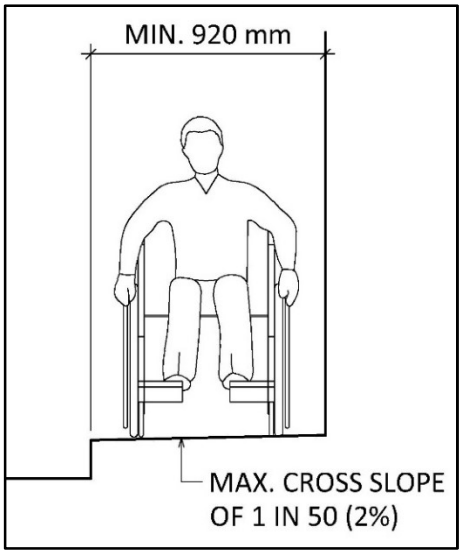


Figure 6 – Allowable Cross Slope

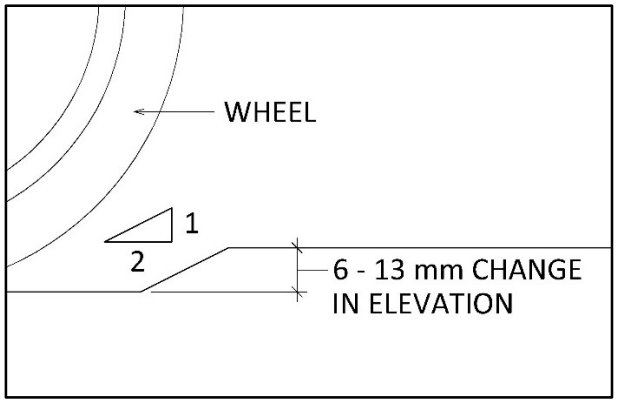


Figure 7 – Slope for Changes in Elevation Between 6 -13 mm

CSA B651, Clause 4.3 – Floor or Ground Surfaces and Clause 5.1 – Accessible Routes

There are additional requirements for the barrier-free path of travel which is referred to as 'accessible routes' in CSA B651.

The width shall be at least 1100 mm wide for:

- u-turns around an obstacle lesss than 1200 mm wide.

The width shall be at least 1500 mm wide for:

- high traffic areas, and
- allowing persons using mobility aids to pass.

The slope for accessible routes shall not exceed the ratio of 1:20 (5%) and if the slope for the accessible route is steeper than 1:20 (5%) it shall be designed in conformance of a ramp.

Exterior Walks

NBC Division B, Article 3.8.3.3 – Exterior Walks

Exterior walks that are part of a barrier-free path of travel shall:

- have a slip resistant, continuous and an even surface,
- not be less than 1100 mm wide, and
- have a level area not less than 1500 mm by 1500 mm adjacent to an entrance doorway.

CSA B651, Clauses 8.2.1 to 8.2.5. and 8.2.7 – Accessible Routes

Exterior accessible routes shall have the following characteristics:

- be separated from a vehicular route by:
  - a curb with a curb ramp,
  - a railing or other barrier, or
  - a tactile attention indicator surface.
- a minimum width of 1500 mm or when adjacent to a curb ramp, at least 1200 mm.
- a cross slope not greater than 2% (1:50) (see Figure 6 on page 24 for clarification),
- be well-drained to prevent ice and water accumulation where no downspouts or other drainage flows across it, and
- have (edge protection a minimum 75 mm high) when there is a drop of between 75 – 250 mm deep adjacent to the pedestrian route.

Exterior Passenger-Loading Zones

NBC Division B, Article 3.8.3.4. – Exterior Passenger-Loading Zones
CSA B651 – Clause 9.3 – Passenger pick-up areas

Where an exterior passenger loading zone is provided it shall have:

- an access aisle not less than 1500 mm wide and 6000 mm long adjacent and parallel to the pickup space (see Figure 8),
- a curb ramp, where there are curbs between the access aisle and the vehicle pull-up space, and
- a clear height of not less than 2750 mm at the pull up space and along the vehicle access and egress routes.

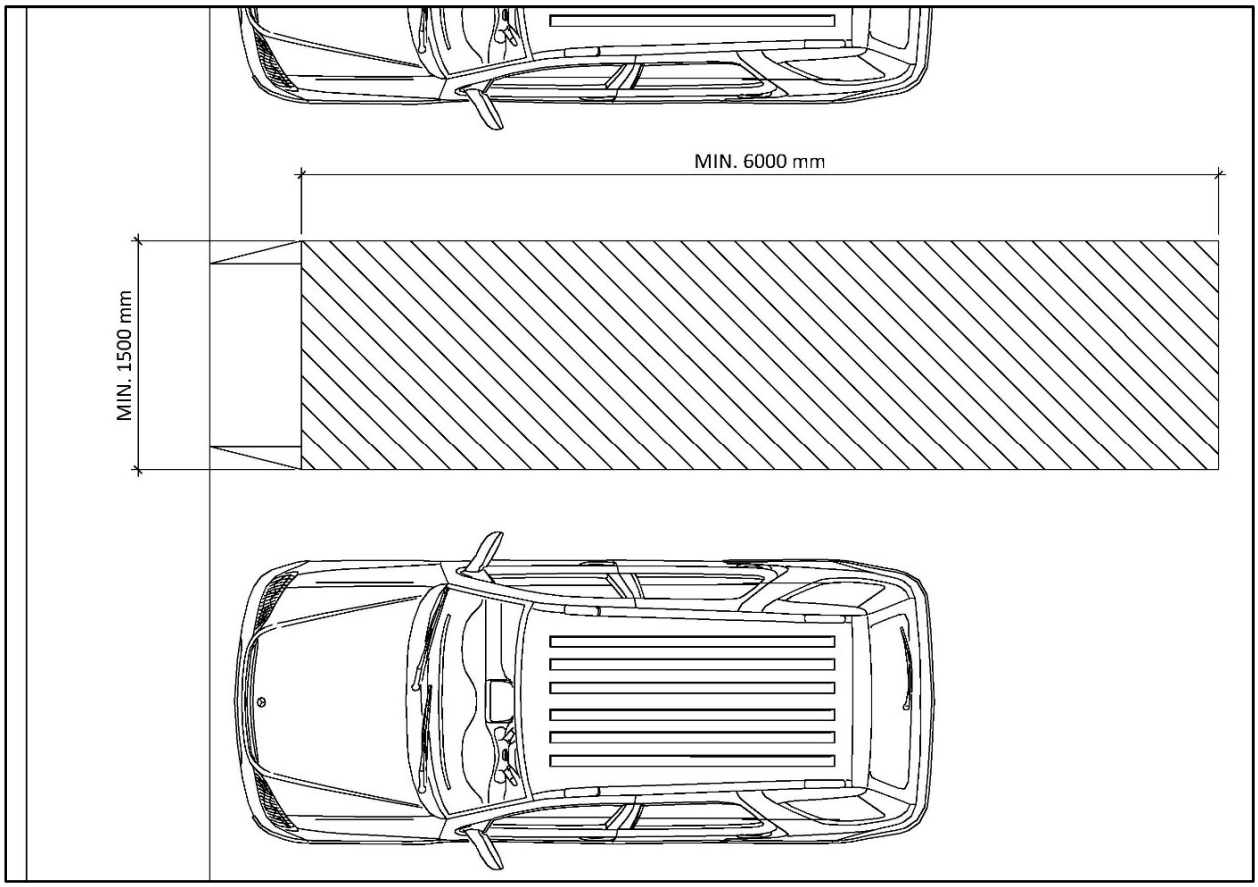


Figure 8 – Barrier-Free Path of Travel Increased Area (NBC & CSA)

Ramps

NBC Division B, Article 3.8.3. - Ramps

A ramp located in a barrier-free path of travel shall:

- have a clear width not less than 870 mm,
- have a slope not more than 1 in 12 (see Figure 9),
- have a level area not less than 1500 mm by 1500 mm at the top and bottom and the level area extends not less than:
  - 600 mm beyond the edge of the door opening where the door opens towards the ramp (see Figure 10), or
  - 300 mm beyond the edge of the door opening where the door opens away from the ramp (see Figure 11).
- have a level area not less than 1200 mm and least the same width as the ramp:
  - at intervals not more than 9 m along its length (see Figure 12), and
  - where there is an abrupt change in the direction of the ramp (see Figure 13).
- be equipped with a handrail at a height between 865 mm to 965 mm high,
- equipped with a guard conforming with other regulations in the NBC Division B, Article 3.4.6.6. (see Figure 14),
- handrails do not apply to ramps serving as an aisle for fixed seating
- the surfaces of ramps and landings shall:
  - be hard or resilient where the ramp is steeper than 1 in 15,
  - have a cross slope not steeper than 1 in 50, and
  - when exposed to water, be designed to drain.
- ramps and landings not at grade or adjacent to a wall shall have edge protection consisting of:
  - a curb not less than 75 mm high, or
  - a raised barrier or rail located not more than 100 mm from the ramp or landing surface.
- floors or walks in a barrier-free path of travel having a slope steeper than 1 in 20 shall be designed as a ramp.

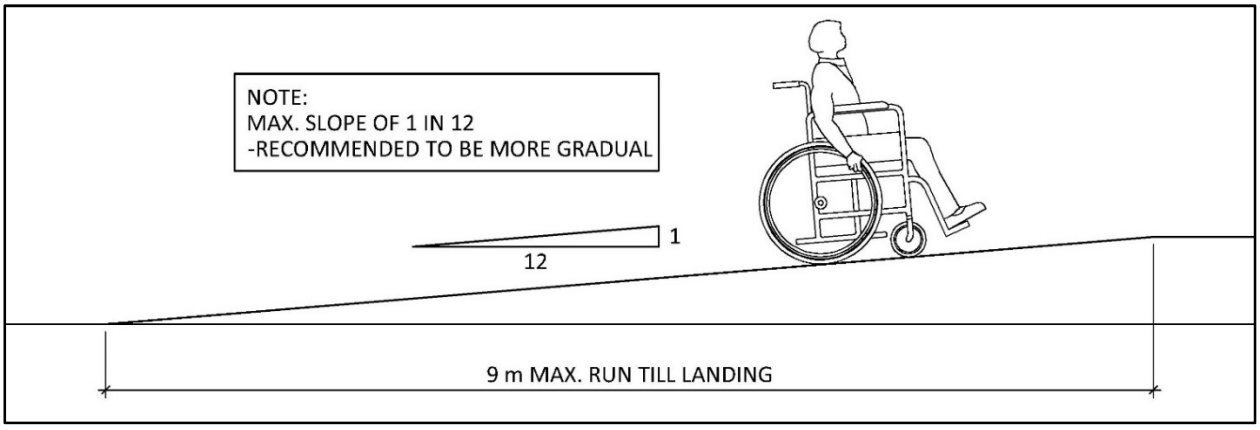


Figure 9 - Ramp Slope (NBC)

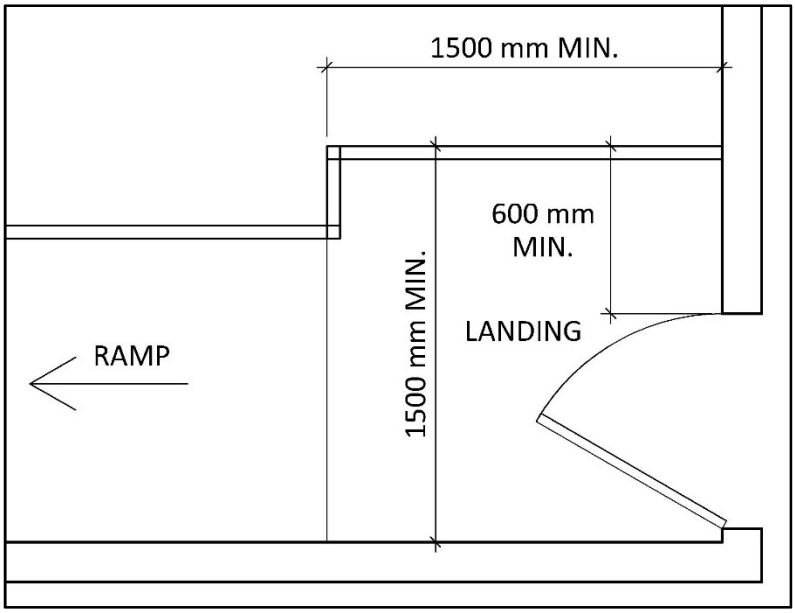


Figure 10 - Landing configuration – Door Swinging Towards Ramp (NBC)

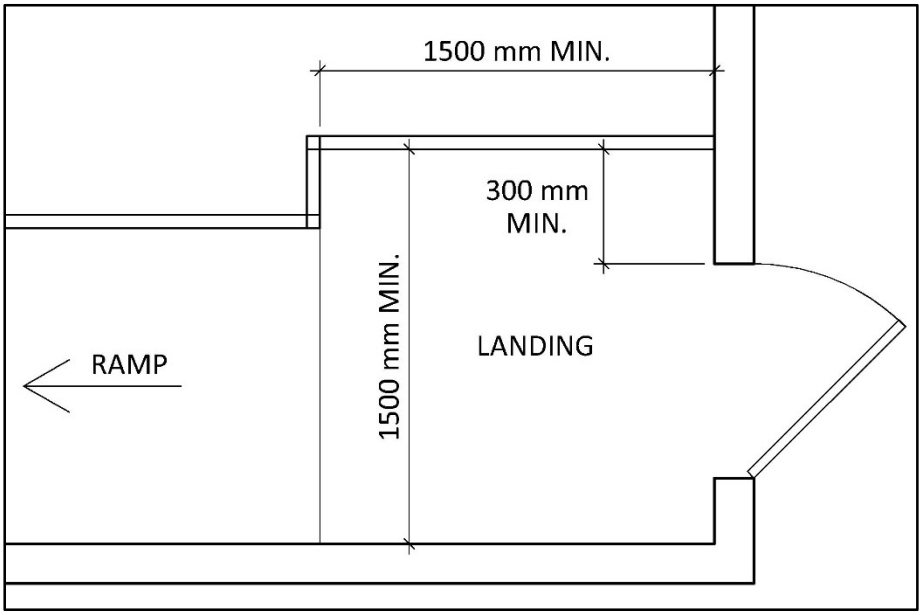


Figure 11 - Landing Configuration – Door Swinging Away from Ramp (NBC)

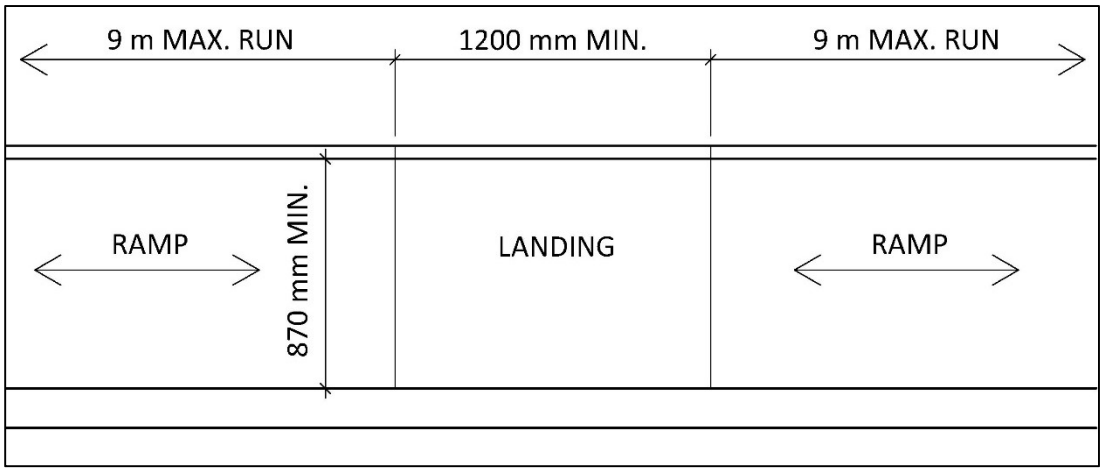


Figure 12 - Landing Configuration When Ramp Exceeds 9 m In Run (NBC)

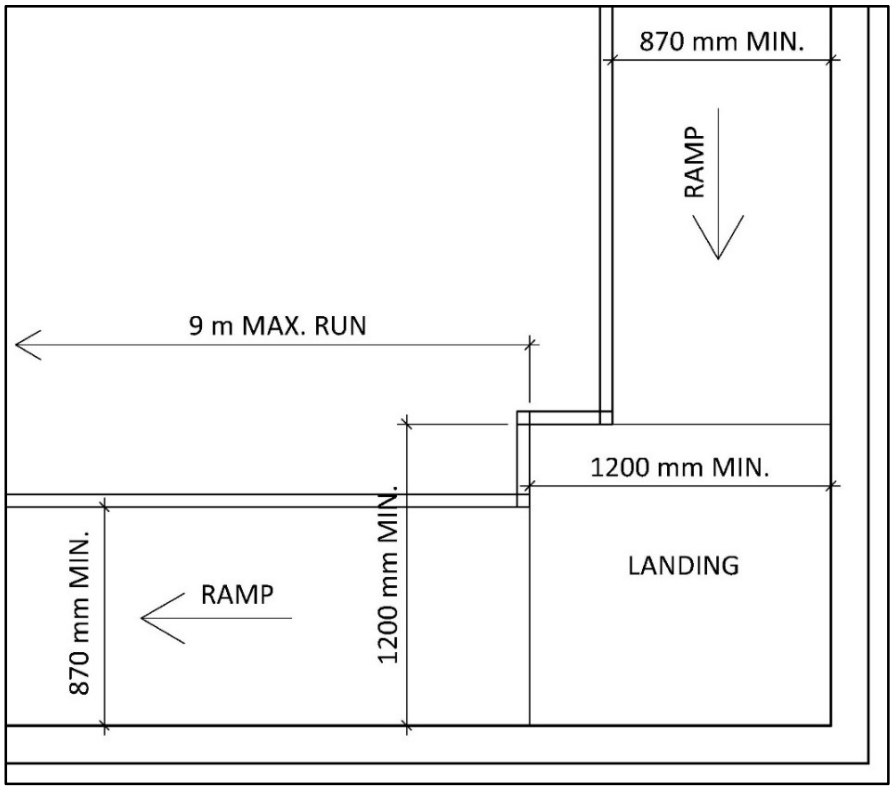


Figure 13 - Landing Configuration for Change of Direction (NBC)

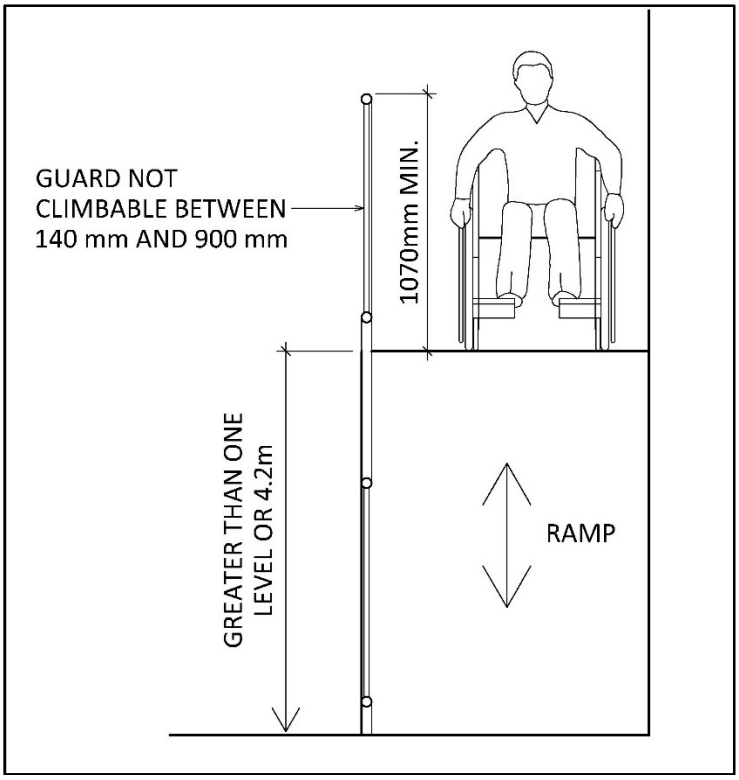


Figure 14 – Guard Requirements for Ramps (NBC)

CSA B651 – Clause 5.5 – Ramps

Ramps required shall:

- have a running slope with the ratio between 1:12 (8.3333%) and 1:20 (5%),
- have a maximum distance between level landings of 9 m,
- have a cross slope of the ramp surface not steeper than 1:50 (2%) (see Figure 6 on page 24),
- have a clear width of not less than 920 mm,
- landings shall be level and:
  - be supplied at the top and bottom of each ramp,
  - be provided at all changes of ramp direction,
  - be at least as wide as the widest ramp leading to it,
  - have a length not less than 1500 mm (see Figure 15),
  - at doorways serving and accessible route, have an area not less than 1500 mm by 1500 mm (see Figure 16), and
  - where it meets a slope change, have a 50 +/- 10 mm wide colour contrasted and slip-resistant strip equal to the width of the ramp,
- have edge protection when ramps or landings are not at grade or adjacent to a wall in the form of either:
  - a curb with a minimum height of 75 mm, or
  - a raised barrier or rail with its lower edge not more than 75 mm from the ramp or landing surface.
- have a minimum illumination at the surface level of at least 100 lx,
- have handrails on both sides when the ramp has a rise greater than 150 mm that:
  - comply with the regulations that are outlined in this guide (see 'Handrails' page 32),

- are continuous on the ramp and around landings,
- are colour-contrasted with their surroundings,
- have at least one set of handrails with a clear width between 920 mm and 1000 mm between the rails,
- have a height between 860 mm and 920 mm, measured from the ramp surface to the top of the rail, and
- have horizontal extensions beyond the top and bottom of the ramp;
  - at least 300 mm long, and
  - that are returned to the post, floor or wall.

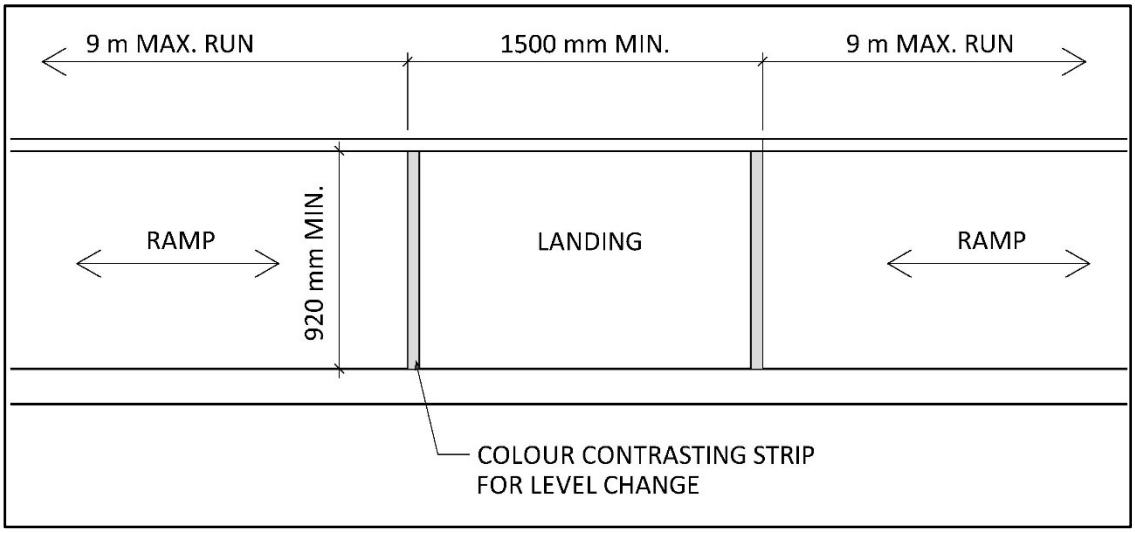


Figure 15 – Colour Contrasting Strips (CSA B651)

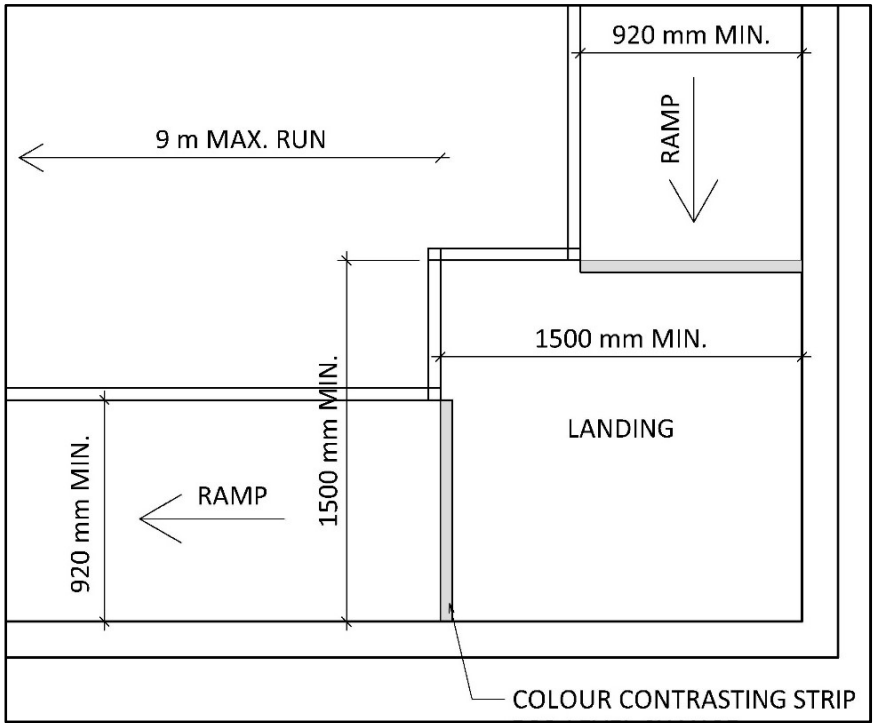


Figure 16 – Landing c/w Colour Contrasting Strips (CSA B651)

Handrails

NBC Division B, Article 3.4.6.5. – Handrails

When handrails are required shall:

- be supplied on one side of stairs that are less than 1100 mm in width,
- have one handrail on each side of:
  - stairs that are 1100 mm or more in width,
  - curved flights of stairs that are any width, and
  - ramps.
- be continuously graspable along the entire length and free of any sharp or abrasive elements, and shall have: (see Figure 17)
  - a circular cross-section with an outside diameter not less than 30 mm and not more than 43 mm, or
  - a non-circular cross-section with a perimeter not less than 100 mm and not more than 125 mm and whose largest cross-sectional dimension is not more than 45 mm.
- measured vertically from the top of the handrail to:
  - a straight line drawn tangent to the tread nosings of the stair or aisle stop served by the handrail, or
  - the surface of the ramp, floor, or landing served by the handrail.
- have an installed height for both ramps and stairs of:
  - not less than 865 mm, and
  - not more than 1070 mm.
- when required, be continuously graspable throughout the length of:
  - the ramp, and
  - a flight of stairs, from the bottom riser to the top riser.
- when interrupted by a doorway, have at least one handrail that is continuous throughout the length of the stairway or ramp, including at landings,
- terminate in a manner that will not obstruct pedestrian travel or create a hazard,
- have at least one handrail that extends 300 mm horizontally beyond the top and bottom of the stairway or ramp,
- have a clearance behind the handrail of at least;
  - 50 mm, or
  - 60 mm if the surface behind the handrail is rough or abrasive.
- be designed complete with the supports, to withstand the loading values of not less than:
  - 0.9 kN (approximately 202 pounds) applied at any point and any direction, and
  - 0.7 kN (approximately 158 pounds) applied uniformly in any direction not located in dwelling units.

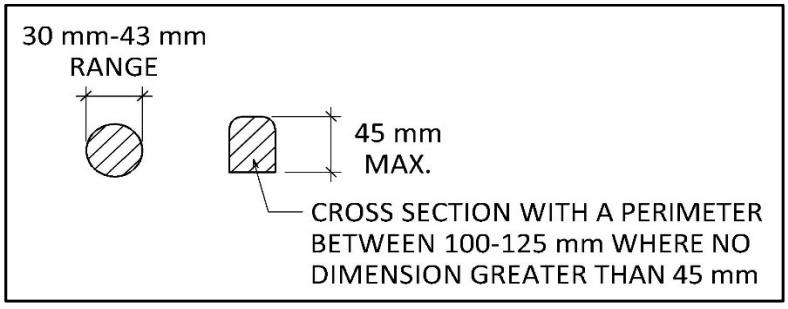


Figure 17 – Handrail Requirements (NBC)

CSA B651, Clause 5.3 – Handrails

When handrails are required shall:

- resist a force of 1.3 kN (approximately 292 pounds) applied in any direction,
- have a graspable cross-section that is either: (see Figure 18)
  - circular with an outside diameter of 30 to 40 mm, or
  - elliptical with an outside perimeter between 100 and 125 mm, with the largest cross-sectional dimension not more than 45 mm.
- be free of any sharp or abrasive elements,
- have a continuous gripping surface, without interruption by newel posts or other construction elements or obstructions that interrupt a hand hold,
- have a clear space between the handrail and the wall, and underneath the handrail, as follows;
  - between 35 and 45 mm wide for a smooth wall surface, and
  - between 45 and 60 mm wide for a rough wall surface, and
- be colour-contrasted with the surrounding wall surface.

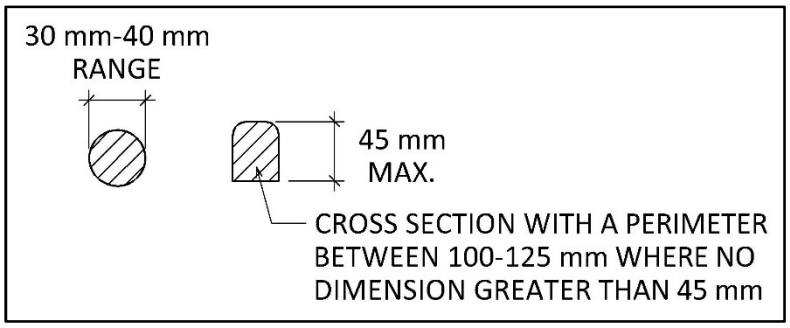


Figure 18 – Handrail Requirements (CSA B651)

Doors and Doorways

Clear Width

NBC Division B, Sentence 3.8.3.6.(2) – Doors and Doorways

Doorways in a barrier-free path of travel shall have a clear width not less than 800 mm when the door is in the open position. (see Figure 19)

CSA B651 – Clause 5.2.1 – Opening Width

Clear opening width shall be at least 810 mm. (see Figure 19)

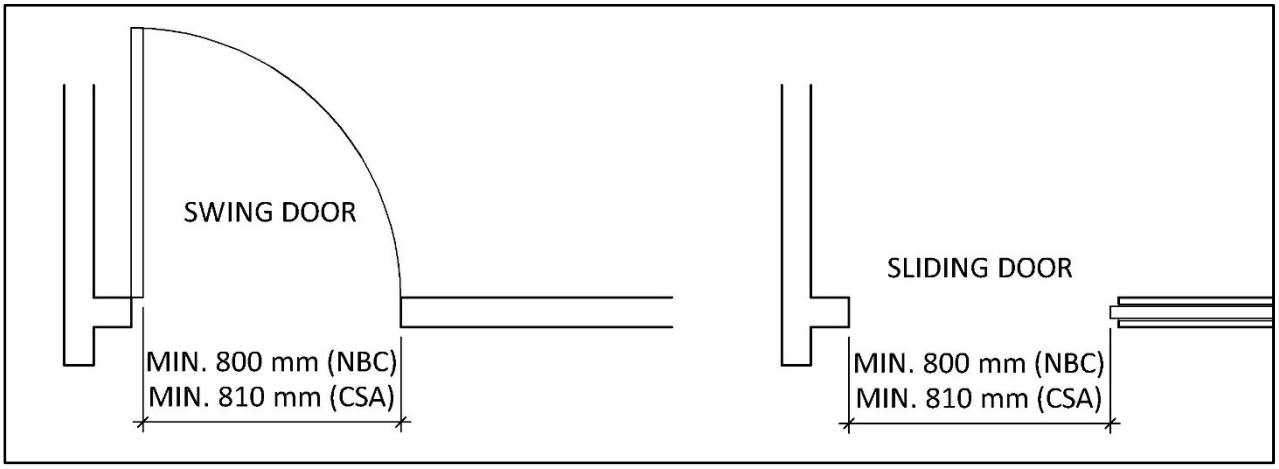


Figure 19 – Clear Width (NBC & CSA B651)

Door operating devices (handles, pulls, latches or locks)

NBC Division B, Sentence 3.8.3.6.(4) – Doors and Doorways

Door operating devices shall be operable at a height between 900 mm (36 inches) and 1100 mm (44 inches) above the floor.

CSA B651, Clause 5.2.7 – Door Hardware

Door operating devices shall be mounted between 800 mm and 1200 mm from the floor.
On a sliding door the operating devices shall be exposed and usable on both sides of the door.

Threshold

NBC Division B, Sentence 3.8.3.6.(5) – Doorways and Doors
CSA B651 – Clause 5.2.6 – Thresholds

The threshold for a doorway in a barrier-free path of travel, including at least one bathroom, shall not be more than 13 mm high. (see Figure 20)

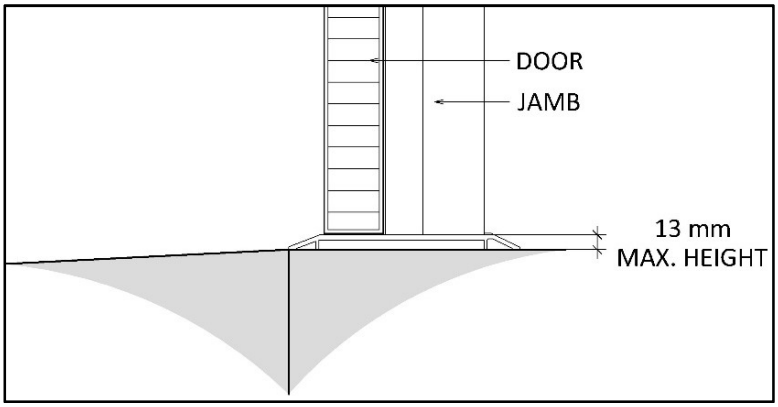


Figure 20 – Threshold (NBC & CSA B651)

Power Door Operator

NBC Division B, Sentence 3.8.3.6.(6) – Doorways and Doors

Doors required to have power door operators in a barrier-free path of travel shall activate either automatically or by the use of controls and have the following:

- markings with the International Symbol of Access,
- located clear of the door swing, but within 1500 mm (5 feet) of the door swing,
- controls that conform to the design requirements of 'Controls' (see page 46),
- operable controls from the 150 mm and 300 mm as well as the 900 mm to 1100 mm range above the floor, and
- operable controls by touching or approaching any part of their surface with a fist, arm, or foot.

Unless equipped with safety sensors, the power door operator shall:

- fully open the door in not less than three (3) seconds, and
- require a force of not more than 65 N (14 pounds) to stop movement of the door.

CSA B651, Clause – 5.2.9 – Power-assisted doors

Doors required to have power assist shall have the following requirements:

- take three (3) seconds or more from a closed to a fully open position,
- remain fully open for a minimum of five (5) seconds,
- require a force of not more than 66 N (15 pounds) to stop door movement, and
- when the door opens into a route of travel, it shall have a cane-detectable guardrail or barrier at right angles to the wall with the door in it. (see Figures 21 & 22)

Cane-Detectable Guard

A cane-detectable guard is required whenever there is an automatic door opener that is activated by a motion sensor, therefore are not required when a manual activation button is used. Both the NBC and CSA B651 address the requirements for the guard for automatic power operated doors.

NBC Division B, Sentence 3.8.3.6.(7) - Doorways and Doors

A cane-detectable guard shall be installed on the hinged side of a power operated door that swings into a barrier-free path of travel. (see Figure 21 & Figure 23)

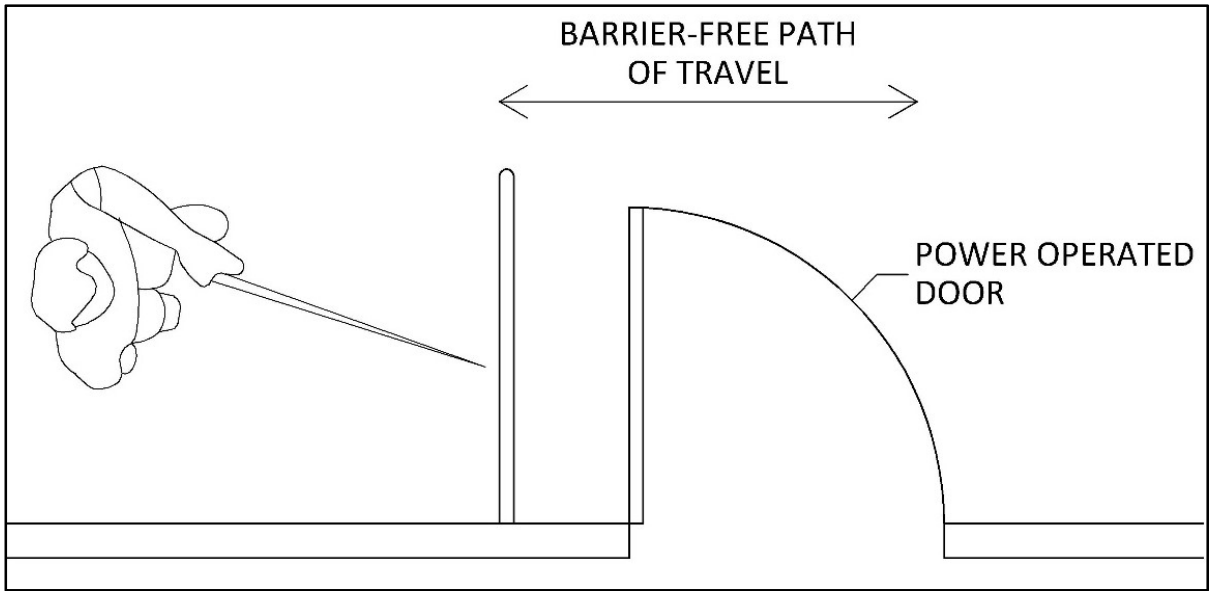


Figure 21 – Cane Detectable Guard (NBC)

CSA B651, Clause – 5.2.9 – Power-assisted doors

When the door opens into a route of travel, it shall have a cane-detectable guardrail or barrier at right angles to the wall with the door in it. (see Figure 22)

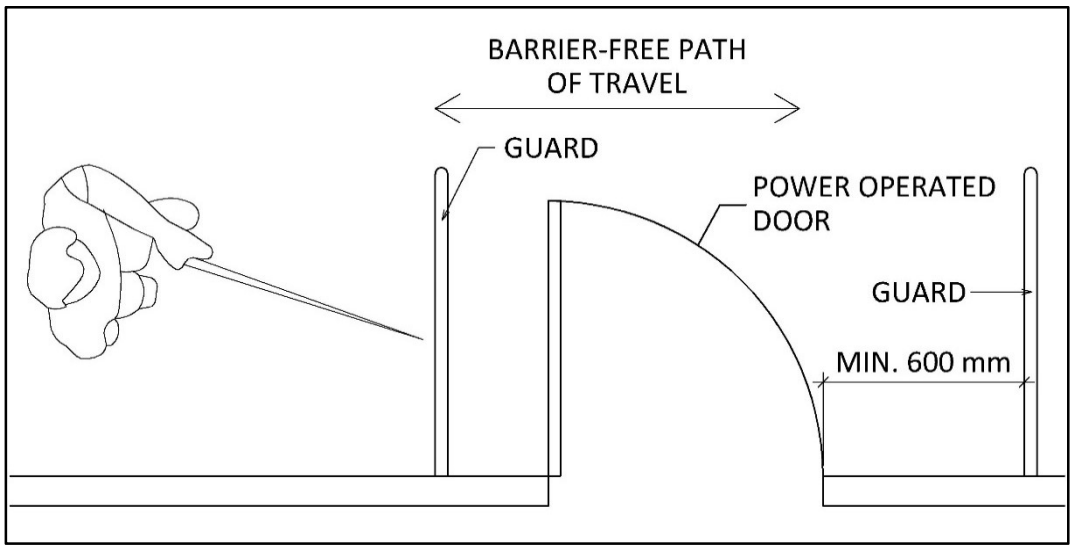


Figure 22 – Cane Detectable Guard (CSA B651)

A cane-detectable guard required for automatic power-assisted door shall not be more than 680 mm high to be cane-detectable (Note: applicable for both NBC and CSA B651). (see Figure 23)

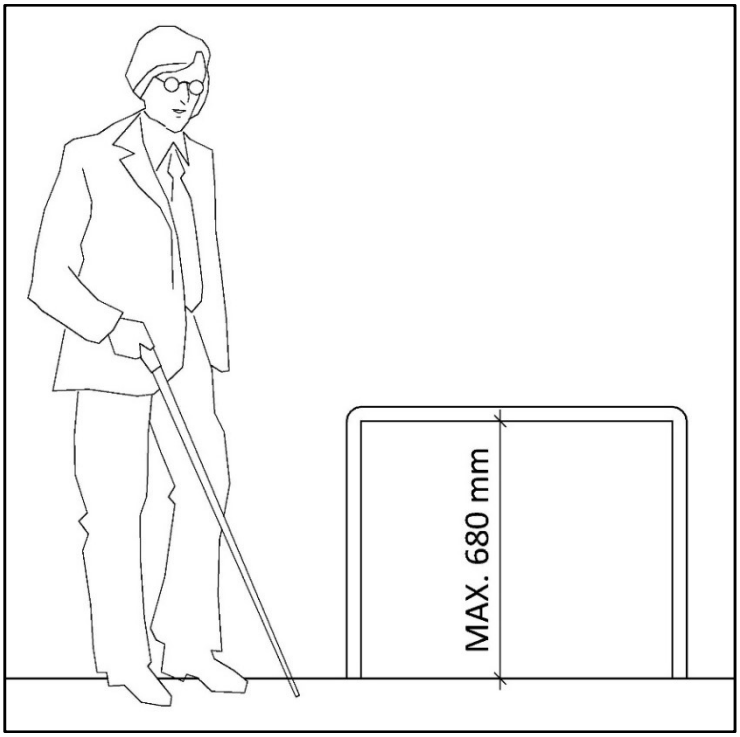


Figure 23 – Cane Detectable Guard Height (NBC & CSA B651)

Force Required

NBC Division B, Sentence 3.8.3.6.(8) - Doorways and Doors
CSA B651, Clause 5.2.8 – Door opening force

The force required to open doors in barrier-free paths of travel shall be the following:

- 38 N (8.5 pounds) for an exterior swinging door,
- 22 N (5 pounds) for an interior swinging door, or
- 22 N (5 pounds) for a sliding door.

Closer

NBC Division B, Sentence 3.8.3.6.(10) - Doorways and Doors

A closer for an interior door in a barrier-free path of travel shall have a closing period of three (3) seconds from the open position (approximately 70 degrees) till the door reaches 75 mm from the closed position. (see Figure 24)

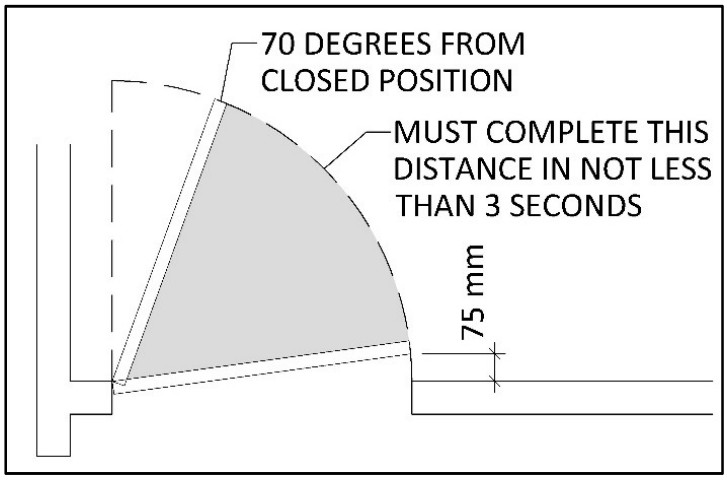


Figure 24 – Closer (NBC)

CSA B651, Clause 5.2.7.2 - Door closers

The sweep period of door closers shall be adjusted so that the will take at three (3) seconds or more to move from the open position of 90 degrees to a semi-closed position of approx. 12 degrees. (see Figure 25)

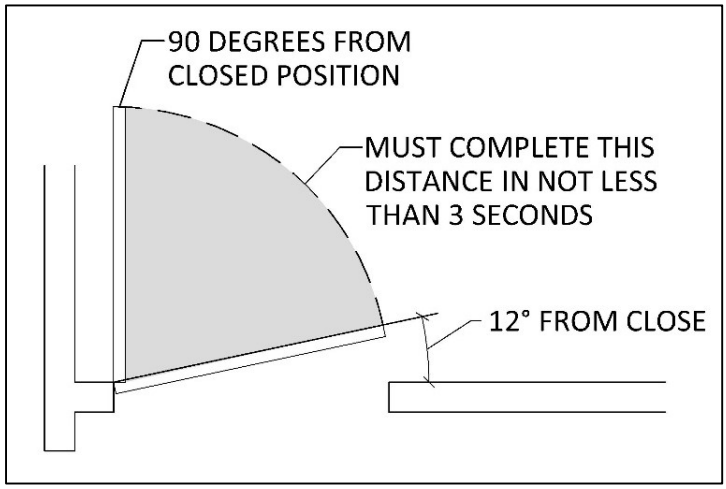


Figure 25 – Closer (CSA B651)

Clearance for Doorways

NBC Division B, Sentence 3.8.3.6.(11) - Doorways and Doors

A swinging door without a power door operator situated in a barrier-free path of travel shall have a clear space on the latch side not less than: (Figure 26)

- 600 mm beyond the edge of the door opening if the door swings toward the approach side, and
- 300 mm beyond the edge of the door opening if the door swings away from the approach side.

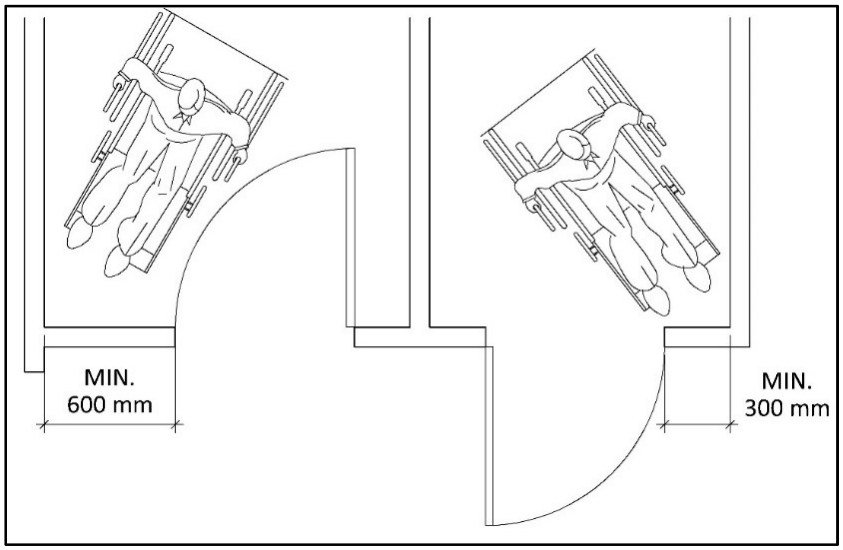


Figure 26 – Clearances for Doorways (NBC)

CSA B651, Clause 5.2.2 – Maneuvering area at doors

CSA B651 has a number of requirements for doors and doorways. There are also more specific requirements for clearances of doors and doorways, dependent on the situation for the occupant in relation to the door and doorway approach (See Figure 30 on page 44 for applicable table).

Illustrations complete with required clearances are available for following scenarios:

- front approach to a swinging door (Figure 27a),
- latch edge approach (Figure 27b),
- hinge edge approach (Figure 27c), and
- sliding door (Figure 27d).

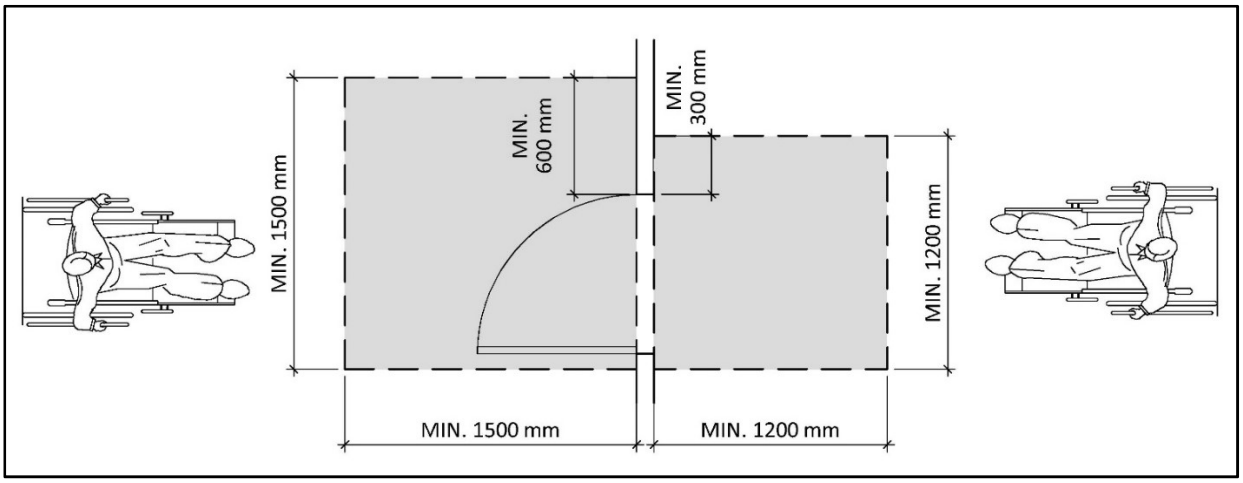


Figure 27a – Clearances for Doorways – Front Approach (CSA B651)

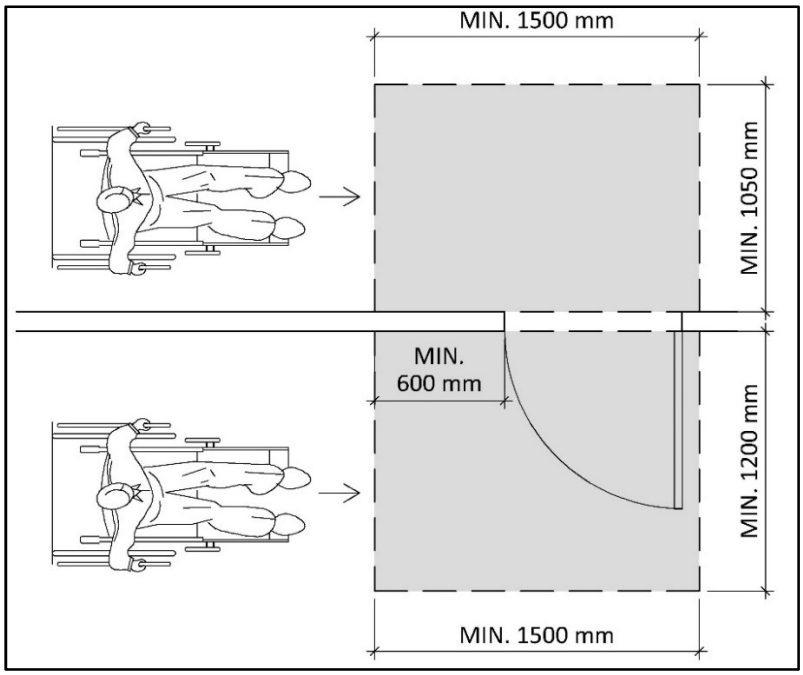


Figure 27b – Clearances for Doorways – Latch Edge Approach (CSA B651)

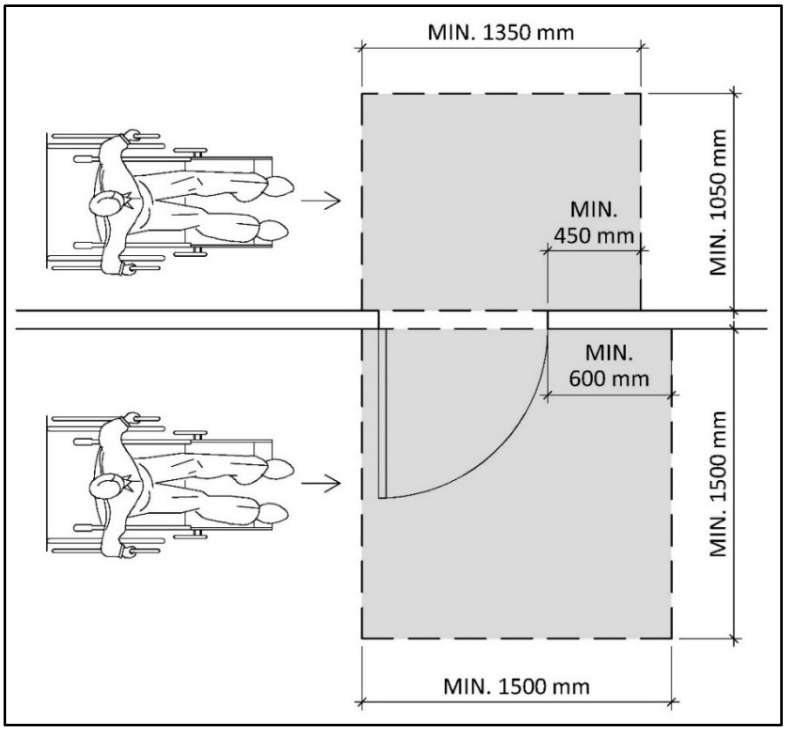


Figure 27c – Clearances for Doorways – Hinge Edge Approach (CSA B651)

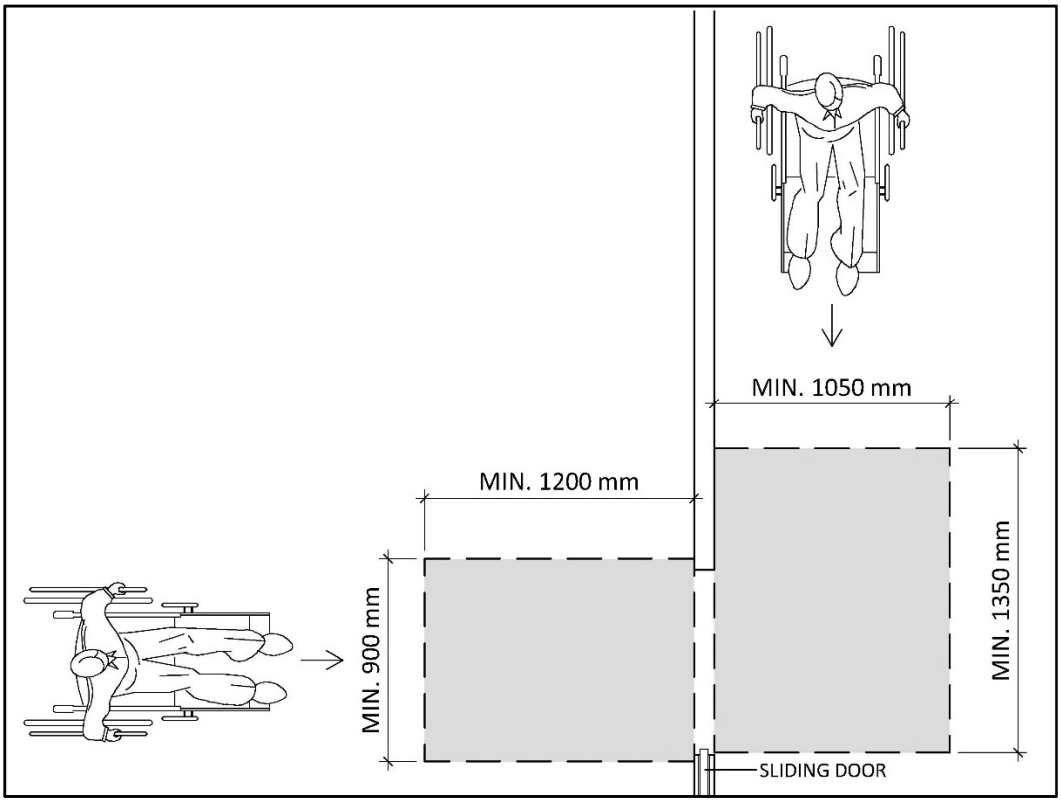


Figure 27d – Clearances for Doorways – Sliding Door (CSA B651)

Doors in Series (Vestibule)

NBC Division B, Sentence 3.8.3.6.(12) - Doorways and Doors
CSA B651, Clause 5.2.5 – Two doors in series

Doors in vestibules that swing in series shall allow for an accommodation of not less than 1200 mm plus the width of the door that swings into the path of travel from one door to another. (see Figure 28a & 28b)

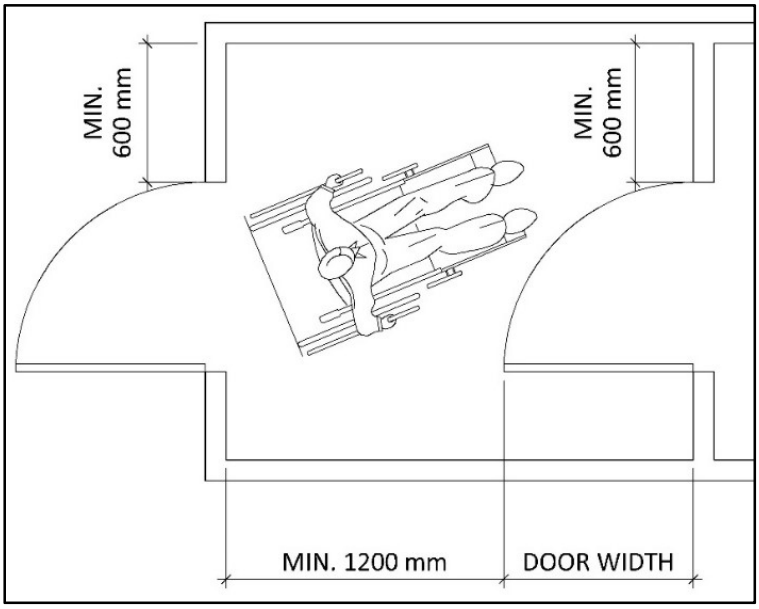


Figure 28a – Doors In Series (NBC & CSA B651)

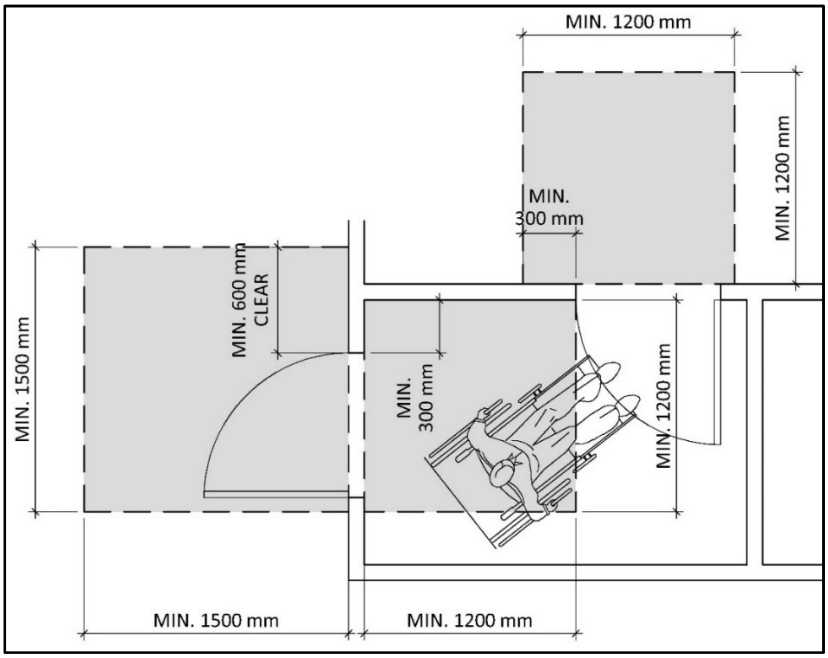


Figure 28b – Doors In Series (NBC & CSA B651)

Multiple-leaf Doors

NBC Division B, Sentence 3.8.3.6.(13) - Doorways and Doors

Only the active leaf in multiple-leaf door in a barrier-free path of travel needs to conform to the requirements of the NBC.

CSA B651, Clause 5.2.3. Multiple-leaf doorways & Clause 5.2.4 Revolving doors

Additionally, CSA B651 mentions revolving doors and that where a revolving door is used, an adjacent door shall be provided that complies with the door regulations in CSA B651 (Clause 5.2.1 – Opening width and Clause 5.2.2 – Maneuvering area at doors)

Level Floor Surface

NBC Division B, Sentence 3.8.3.6.(14) - Doorways and Doors

The floor on either side of a door in a barrier-free path of travel shall be continuously level within a rectangular area that: (see Figure 29)

- is as wide as the door plus the clearance required on the latch side dependent on the swing of the door (see 'Clearance for Doorways' on page 39), and
- the dimension perpendicular to the closed door is not less than the width of the barrier-free path of travel, but is not required to exceed 1500 mm (5 feet).

Note: Level areas required for ramps, contain other provisions that supersede this requirement. (see page 27)

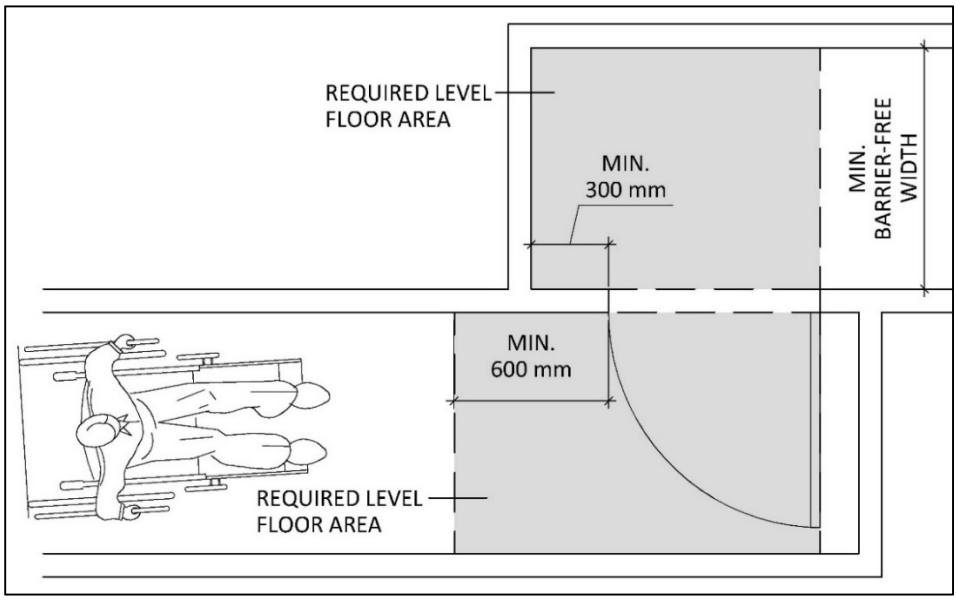


Figure 29 – Level Floor Area For Doorways (NBC)

CSA B651, Clause 5.2.2 - Maneuvering area at doors

The CSA standard requires specific dimensions for clear level floor space depending on the application of the door/doorway. The chart below (see Figure 30) specifies the dimensions based off of the following scenarios:

CONTEXT	CLEAR FLOOR AREA REQUIRED, mm DEPTH	WIDTH	DISTANCE FROM DOOR OPENING MEASURED AT THE LATCH EDGE, mm
SWINGING DOOR			
FRONT APPROACH			
PULL SIDE	1500	1500	600
PUSH SIDE	1200	1200	300
LATCH EDGE APPROACH			
PULL SIDE	1200	1500	600
PUSH SIDE	1050	1500	600
HINGE EDGE APPROACH			
PULL SIDE	1500	1500	600
PUSH SIDE	1050	1350	450
SLIDING DOOR			
FRONT APPROACH	1200	900	50
SIDE APPROACH	1050	1350	540

Figure 30 – Level Floor Area For Doorways (CSA B651)

Passenger-Elevating Devices

NBC Division B, Article 3.8.3.7. – Passenger-Elevating Devices

The NBC states the following:

- A passenger-elevating device referred to in Article 3.8.2.3. shall conform to CSA B355, “Lifts for Persons with Physical Disabilities.”

CSA B651, Clause 5.6.2 - Platform lifts

Similarly, CSA B651 states the following:

- Elevating devices such as platform lifts shall comply with CSA B355 and the requirements of authorities having jurisdiction.

CSA B651 goes on to clarify the term platform lift as any of the following:

- An elevating device that is installed at a permanent location in a building structure and is used to transport persons with disabilities on a platform that moves between permanent levels.
  - Enclosed stair lift – an inclined lift where the platform runway is separate from the stair circulation space.
  - Enclosed vertical lift – a vertical lift with an enclosed platform runway.
  - Unenclosed stair lift – an inclined lift where the platform or chair runway is within the stair circulation space.
  - Unenclosed vertical lift – a vertical lift with a partially enclosed or unenclosed platform runway.

Controls

NBC Division B, Article 3.8.3.8. – Controls

Controls described in the NBC shall:

- where located in or adjacent to a barrier-free path of travel and unless otherwise stated: (see Figure 31)
  - be mounted 400 mm to 1200 mm above the floor (see Figure 33),
  - be adjacent to and centered on either the length or the width of a clear floor space of 1350 mm by 800 mm, and
- be operable:
  - with one hand in a closed fist position, without requiring tight grasping, pinching with fingers, or twisting of the wrist, and
  - unless otherwise stated, with a force not more than 22 N.

Note: Operation of controls are the same as for CSA B651.

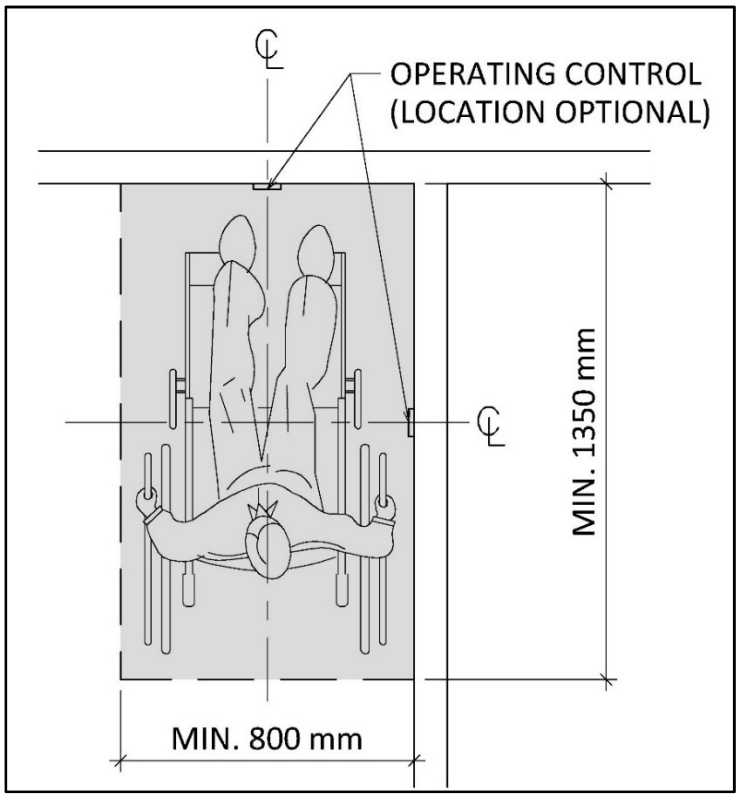


Figure 31 – Controls w/ Clear Area Requirements (NBC)

CSA B651, Clause 4.2 – Operating Controls

CSA B651 expands on the requirements in this document. The CSA standard defines operating controls as:

- door handles and locks;
- window operators and locks;
- faucets and adjustable shower heads;
- electrical outlets and switches;
- thermostats;
- fire alarm pull stations; and
- activation switches.

- the area in front of the operating control shall be at least 750 mm x 1200 mm, level and adjacent to the operating control. (see Figure 32)
- the height of the controls shall be located in a range between 400 mm and 1200 mm from the floor. (see Figure 33)
  - Control Devices - shall provide tactile and/or auditory information, indicating function and position of controls.
  - Visual Displays – Information on visual displays shall be supplemented by tactile and/or auditory information; colour-contrasted; and located on a glare-free surface
  - Colour Contrast – Operating controls shall be colour-contrasted with their background.

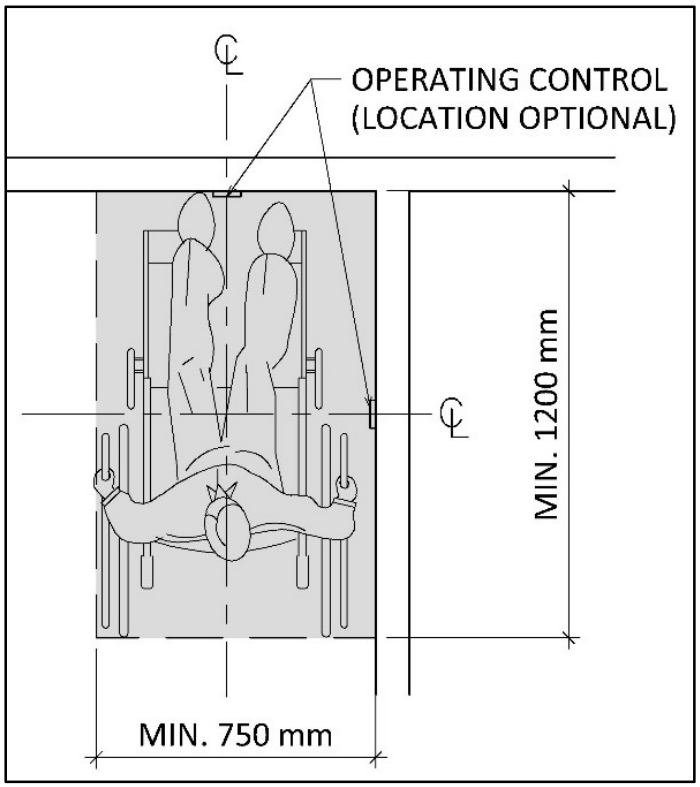


Figure 32 – Controls w/ Clear Area Requirements (CSA B651)

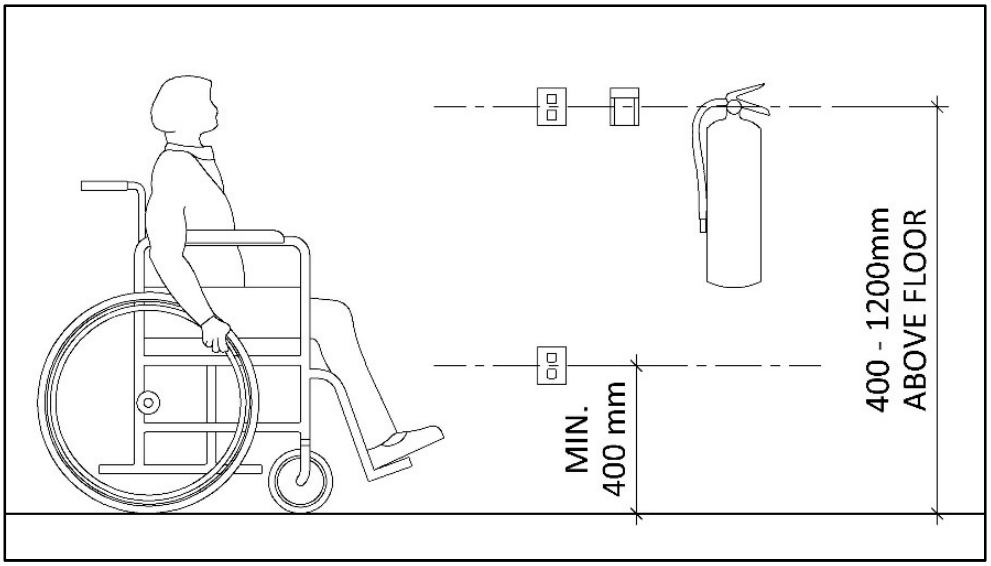


Figure 33 – Control Height Requirements (NBC & CSA B651)

Accessibility Signage

NBC Division B, Article 3.8.3.9 – Accessibility Signs

Signs shall be required to indicate the location of:

- barrier-free entrances;
- barrier-free washrooms;
- barrier-free showers;
- barrier-free elevators;
- barrier-free parking spaces; and
- facilities for persons with hearing disabilities.

Where a washroom is not designed to accommodate persons with physical disabilities in a storey to which a barrier-free path of travel is required, signs shall be provided to indicate the location of barrier-free facilities.

All signs shall conform to the International Symbol of Access or the International Symbol of Access for Hearing Loss (see Figure 34) and appropriate graphical or textual information that clearly indicates the type of facilities available.

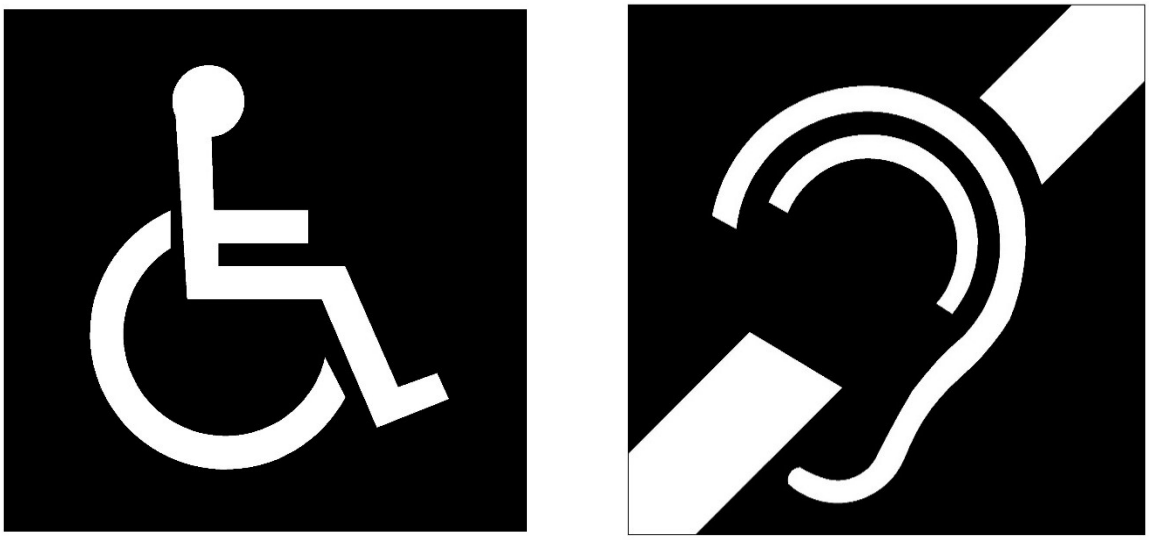


Figure 34 – International Symbol of Access & The International Symbol of Access for Hearing Loss

CSA B651 – Clause 4.5 – Signage

CSA B651 has an expanded amount of signage requirements.

Location

Where signage, including electronic displays, is provided, it shall be

- consistently located; and
- positioned to avoid shadow areas and glare.

Configuration of Signs

Where signage, including electronic displays, is provided, it shall:

- have a glare free surface;
- be of uniform design;
- when used to give the same type of information within the same facility, be consistently shaped, coloured, and positioned; and
- be colour contrasted with its background. (see Figure 35a)

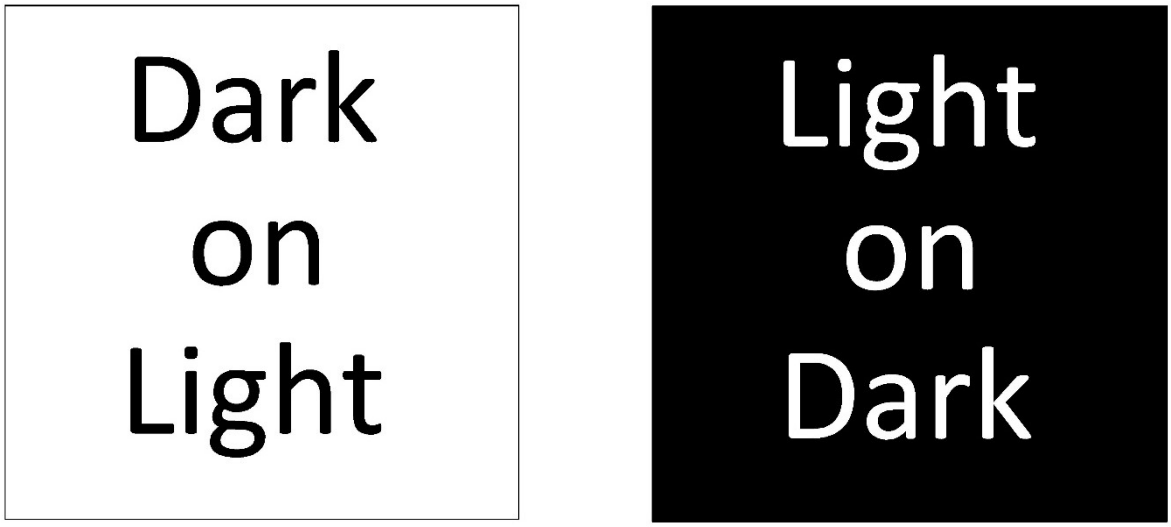


Figure 35a – Colour Contrasting of Signage

Characters

On signs, letters and numerals shall:

- be sans serif;
- have Arabic numbers
- have a weight-to-height ratio between 3:5 and 1:1;
- have a stroke-width-to-height-ratio between 1:5 and 1:10;
- be colour-contrasted by at least 70% with its background;
- have a character height relative to the intended viewing distance comply with Figure 35b; and
- use an upper case “X” for character measurement.

Minimum character height, mm	Maximum viewing distance, mm
25	750
50	1500
75	2250
100	3000
150	4500
200	6000
250	7500
300	9000

Figure 35b – Character Height Relative to Viewing Distance

Pictograms and Symbols

Pictograms and symbols shall be colour-contrasted by at least 70% with their background.

Illumination

Illumination required for signs shall be at least 200 lx.

Tactile Signs

Signs with tactile markings shall supplement the text of:

- regulatory signs, such as prohibition and mandatory signs;
- warning signs, such as caution and danger signs; and
- identification signs, such as rooms, titles, names or numbers.

The characters for signs with tactile markings shall be:

- raised between 0.8 and 1.5 mm above the surface;
- sans serif;
- 16 to 50 mm in height;
- accompanied by Grade 1 Braille near the bottom edge of the sign; and
- colour-contrasted with their background by at least 70%.

Pictograms and symbols used for signs with tactile markings shall be:

- raised between 0.8 and 1.5 mm above the surface;
- at least 150 mm in height;
- accompanied by the equivalent description in Grade 1 Braille, un-contracted and placed directly below the pictogram or symbol; and
- colour-contrasted with their background by at least 70%.

Signs with tactile markings shall be located:

- if used for a door, be mounted on the wall beside the latch edge of the door;
- where applicable, have the leading vertical edge 150 +/- 10 mm from the door jamb;
- where double-leaf doors are used or no wall space adjoins the door's latch edge, be mounted on the nearest adjacent wall;
- allow a person to approach the sign to within 100 mm without encountering protruding objects or standing within a door swing;
- be mounted with the horizontal centerline 1500 +/- 25 mm from the floor; and
- have a clear wall area around the sign at least 75 mm wide.

The symbol of accessibility shall be the international symbol of access.

Drinking Fountains

Drinking fountains are not a mandatory requirement by the NBC, however once any fountains are installed or proposed to be installed, could require either the NBC or CSA B651 to be applied.

NBC Division B, Article 3.8.3.10. – Drinking Fountains

When drinking fountains are supplied, at least one shall conform to barrier-free requirements and shall be:

- located along a barrier-free path of travel,
- have a minimum clear floor space 800 mm by 1350 mm in front of the fountain, (see Figure 36a)
- have knee clearance following the dimensions for lavatories,
- the spout shall: (see Figure 36b)
  - be located near the front of the unit, at a height between 750 mm and 915 mm above the floor, and
  - direct water flow to be parallel to the front of the unit and at a height approx. 100 mm above the fountain, and
- be equipped with controls that:
  - activate automatically, or
  - located either on front or on both sides of the fountain, complete with the requirements of 'operable controls' covered earlier in this guide.

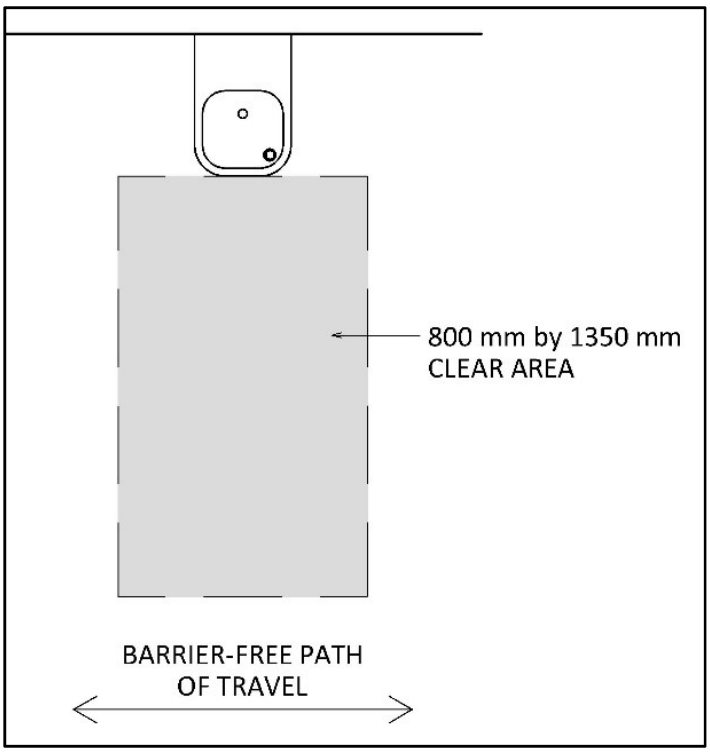


Figure 36a – Clear Area for Water-Fountain (NBC)

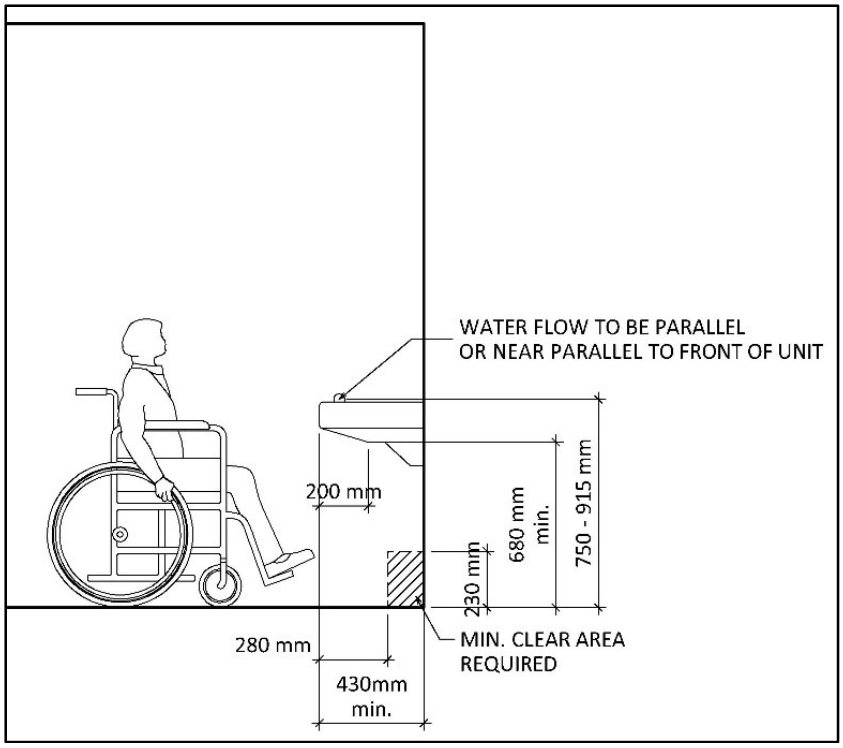


Figure 36b – Clearances for Water Fountains (NBC)

CSA B651, Clause 6.1 – Drinking fountains

CSA B651 provides similar requirements to the NBC, however there are some subtle differences in dimensions used.

Spout

The spout shall be between the dimensions 750 mm and 900 mm from the floor, located near the front of the unit. It shall direct the flow parallel or nearly parallel to the front of the unit and shall be at a height at least 100 mm high from the fountain level.

Controls

The controls shall:

- not be foot operated;
- allow the user the ability to control the timing and water delivery height;
- comply with the 'operating controls' guidelines; and
- be located at or near the front of the fountain.

Floor Area

The floor area shall have a clear floor area of at least 750 mm by 1200 mm in front of the unit. (see Figure 37a)

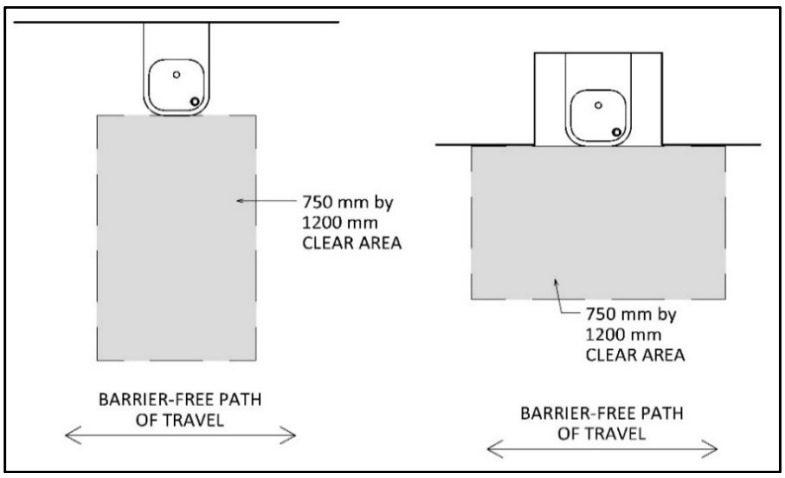


Figure 37a – Clear Floor Area for Water Fountains (CSA B651)

Colour Contrast

The fountain shall be colour-contrasted from the background surrounding the unit.

Cantilevered & Recessed Fountains

Cantilevered drinking fountains shall: (see Figure 37b)

- have a knee clearance between the bottom of the apron and the floor at least 750 mm wide x 200 mm deep x 680 mm high;
- have a toe space at least 750 mm wide x 230 mm deep and 230 mm high; and
- be cane-detectable, recessed or otherwise located out of the route of travel.

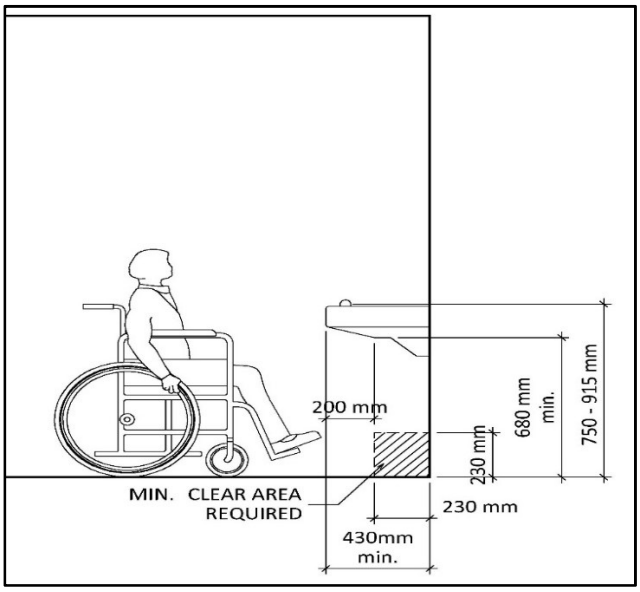


Figure 37b – Clearances for Water Fountains (CSA B651)

Grab Bars

Grab bars are listed in both NBC and CSA B651 and are directly referenced throughout for washroom facilities for barrier-free design.

NBC Division B, Article 3.7.2.8. – Grab Bars

Grab bars shall:

- be slip-resistant and free of any sharp or abrasive elements,
- be mounted on surfaces that are free of any sharp or abrasive elements,
- be able to resist a load of not less than 1.3 kN (approx. 292 pounds) applied vertically or horizontally,
- be 30 to 40 mm in diameter, and
- where mounted on a wall, have a clearance of 35 mm to 45 mm from the wall.

CSA B651, Clause 6.2.5 – Grab bars

A grab bar shall:

- be slip-resistant,
- have a diameter between 30 and 40 mm,
- where mounted adjacent to a wall, have a space between 35 and 45 mm between the wall and the grab bar, and
- not rotate within its fittings.

Structural strength

A grab bar shall be installed to resist a force of at least 1.3 kN (approx. 292 pounds) applied in any direction.

Surfaces

A grab bar and adjacent surfaces shall be free of any sharp or abrasive elements.

Water-Closet Stalls

Barrier-free water closet stalls and enclosures required by the respective standard.

NBC Division B, Article 3.8.3.11. – Water-Closet Stalls

See Figures 38a and 38b for clarification.

As outlined in the NBC accessible water closet stalls shall:

- not be less than 1500 mm wide by 1500 mm deep,
- have a clear space in front of the accessible water closet stall that is 1500 mm by 1500 mm,
- have a door that:
  - is latchable from the inside of the water closet stall with an accessible mechanism,
  - aligned with the transfer space adjacent to the water closet, or with a clear floor space 1500 mm by 1500 mm within the stall,
  - has a clear opening of 850 mm wide when in the open position,
  - is self-closing so that, when at rest, the door is ajar by not more than 50 mm beyond the jamb,
  - swings outward, unless there is sufficient floor space within the stall for the door to swing inward in addition to a clear floor space of at least 800 mm by 1350 mm,
  - when the door swings outward, is provided with a D-shaped visually contrasting door pull not less than 140 mm long, located on the inside that the midpoint is 200 mm to 300 mm from the hinged side of the door and 800 mm to 1000 mm above the floor,
- have a water closet that the centre-line is between 460 mm to 480 mm to the wall on one side,
- have an L-shaped grab bar that: (see Figure 38b)
  - is wall mounted on the wall closest to the water closet,
  - has horizontal and vertical components not less than 760 mm long, with the horizontal component 750 mm to 850 mm above the floor and the vertical component 150 mm in front of the water closet, and
  - complies with the requirements for grab bars (see ‘Grab Bars’ on page 55).
- be equipped with either one grab bar 600 mm long centered over the water closet, or two grab bars at least 300 mm long and located on either side of the water closet that:
  - conform to the requirements of grab bars (see ‘Grab Bars’ on page 55)
  - mounted on the rear wall, and
  - mounted at the same height as the grab bar on the side wall or 100 mm above the top of the attached water tank, if applicable.
- equipped with a coat hook mounted not more than 1200 mm above the floor on the side wall and projecting not more than 50 mm from the wall, and
- be equipped with a toilet paper dispenser mounted on the side wall closest to the water closet such that:
  - the bottom of the dispenser is 600 mm to 800 mm above the floor, and
  - the closet edge of the dispenser is 300 mm from the front of the water closet.

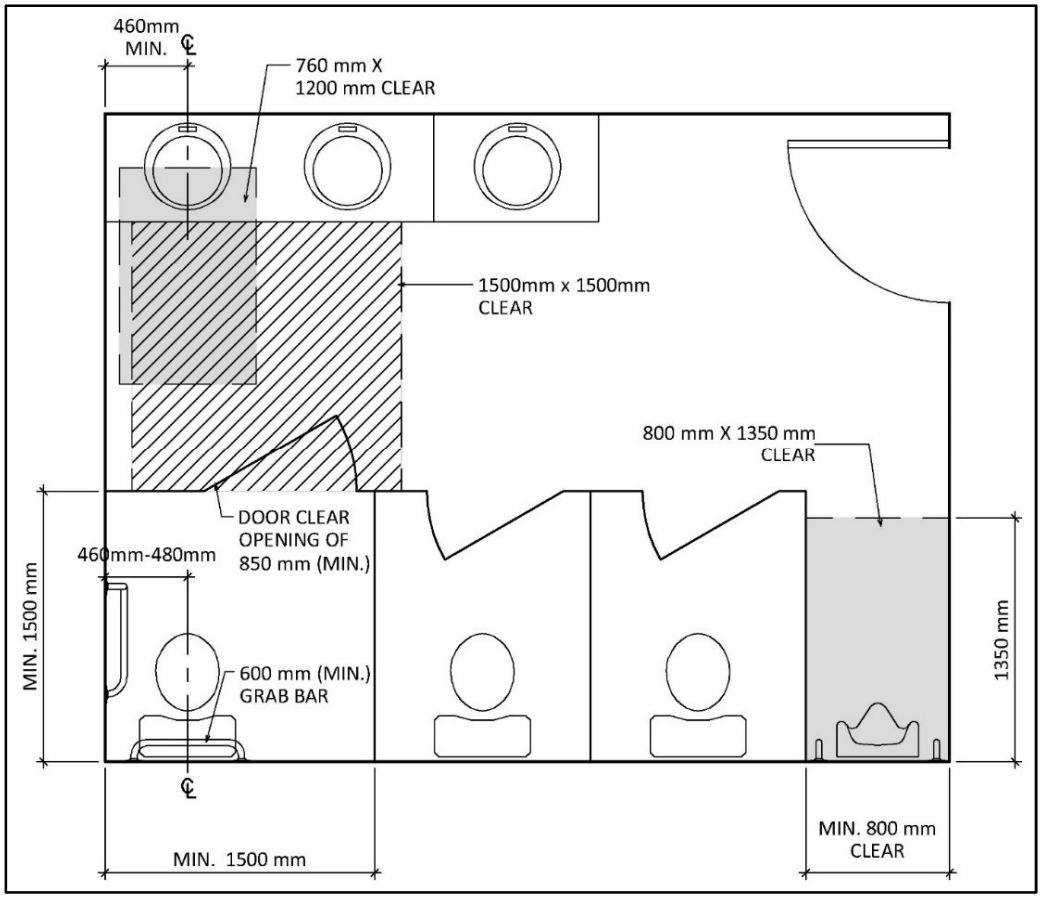


Figure 38a – Washroom Layout Requirements (NBC)

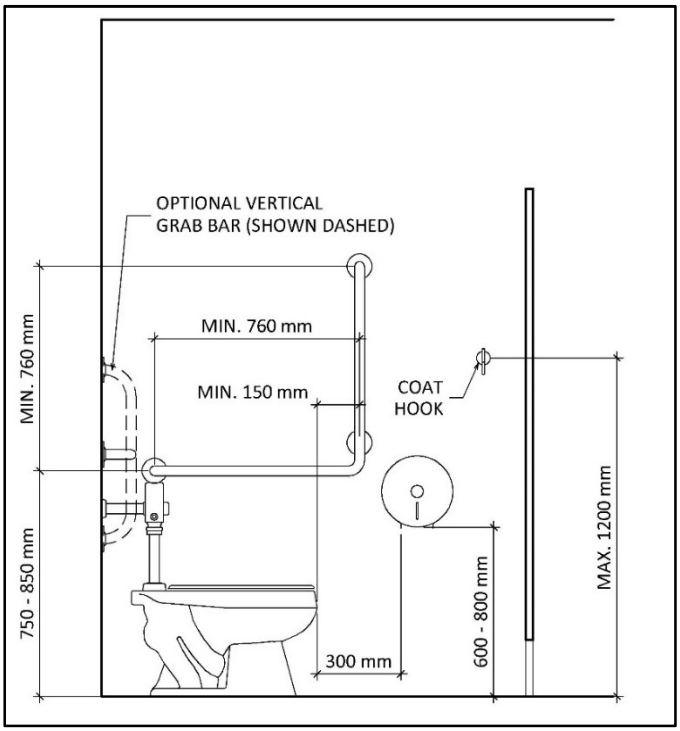


Figure 38b – Water Closet Stall Requirements (NBC)

CSA B651, Clause 6.2.7 – Toilet stalls

CSA B651 contains many similar requirements to the NBC with some modifications for dimensions. (see Figures 39a and 39b for clarification)

Water closet stalls shall:

- not be less than 1600 mm wide and 1500 mm deep,
- have a hook on a side wall;
  - mounted not more than 1200 mm above the floor, and
  - projecting not more than 40 mm from the wall.

Water closet stall doors shall:

- provide a clear opening of at least 810 mm with the door in the open position,
- be aligned with the transfer space adjacent to the water closet,
- swing outward, unless additional space is provided within the stall for the door swing,
- have a D-type door pull at least 140 mm long mounted horizontally on the inside of an out swinging door that:
  - has its centerline located between 200 and 300 mm from the hinge edge, and
  - at a height between 800 and 1000 mm from the floor,
- have a D-type door pull at least 140 mm long, mounted horizontally on the outside with;
  - with its centerline located between 120 and 220 mm from the latch edge of the door, and
  - at a height between 800 and 1000 mm from the floor,
- be self-closing so that at rest the door will be ajar not more than 50 mm beyond the jamb,
- be latched from the inside that complies with the requirements for operating controls (see 'Controls', page 46),
- have a clear area at least 1500 by 1500 mm in front of the stall,
- has grab bars that are mounted horizontally at a height between 750 and 850 mm above the floor and are (see 'Grab Bars' on page 55):
  - mounted on the wall adjacent to the toilet:
    - beginning not more than 300 mm from the rear wall and extend at least 450 mm in front of the toilet seat, and
  - on the rear wall that is either,
    - one, centred with the toilet at least 600 mm long, or
    - two, each 300 mm long positioned on either side of the flush valve, located not further than 150 mm from the flush valve.
- have a toilet paper dispenser that shall be located:
  - so that the dispensing of the paper is in line with the front of the seat, and
  - at a height between 600 and 700 mm from the floor.

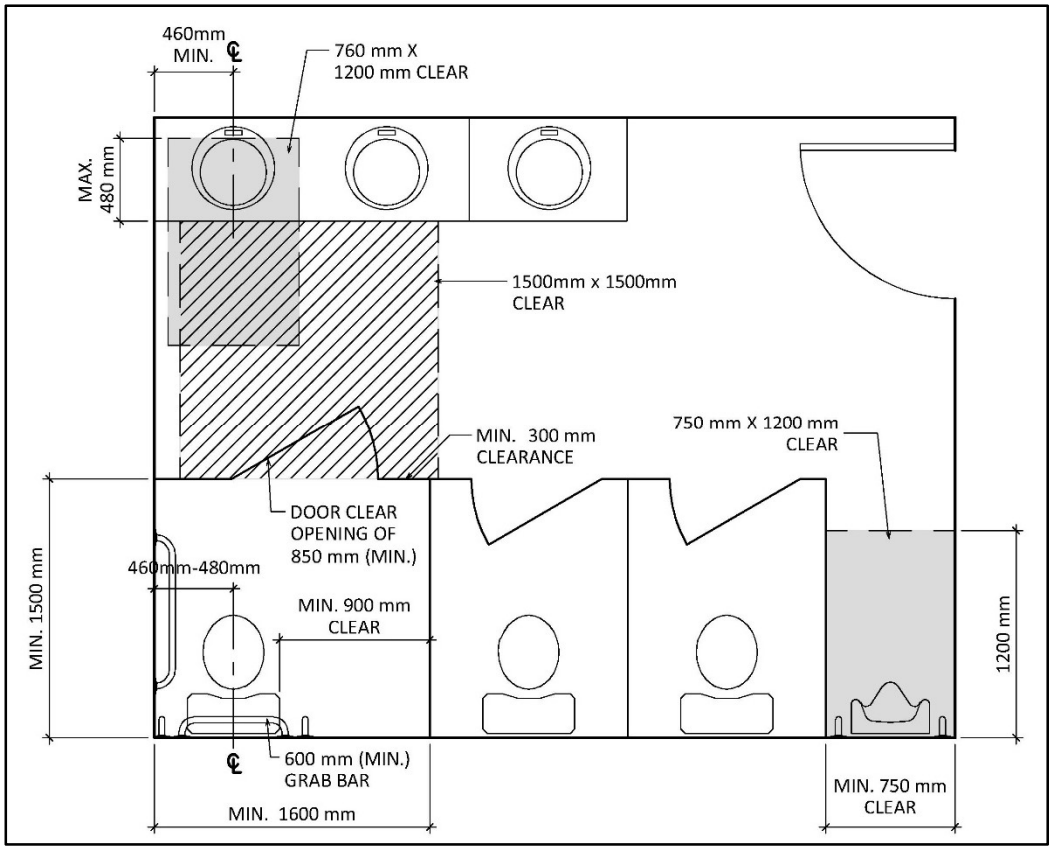


Figure 39a – Washroom Layout Requirements (CSA B651)

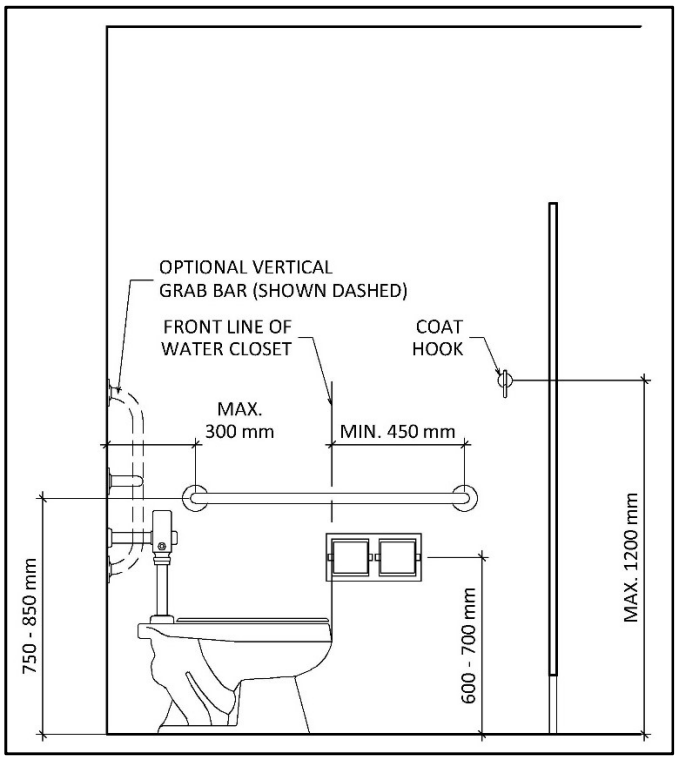


Figure 39b – Toilet Stall Requirements (CSA B651)

Universal Washrooms

NBC Division B, Article 3.8.3.12 – Universal Washrooms

See Figure 40a, 40b & 40c for clarification.

As outlined in the NBC, universal washrooms shall:

- be served by a barrier-free path of travel,
- have a door complying with the door requirements as outlined earlier in this guide (see 'Doors and Doorways', page 34), and that:
  - has a latch-operating mechanism located between 900 – 1000 mm above the floor, is lockable from the inside and can be released from the outside in an emergency situation, and
  - when it is an out swinging door that is not self-closing, has a door pull not less than 140 mm long located on the inside so that its midpoint is not less than 200 mm and not more than 300 mm from the hinged side of the door and not less than 900 mm and not more than 1000 mm above the floor.
- have one lavatory conforming to NBC requirements,
- have one water closet conforming to NBC requirements and with a clear floor space at least 900 mm wide that is parallel and adjacent to the water closet,
- have grab bars that conform to NBC requirements,
- have a coat hook that conforms to NBC requirements,
- have a toilet paper dispenser that conforms to the NBC requirements,
- have a shelf located not more than 1200 mm above the floor, unless a counter is provided, and
- be designed to permit a wheelchair to turn in an open space not less than 1500 mm in diameter.

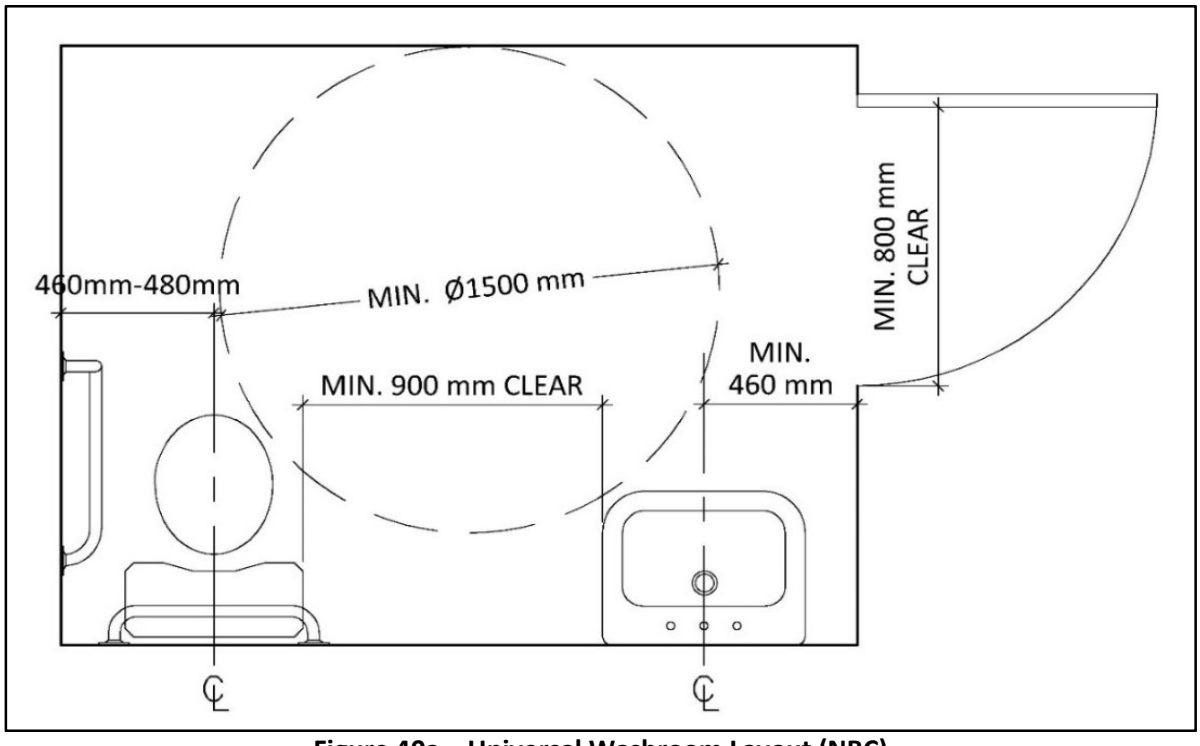


Figure 40a – Universal Washroom Layout (NBC)

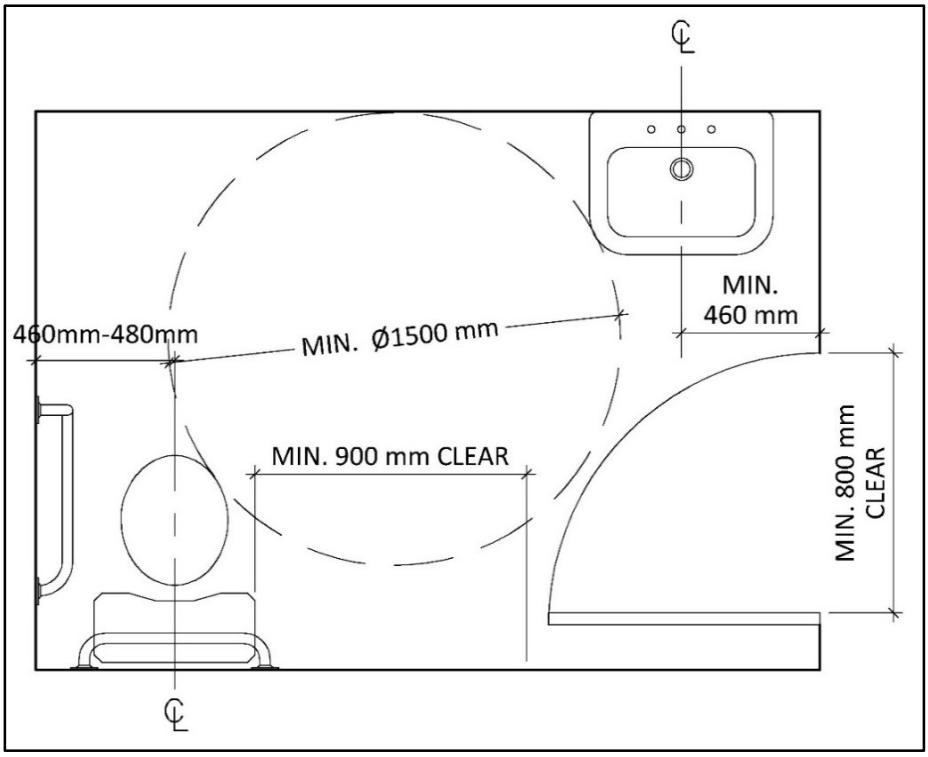


Figure 40b – Universal Washroom Layout (NBC)

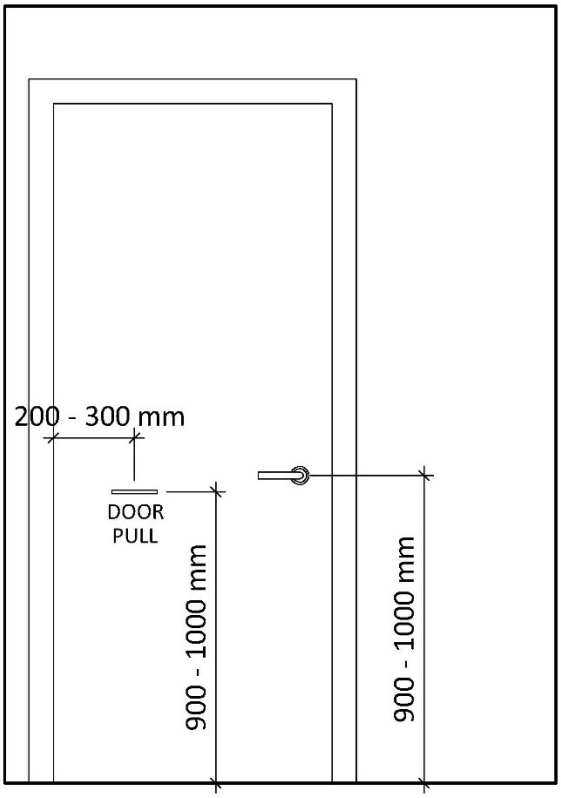


Figure 40c – Universal Washroom Door Layout (NBC)

CSA B651, Clause 6.3 – Universal washrooms

See Figures 41a and 41b for clarification.

As outlined in CSA B651 a universal washroom shall:

- have a clear floor area not less than 3.5 m^2,
- provide a distance between opposite walls of at least 1700 mm,
- provide a clear area of at least 1500 x 1500 mm,
- have a lavatory that complies with CSA B651,
- have a toilet that complies with CSA B651, and
- be identified by a sign that complies with:
  - CSA B651 (see 'Accessibility Signage', page 49)
  - shows a male and female pictogram and the International symbol of access.

The door for a universal washroom shall:

- comply with the requirements of CSA B651 (see 'Doors and Doorways', page 34),
- have a locking mechanism that conforms to CSA B651 and may be unlocked from the outside in an emergency situation,
- have either a:
  - closer, spring-type or gravity hinge, or
  - D-type pull at least 140 mm long, mounted horizontally on the inside of an out-swinging door with its centerline located between 200 and 300 mm from the hinge edge and at a height between 800 mm and 1000 mm from the floor.

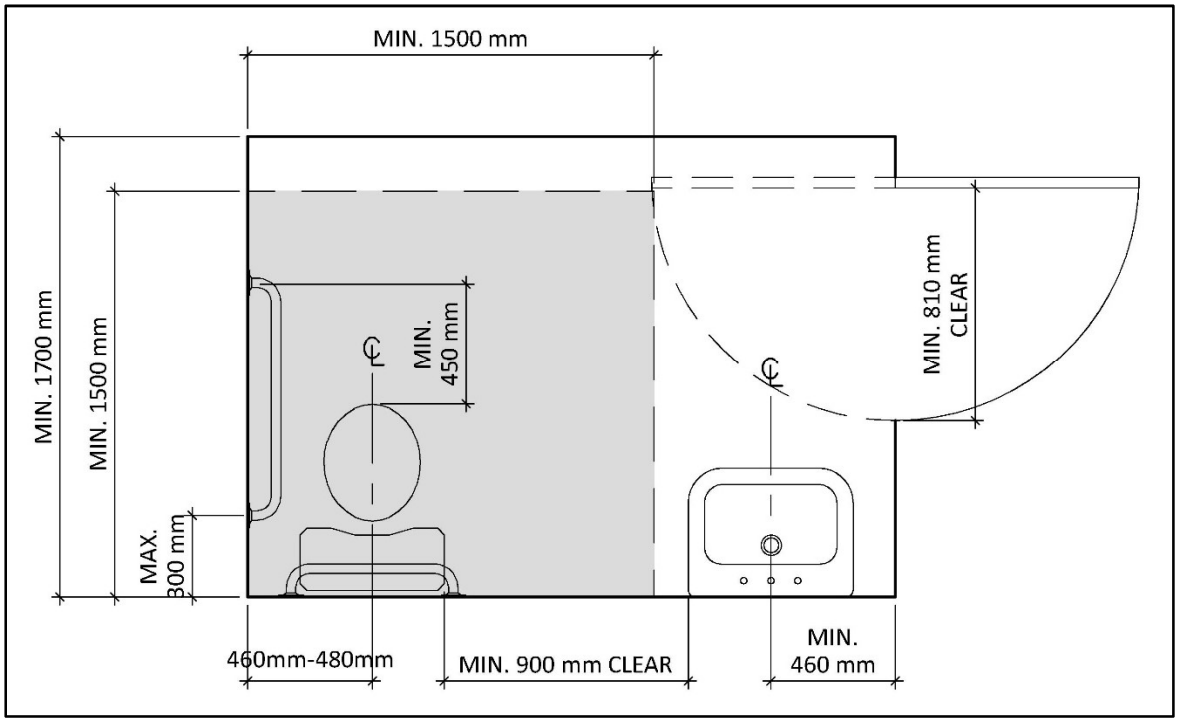


Figure 41a – Universal Washroom Layout (CSA B651)

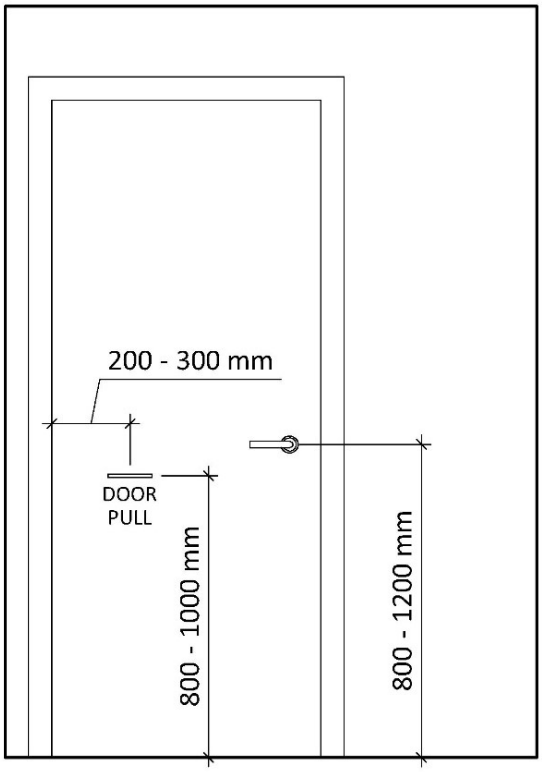


Figure 41b – Universal Washroom Door Layout (CSA B651)

Water Closets

NBC Division B, Article 3.8.3.13. – Water Closets

As outlined in the NBC, water closets (toilets) shall: (see Figure 42)

- have a water closet with the seat located 430 mm to 460 mm above the floor,
- have an automatic flusher, or equipped with a flushing control that:
  - is located 500 mm to 900 mm above the floor,
  - is located no more than 350 mm from the transfer side, and
  - complies with 3.8.3.8.(1)(b) - (see 'Controls', page 46)
- be equipped with a seat lid or other back support, and
- where it has a tank, have a securely attached tank top.

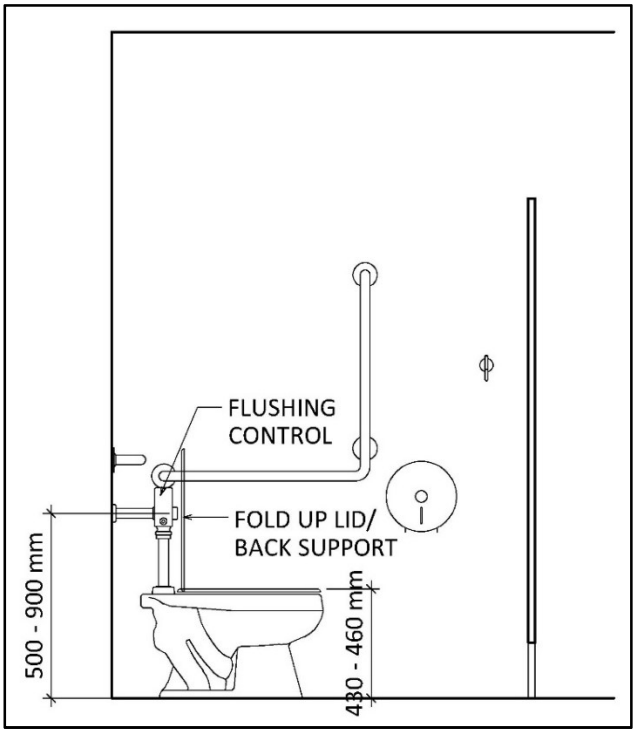


Figure 42 – Water Closet Requirements (NBC)

CSA B651, Clause 6.2.6 – Toilets

As outlined in the CSA B651, water closets (toilets) shall have: (see Figure 43)

- the top of the seat between 400 and 460 mm from the floor,
- no spring-activated seat,
- a back support where there is no seat lid or tank, and
- where there is a tank, a tank lid that is securely attached.

The location of a toilet shall: (see Figure 43)

- have its centerline between 460 and 480 mm from an adjacent wall, and
- have a clear transfer space at least 900 mm wide by 1500 mm long on its open side, where the width is measured from the edge of the toilet bowl.

The flush controls for the toilet shall:

- be automatically activated, or
- be hand-operated by a device that:
  - complies with 4.2 of CSA B651 (see 'Controls', page 18) and
  - is located at the transfer space side of the toilet.

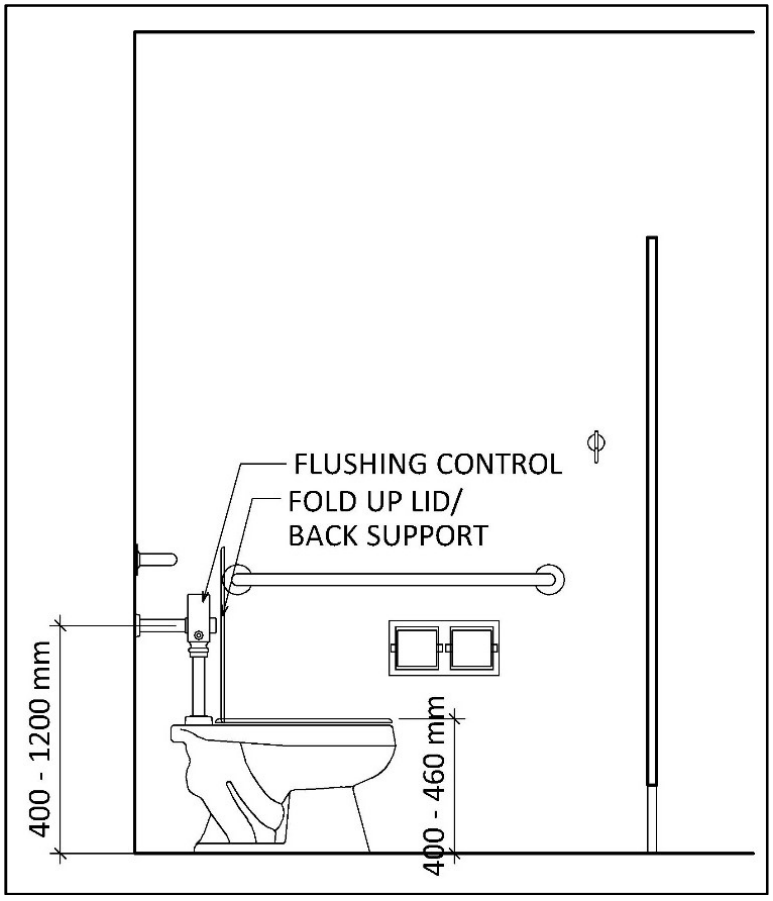


Figure 43 – Toilet Requirements (CSA B651)

Urinals

NBC Division B, Article 3.8.3.14. – Urinals

Where urinals are installed, they shall: (see Figure 44)

- be wall mounted, with the opening of the basin located not more than 430 mm above the floor,
- be adjacent to an accessible route,
- have a clear width of 800 mm centred on the urinal and unobstructed by privacy screens,
- not have any steps in front of it,
- have a flush control that:
  - is automatic, or
  - is located between 900 and 1100 mm and conforms to the requirements of the controls, (see 'Controls', page 46)
- have vertical grab bars on each side that:
  - complies with the requirements for grab bars in the NBC, (see 'Grab bars', page 55)
  - are not less than 600 mm long, with its centre line 1000 mm above the floor, and
  - are located not more than 380 mm from the centre line of the urinal.

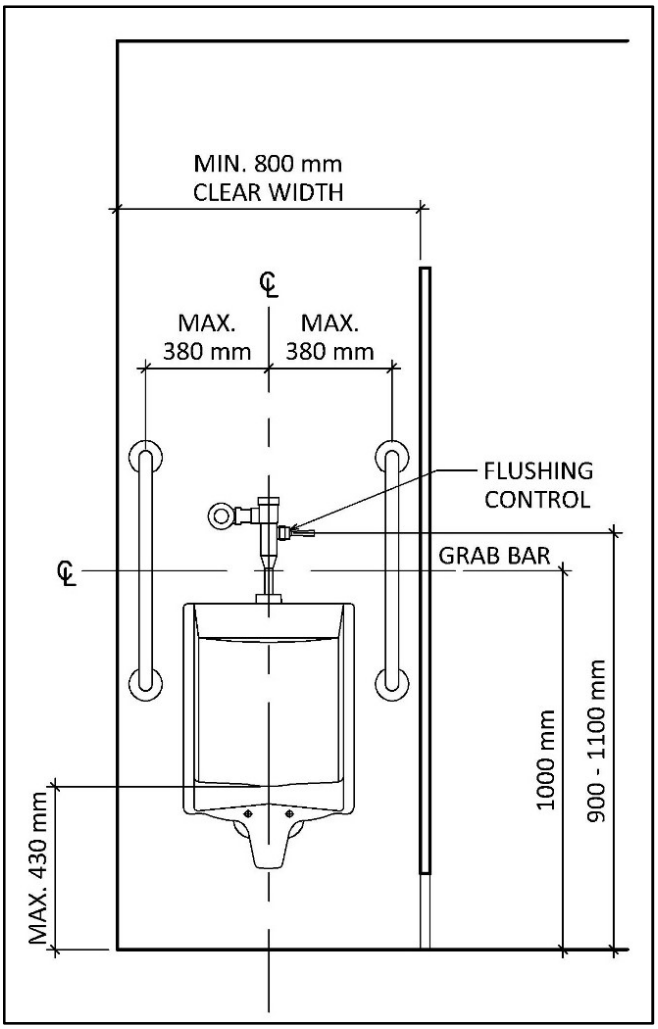


Figure 44 – Urinal Requirements (NBC)

CSA B651, Clause 6.2.8 – Urinals

The requirements for urinals in CSA B651 have similar requirements to the NBC as follows: (see Figure 45)

The urinal shall:

- be a stall or wall-hung type, with the well located so that:
  - the lower rim is not higher than 430 mm from the floor, and
  - the upper rim is not lower than 860 mm from the floor
- have a clear floor area in front of the urinal that:
  - is adjacent to an accessible route,
  - centred on the urinal,
  - at least 750 mm wide and 1200 mm deep, (see Figure 39a, page 59)
  - unobstructed by floor level changes or privacy screens, and
- have flush controls that are:
  - automatically operated, or
  - hand-operated complying with controls earlier in the standard (see 'Controls', page 46).

The grab bars for urinals shall:

- be at least 600 mm long,
- mounted vertically on the back wall:
  - on each side of the urinal,
  - not more than 380 mm from the centre of the urinal, and
  - with the lower end between 600 and 650 mm from the floor, and
- colour contrasted with the back wall.

A unique requirement for this CSA standard is a centerline indicator. The centerline of a urinal shall be indicated by a vertical element that:

- is centred on the urinal,
- extends to a height of at least 1300 mm from the floor, but never less than 150 mm above the upper urinal rim,
- is at least 50 mm wide,
- is raised at least 3 mm from the wall surface, and
- is colour contrasted from the back wall.

Of note for the centerline indicator is that exposed piping or other architectural features may be used for the centerline indicator. The centerline indicator shall apply to all urinals, when there is more than one present.

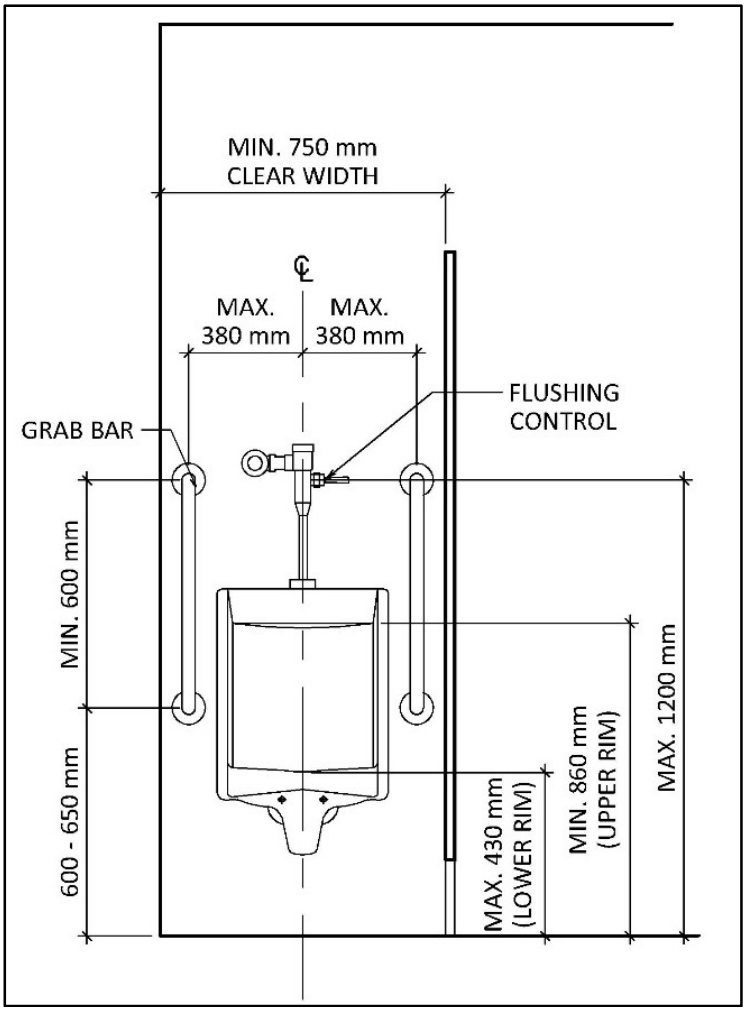


Figure 45 – Urinal Requirements (CSA B651)

Lavatories and Mirrors

NBC Division B, Article 3.8.3.15. – Lavatories and Mirrors

When required, lavatories shall: (see Figure 46)

- be equipped with faucets that are either automatically operated or have a manual control,
- be located so that the distance between the centre line of the lavatory and any side wall is not less than 460 mm,
- have the height to the rim is not more than 865 mm from the floor,
- have a clearance beneath the lavatory not less than:
  - 760 mm wide,
  - 735 mm high at the front edge,
  - 685 mm high at a point 200 mm back from the front edge, and
  - 230 mm high over the distance from a point 280 mm to a point 430 mm back from the front edge
- have insulated water supply and drain pipes where these pipes are exposed (See Note A-3.8.3.15.(1)(e) for exceptions),
- have a soap dispenser that is:
  - automatic, or
  - is operable with one hand (see 'Controls', page 46) is located not more than 1100 mm above the floor and within 500 mm from the front of the lavatory, and
- have a towel dispenser or other hand drying equipment located close to the lavatory and not more than 1200 mm above the floor.

The mirrors shall be:

- mounted with the bottom edge not more than 1000 mm above the floor, or
- fixed in an incline position so to be usable by a person in a wheelchair.

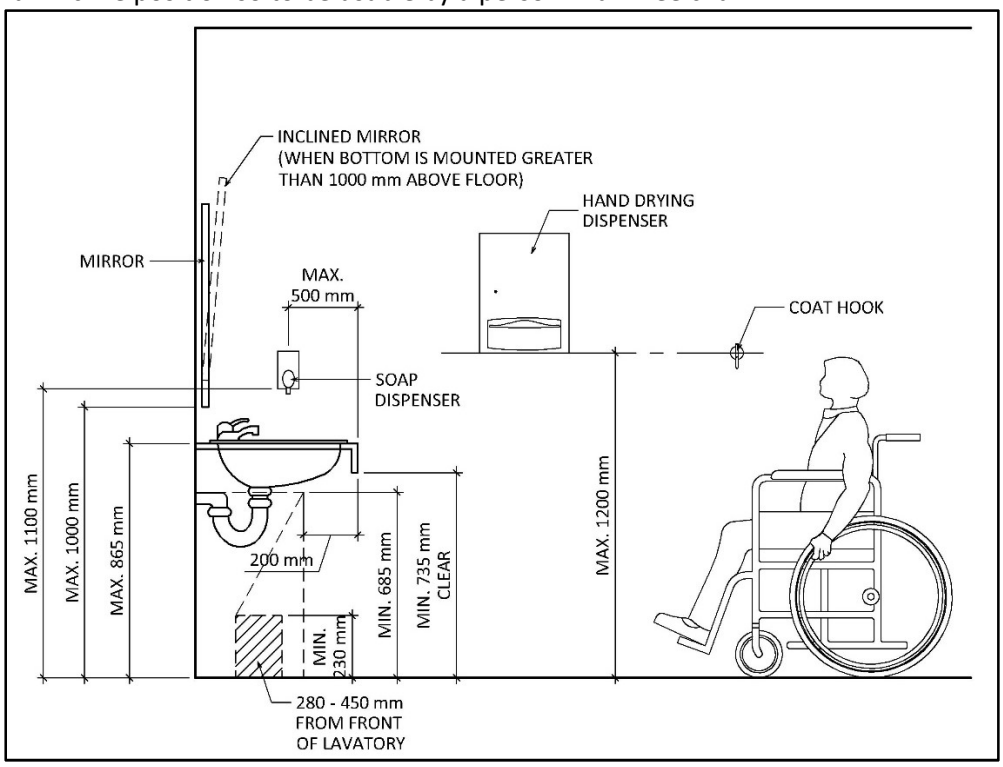


Figure 46 – Lavatories, Mirrors and Accessories (NBC)

CSA B651, Clause 6.2 – Washroom facilities

Under CSA B651 the requirements of lavatories and mirrors are as follows: (see Figure 47)

The lavatory shall:

- be mounted with the centerline at least 460 mm from a side wall,
- have the top of the lavatory located between 810 and 860 mm from the floor,
- have a knee space centred on the on the lavatory with at least 750 mm wide x 200 mm deep and 680 mm high with an additional toe clearance of at least 750 mm wide x 230 mm deep and 230 mm high,
- have a clear floor area centred with the lavatory at least 750 x 1200 mm, of which not more than 480 mm may be under the lavatory, and
- have hot water and drain pipes offset to the rear.

Lavatory counters shall:

- have a knee clearance at least 750 mm wide and 720 mm high when there is a front apron.

Faucets

The faucets shall:

- meet the requirements of Operating Controls as found in CSA-B651 (see 'Controls', page 46)
- not require the application of continuous force to maintain water flow,
- where metered, will provide at least ten (10) seconds of water flow, and
- when handles are utilized, have lever-type handles that are usable with a closed fist.

Maximum water temperature supplied to the lavatory shall not exceed 49°C.

Mirrors shall be mounted where the bottom edge of the is not more than 1000 mm from the floor.

Soap dispensers shall:

- be located within 500 mm reach of a person seated at the lavatory,
- not be higher than 1100 mm from the floor, and
- operable with one hand to dispense soap on the palm of the hand.

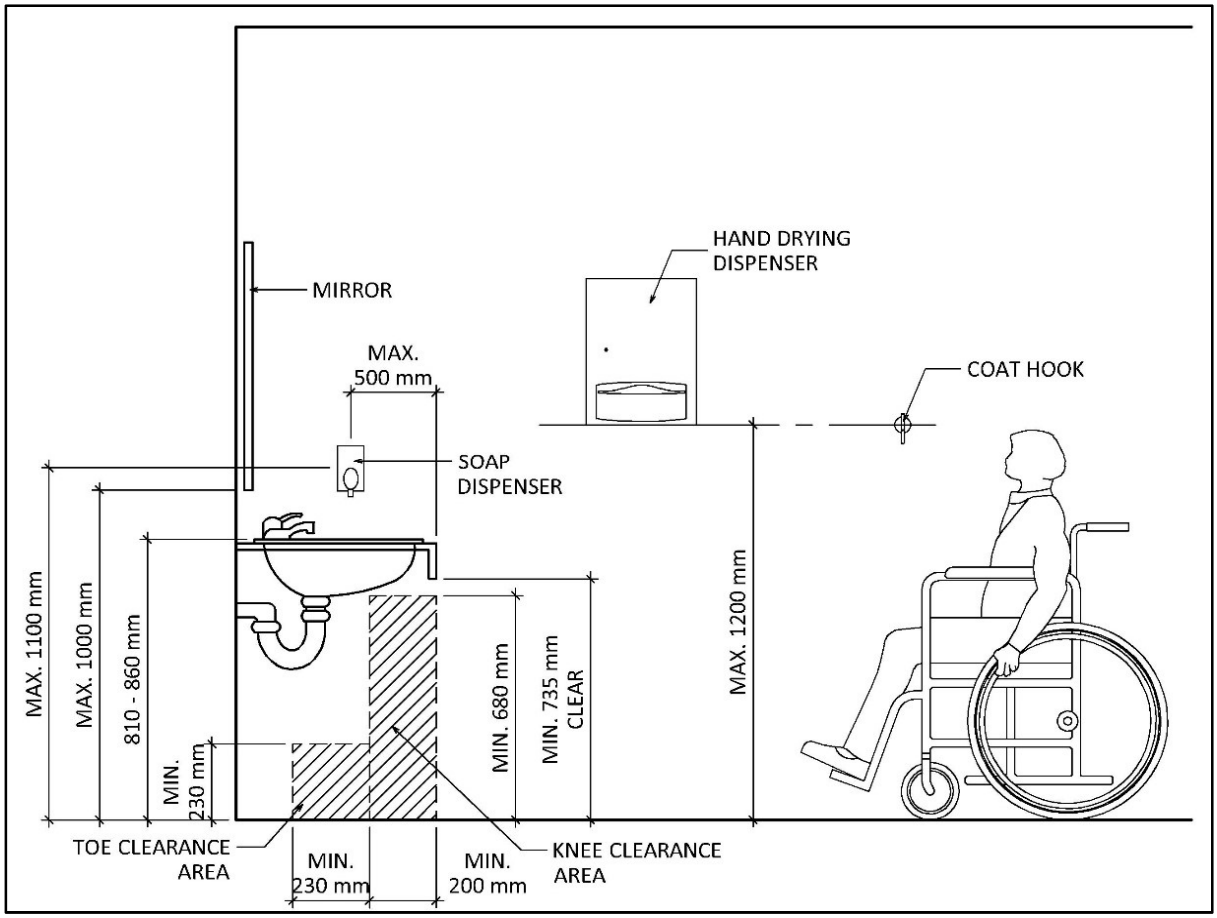


Figure 47 – Lavatories, Mirrors and Accessories (CSA B651)

Showers

NBC Division B, Article 3.8.3.16. – Showers

See Figures 48a & 48b for clarification

When required, showers shall:

- not be less than 1500 mm wide and 900 mm deep,
- have a clear floor space at the entrance to the shower that is not less than 900 mm deep and the same width as the shower. A fixture is permitted to project into the clear space provided that it does not restrict access to the shower,
- not have any doors or curtains that obstruct the controls or the clear floor space at the shower entrance,
- have a slip resistant floor surface,
- have a threshold not more than 13 mm higher than the finished floor and, when higher than 6 mm, beveled to a slope no steeper than 1 in 2,
- have two (2) grab bars that:
  - are slip resistant and free of any sharp or abrasive elements,
  - are mounted on surfaces that are free of sharp or abrasive elements,
  - are able to resist a load of not less than 1.3 kN (292 pounds) applied vertically or horizontally,
  - be 30 mm to 40 mm in diameter,
  - is mounted on a wall with a clearance of 35 to 45 mm from the wall,
  - has one of the bars that is not less than 1000 mm long and located vertically on the side wall 50 mm to 80 mm from the adjacent floor space, with its lower end 600 mm to 650 mm from the floor, and
  - has an L-shaped bar located on the opposite wall of the entrance to the shower, with a horizontal member not less than 1000 mm long mounted 750 mm to 870 mm from the floor, and the vertical member not less than 750 mm long, mounted 400 to 500 mm from the side wall on which the other vertical grab bar is mounted,
- have a hinged seat that is not spring loaded or a fixed seat that has a smooth slip-resistant surface with no rough edges with the following specifications:
  - 450 mm wide and 400 mm deep,
  - mounted on the same wall as the vertical grab bar, at 460 - 480 mm from the floor, and
  - resist a minimum load of 1.3 kN (292 pounds).
- have a pressure-equalizing valve or thermostatic-mixing valve and other controls that:
  - conform to the controls as specified earlier in this guide. (see ‘Controls’ page 46)
  - are mounted on the wall opposite the entrance to the entrance of the shower and not more than 1200 mm above the floor, and within reach of the seat.
- have a hand held shower head with not less than 1800 mm of flexible hose and located so that it:
  - can be reached from a seated position,
  - can be used in a fixed position at a height between 1200 and 2030 mm (approx. four (4) feet to six (6) foot nine (9) inches), and
  - does not obstruct the use of the grab bars, and
- have a recessed soap holder that can be reached from the seated position.

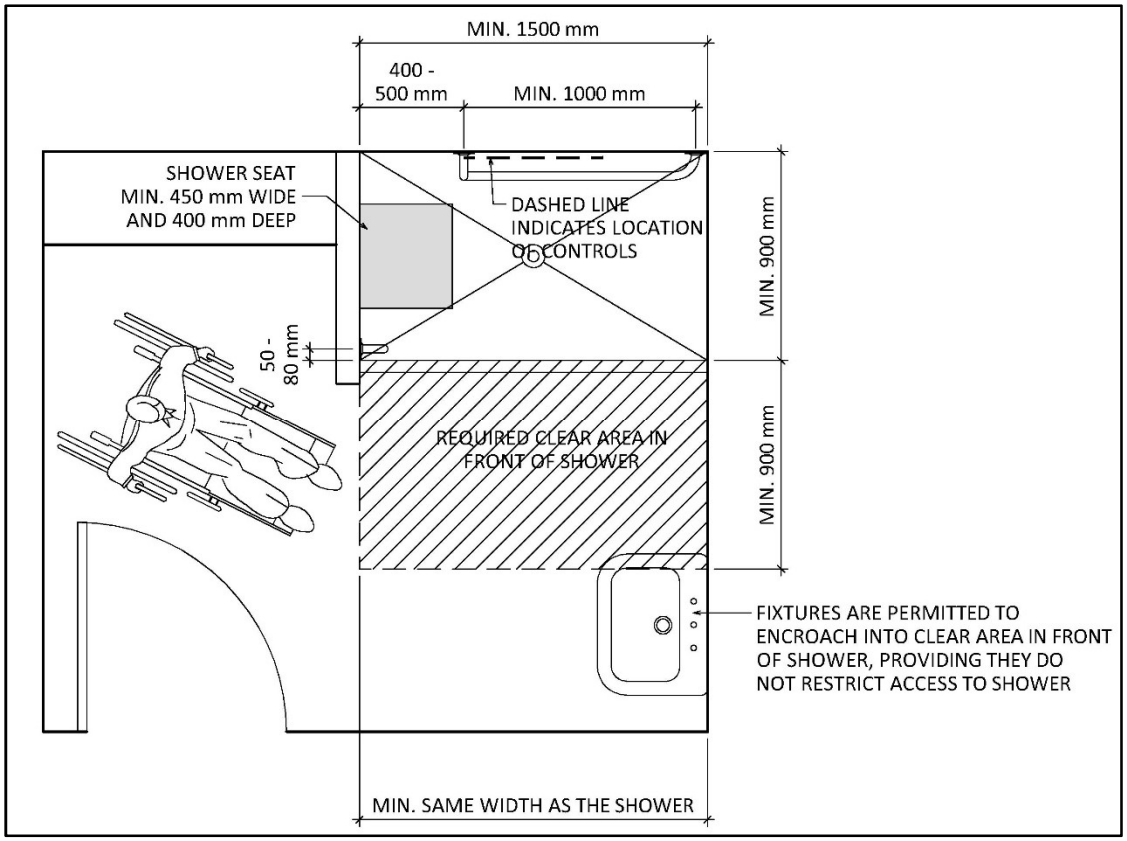


Figure 48a – Shower Requirements, Plan View (NBC)

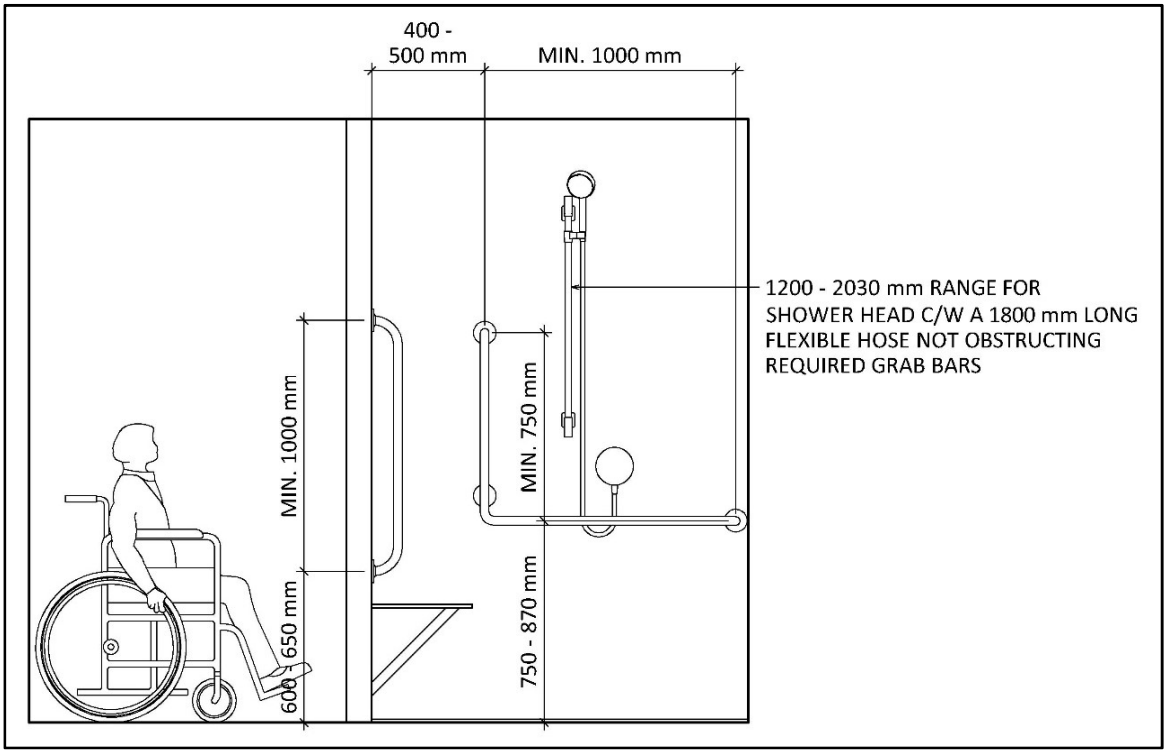


Figure 48b – Shower Requirements, Elevation View (NBC)

CSA B651, Clause 6.5.5 – Roll-in shower stalls

CSA B651 has two sets of shower specifications

The first is a roll-in shower stall and shall have: (see Figures 49a & 49b)

- maximum water temperature supplied to the shower shall not exceed 49°C.
- shower heads shall:
  - be handheld type,
  - provided with a hose a minimum 1500 mm long,
  - allow for use in a fixed position, and
  - be mounted vertically where:
    - it is adjustable between 1200 and 2030 mm for the floor, and
    - not obstruct the use of grab bars
- when there is an enclosure, any door or curtain shall not obstruct the controls or transfer space,
- the shower floor shall be:
  - slip resistant even when wet, and
  - slope minimally for drainage
- roll-in shower stalls shall have an interior clear area of a minimum 750 by 1500 mm,
- the access area shall be clear in front of the shower entrance at least 900 deep by 1500 mm wide (see Figure 49a)
- grab bars shall:
  - have one horizontally on a side wall at least 600 mm in length and between 750 and 850 mm from the floor,
  - have one vertically on the opposite side wall at least 1000 mm in length, with the lower end between 600 and 650 mm from the floor and between 50 and 80 mm from the adjacent clear area in front of the entrance,
  - have a horizontal grab bar on the back wall that is a minimum 1000 mm in length and between 750 and 850 mm from the floor, and
  - have a vertical grab bar on the back wall at least 750 mm in length with the lower edge between 50 and 60 mm above the horizontal grab listed above and located between 400 and 500 mm from the side wall on which the other vertical grab bar is mounted.
- controls for the showers shall:
  - comply with the specifications for controls in CSA B651 discussed earlier in this guide (see 'Controls', page 46)
  - be mounted in the centre of the back wall opposite of the shower entrance, and
  - be not more than 1200 mm above the floor.
- thresholds shall:
  - not exceed 13 mm in height, and
  - if between 7 and 13 mm in height and beveled at a slope not steeper than the ratio of 1:2.

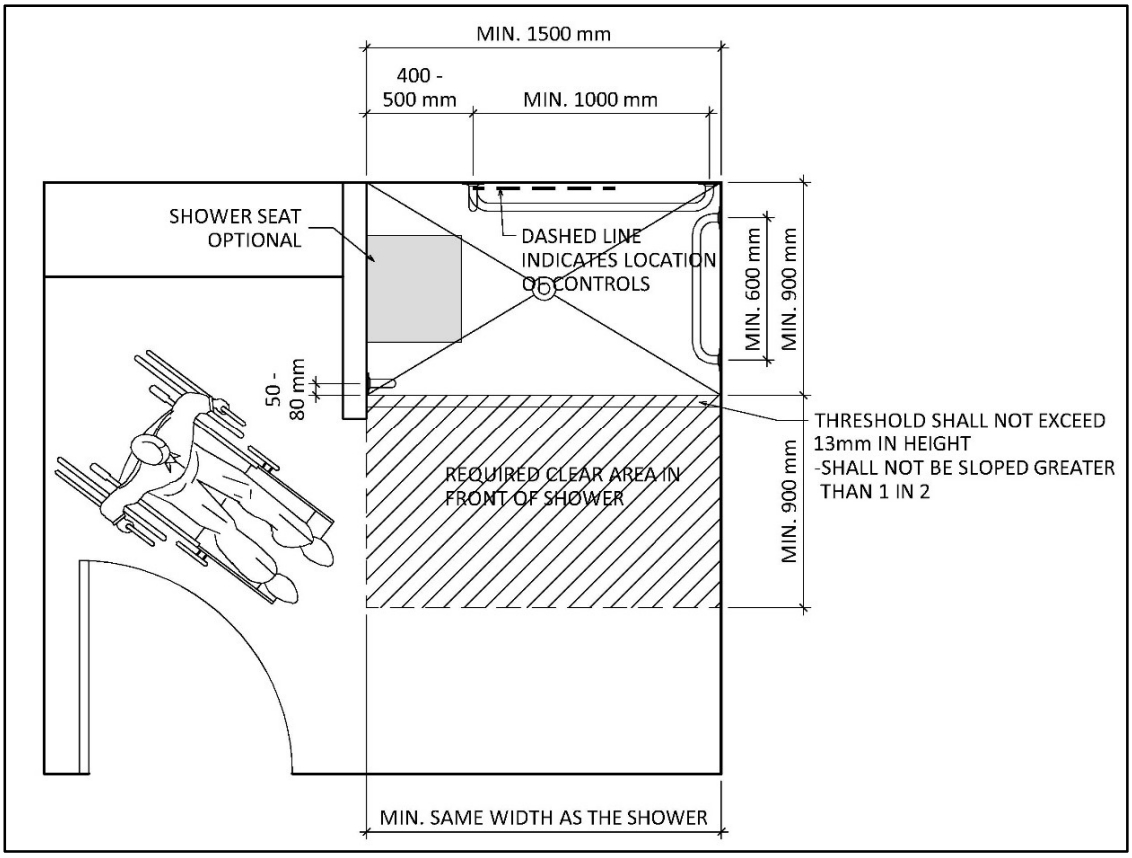


Figure 49a – Roll-in Shower Requirements, Plan View (CSA B651)

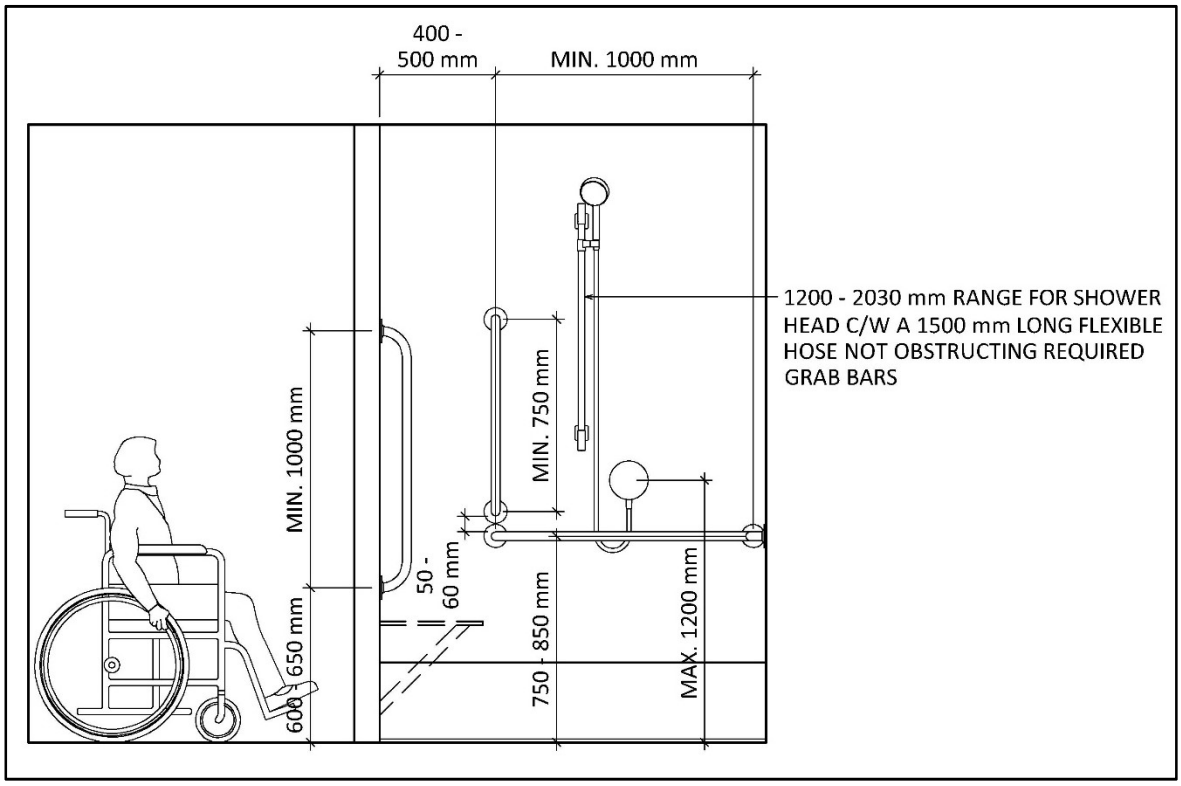


Figure 49b – Roll-in Shower Requirements, Elevation View (CSA B651)

CSA B651, Clause 6.5.6 – Shower stalls with curb

The second set of specifications for showers are for shower stalls with a curb.

This set of shower stalls shall have:

- a minimum interior clear area of a minimum of 900 by 900 mm,
- a clear floor area with a minimum of 900 by 1200 mm (see Figure 50a),
- a seat that is:
  - on the wall opposite of the controls,
  - at least 400 mm wide extending the full depth of the stall,
  - with its top between 430 and 480 mm from the floor, and
  - with a smooth non-slip surface without rough edges,
- two grab bars shall be mounted as follows:
  - one horizontal on the back wall that is 750 mm in length and mounted between 750 and 850 mm from the floor,
  - one vertical on the same wall as the controls that is 1000 mm in length and mounted where the lower end is between 600 and 650 mm from the floor, and is between 80 and 120 mm from the adjacent clear floor area (see Figures 50a & 50b).
- controls that:
  - comply with the specifications for controls in CSA B651 discussed earlier in this guide (see 'Controls', page 46),
  - mounted within reach of the seat,
  - be not more than 1200 mm above the floor, and
  - accessible from outside the stall.
- shower curbs not be higher than 100 mm and not wider than 100 mm.

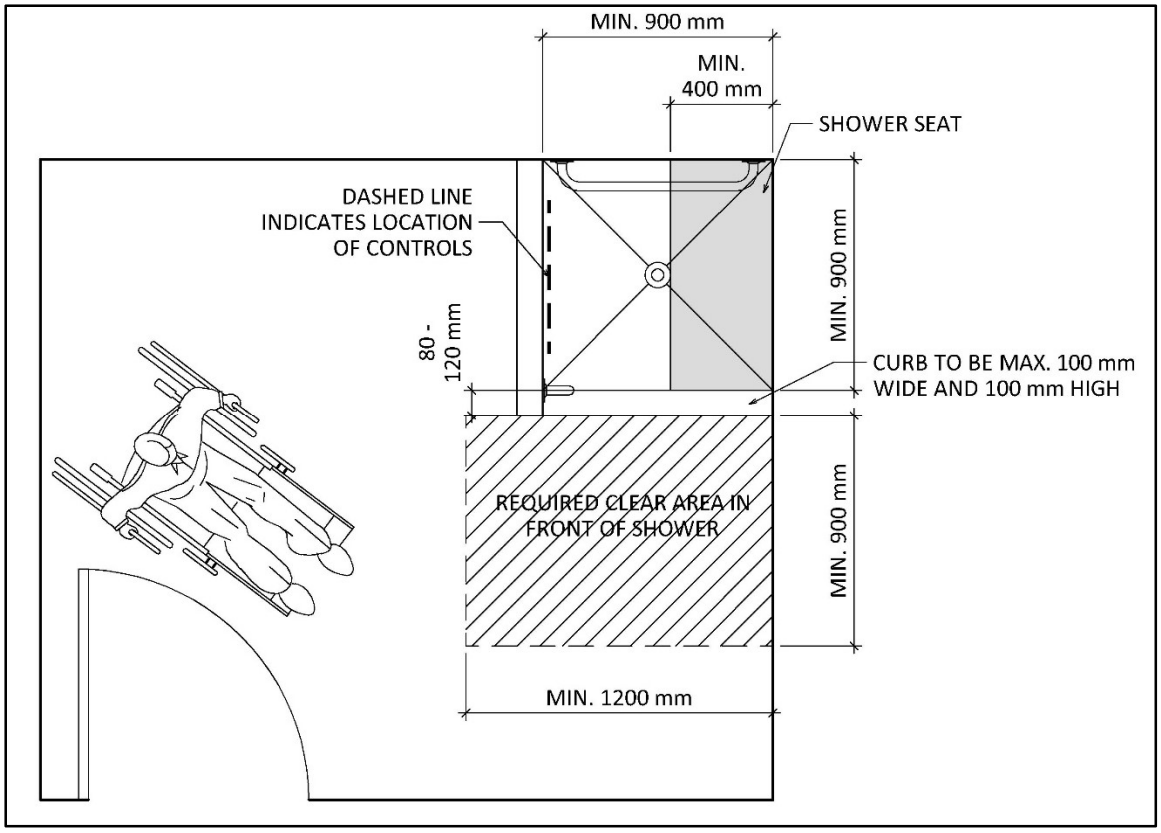


Figure 50a – Shower w/ Curb Requirements, Plan View (CSA B651)

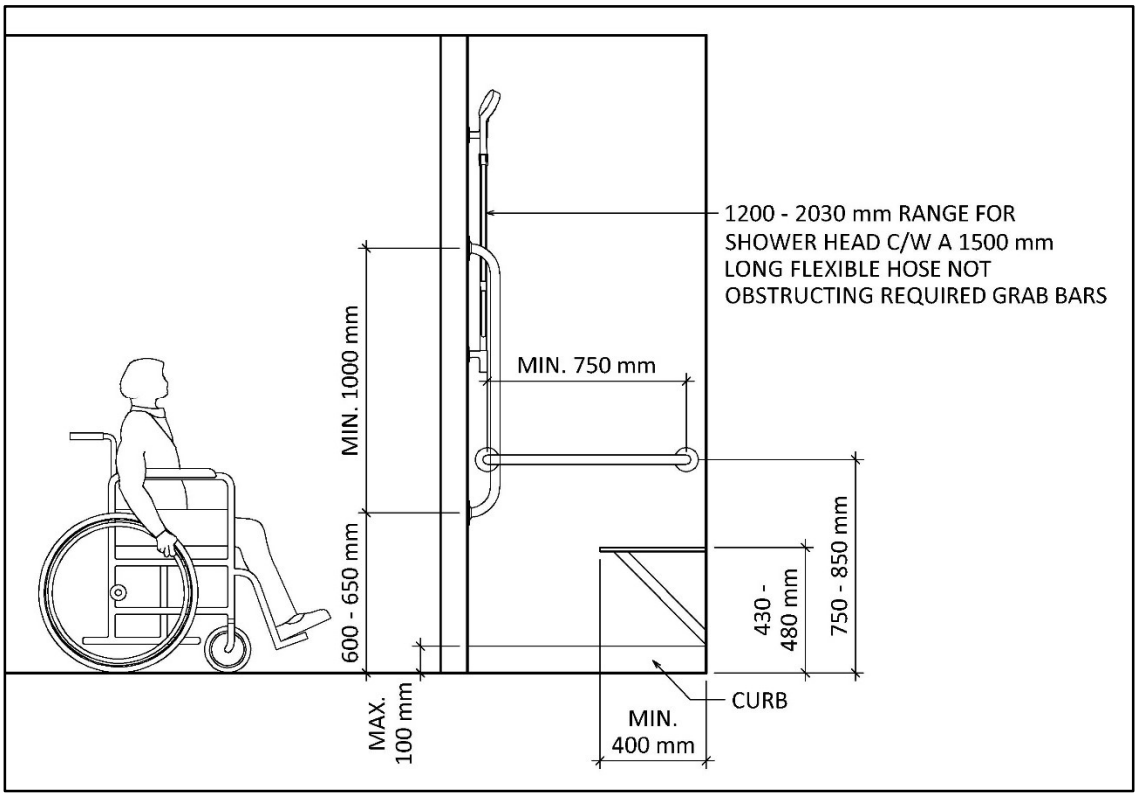


Figure 50b – Shower w/ Curb Requirements, Elevation View (CSA B651)

Bathtubs

NBC Division B, Article 3.8.3.17. – Bathtubs

When required, bathtubs shall: (see Figure 51a & 51b)

- be located in a room with a clear floor space not less than 1500 mm in diameter,
- not be less than 1500 mm long,
- have a clear floor space not less than 750 mm wide adjacent to the entire length of the bathtub,
- be capable to being accessed along the full length of the rub with no tracks mounted on rim,
- faucets with controls that:
  - conform to the requirements discussed earlier in this guide (see 'Controls', page 46),
  - are installed on the centerline of the tub and the exterior edge of the tub rim and at a maximum height of 450 mm above the rim,
- have three (3) grab bars that:
  - requirements of grab bars covered earlier in this guide (see 'Grab Bars', page 55)
  - are not less than 1200 mm long,
  - two of which are located vertically at each end of the bath tub, set 80 to 120 mm from the outside edge of the tub, and the lower end is between 180 to 280 mm above the bathtub rim, and
  - one is located horizontally along the length of the tub at 180 – 280 mm above the bathtub rim,
- have a slip resistant bottom surface, and
- have a hand-held shower head with a flexible hose not less than 1800 mm in length and can be fixed between a height of 1200 mm to 2030 mm.

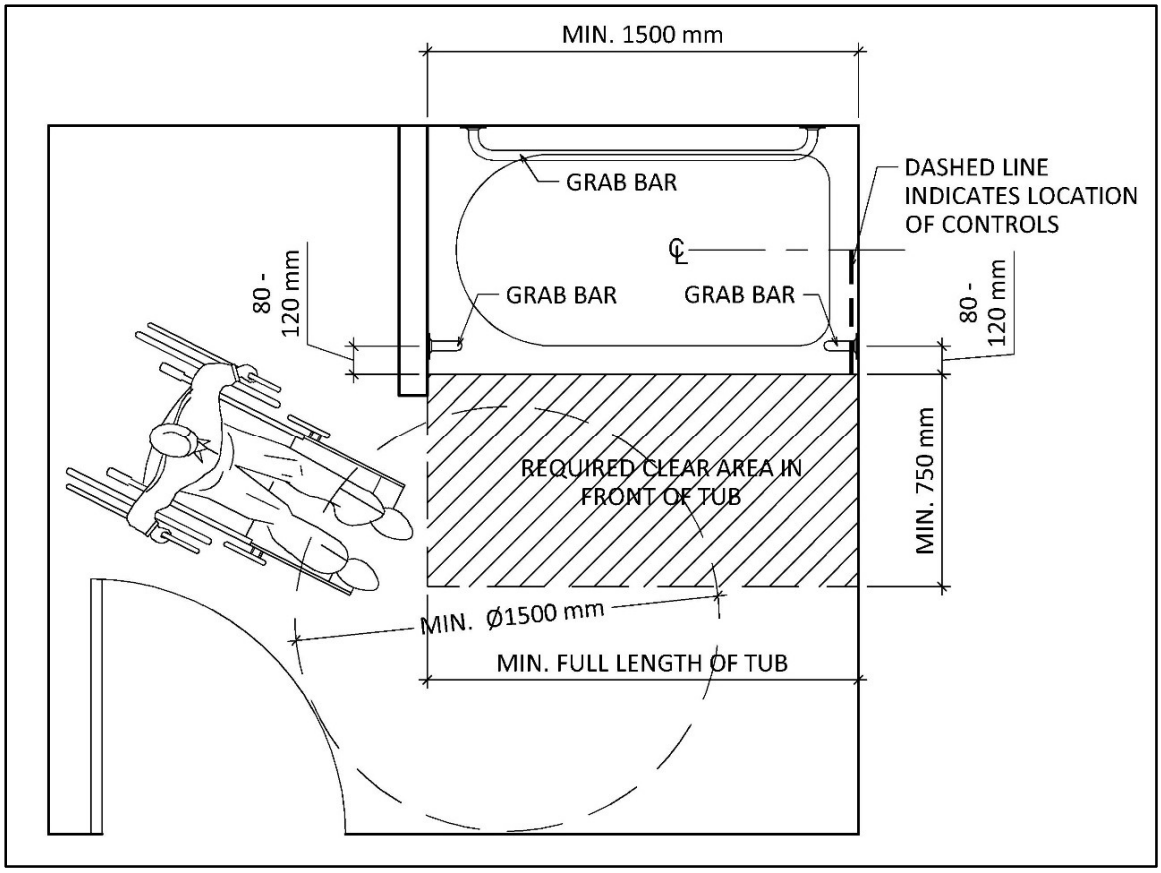


Figure 51a – Bathtub Requirements, Plan View (NBC)

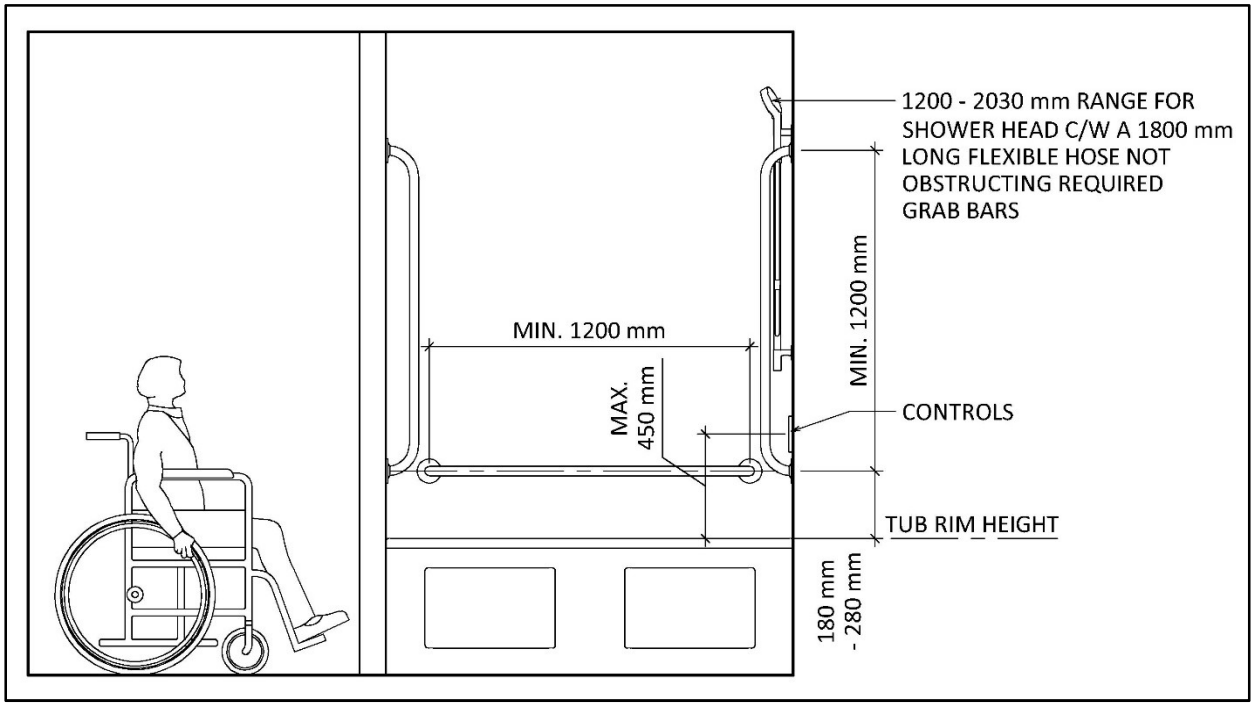


Figure 51b – Bathtub Requirements, Elevation View (NBC)

CSA B651, Clause 6.5.7 – Bathtubs

See Figures 52a & 52b for clarification.

When required, bathtubs shall:

- have a clear floor area 750 mm wide over the entire length of the bathtub,
- have two grab bars where:
  - one is horizontally centred along the length of the tub, with a length not less than 1200 mm and is mounted between 180-280 mm above the bathtub rim, and
  - one vertically mounted on the foot end of the tub:
    - a minimum of 1200 mm in length
    - with the lower end between 180 – 280 above the bathtub rim, and
    - between 80 and 120 mm from the adjacent floor area.
- controls for the bathtub shall:
  - meet the requirements as covered earlier in this guide (see 'Controls', page 46)
  - be located at the foot end of the tub between the centerline of the bathtub and the clear floor area, and
  - be located not more than 450 mm above the bathtub rim.
- not have an enclosure, and
- have a slip-resistant base.

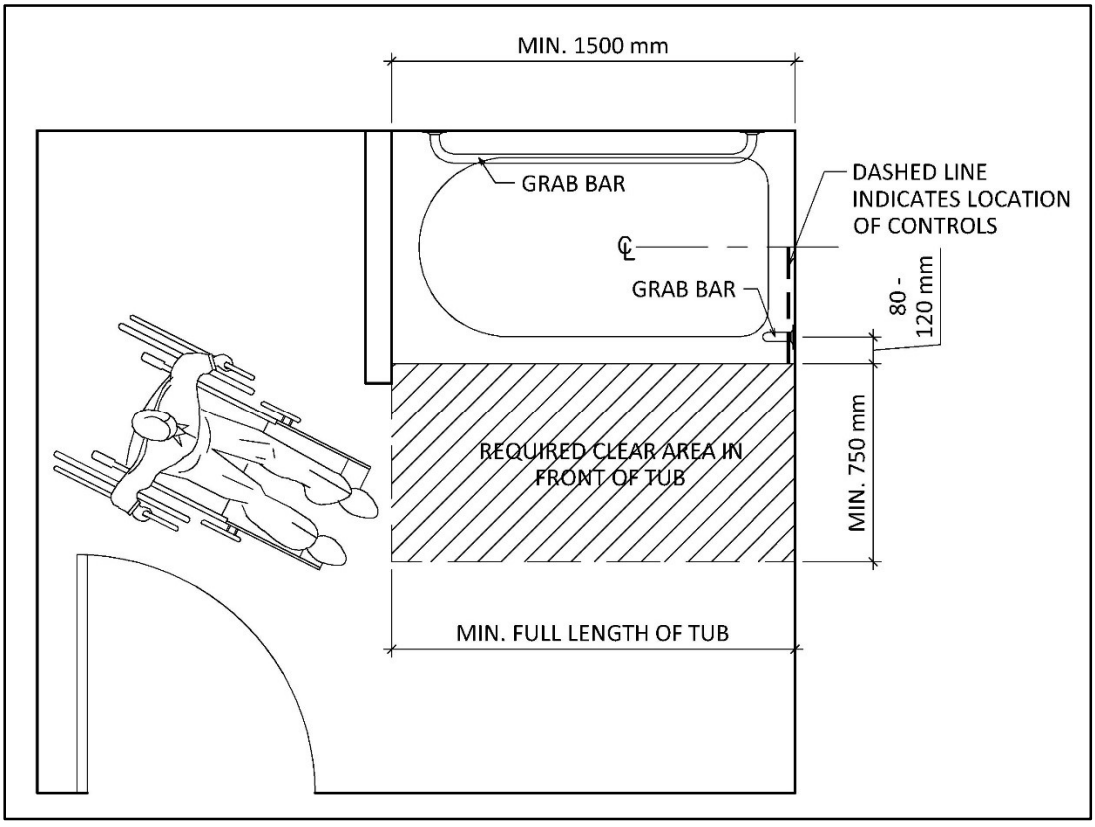


Figure 52a – Bathtub Requirements, Plan View (CSA B651)

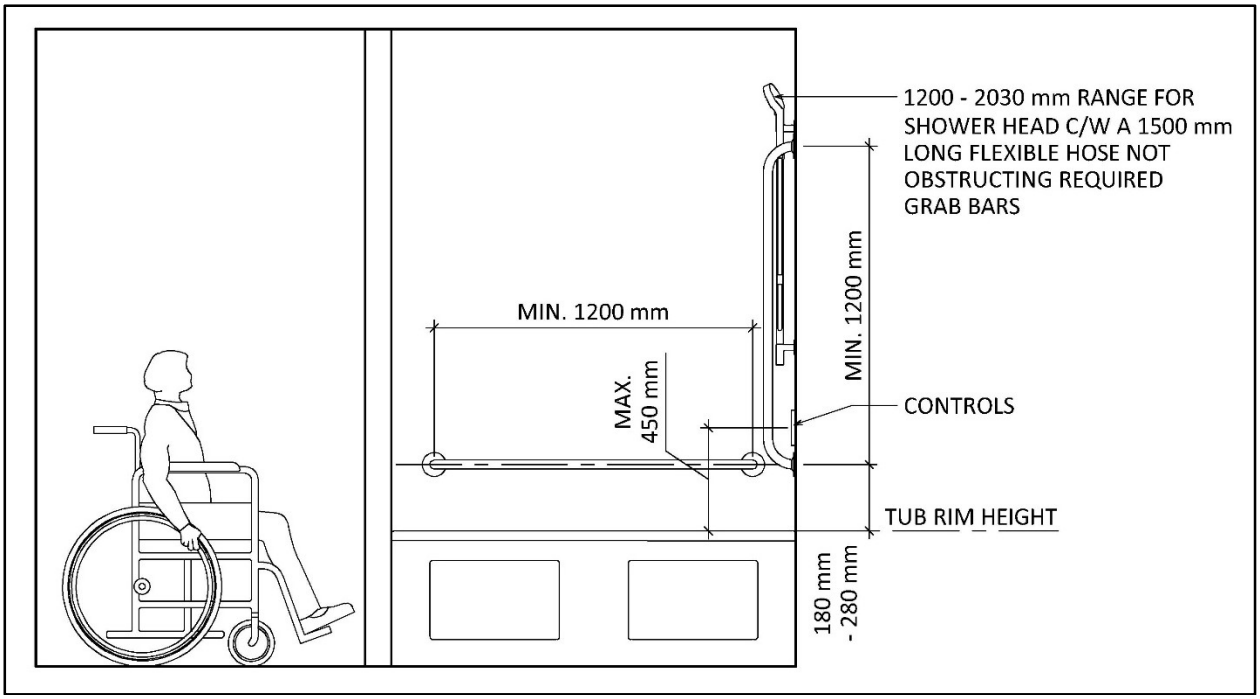


Figure 52b – Bathtub Requirements, Elevation View (CSA B651)

Assistive Listening Devices

NBC Division B, Article 3.8.3.18. – Assistive Listening Devices

When required, assistive listening devices and systems shall:

- encompass the entire seating area, and
- if part of an induction loop system, only half of the seating area in the room need to be encompassed.

CSA B651, Clause 6.6.1 – Assistive listening systems

- Where an assistive listening system is provided, and induction loop, infrared system, or radio frequency system shall be used.

Counters

NBC Division B, Article 3.8.3.19 – Counters

Shelves or counters required shall: (see Figures 53a & 53b)

- have a barrier-free section not less than 760 mm long centred over a knee space as detailed below,
- have a surface not more than 865 mm above the floor, and
- have a knee space under the surface that is:
  - not less than 760 mm wide,
  - not less than 685 mm high, and
  - not less than 485 mm deep.

When a counter that is in constant use, such as a cafeteria counter, no knee space is required to be supplied underneath it.

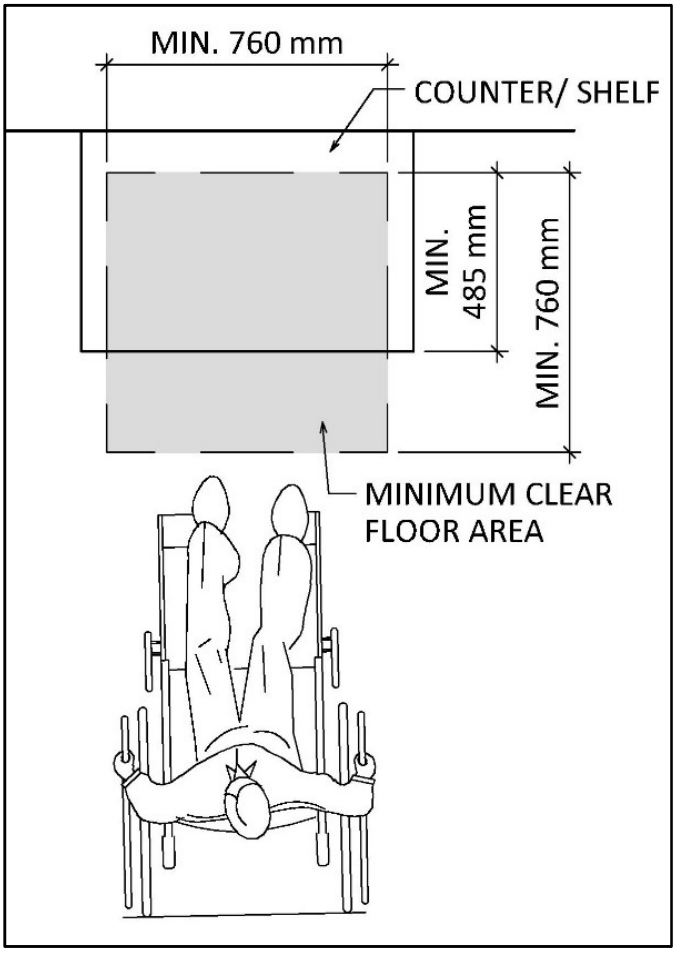


Figure 53a – Counter Requirements (NBC)

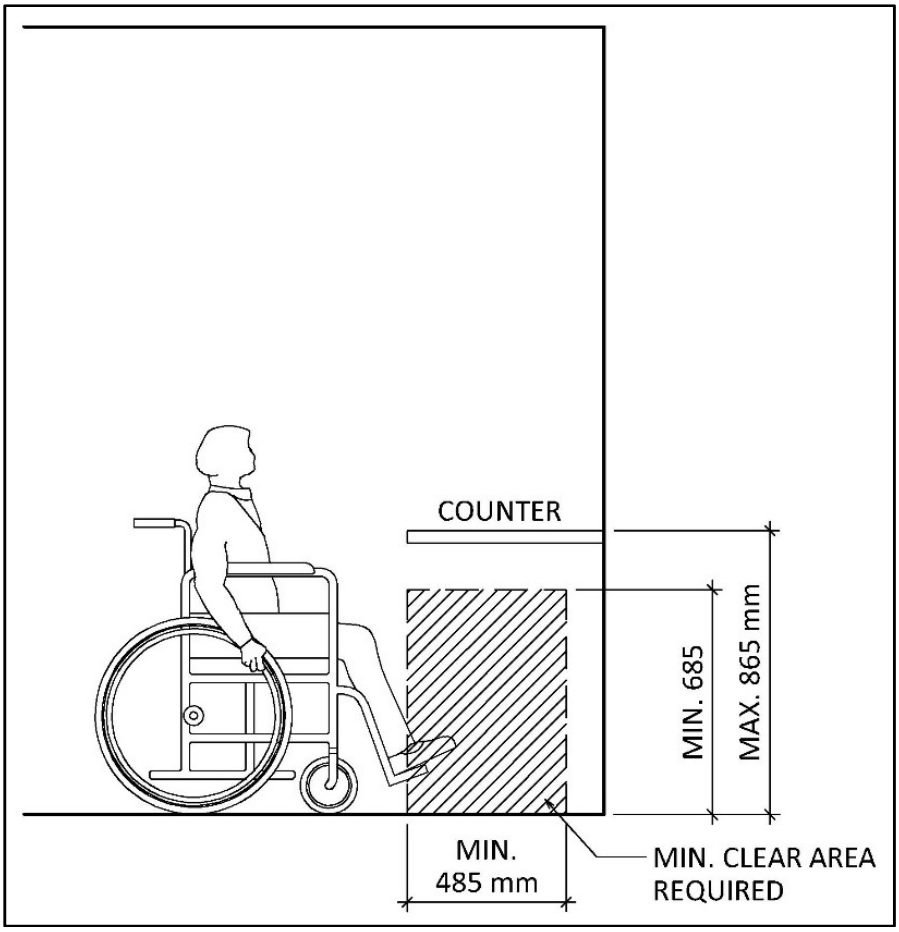


Figure 53b – Counter Requirements (NBC)

CSA B651, Clause 6.7.1 – Spaces at tables and counters

Shelves or counters required shall: (see Figures 54a & 54b)

- have a clear floor area not less than 750 mm by 1200 mm, with maneuvering space to approach it,
- be at a height between 730 mm and 860 mm from the floor, and
- have a knee clearance that is:
  - 750 mm wide by 480 mm deep and 680 mm high, where the overlap of the clear floor area is not more than 480 mm.

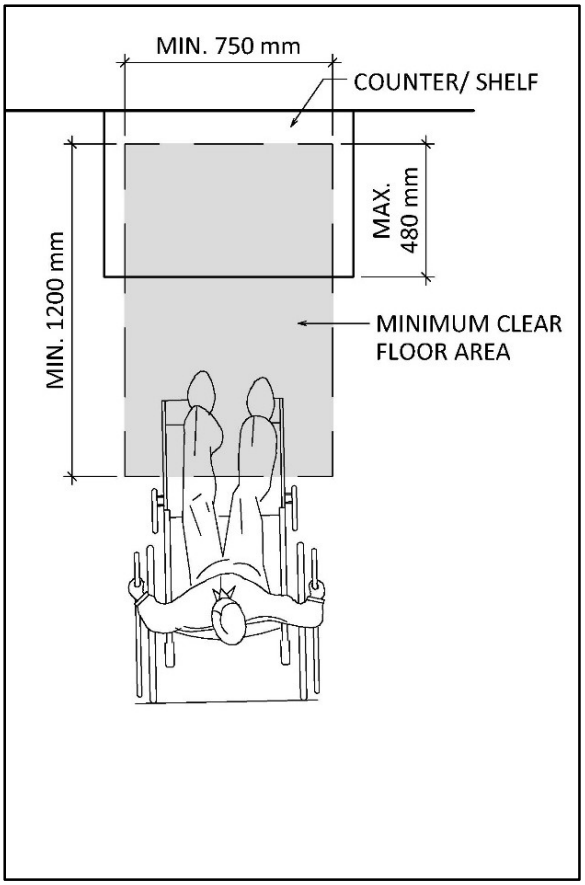


Figure 54a – Counter Requirements (CSA B651)

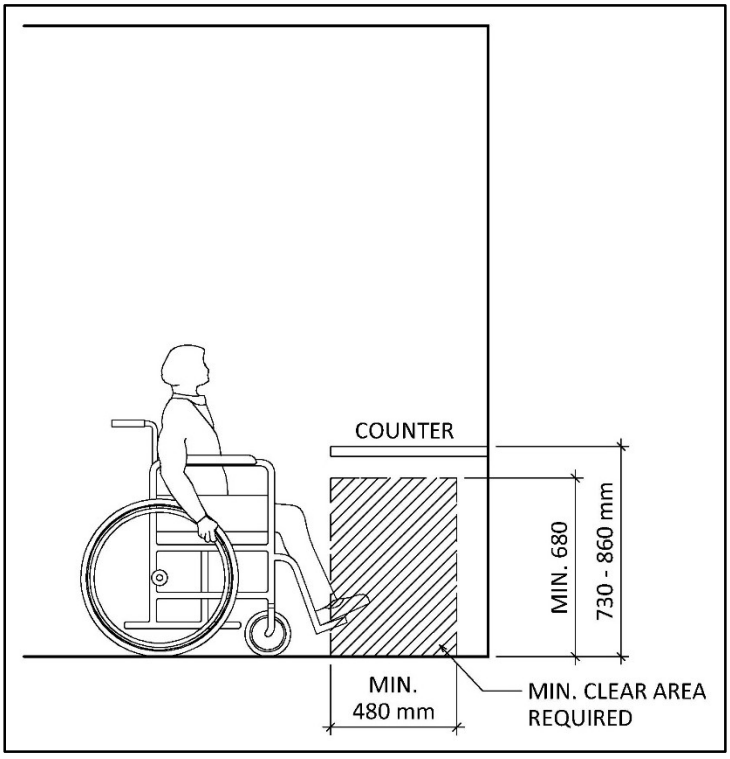


Figure 54b – Counter Requirements (CSA B651)

Shelves and Counters for Telephones

NBC Division B, Article 3.8.3.20. – Shelves or Counters for Telephones

Shelves or counters required by the NBC shall: (see Figure 55)

- be level,
- not be less than 305 mm (12 inches) deep,
- have, for each telephone provided, a clear space not less than 250 mm wide having no obstruction within 250 mm above the surface, and
- have a section with a surface not more than 865 mm above the floor serving at least one telephone,

- when a wall hung telephone is provided above a shelf or counter section as described above, it shall be located so that the receiver and coin slot are not more than 1200 mm above the floor.

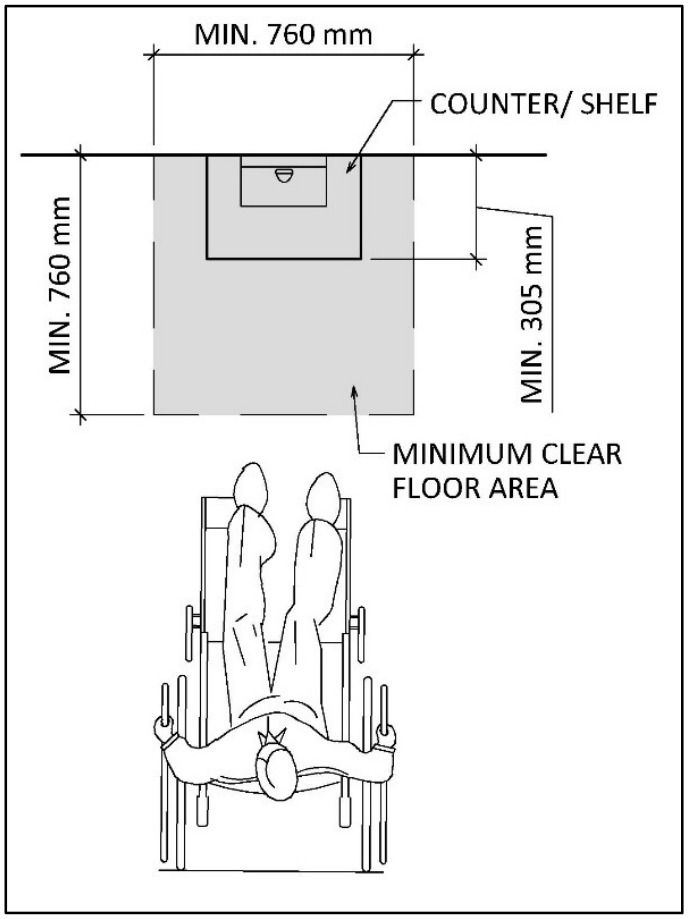


Figure 55 – Shelves or Counters for Telephone (NBC)

CSA B651, Clause 6.6.2 – Public Telephones

See Figure 56 for clarification

Shelves or counters for telephones required, shall:

- have a minimum of 450 mm wide by 300 mm deep,
- provide a space of at least 250 mm high and 225 mm wide for teletypewriter (TTY) or text telephone (TT), and
- be at a height between 730 and 860 mm from the floor.

When telephones are on counters, the counters shall:

- have a clear floor area of at least 750 mm wide and 1200 mm deep, which shall extend to not more than 480 mm under the shelf or counter, and
- have a knee clearance between 680 – 730 mm high.

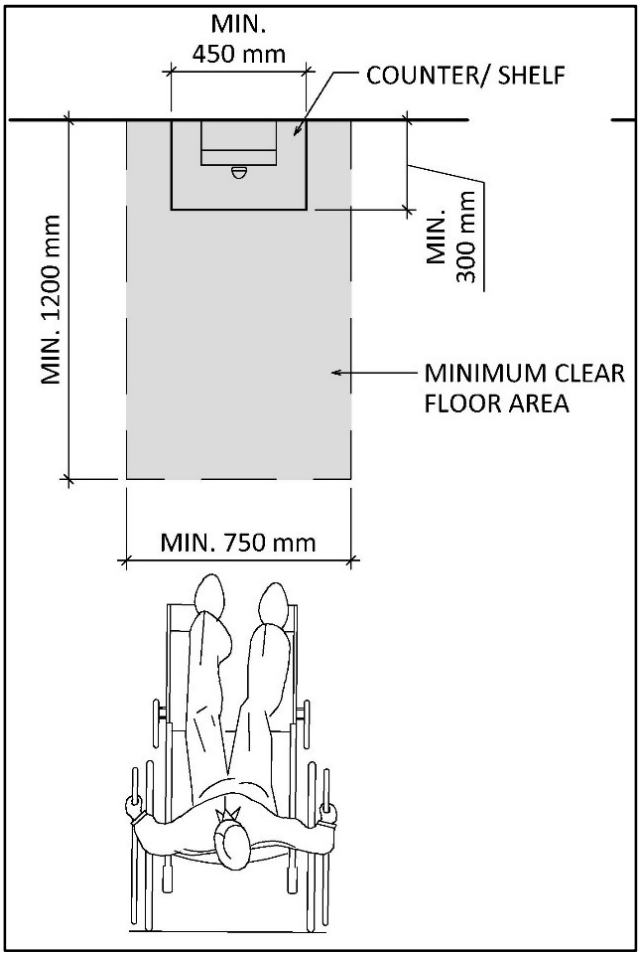


Figure 56 – Shelves or Counters for Telephone (CSA B651)

Spaces in Seating Area

NBC Division B, Article 3.8.3.21. – Spaces in Seating Area

Spaces designed for wheelchair use required by the NBC shall: (see Figure 57)

- be clear and level, or level with removable seats,
- not be less than 900 mm wide and 1525 mm long to allow a wheelchair to enter with a side approach, and 900 mm by 1220 mm long when the wheelchair can enter from the front or rear of the space,
- be arranged so that at least two (2) designated spaces are side by side,
- be located adjoining a barrier-free path of travel without infringing on egress from row seating or any aisle requirements, and
- have seats throughout as part of a seating plan, so as to provide a choice of viewing locations with clear views of the event taking place.

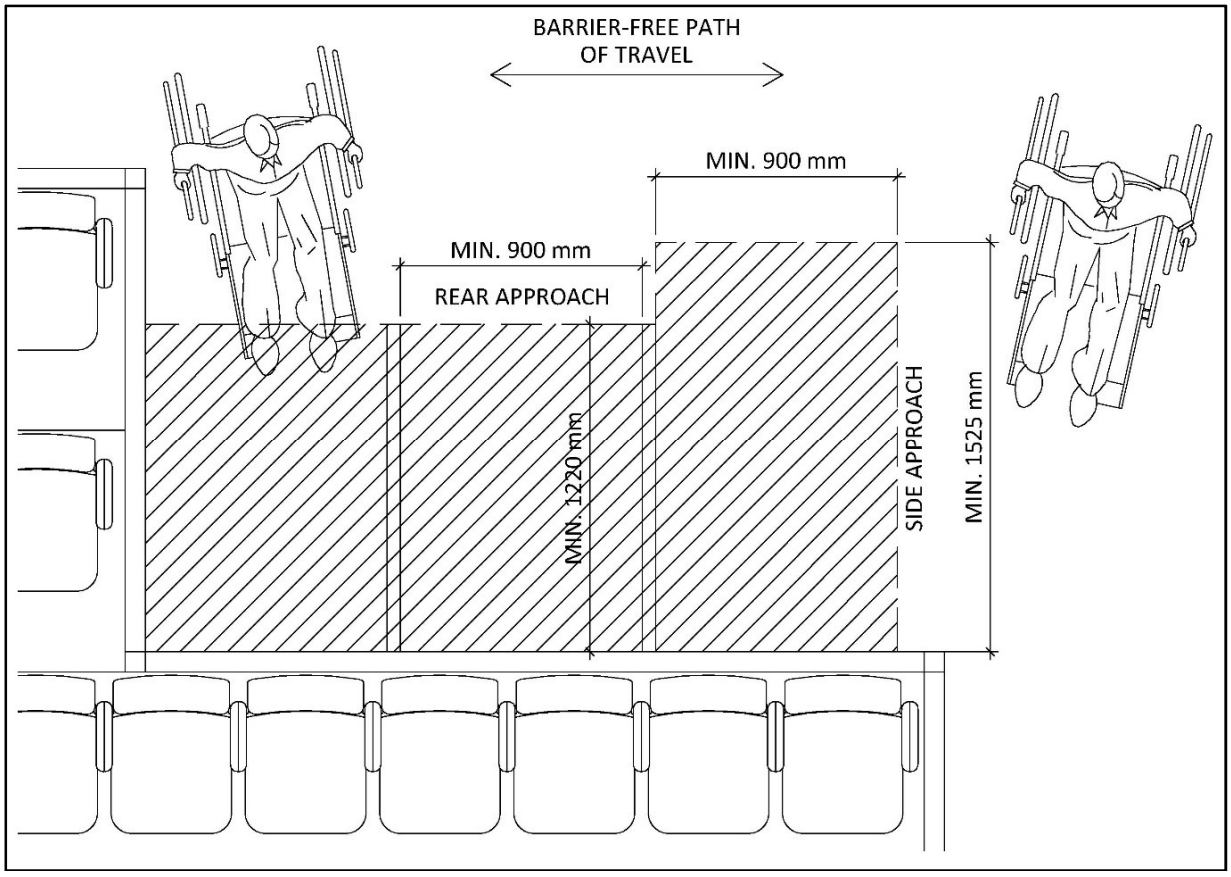


Figure 57 – Spaces in Seating Areas (NBC)

Minimum Designated Wheelchair Spaces

NBC Division B, Article 3.8.2.3. - The minimum number of designated wheelchair spaces shall conform to the following table:

Number of Fixed Seats in Seating Area	Number of Spaces Required for Wheelchairs
2 - 100	2
101 - 200	3
201 - 300	4
301 - 400	5
401 - 500	6
501 - 900	7
901 - 1300	8
1301 - 1700	9
each increment of up to 400 seats in excess of 1700	one additional space

CSA B651, Clause 6.7.2 – Rest area seating

Spaces designed for wheelchair use required, shall: (see Figure 58)

- have a clear floor area of 850 mm by 1200 mm,
- have a clear and level surface,
- be located adjacent to a means of egress,
- be an integral part of the seating plan, that would be dispersed throughout the seating area on all levels,
- be adjacent to other seating,
- provide half of the accessible seating to be placed side by side, and
- have sight lines that are comparable to seating positions and not reduced or obstructed by standing members of the audience.

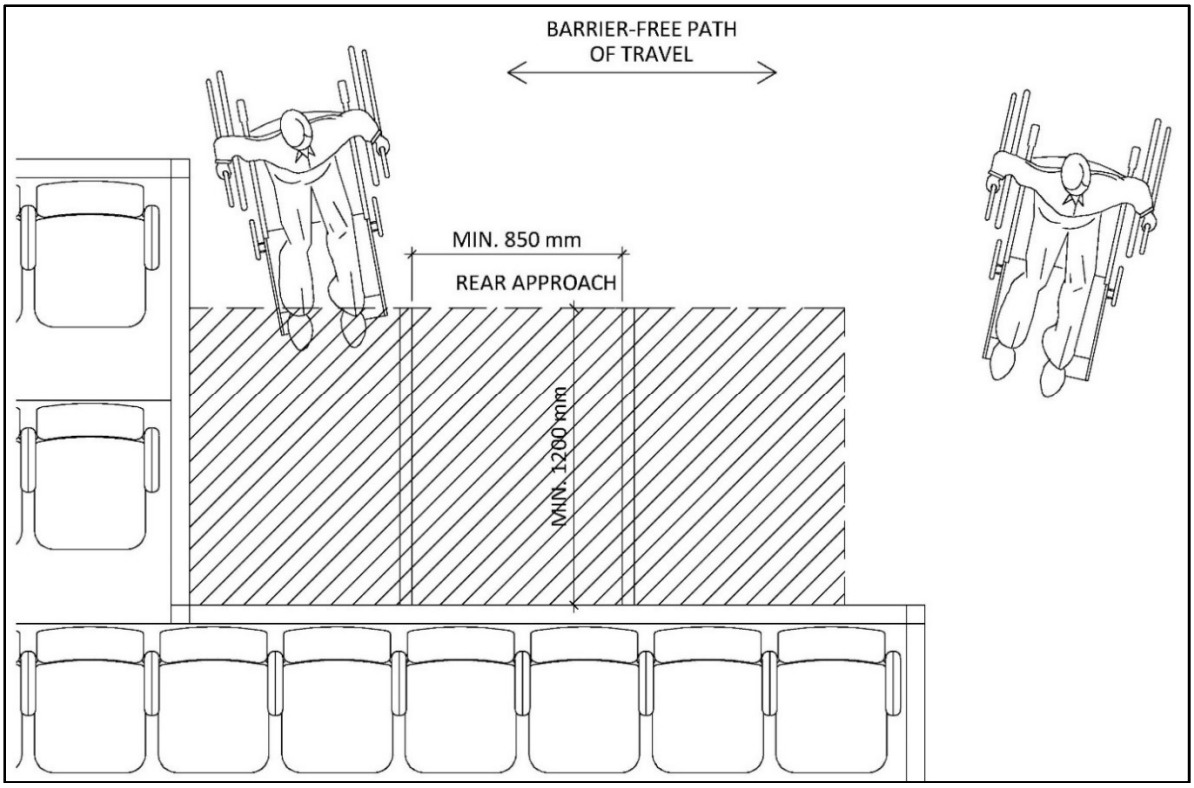


Figure 58 – Spaces in Seating Areas (CSA B651)

Minimum Wheelchair Viewing Spaces

CSA B651, Clause 6.7.3.3, Table 6. - The minimum number of wheelchair viewing spaces shall conform to the following table:

Number of Fixed Seats in Seating Area	Number of Spaces Required for Wheelchairs
4 to 25	1
26 to 50	2
51 to 150	4
151 to 300	5
301 to 500	6
501 to 5000	6, plus 1 for each 150, or fraction thereof
over 5000	36, plus 1 for each 200, of fraction thereof

Clear Sight Lines

Both the NBC Division B, Clause 3.8.3.21.(1)(e) and CSA B651, Clause 6.7.3.3. have the same requirement of clear view sight lines for the wheelchair spaces when required in fixed seating areas.

The following illustration clarifies the issue. (see Figure 59)

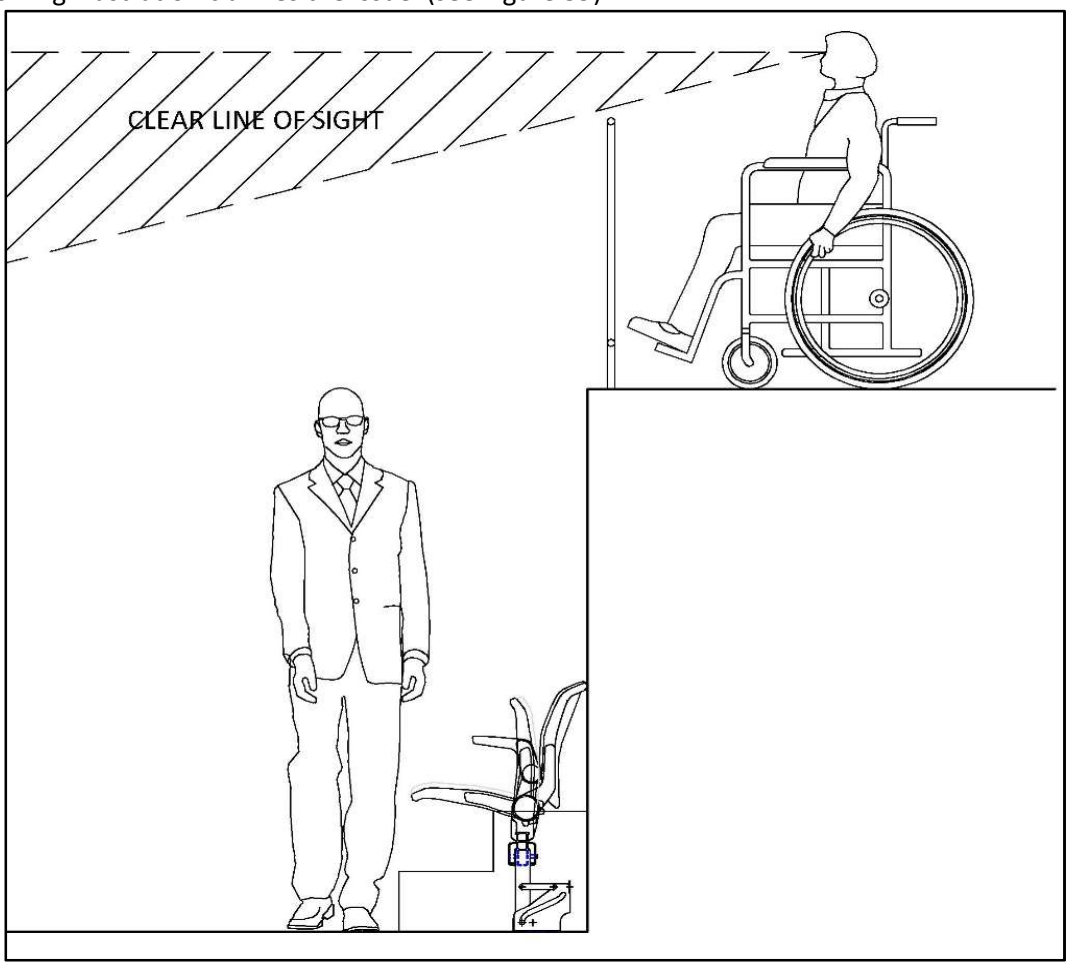


Figure 59 – Clear Sight Lines (NBC & CSA B651)

Other Information

The NBC references many standards, such as CSA B651. These are published by accredited standards development organizations in Canada and other countries. Referencing a document in a code has the effect of making the provisions of that document part of the Codes.

Documents referenced in a code apply only to the extent that they relate to buildings and the part of the Codes where they are referenced. If there is conflict between a code provision and a referenced document, the provisions of the Codes govern.

Referenced documents shall be the edition designated by the Codes currently in use in Saskatchewan.

Appendices

Appendix A – Barrier-Free Application Checklist
Appendix B – Barrier-Free Design Requirements (NBC)
Appendix C – Barrier-Free Design Requirements (CSA B651)

Appendix A – Barrier-Free Application Checklist

Item		Status		
NBC - Exceptions (NBC, Div. B, Article 3.8.2.1.)	**Authority**	**√**	**X**	**N/A**
Is the proposed building for construction one of the following: • House (detached, semi-detached, house with a secondary suite, duplexes, triplexes, townhouses, row houses and boarding houses) • Building of Group F1 occupancy • Building that is not intended to be occupied on a daily or full-time basis (i.e. automatic telephone exchanges, pumphouses and substations) the barrier-free requirements do not apply.	NBC 3.8.2.1.	◯	◯	◯
NBC – Area Requiring a Barrier-Free Path of Travel	**Authority**	**√**	**X**	**N/A**
A barrier-free path of travel from the entrance storey and within all normally occupied floor areas served by a passenger elevator, escalator, inclined moving walk, or other platform-equipped passenger-elevating device. (exemptions exist – see page 22 for clarification)	NBC 3.8.2.3.	◯	◯	◯
Existing Building exemption provision	**Authority**	**√**	**X**	**N/A**
• Is the existing building barrier-free? • Is the building greater than 600 m^2? • Do the barrier-free requirements apply? NOTE: Consult decision tree on Figure 2 page 13 for clarification	UBAS Regs Section 14, 15 and 16	◯ ◯ ◯	◯ ◯ ◯	◯ ◯ ◯
Residential Occupancy Barrier-Free Requirements (SK Amendment)	**Authority**	**√**	**X**	**N/A**
The UBAS Regs Amendment, NBC 3.8.2.12. – Residential Occupancies In a building of residential occupancy, suites that are not individually controlled shall have at least: • one, or • 5% of the suites required to be accessible by a barrier-free path of travel shall be barrier-free in conformance with Article 3.8.3.22. (SK Amendment) Note: Refer to page 14 for clarification of requirements for 3.8.3.22.	The UBAS Regs, SK Amendement (NBC 3.8.2.12)	◯	◯	◯
Path of Compliance	**NBC**	**CSA B651**		
Note: Either NBC Div. B, Section 3.8 or CSA B651 "Accessible Design for the Built Environment" shall be used in its entirety for compliance with barrier-free design Reference: NBC Division B, Subsection 3.8.3. – "Design"				

Appendix B - Barrier-Free Design Requirements (NBC)

(APPLIES TO ALL BUILDINGS EXCEPT AS LISTED IN DESIGN REQUIREMENTS EXEMPTIONS PAGE 13)

NBC Design Requirements				
Item		**Status**		
Barrier-free Path of Travel	**Authority**	**√**	**X**	**N/A**
Key elements • Unobstructed width of a minimum 920 mm throughout, • Ramp(s) or passenger elevating devices present in barrier-free path of travel for variances in elevations • Exterior walks a minimum of 1100 mm wide, • If the path of travel is greater than 30 m long, that there is an increase of 1500 mm by 1500 mm at intervals not greater than 30 m **Inspection** • No opening that permits the passage of a sphere 13 mm in diameter, • If there elongated openings present, that they are oriented to be perpendicular to the direction of travel, • Stable, firm and slip resistant, • Cross slop not greater than 1 in 50 (2%) • Bevels of not greater than a 1 in 2 slope for changes in elevation between 6 and 13 mm, and • Provision for sloped floor or ramp for changes in elevation greater than 13mm.	NBC 3.8.3.2., 3.8.3.3.	◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯	
Exterior Passenger-Loading Zones	**Authority**	**√**	**X**	**N/A**
• Access aisle not less than 1500 mm wide by 6000 mm long • Curb ramp (where curbs exist) • A clear height of not less than 2750 mm at the pull up space and along vehicle access	NBC 3.8.3.4.	◯ ◯ ◯	◯ ◯ ◯	◯ ◯ ◯
Ramps	**Authority**	**√**	**X**	**N/A**

Key elements
• Slope not steeper than 1 in 12 (8.333%)
• Clear width of 870 mm
• Cross slope not steeper than 1 in 50 (2%)
• Hard or resilient surface when steeper than 1 in 15 (6.667%) slope
• Edge protection of a min. 75 mm high when not at grade level or adjacent to a wall
• Level landings that are a min. 1200 mm and the width of the ramp where:
  • the ramp runs are greater than 9 m in length, or
  • abrupt change in direction
	NBC 3.8.3.5.	◯
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				◯

Appendix B - Barrier-Free Design Requirements (NBC)

Handrails	Authority	√	X	N/A
Key elements				
• Two handrails, continuously graspable throughout	NBC 3.4.6.5. & 3.8.3.5.	◯	◯	◯
• Handrails have the following dimensions:				
◦ 30 to 43 mm circular diameter, or		◯	◯	◯
◦ With a perimeter of a min. 100 mm with a max. perimeter of 125 mm with the largest dimension not more than 43 mm.		◯	◯	◯
• Be able to withstand loading requirements:				
◦ 0.9 kN (approx. 202 pounds) applied at any point and any direction, and 0.7 kN (approx. 158 pounds) applied uniformly in any direction not located in dwelling units		◯	◯	◯
• Handrail height between 865 and 1070 mm		◯	◯	◯
• Min. one handrail that continues 300 mm beyond the top and bottom of the stairway or ramp				
◦ Clearance behind the handrail and the surface behind shall be 50 mm, or 60 mm if the surface behind is rough or abrasive		◯	◯	◯

Doors and Doorways	Authority	√	X	N/A
Key elements				
• When in a barrier-free path of travel, a clear width of not less than 800 mm when in the open position	NBC 3.8.3.6.	◯	◯	◯
• Operating device in the range 900 to 1100 mm		◯	◯	◯
• Threshold requirements for doors in a barrier-free path of travel max. 13 mm high (including one bathroom, if applicable)		◯	◯	◯
• Power door operators that:				
◦ c/w markings of the International Symbol of Access,		◯	◯	◯
◦ Located clear of the swing but within 1500 mm of the door swing,		◯	◯	◯
◦ Controls that are either in the 150 to 300 mm range as well as the 900 to 1100 mm range above the floor,		◯	◯	◯
◦ Are able to be touched by a fist, arm or foot,		◯	◯	◯
◦ Open the door in not less than three (3) seconds, and		◯	◯	◯
◦ Require less than 65 kN (14 pounds) to stop movement of the door.		◯	◯	◯
◦ that take three (3) seconds or more from a closed to a fully open position,		◯	◯	◯
◦ Remains fully open for a minimum of five (5) seconds,		◯	◯	◯
◦ Require a force not more than 66 kN (15 pounds) to stop door movement,		◯	◯	◯
• Cane detectable guard that is located on the hinge side of a power operated door, that swings into a barrier-free path of travel,		◯	◯	◯
• Maximum force required to open the door:				
◦ 38 kN (8.5 pounds) for an exterior swinging door,		◯	◯	◯
◦ 22 kN (5 pounds) for an interior swinging door, or		◯	◯	◯
◦ 22 kN (5 pounds) for a sliding door.		◯	◯	◯
• Clearance for doorways:				
◦ Any door with a power operator, has a clear space on the latch side that is:				
▪ 600 mm when the door swings toward the approach side, and		◯	◯	◯

• 300 mm when the door swings away from the approach side • Doors in series (i.e. vestibules) must maintain a clear space of 1200 mm plus the width of the door that swings into a path of travel • NOTE: refer to page 39 for examples • Multiple-leaf doors: • only one active leaf in multiple-leaf doors in a barrier-free path of travel shall conform to the requirements • Level floor surface at doors and doorways as specified in their respective standards		◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯		
Passenger Elevating Devices	**Authority**	**√**	**X**	**N/A**
• Passenger elevating device meets the standard CSA B355 'Lifts for Persons with Physical Disabilities'	NBC 3.8.3.7.	◯	◯	◯
Controls	**Authority**	**√**	**X**	**N/A**
• Controls that: • Mounted 400 to 1200 mm above floor • Operable with one hand in a closed fist position, not requiring more than 22 N (approx. five (5) pounds) force • Clear floor area centred on the control that is min. 800 mm wide by 1350 mm long • Colour contrasting controls from the background	NBC 3.8.3.8.	◯ ◯ ◯ ◯	◯ ◯ ◯ ◯	◯ ◯ ◯ ◯
Signage	**Authority**	**√**	**X**	**N/A**
• Signage that: • Is colour contrasted from its background has the International Symbol of Access or the International Symbol for Access for Hearing Loss • Is colour contrasted from its background and has the International Symbol of Access or the International Symbol for Access for Hearing Loss	NBC 3.8.3.9.	◯ ◯	◯ ◯	◯ ◯
Drinking Fountains	**Authority**	**√**	**X**	**N/A**
Drinking fountains that: • Are located along a barrier-free path of travel, • Have a min. clear floor space of 800 mm wide by 1350 mm long, • Have a knee clearance that is a min. 200 mm deep and 680 mm high and the same width as the clear floor space, • Has a toe space that is a min. 800 mm wide by 230 mm high and is a minimum 430 mm from the front of the unit, • Has a spout that is near the front of the unit, at a height between 750 mm and 915 mm high, • Water flow that is parallel to the front of the unit and at a height approx. 100 mm above the fountain, and • Controls that meet the requirements found earlier in the guide (refer to 'Controls' page 46)	NBC 3.8.3.10.	◯ ◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯ ◯

Water Closet Stalls	Authority	√	X	N/A
Water closet stalls shall be installed that:				
• are not less than 1500 mm by 1500 mm,	NBC 3.8.3.11.	◯	◯	◯
• has a clear space in front of the stall that is 1500 mm by 1500 mm,		◯	◯	◯
• has a door that:				
• has a clear opening of 850 mm wide in the open position,		◯	◯	◯
• is latchable from the inside with an accessible mechanism,		◯	◯	◯
• is aligned with a transfer space adjacent to the water closet, or that has a clear floor space that is 1500 mm by 1500 mm within the stall,		◯	◯	◯
• swings outward of the stall, or if it swings inward, has a clear floor space of at least 800 mm by 1350 mm in addition to the door swinging inward,		◯	◯	◯
• is equipped with a 'D' shaped ring for an out swinging door, mounted at the dimensions listed on page 56 of the guide,		◯	◯	◯
• has a water closet with the centre-line between 460 to 480 mm from a wall on the one side,		◯	◯	◯
• has an 'L' shaped grab bar mounted to the specifications listed on page 56 of the guide,		◯	◯	◯
• be equipped with either a grab bar(s) on the back wall of the water closet listed on page 55 of the guide		◯	◯	◯
• has a coat hook that is mounted not more than 1200 mm from the floor and at least 50 mm out from the wall on which it is mounted, and		◯	◯	◯
• is equipped with a toilet paper dispenser that conforms to the specified dimensions found on page 56 of the guide		◯	◯	◯

Universal Washrooms	Authority	√	X	N/A
Universal washrooms shall:				
• Be served by a barrier-free path of travel,	NBC 3.8.3.12.	◯	◯	◯
• Have a door complying with the requirements stated in 'Doors and Doorways' (refer to page 34) c/w		◯	◯	◯
• A latch operating mechanism located between 900 to 1000 mm above floor		◯	◯	◯
• When there is a non-closing, out swinging door the there is a door pull that conforms to the requirements on page 60.		◯	◯	◯
• have a lavatory that meets the NBC requirements (refer to page 69)		◯	◯	◯
• have a water closet that meets the NBC requirements (refer to page 64) complete width (c/w) a clear floor space a min. 900 mm wide that is parallel and adjacent to the water closet,		◯	◯	◯
• grab bars that meet the design requirements (see page 55)		◯	◯	◯
• have a coat hook that is mounted not more than 1200 mm from the floor and at least 50 mm out from the wall on which it is mounted,		◯	◯	◯
• have a toilet paper dispenser that conforms to the requirement referred to earlier in this document (refer to page 56)		◯	◯	◯
• has a shelf located not more than 1200 mm above the floor unless a counter is provided, and		◯	◯	◯

• permitted to allow a wheelchair to turn in a 1500 mm diameter.		◯	◯	◯
Water Closet (Toilet)	**Authority**	**√**	**X**	**N/A**

Water closets as outlined shall:
• Have a seat located between 430 and 460 mm above the floor,
• Have an automatic flusher where the flusher is:
  • Located 500 to 900 mm above the floor,
  • Located no more than 350 mm from the transfer side, and
  • Complies with the design requirements for controls (refer to page 46),
• Be equipped with a seat lid or other back support, and
• Where a tank is installed, that it is secure.
	NBC 3.8.3.13.	◯
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Urinals	**Authority**	**√**	**X**	**N/A**

When urinals are installed they shall:
• Be wall mounted, with the opening of the basin not more than 430 mm above the floor,
• Be adjacent to an accessible route,
• Have a clear width of 800 mm centred on the urinal and unobstructed by privacy screens,
• Not have any steps in front of it,
• Have a flush control that:
  • Is automatic, or
  • Is located between 900 and 1100 mm and conforms to the requirements of 'Controls' (refer to page 46)
• Have grab bars on either side that:
  • Conform to the requirements of grab bars,
  • Are not less than 600 mm long, with the centreline 1000 mm above the floor, and
  • Are located not more than 380 mm from the centre line of the urinal.
	NBC 3.8.3.14.	◯
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Lavatories and Mirrors	**Authority**	**√**	**X**	**N/A**

When lavatories are required, they shall:
• Be equipped with faucets that operate automatically, or manually controlled as specified under 'Controls' (refer to page 46),
• Be located so that the distance between the centre line of the lavatory and any side wall is not less than 460 mm,
• Be at a height not more than 865 mm from the floor,
• Have the following clearances:
  • 760 mm wide,
  • 735 mm high at the front edge,
  • 685 mm high at a point 200 mm back from the front edge,
  • 230 mm high over the distance from a point 280 mm to a point 430 mm back from the front edge,
• Have insulated water supply and drain lines, when the pipes are exposed,
• Have a soap dispenser that is:
	NBC 3.8.3.15.	◯
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• Automatic, or • Is operable with one hand, is located not more than 1100 mm above the floor and within 500 mm from the front of the lavatory, and • Have a towel dispenser or other hand drying equipment close to the lavatory and not more than 1200 mm above the floor • Mirrors shall be mounted with the bottom edge not more than 1000 mm above the floor, and fixed in an incline position so it is usable by a person in a wheelchair.		◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯		
Showers	**Authority**	**√**	**X**	**N/A**
When required, showers shall: • Not be less than 1500 mm wide and 900 mm deep, • Have a clear floor space at the entrance to the shower that is not less than 900 mm deep and the same width as the shower, • Not have any doors or curtains that obstruct controls or the clear floor space at the entrance, • Have a slip resistant floor surface, • Have a threshold not more than 13 mm higher than the finished floor and when higher than 6 mm, beveled at a slope no steeper than 1 in 2, • Have two (2) grab bars that meet the requirements found on page 55 • Have a hinged seat meeting the requirements found on page 72 • Have a pressure-equalizing valve or thermostatic-mixing valve and other controls that meet the requirements of the section 'Controls' and not mounted more than 1200 mm above the floor • Have a hand-held shower head that has a flexible hose not less than 1800 mm in length, reachable from the seat and can be in a fixed position between 1200 and 2030 mm from the floor • Have a recessed soap holder that can be reached from the seat.	NBC 3.8.3.16.	◯ ◯		
Bathtubs	**Authority**	**√**	**X**	**N/A**
When required bathtubs shall: • Be located in a room with a clear floor space with not less than 1500 mm diameter, • Not be less than 1500 mm long, • Have a clear floor space not less than 750 mm wide adjacent to the entire length of the tub, • Be capable of being accessed along the full length of the tub without tracks mounted onto the rim, • Faucets that: • Conform to the requirements found in 'Controls' (refer to page 46), • Are installed on the centreline of the tub and the exterior edge of the tub rim, and at a max. height 450 mm above the rim, • Has three grab bars that: • Meet the requirements of 'grab bars' (refer to page 55) • Are not less than 1200 mm long,	NBC 3.8.3.17.	◯ ◯		

• Two of which are located vertically at each end of the tub, set 80 – 120 mm from the outside edge of the tub, where the lower end is located 180 – 280 mm above the bathtub rim, and • One is located horizontally along the length of the tub at 180 – 280 mm above the bathtub rim, • Have a slip resistant surface, and • Have a hand-held shower head with a flexible hose that is not less than 1800 mm in length and can be fixed at a height 1200 – 2030 mm above the bathtub floor		◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯		
Assistive Listening Devices	**Authority**	**√**	**X**	**N/A**
Assistive listening devices shall: • Encompass the entire seating area, and • When part of an induction loop system, have only half of the seating area in the room need be encompassed	NBC 3.8.3.18.	◯ ◯ ◯ ◯ ◯ ◯		
Counters	**Authority**	**√**	**X**	**N/A**
Shelves or counters required shall: • Have a barrier-free section not less than 760 mm long centred c/w a knee space, • Have a surface not more than 865 mm above the floor, and • Have a knee space under the surface that is: • Not less than 760 mm wide, • Not less than 685 mm high, and • Not less than 485 mm deep Note: Counters with continuous use, such as a cafeteria counter, do not require a knee space underneath	NBC 3.8.3.19.	◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯		
Shelves and Counters for Telephones	**Authority**	**√**	**X**	**N/A**
Any counters or shelves required for telephone use shall: • Be level, • Not be less than 305 mm (approx. 12 inches) deep, • Have a clear space not less than 250 mm wide where there is no obstruction within 250 mm above the surface, and • Have a section with a surface not more than 865 mm above the floor serving at least one telephone • When a wall hung telephone is provided above the counter specified above, the telephone shall be located so that the receiver and the coin slot are not more than 1200 mm above the floor	NBC 3.8.3.20.	◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯		
Spaces in Seated Areas	**Authority**	**√**	**X**	**N/A**
Spaces designed for wheelchair access in seated areas shall: • Have the minimum required spaces as referenced on table 3.8.2.3. • Be clear and level, or level with removable seats, • Not be less than 900 mm wide and 1525 mm long for a side approach, and 900 mm wide by 1220 mm long when accessible from the front or rear,	NBC 3.8.3.21.	◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯		

• Be arranged so that at least two (2) designed spaces are side by side, • Be located adjoining a barrier-free path of travel, without any infringement on egress from row seating, and • Have seats throughout the seating area to provide a choice of viewing locations with clear views.		◯ ◯ ◯	◯ ◯ ◯	◯ ◯ ◯
Residential Occupancies* (SK Amendment)	**Authority**	**√**	**X**	**N/A**
Washrooms shall: • have a floor space at least 1500 mm by 1500 mm with no encroachment other than a water closet,	NBC 3.8.3.22.	◯	◯	◯

Appendix C - Barrier-Free Design Requirements (CSA B651)

(APPLIES TO ALL BUILDINGS EXCEPT AS LISTED IN DESIGN REQUIREMENTS EXEMPTIONS PAGE 13)

CSA B651 Design Requirements				
Barrier-free Path of Travel	**Authority**	**√**	**X**	**N/A**
• Unobstructed width of a minimum 920 mm throughout, • Ramp(s) or passenger elevating devices present in barrier-free path of travel for variances in elevations, • Exterior walks a minimum of 1100 mm wide, • If the path of travel is greater than 30 m long, that there is an increase of 1500 mm by 1500 mm at intervals not greater than 30 m, • No opening that permits the passage of a sphere 13 mm in diameter, • If there elongated openings present, that they are oriented to be perpendicular to the direction of travel, • Stable, firm and slip resistant, • Cross slop not greater than 1 in 50 (2%), • Bevels of not greater than a 1 in 2 slope for changes in elevation between 6 and 13 mm, and • Provision for sloped floor or ramp for changes in elevation greater than 13 mm.	CSA B651 Clause 4.3. and 5.1.	◯	◯	◯
Exterior Passenger-Loading Zones	**Authority**	**√**	**X**	**N/A**
• Access aisle not less than 1500 mm wide by 6000 mm long, • Curb ramp (where curbs exist), • A clear height of not less than 2750 mm at the pull up space and along vehicle access.	CSA B651 Clause 9.3.	◯	◯	◯

• Slope not steeper than 1 in 12 (8.333%),
• Clear width of 920 mm,
• Cross slope not steeper than 1 in 50 (2%),
• Hard or resilient surface when steeper than 1 in 15 (6.667%) slope (NBC),
• Edge protection of a min. 75 mm high when not at grade level or adjacent to a wall,
• Level landings that are a min. 1500 mm and the width of the ramp where:
  • the ramp runs are greater than 9 m in length, or
  • any change in direction,
  • top and bottom of the ramp.
	CSA B651 Clause 5.5.	◯	◯	◯

Handrails	**Authority**	**√**	**X**	**N/A**

• Two handrails, continuously graspable throughout
• Handrails have the following dimensions:
  • 30 to 40 mm circular outside diameter, or
  • With an outside perimeter between 100 and 125 mm with the largest cross-sectional dimension not more than 45 mm.
	CSA B651 Clause 5.3.	◯	◯	◯

• Be able to withstand loading requirements: • 1.3 kN (approx. 292 pounds) applied in any direction, • Handrail height between 865 and 1070 mm, • Min. one handrail that continues 300 mm beyond the top and bottom of the stairway or ramp, • Clearance behind the handrail and the surface behind shall be between 35 and 45 mm wide with a smooth wall, and between 45 and 60 mm wide for rough wall surfaces.		◯ ◯ ◯ ◯	◯ ◯ ◯ ◯	◯ ◯ ◯ ◯
Doors and Doorways	**Authority**	**√**	**X**	**N/A**

• When in a barrier-free path of travel, a clear width of not less than 810 mm when in the open position,
• Operating device in the range 800 to 1200 mm,
• Threshold requirements for doors in a barrier-free path of travel max. 13 mm high (including one bathroom, if applicable),
• Power door operators that:
  • that take three (3) seconds or more from a closed to a fully open position,
  • Remains fully open for a minimum of give (5) seconds,
  • Require a force not more than 66 N (15 pounds) to stop door movement,
• Cane detectable guard where any power operated door that opens into a route of travel shall have a guardrail or barrier on either side of the door,
• Maximum force required to open the door:
  • 38 N (8.5 pounds) for an exterior swinging door,
  • 22 N (5 pounds) for an interior swinging door, or
  • 22 N (5 pounds) for a sliding door,
• Clearance for doorways:
(refer to page 46 for which scenario applies)
• Doors in series (i.e. vestibules) must maintain a clear space of 1200 mm plus the width of the door that swings into a path of travel,
  • NOTE: refer to page 40 for examples
• Multiple-leaf doors:
  • only one active leaf in multiple-leaf doors in a barrier-free path of travel shall conform to the requirements,
• Level floor surface:
  • level floor area at doors and doorways as specified in their respective standards.
	CSA B651 Clause 5.2.	◯
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Passenger Elevating Devices	**Authority**	**√**	**X**	**N/A**
Passenger elevating device meets the standard CSA B355 'Lifts for Persons with Physical Disabilities'	CSA B651 5.6.2.	◯	◯	◯
Controls	**Authority**	**√**	**X**	**N/A**
Controls that: • Mounted 400 to 1200 mm above floor,	CSA B651 Clause 4.2.	◯	◯	◯

• Operable with one hand in a closed fist position, not requiring more than 22 N (approx. five (5) pounds) force, • Clear floor area centred on the control that is min. 750 mm wide by 1200 mm long, • Colour contrasting controls from the background.		◯ ◯ ◯	◯ ◯ ◯	◯ ◯ ◯
Signage	**Authority**	**√**	**X**	**N/A**
Signage that is colour contrasted from its background and meets the requirements as referenced in standard (refer to page 49).	CSA B651 Clauses 4.9. & 9.4.	◯	◯	◯
Drinking Fountains	**Authority**	**√**	**X**	**N/A**

Drinking fountains that:
• Are located along a barrier-free path of travel and,
  • Has a min. clear floor area that is 750 mm by 1200 mm long in front of the unit,
  • Colour contrasted from the background,
  • Is either cantilevered or recessed,
  • Has a knee clearance that is a min. 750 mm wide by 200 mm deep and 680 mm high,
• Has a toe space that is a min. 750 mm wide by 230 mm deep and 230 mm high
	CSA B651 Clause 6.1.	◯
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Water Closet Stalls	**Authority**	**√**	**X**	**N/A**

Water closet stalls shall be installed that:
• Has a min. size of 1600 mm wide by 1500 mm deep,
• has a clear space in front of the stall that is 1500 mm by 1500 mm,
• has a door that:
  • has a clear opening of 810 mm with the door in the open position,
  • is aligned with the transfer space,
  • swings outward, unless there is additional space for it to swing inward,
  • has a 'D' type door pull on the inside of an out swinging door that meets the dimensions on page 59 of the guide,
  • has a 'D' type door pull on the outside of the door mounted at the dimensions listed on page 59 of the guide,
  • is self closing and will rest not more than 50 mm ajar from the jamb, and
  • latchable from the inside with a mechanism that conforms to the requirements for operating controls (see page 58) and,
• Has a coat hook that is not more that 1200 mm from the floor and projects not more than 40 mm from the wall,
• Has grab bars that conform to the specifications of CSA B651 (refer to page 55).
	CSA B651 Clause 6.2.7.	◯
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Appendix C - Barrier-Free Design Requirements (CSA B651)

Universal Washrooms	**Authority**	**√**	**X**	**N/A**
Universal washrooms shall: • Have a clear floor area of not less than 3.5 $m^{2,}$ • Provide a distance between opposite walls of at least 1700 mm, • Provide a clear floor area 1500 by 1500 mm, • Have a lavatory that meets the CSA requirements listed on page 70, • Have a toilet that complies with the requirements listed on page 64, • Have a sign identifying the washroom that conforms to the requirements as listed on page 49.	CSA B651 Clause 6.3.	◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯
Water Closets (Toilet)	**Authority**	**√**	**X**	**N/A**

Water closets as outlined shall:
• Have a seat between 400 and 460 mm above the floor,
• Not have a spring active seat,
• A back support where there is no seat lid or tank installed,
• When a tank is installed, must be securely attached,
• The location shall be:
  • 460 to 480 mm from the adjacent wall, and
  • Have a clear transfer space at least 900 mm wide by 1500 mm long on the open side measure from the edge of the toilet.
• Have flush controls that:
  • Are automatically activated, or
  • Hand operated c/w hand controls that comply with the requirements from page 47 located on the transfer side.
	CSA B651
	Clause 6.2.6.
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Urinals	**Authority**	**√**	**X**	**N/A**

When urinals are installed they shall:
• Be a stall or wall-hung type, with the well located where:
  • The lower rim is not higher than 430 mm from the floor, and
  • The upper rim is located not lower than 860 mm from the floor,
• Have a clear floor area in front of the urinal that:
  • Is adjacent to an accessible route,
  • Centred on the urinal,
  • At least 750 mm wide and 1200 mm deep, and
  • Unobstructed by floor level changes or privacy screens.
• Have flush controls that are:
  • Automatic operators,
  • Hand-operated controls (refer to page 47),
• Have grab bars that are:
  • Colour contrasted,
  • At least 600 mm long,
  • Mounted vertically on the back wall on either side of the urinal,
  • Not more than 380 mm from the centre of the urinal, and
  • With the lower end between 600 and 650 mm from the floor,
• Have a centreline indicator which may include piping or an architectural feature.
	CSA B651
	Clause 6.2.8.
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Appendix C - Barrier-Free Design Requirements (CSA B651)

Lavatories and Mirrors	**Authority**	**√**	**X**	**N/A**
When lavatories are required, they shall:				
• Be mounted with the centreline at least 460 mm from a side wall,	CSA B651 Clauses 6.2.3. & 6.2.4.2.	◯	◯	◯
• Have the top of the lavatory between 810 and 860 mm from the floor,		◯	◯	◯
• Have a knee space centred on the lavatory that is 750 mm wide, 200 mm deep and 680 mm high with an additional toe space of at least 750 mm wide, 230 deep and 230 mm high,		◯	◯	◯
• Have a clear floor area centred with the lavatory at least 750 x 1200 mm of which not more than 480 mm may be under the lavatory, and		◯	◯	◯
• Have hot water and drain pipes offset to the rear,		◯	◯	◯
• Counters shall have a knee clearance 750 mm wide and 720 mm high when there is a front apron,		◯	◯	◯
• Faucets shall:				
◦ Meet the requirements found in 'Controls' (refer to page 47),		◯	◯	◯
◦ not be required to apply consistent force for water flow, and		◯	◯	◯
◦ when metered, provide a minimum ten (10) seconds of flow,		◯	◯	◯
• Max water temp shall be set to 49°C,		◯	◯	◯
• Mirrors shall be mounted where the bottom edge is not more than 1000 mm from the floor,		◯	◯	◯
• Soap dispensers shall:				
◦ Be located with 500 mm reach of a person seated at the lavatory,		◯	◯	◯
◦ Not be higher than 1100 mm from the floor, and		◯	◯	◯
◦ Operable with one hand.		◯	◯	◯

Showers	**Authority**	**√**	**X**	**N/A**
When required, showers shall:				
• Max water temp set at 49°C,	CSA B651 Clauses 6.5.5. & 6.5.6.	◯	◯	◯
• Shower heads shall be of a handheld type able to be at a fixed height between 1200 and 2030 mm from the floor, c/w a hose not less than 1500 mm long and not obstruct any grab bar,		◯	◯	◯
• When an enclosure is present, the controls or transfer space shall not be obstructed,		◯	◯	◯
• Have a floor that is slip resistant when wet and sloped minimally for drainage,		◯	◯	◯
• Have a minimum interior clear area of:				
◦ 750 by 1500 mm for roll-in showers, or		◯	◯	◯
◦ 900 by 900 mm for shower stalls with a curb,		◯	◯	◯
• Have a clear floor area for a transfer space of:				
◦ 900 mm deep by 1500 mm wide for roll-in showers,		◯	◯	◯
◦ 900 mm deep by 1200 mm wide for showers with a curb,		◯	◯	◯
• Have grab bars that meet the requirements of either a roll-in shower or with a curb (refer to pages 55 and 74),		◯	◯	◯
• Controls that meet the requirements of 'Controls' (see page 47) not more than 1200 mm above the floor. Controls shall be mounted on the wall that:		◯	◯	◯

• In the case of roll-in shower, is opposite of the entrance to the shower, or • In the case of a shower with a curb, within reach of the seat on the opposite wall, • Have a seat for showers with a curb (optional for roll-in showers) meeting the requirements listed on page 74, • When equipped with a curb, the curb shall not be less than 100 mm high and 100 mm wide.		◯ ◯ ◯ ◯	◯ ◯ ◯ ◯	◯ ◯ ◯ ◯
Bathtubs	**Authority**	**√**	**X**	**N/A**

When required bathtubs shall:
• Have a clear floor area at least 750 mm wide over the entire length of the bathtub,
• Have two grab bars that:
  • One is horizontally centred along the length of the tub, with a length not less than 1200 mm and mounted 180 – 280 mm above the tub rim, and
  • One vertically mounted on the foot end of the tub that is:
  • 1200 mm in length,
  • Where the lower end is between 180 – 280 mm above the tub rim, and
  • Between 80 – 120 mm from the adjacent floor area,
• Controls that:
  • Meet the requirements set out in 'Controls' (refer to page 47),
  • Are located at the foot end of the tub between the centreline of the tub and the clear floor area, and
  • Located not more than 450 mm above the bathtub rim,
• Not have an enclosure, and
• Have a slip-resistant base.
	CSA B651 Clause 6.5.7.	◯
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Assistive Listening Devices	**Authority**	**√**	**X**	**N/A**
Assistive listening devices shall: • Where an assistive listening system is provided, and induction loop, infrared system, or radio frequency system shall be used	CSA B651 Clause 6.6.1.	◯	◯	◯
Counters	**Authority**	**√**	**X**	**N/A**
Shelves or counters required shall: • Have a clear floor area not less than 750 mm by 1200 mm, • Be at a height between 730 – 860 mm from the floor, and • Have a knee clearance that is a minimum 750 mm wide, 480 mm deep and 680 mm high, where an overlap of the clear floor area is not more than 480 mm.	CSA B651 Clause 6.7.1	◯ ◯ ◯	◯ ◯ ◯	◯ ◯ ◯

Appendix C - Barrier-Free Design Requirements (CSA B651)

Shelves and Counters for Telephones	**Authority**	**√**	**X**	**N/A**

Any counters or shelves required for telephone use shall:
• Have a minimum 450 mm wide by 300 mm deep,
• Provide a space of at least 250 mm high and 225 mm wide for a teletypewriter (TTY) or text telephone (TT), and
• Be at a height between 730 – 860 mm from the floor,
• When the telephone is on a counter it shall:
  • Have a clear floor area of at least 750 mm wide and 1200 mm deep, which shall extend to not more than 480 mm under the shelf or counter, and
  • Have a knee clearance between 680 – 730 mm high.
	CSA B651
	Clause 6.6.2.
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Spaces in Seated Areas	**Authority**	**√**	**X**	**N/A**
Spaces designed for wheelchair access in seated areas shall: • Have a minimum number of spaces based off of table 6 in CSA B651, • Have a clear, level floor area of 850 mm wide by 1200 mm long, • Located adjacent to a means of egress, • Part of the seating plan, that is dispersed throughout the seating area on all levels, • Adjacent to other seating, • Provide half of the accessible seating to be placed side by side, and • Have sight lines that are comparable to seating positions and not reduced or obstructed by standing members of the audience.	CSA B651 Clause 6.7.2.	◯ ◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯ ◯	◯ ◯ ◯ ◯ ◯ ◯ ◯