Ontario's 2024 Building Code

Introducing Key Changes to Part 3, Fire Protection, Occupant Safety and Accessibility

Building and Development Branch
Planning and Growth Division
August 28, 2024

Disclaimer

- The information contained within this slide deck is intended for general information purposes only. It only highlights key changes to the Building Code. It is not intended as legal or technical advice and it should not be relied on as such. Code users are strongly advised to consult the official records for specific legislative and regulatory requirements, including Ontario's 2024 Building Code, O. Reg. 163/24 as amended by O. Reg. 203/24, 2020 National Building Code and Ontario Amendment Document (May 15, 2024) for the full extent and the exact wording of the changes.

Purpose

- To ensure smooth transition to 2024 Building Code, this deck is intended to inform ministry partners and stakeholders about key changes implemented in Part 3, Fire Protection, Occupant Safety and Accessibility in Ontario's 2024 Building Code.

- The changes are intended to reduce existing variations with the National Building Code (NBC), align with new provisions introduced through 2020 National Construction Codes, and address Ontario-Specific changes.

Effective Date

- The 2024 Building Code comes into effect on January 1, 2025.

- There will be a three-month grace period until March 31, 2025, for applications for which drawings were substantially complete before January 1, 2025.

Content

The following Items will be covered:

- ❑ Sprinkler Systems
- ❑ Penetrations
- ❑ Construction Requirements
- ❑ Fire Alarm and Detection Systems
- ❑ Standpipe Systems
- ❑ Interconnected Floor Spaces
- ❑ Mezzanine Exiting and Egress
- ❑ Combustible Cladding
- ❑ Rapid Transit Stations
- ❑ Accessibility
- ❑ Miscellaneous

Sprinkler Systems

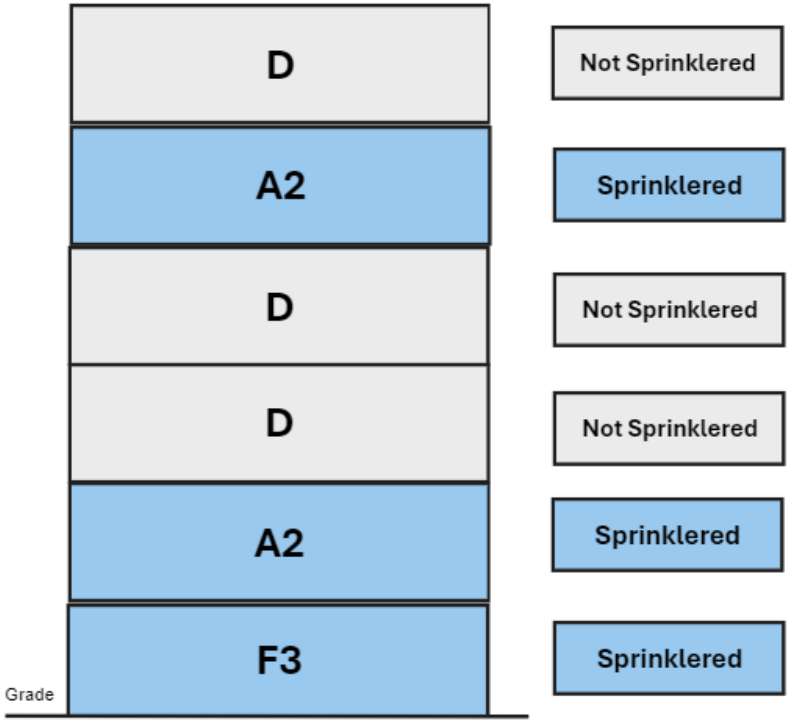
Ontario

Sprinkler System Coverage (Article 3.2.2.18.)

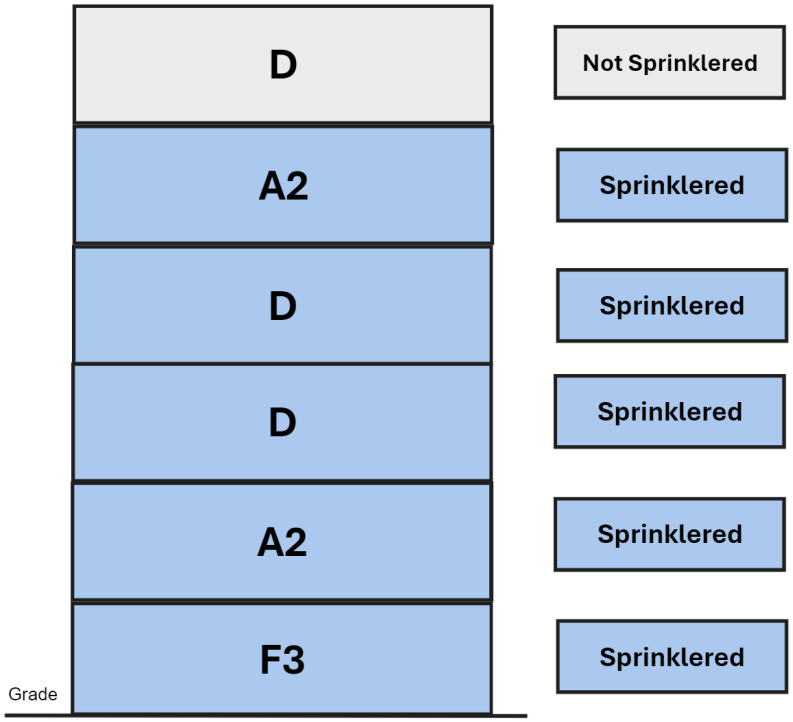
- The Code now requires all storeys below a storey in which an automatic sprinkler system is installed, to also be protected by an automatic sprinkler system (3.2.2.18.(2))
- If a sprinkler system is required to be installed in an upper storey based on the applicable construction requirements (3.2.2.20. to 3.2.2.92.), then an automatic sprinkler system must also be installed in all lower storeys.
- This approach harmonizes with the National Building Code of Canada and the other provincial Codes.
- The new requirements will impact very limited building types and configurations when compared with the 2012 Building Code approach.

Sprinkler System Coverage (Article 3.2.2.18.)

2012 OBC



2024 OBC



Group A2 - 6 Storeys – 3.2.2.24. (Sprinklered) **Group D - 6 Storeys – 3.2.2.50.** **Group F3 - 6 Storeys – 3.2.2.75.**	**Group A2 - 6 Storeys – 3.2.2.24. (Sprinklered)** **Group D - 6 Storeys – 3.2.2.58.** **Group F3 - 6 Storeys – 3.2.2.83.**

Ontario

Sprinkler System Design (3.2.5.12.)

- Clarification is provided on where closely spaced sprinklers and associated draft stops are required to be installed around floor openings in conformance with NFPA 13, “Installation of Sprinkler Systems”.
- Permits the application of NFPA 13D, “Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes”, to row houses.

Image Courtesy of Kirkor Architects Planners

Penetrations

Ontario

Penetrations (Subsections 3.1.8. and 3.1.9.)

- In general, these Subsections have been significantly revised and restructured to provide more clarity and consistency between both Part 3 and Part 9 requirements.
- Clarification that the continuity of a fire separation must be maintained by a fire stop (ULC S115 – FT rating) when it abuts another fire separation, a floor, a ceiling or a roof (3.1.8.1.)
- Joints located in a horizontal plane between a floor and an exterior wall must also be sealed by a fire stop tested to ASTM E2307, “Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-Storey Test Apparatus” (3.1.8.1.)
- The rating required for fire stops is now based on the fire-resistance rating of the penetrated assembly and not the rating of the closures (3.1.9.1.)

Penetrations (Subsections 3.1.8. and 3.1.9.)

- New exemption from the requirement for service equipment penetrations through horizontal fire separations (3.2.1.2.) to have T-rated fire stops (3.1.9.1.)
- Clarification for the provisions that addresses firestopping of service penetration such as ducts, electrical outlet boxes, totally enclosed raceways or other similar service equipment (3.1.9.2. and 3.1.9.3.)
- Combustible pipe penetration - allows transitions between combustible and noncombustible piping at fire separations (3.1.9.4.)
- Combustible pipe penetration - removes the requirement for a pressure differential of 50 Pa for tests of firestopped combustible piping for buildings of 3 storeys or less in building height (3.1.9.4.)

Construction Requirements

Ontario

Construction Requirements (Articles 3.2.2.20. to 3.2.2.92.)

- These Articles have been revised to align more closely with the National Building Code (NBC). The Article numbering has been changed to match the NBC.
- Some of these changes include:
  - Modifications to some Articles now require sprinkler protection, such as Group A Division 1 (3.2.2.21. and 3.2.2.22.) and Group F Division 2 (3.2.2.77. and 3.2.2.79.).
  - Addition of a new construction article, such as Group B3 (3.2.2.44.) and Group F Division 2 (3.2.2.78.).
- Maintaining certain Ontario-specific construction Articles, such as for Group C Retirement Homes (3.2.2.55A. to 3.2.2.55E.) and 4-storey noncombustible stacked townhouses (3.2.2.50.).

Fire Alarm and Detection Systems

Fire Alarm and Detection Systems (Subsection 3.2.4.)

- Fire alarm systems are required to be installed in buildings in which an automatic sprinkler system is installed. This approach harmonizes with the NBC. (3.2.4.1.)
- This requirement is not applicable to buildings:
  - with sprinkler systems that are installed in accordance with NFPA 13D, or
  - that contain fewer than 9 sprinklers with water supply from the domestic water system.
- Buildings where automatic sprinkler systems are installed must meet all applicable requirement of Subsection 3.2.4. including electrical supervision and monitoring.

Fire Alarm and Detection Systems (Subsection 3.2.4.)

- Clarification - audible signal sound pressure should be measured on a floor area when any intervening doors between the device and the rest of the floor area are closed. (3.2.4.18.)

- New provision - audible signal with low frequency introduced in sleeping rooms in buildings of residential or care occupancies. (3.2.4.18.)

- Clarification for the requirements of visual signal components of smoke detectors, when the smoke detectors are used in lieu of smoke alarms. (3.2.4.20.) A cross reference is added.

Standpipe Systems

Standpipe Systems (Articles 3.2.5.8. – 3.2.5.11.)

General

- Standpipe system provisions will now be fully harmonized with the NBC. Standpipe system design will be more aligned with NFPA 14 Standard for design, construction, installation and testing.

- Note that the permission to waive the standpipe system requirement for 4-storey townhouses is maintained as an Ontario-specific provision.

Standpipe Systems (Articles 3.2.5.8. – 3.2.5.11.)

Standpipe System Design

- The required minimum allowable residual pressure at the design flow rate at the hydraulically most remote hose connection is based on the NFPA 14 Standard.
- The Code still permits a reduction for the residual water pressure at the design flowrate at the topmost hose connection of a standpipe system. However, that reduction is now based on a higher residual water pressure (690 kPa instead of 450 kPA in the 2012 OBC).
- Unless as otherwise stated in Articles 3.2.5.10. (Hose Connection) and 3.2.5.11. (Hose Station), the requirement for hose station and hose connection must be designed to NFPA 14 Standard.

Standpipe Systems (Articles 3.2.5.8. – 3.2.5.11.)

Standpipe Systems – Hose Connection and Hose Station

- The new approach will result in certain design changes from the previous Code requirements such as:
  - hose connection required to be located within the exit,
  - more coverage provided for the hose system as per NFPA 14 Standard,
  - higher system demand (min. pressure and flow rate),
  - 64 mm hose connections are required to be installed in the standpipe system unless the building is not more that 25 m high and where sprinkler system is not installed,
  - hose stations are not required in buildings that are sprinklered or floor areas that are sprinklered.

Interconnected Floor Spaces

Interconnected Floor Spaces (3.2.8.3. to 3.2.8.8.)

- The specific and detailed requirements for interconnected floor spaces now harmonize with the design approach of the NBC.
- The new approach will result in certain design changes from the previous Code requirements such as:
  - buildings that contains an interconnected floor space must be sprinklered throughout,
  - pressurized vestibule (smoke control) for exits that open into an interconnected floor space,
  - pressurized vestibules at elevators doors:
    - in all levels of interconnected floor spaces, or
    - opening into only storeys above interconnected floor spaces.

Interconnected Floor Spaces (Articles 3.2.8.3. to 3.2.8.8.)

- The new approach will result in certain design changes from the previous Code requirements such as (cont'd):
  - Draft stops are required at the edge of the interconnected opening
  - Flow rates are slightly lower for mechanical exhaust system for air extraction from the interconnected floor space
  - Limitations on the amount of combustible content (excludes interior finishes) in parts of floor areas that are more than 8 m above floor in the interconnected floor space

Interconnected Floor Spaces (Articles 3.2.8.3. to 3.2.8.8.)

- The required exit width for exit stairs that serve interconnected floor spaces must be cumulative (3.4.3.2.(6))
- Alternative design approach to cumulative exiting:
  - Provide area of 0.3 m^2 per person for treads and landings in the exit stairs, or
  - "Protected floor space" within the storey based upon an area of 0.5 m^2 per person
- Protect Floor Space (newly defined term) - part of a floor area protected from the effects of fire and used as part of a means of egress from an interconnected floor space.

Image Courtesy of NRC

Interconnected Floor Spaces (Articles 3.2.8.3. to 3.2.8.8.)

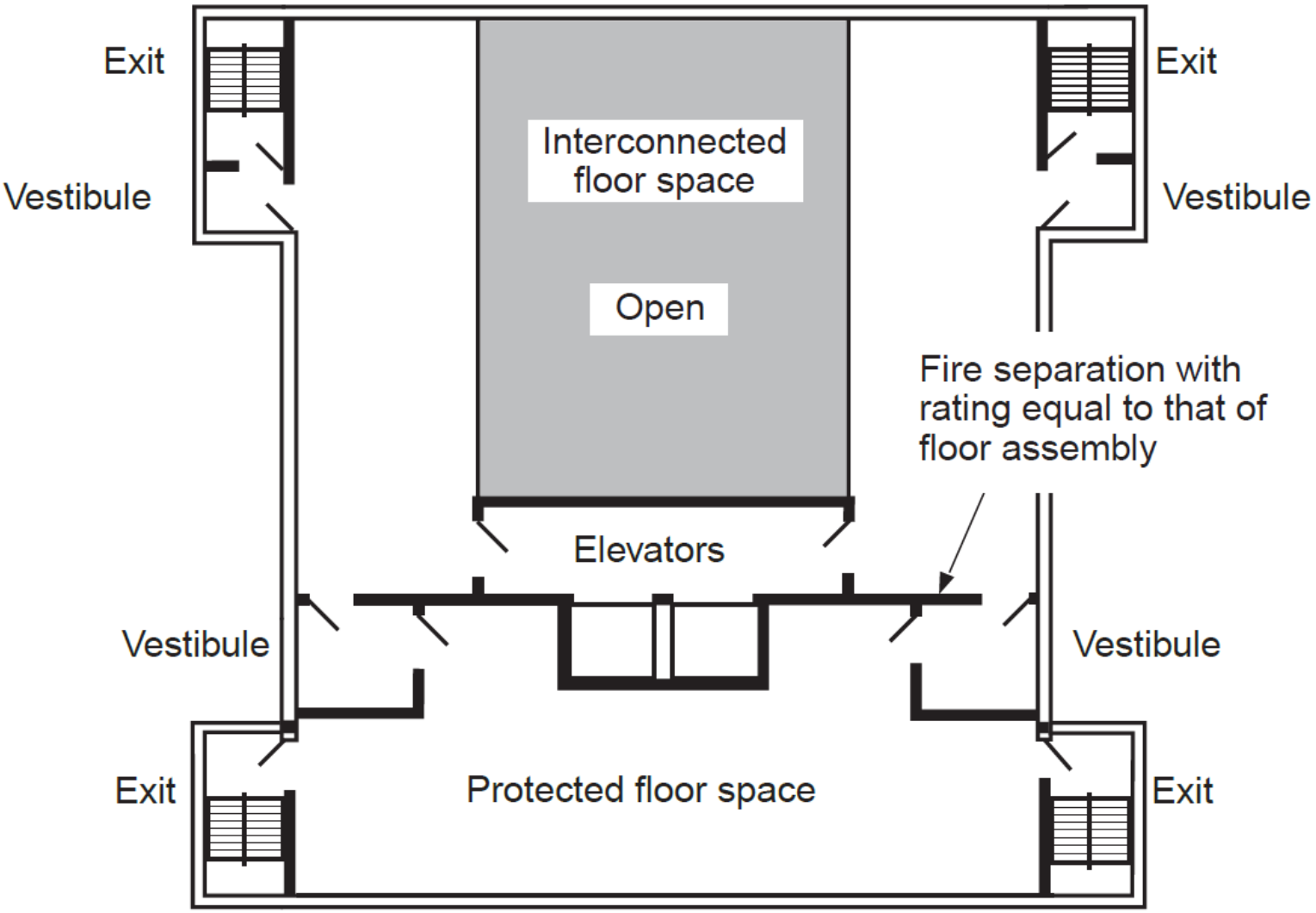


Image Courtesy of NRC

Ontario

Mezzanine Exiting and Egress

Ontario

Mezzanine Exiting and Egress (Article 3.4.2.2.)

- The requirements for mezzanine exiting/egress have been modified and now are solely self-contained within Article 3.4.2.2.
- The general rule is that a mezzanine is served by a means of egress leading to exits accessible at the mezzanine level on the same basis as the floor area. This typically means that the mezzanine will have certain features such as:
  - Served by minimum 2 enclosed exit stairs (fire separated),
  - Enclosed exit stairs meet all appliable exit provisions in Section 3.4. (e.g. distance between exits),
  - Exits leads to a safe space outside the building (exterior open space that is protected from fire exposure).

Mezzanine Exiting and Egress (Article 3.4.2.2.)

- First exception to the general rule, provided the following conditions are met (3.4.2.2.(2)):
  - Mezzanine is not required to terminate at a vertical fire separation based on Sentence 3.2.8.2.(1),
  - Restriction on the number of occupants,
  - Size of the mezzanine is relatively small, and
  - Limitation on the travel distance – based on the number of doorways.
- This exception permits egress stair from the mezzanine level provided all the conditions are met. The egress stair could be an open stair design.

Mezzanine Exiting and Egress (Article 3.4.2.2.)

- 2nd exception to the general rule may be used if all conditions in 3.4.2.2.(2) cannot be met in 3.4.2.2.(3).
- The Code specifies this exception only applies where:
  - the mezzanine is not required to terminate at a vertical fire separation based on Sentence 3.2.8.2.(1).
- At least half of the required means of egress should lead to an exit(s) accessible at the mezzanine level.
- For example, where a minimum of two exits are required, the following access from the mezzanine level could be provided:
  - One fire separated enclosed exit stair, and
  - One egress stairs from the mezzanine to the floor below

Combustible Cladding

Ontario

Combustible Cladding (Articles 3.1.5.5. and 3.1.5.6.)

- Harmonized with NBC and other provincial Codes.
- Combustible cladding and combustible components are now addressed in two separate Articles.
- Combustible cladding is permitted to be used in a sprinklered building of any height provided the exterior wall assembly is tested under fire conditions in CAN/ULC-S134, “Fire Test of Exterior Wall Assemblies”.
- Combustible component, other than combustible cladding, is permitted be used in a sprinklered building of any height provided:
  - wall assembly is tested under fire conditions (ULC S134), or
  - protected by masonry or concrete cladding.

Rapid Transit Stations

Ontario

Rapid Transit Stations (Section 3.13.)

BACKGROUND

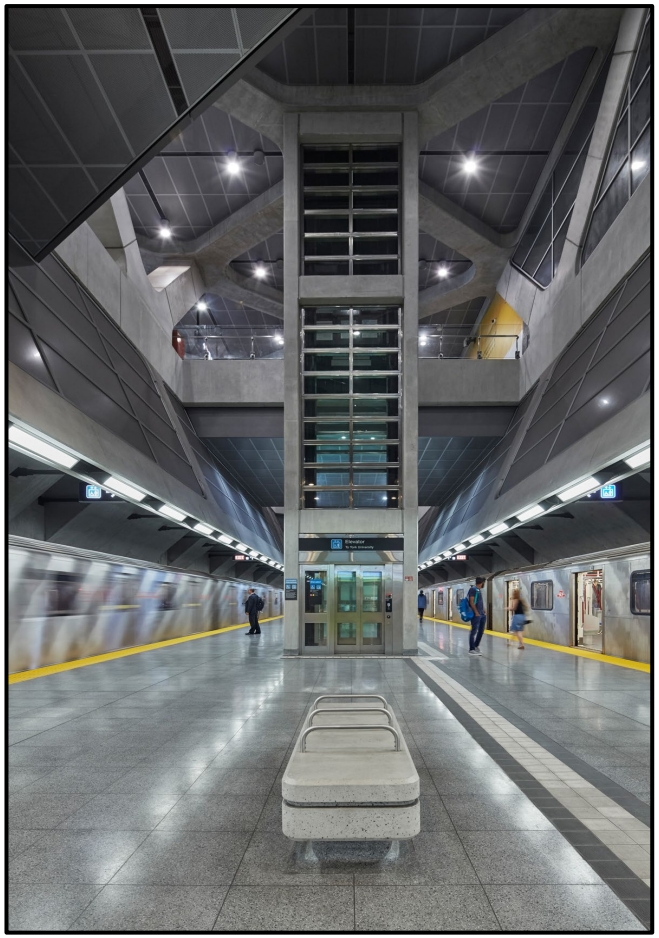
- Section 3.13. was included in the Building Code over 30 years ago at the request of the Toronto Transit Commission (TTC) to provide construction requirements for transit stations within its system.
- The Section of the Code is unique to Ontario and contains additional or special construction requirements (or exceptions) for rapid transit stations.
- Since its inclusion in the Building Code, Section 3.13. has not undergone significant updates or amendments.

Rapid Transit Stations (Section 3.13.)

- The changes in Section 3.13. address the following Items:
  - Construction requirements
  - Vestibules where a station is connected to other buildings
  - Guards at platform edges
  - Width of egress routes
  - Sprinkler protection underneath escalators

Rapid Transit Stations (Section 3.13.)

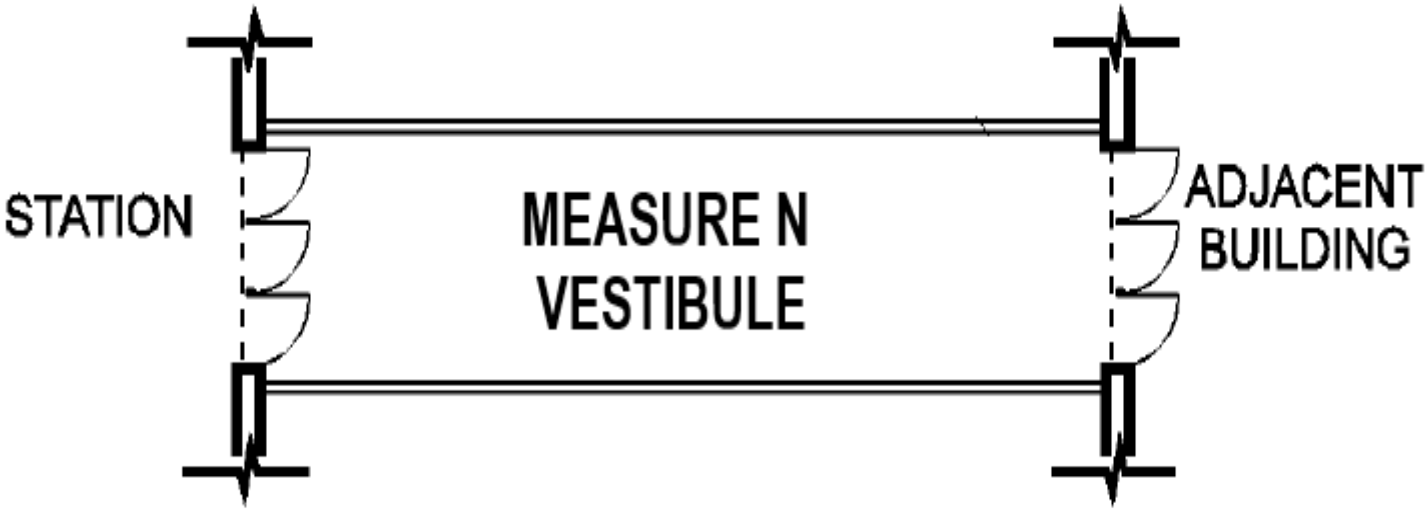
- Construction Requirements (3.13.2.1.)
  - Provisions restructured to provide more clarity when stations are built below, partially below, and above ground level.
  - Interconnected floor spaces – permitted (clarification).
  - Stairs, escalators and elevators may be located in interconnected floor spaces (clarification).



Courtesy of Adamson Associates Architects.

Rapid Transit Stations (Section 3.13.)

- Access to Adjacent Building (3.13.3.6.)
  - The vestibule that provides access between the station and an adjacent building must comply with Measure N in SB-4) regardless of whether the building is classified as a low-rise, mid-rise or high-rise building.



Ontario

Rapid Transit Stations (Section 3.13.)

- Guards (3.13.3.8.)
  - Clarification that guards are not required along the guideway (track) side of train platform.
  - Aligns OBC provisions with NFPA 130.
- Width of Means of Egress (3.13.4.5.)
  - Specifies minimum clear widths for fare collection equipment providing means of egress from public areas in stations:
    - Turnstile 420 mm
    - Fare collection gate (height 1000 mm or less) – 455 mm
    - Fare collection gate (height more than 1000 mm) – 530 mm

Rapid Transit Stations (Section 3.13.)

- Escalators (3.13.5.10.)
  - The requirement to provide sprinkler protection to the underside of escalators within their steel truss enclosure has been removed.

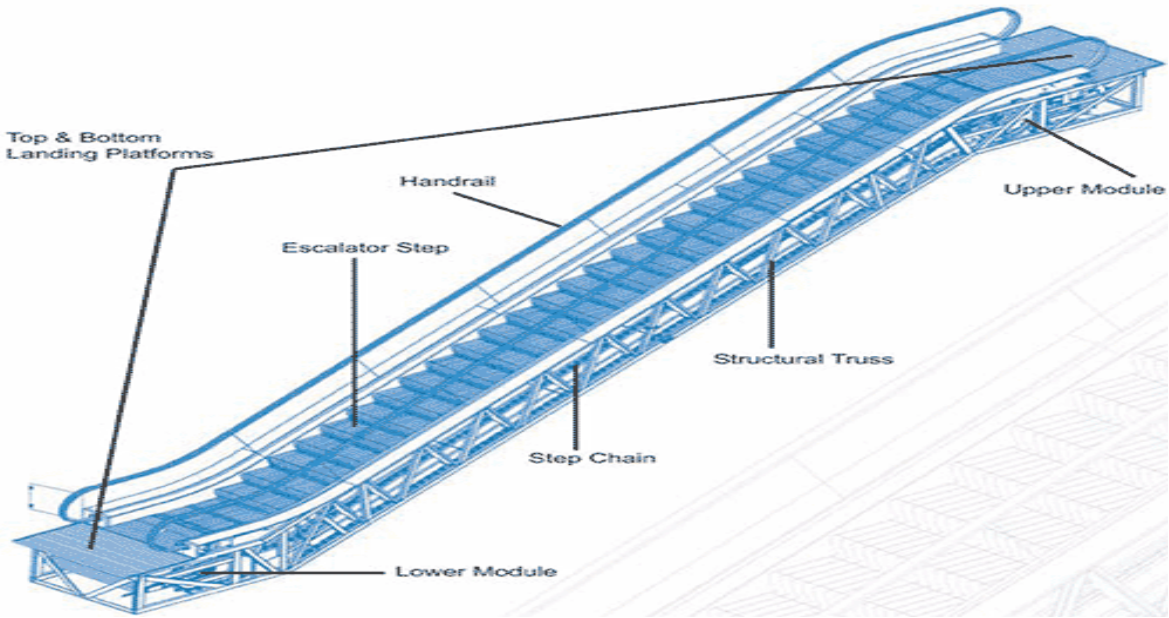


Image Courtesy of KONE Inc.

Ontario

Accessibility

Application of Barrier-Free Design (Article 3.8.1.1.)

Application of Barrier-Free Design

- Barrier-Free design applies to all buildings except for specific type of buildings that are listed in this Article.

- Detached houses, semi-detached houses, houses with secondary suites, duplexes, triplexes, townhouses, row houses and boarding or rooming houses are exempt from the application of Barrier-Free design.

Barrier-Free Building Entrances (Article 3.8.1.2.)

- Sentence 3.8.1.2.(1) was amended to now include ALL pedestrian entrances to a building, to be barrier-free and also connect to a barrier-free exterior path of travel. Service entrances are exempt.

- 2012 Sentence 3.8.1.2.(2) has been deleted, which only required the principal entrance to be barrier-free and a minimum number of barrier-free pedestrian entrances based on the number of pedestrian entrances to that building.

Areas Requiring Barrier-Free Path of Travel (Article 3.8.2.1.)

- Sentence 3.8.2.1.(1) starts with an exception / permission, as described in Sentence (3) that outlines where a barrier-free path of travel is NOT required.
- A barrier-free path of travel, from the building entrances that are described in Sentences 3.8.1.2.(1) & (2), is now required throughout the entrance storey and within all normally occupied floor areas and rooftop amenity spaces.
- Clause 3.8.2.1.(1)(b) provides an exception / permission as outlined in Sentence 3.8.2.1.(2). This exception refers to areas where the Barrier-Free path of travel does not need to extend.
- Note that a Barrier-Free path of travel is still required from the entrances of the buildings and throughout the entrance storey.

Areas Requiring Barrier-Free Path of Travel - Cont'd (Article 3.8.2.1.)

Sentence 3.8.2.1.(2):

- Refer to Appendix notes A-3.8.2.1.(2)(b).
- Clause (b) is intended for small buildings that are restricted in building area by lot size, including small infill properties between existing buildings. In those cases, it may not be feasible to require an elevator for the building to make all other floors accessible.
- Note that this Clause does not exempt areas requiring barrier-free path of travel that are described in Clause 3.8.2.1.(1)(a) [which is from the building entrance throughout the entrance storey], from being met.

Areas Requiring Barrier-Free Path of Travel - Cont'd (Article 3.8.2.1.)

- Clause 3.8.2.1.(3)(m) is new and exempts a barrier-free path of travel to the floor level above or below the entrance level in buildings up to 2 storeys high or in 2 storey suites, unless the floor level above or below:
  - (i) is served by a passenger elevator, a platform equipped passenger elevating device, an escalator or included moving walk, or
  - (ii) has a floor area is 600 m^2 or more, or
  - (iii) contains facilities that are not contained on the entrance level but are integral to the principal function of the entrance level, or
  - (iv) contains an assembly occupancy more than 100 m^2 in floor area.

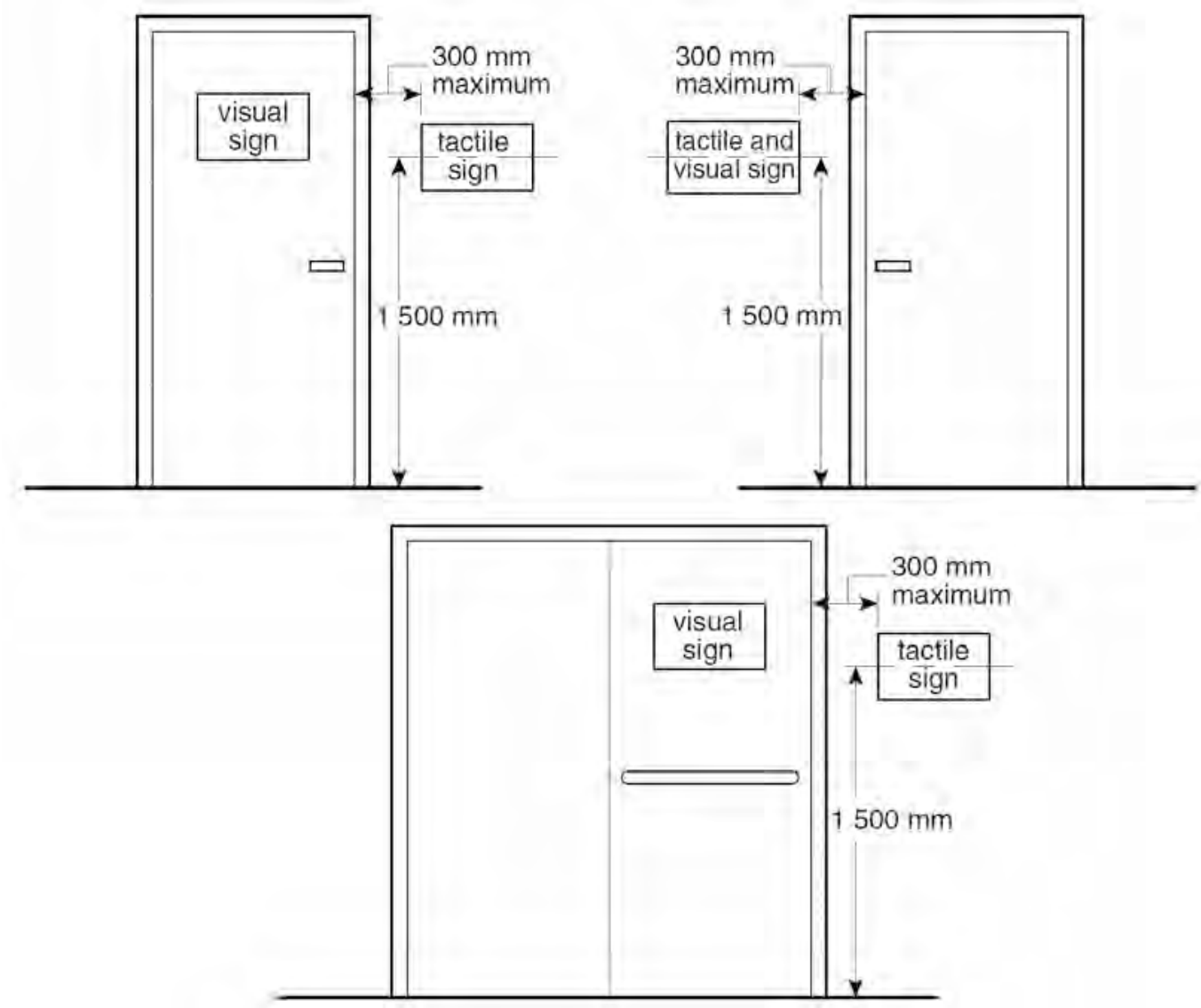
Barrier-Free Paths of Travel to Entrances, Exterior Passenger Loading Zones and Access to Parking Areas (Article 3.8.2.2.)

- Article 3.8.2.2. already existed in the 2012 Building Code.
- Sentence 3.8.2.2.(1) has been amended to require a **direct barrier-free path of travel** be provided between a barrier-free entrance to a designated barrier-free parking area (where provided), to an exterior passenger loading zone (where provided) and to a public thoroughfare.
- Sentence 3.8.2.2.(4) is new. This provision requires a barrier-free path of travel be provided between each parking level that has barrier-free parking as well as all other parts of the building that are required to be provided with barrier-free access that are served by that storage garage.

Accessibility Signs (Article 3.8.3.1.)

- Sentence 3.8.3.1.(1) has been amended to include additional areas where signs with visual information are to be installed to specify locations (e.g., location of barrier –free washroom).
- Sentence 3.8.3.1.(2) has been amended to provide the choice of also using the International Symbol for Hearing Loss and appropriate graphical or textural information.
- Sentence 3.8.3.1.(3) has been amended for more clarity. Visual and tactile information to be provided on signs.
- Sentence 3.8.3.1.(5) is new and clarifies that directional signs are to be provided with visual information.
- Sentence 3.8.3.1.(7) is new and outlines the requirements for tactile information sign locations.
- Sentence (8) is new and addresses visual information signs (required to comply CSA standard.

Accessibility Signs (Appendix Note A-3.8.3.1.)



Ontario

Minimum Lighting Requirements (Article 3.2.7.1.)

- A minimum level of illumination, of at least 200 lx is required:
  - where visual information is provided to controls required by Article 3.8.1.5. with exemption for signs with visual information internally illuminated, and
  - at signs displaying visual information required by Certain Clauses (Clauses 3.4.6.10.(5)(b) and 3.4.6.16.(5)(g), Subclause 3.4.6.16.(5)(l)(ii), Clause 3.4.6.16.(6)(d), Sentence 3.4.6.18.(3), Clause 3.4.6.18.(4)(a) and Articles 3.4.6.19. and 3.8.3.1).
  - This requirement is exempt for internally illuminated signs.

Barrier-Free Path of Travel for Exterior Walks (Article 3.8.3.2.)

- Dimension change in Clause 3.8.3.2.(1)(e) for exterior walks that form part of a barrier-free path of travel to have at least a 1600 mm wide surface of a different texture to that surrounding it, where the line of travel is level and even with adjacent walking surfaces.

Doorways and Doors in a Barrier-Free Path of Travel (Article 3.8.3.3.)

- A clear width dimension change in Sentence 3.8.3.3.(1) has been made, from 860 mm to 850 mm, for doorways located in a barrier-free path of travel.

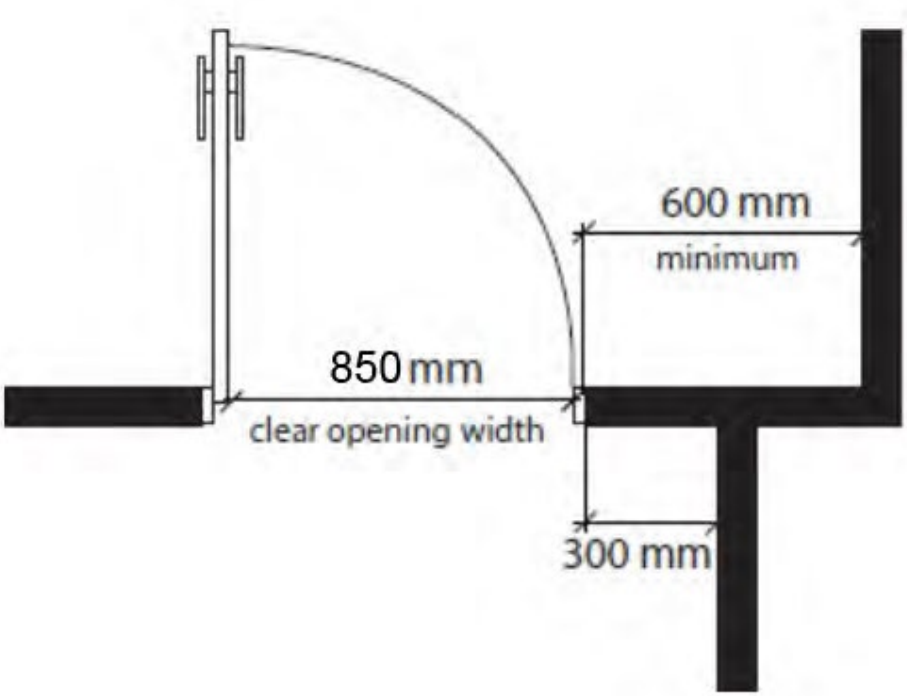


Figure A-3.8.3.3.(1) Clear Doorway Width

Ontario

Doorways and Doors – Cont'd (Article 3.8.3.3.)

- Door width under Sections 3.3. and 3.4. have also been increased to a minimum clear width of 850 mm.

- Sentences 3.8.3.3.(4) & (5) have been amended to require power door operators on doors that provide barrier-free path of travel regardless of the type of occupancy at the entrance to the building serves.

- Sentence 3.8.3.3.(4.1) is new and addresses doors equipped with a self-closing device (doors located on public areas).

Ramps in a Barrier-Free Path of Travel (Article 3.8.3.4.)

- Dimension change in Clause 3.8.3.4.(1)(a) has been made, from a minimum ramp width of 900 mm to a minimum 1000 mm width between handrails, for doorways located in a barrier-free path of travel.

- Dimension change in Clauses 3.8.3.4.(1)(c)&(d) has been made, from a minimum 1670 mm by 1670 mm level area to the new minimum of 1700 mm by 1700 mm.

- Clause 3.8.3.4.(1)(g) has been amended to provide the option for a ramp located in a barrier-free path of travel to have a minimum 50 mm high curb on any side of the ramp without any solid enclosures / guards **or** be provided with horizontal railings or other barriers that extend to within 50 mm of the finished ramp.

Accessible Passenger Elevating Devices (Article 3.8.3.5.)

- Sentence 3.8.3.5.(1) has been extended to include two additional Clauses.

- These additional Clauses speak to a clear floor space and an entry door or gate that are now required for passenger elevating devices that are located in a barrier-free path of travel.

Accessible Assistive Listening Systems (Article 3.8.3.7.)

- Sentence 3.8.3.7.(1) will require buildings with assembly occupancies with an area of more than 100 m^2 to be equipped with an assistive listening system.

- Sentence 3.8.3.7.(2) is new.
  At least one service counter in an assembly occupancy building is required to be equipped with an assistive listening system or adaptive technology in each location where information, goods or services are provided to the public.

- Sentence 3.8.3.7.(3) is new.
  This Sentence clarifies that the assistive listening system or adaptive technology must provide amplification system for the clear communication.

Barrier-Free Showers and Bathtubs (Article 3.8.3.13.)

- Sentence 3.8.3.13.(4) is new.

  This Sentence requires each location where a showering facility is provided for use by the general public or customers, or as part of a common use area for employees, at least one universal dressing and shower room must be provided.

- Sentence 3.8.3.13.(5) is new.

  This Sentence describes the requirements of the universal dressing and shower room that is required by Sentence 3.8.3.13.(4).

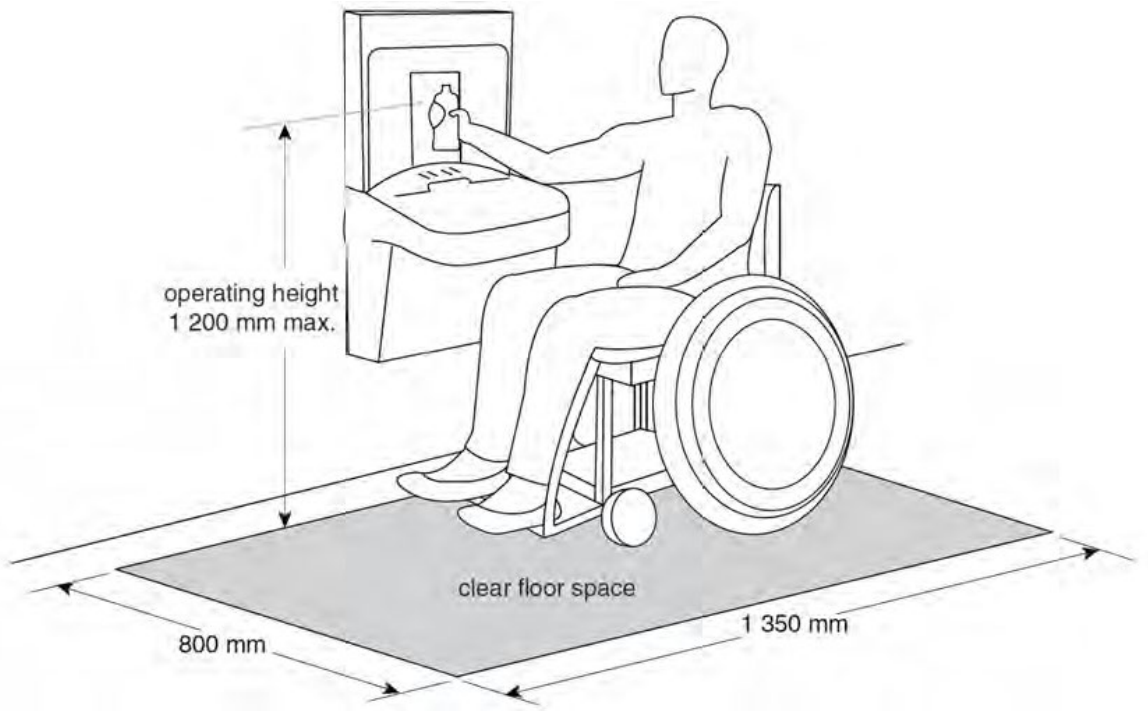
Accessible Service Counters (Article 3.8.3.14.)

- This Article describes the Building Code requirements for service counters wherever they are provided.

- The Code requires that at least one section of the service counters comply with Sentence 3.8.3.14.(2), which describes the minimum dimensions.

Accessible Water-Bottle Filling Stations (Article 3.8.3.16A.)

- This new Article describes the Code requirements for water-bottle filling stations where one or more water-bottle stations are provided at each location.



Ontario

Minimum Lighting Requirements (Article 3.2.7.1.)

- A minimum level of illumination, of at least 100 lx, is required:
  - over the entire length of escalators and moving walking surfaces, and
  - at controls required by Article 3.8.1.5. other than light switches and internally illuminated controls.

Public Pools

Ontario

Construction of Pools - (Article 3.11.3.1.)

- Clause 3.11.3.1.(9)(a) has been amended to ensure a minimum of 1100 mm wide barrier-free path of travel on the hard surfaced pool deck.

- Sentence 3.11.3.1.(15) has been reinstated. This Sentence requires the perimeter of the pool deck to be clearly delineated by painted lines of other means where any area continuous to the pool deck may be confused with the deck.

- Sentence 3.11.3.1.(28) is new. This Sentence describes the Code requirements for a set of steps for entry into and egress from these pools, if they are provided.

Miscellaneous

Ontario

Door Release Hardware (Articles 3.3.2.7. & 3.4.6.16.)

- Signs that are permanently mounted on doors indicating that the locking device will release, must be visual information signs. In addition, tactile information signs are also to be permanently mounted near those doors.
- Door release hardware shall be installed between 900 mm and 1100 mm above the finished floor.
- Door release hardware (Articles 3.3.2.7. and 3.4.6.16.) requirement has been amended to specify the width of the panic hardware to be at least half of the door width.

Miscellaneous – Various Articles

- Sprinkler Protected Glazed Wall Assembly (Article 3.1.8.20.) has been amended by replacing ULC/ORD C263.1, "Sprinkler-Protected Window Systems" with ULC Standard CAN/ULC-S136 “Fire Test of Sprinkler Protected Window Systems”.

- One of the 3 testing standards required for plastic materials used in the construction of sign faces (Article 3.15.4.1.), withdrawn ASTM D568, “Rate of Burning and/or Extent and Time of Burning Flexible Plastics in a Vertical Position” has been replaced by ASTM D3801: “Standard Test Method for Measuring Comparative Burning Characteristics of Solid Plastics in a Vertical Position”.

Miscellaneous – Various Articles

- To align with the 2020 NBC, fire related provisions in Part 6 have been relocated to Part 3 under a new Subsection 3.6.5. (Air Duct and Plenum Systems).

- A new safety glazing requirement referencing CAN/CGSB-12.1, “Safety Glazing” has been introduced (new Article 3.3.2.17. and Article 3.7.4.10.).

Questions?

Ontario