Ontario's 2024 Building Code

Introducing Key Changes to Part 7: Plumbing

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Building and Development Branch
Planning and Growth Division

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, 2020 National Plumbing 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 major changes implemented in Part 7, Plumbing of Division B in Ontario's 2024 Building Code.
- The changes are intended to reduce existing variation with the National Plumbing Code (NPC), 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:

- ❑ General
- ❑ Editorial Changes
- ❑ Numbering System Changes
- ❑ Ontario-Specific Changes
- ❑ Materials and Equipment
- ❑ Piping
- ❑ Drainage Systems
- ❑ Venting Systems
- ❑ Potable and Non-Potable Water Systems

Editorial Changes

Throughout Part 7, several terms have been deleted or replaced to harmonize with the National Plumbing Code (NPC) for example:

- ❑ The defined term “size” has been replaced with “nominal pipe size” or “NPS” to align with industry terminology.
- ❑ The term “certified to” has been replaced by “conform to” for consistency with the 2020 NPC with respect to referencing material standards.

Editorial Changes

Throughout Part 7, some Articles have been relocated, reworded or renamed to harmonize with the NPC, for example:

- **Tests of Pipes in Drainage System (Article 7.3.6.2.) -** Sentence (1) has been reworded to match the National.
- **Tests of Venting Systems (Article 7.3.6.3.)-** Sentence (1) has been reworded to match the National.

Additional details can be found in the Technical Bulletins.

Numbering System Changes

Part 7 Numbering System

- Ontario adopts the 2020 NPC as Part 7 of Ontario's Building Code with some changes. The 2020 NBC has Part 7 Plumbing Services which directs the users to the 2020 NPC. in this addition harmonization between NPC and Part 7 of Ontario Building Code has substantially increased.

- The code reference numbers have been revised to further align with Part 2 provisions of Division B in the 2020 NPC by adding a leading number 7.

Ontario-Specific Changes

- Harmonized OBC provisions with the 2020 NBC and 2020 NPC are accompanied with Ontario-specific changes. Those changes are sometimes assigned a unique code reference number, or in the case of non-adoption of an NBC or NPC provision, the Code reference is described as “reserved”.

General (Section 7.1.)

- The exception in Sentence (1) has been updated for service connections to allow wastewater and rainwater to be diverted to non-potable water systems for consistency with non-potable water systems and non-potable rainwater harvesting systems.
- In addition, this Sentence harmonizes with the 2020 NPC with respect to required connections for water distribution systems.

General (Section 7.1.) Cont'd

Lighting and Ventilation Requirements (Article 7.1.3.1.)

- ❑ Existing Article 7.1.3.1. "Definitions" relocated to Ontario-Specific Article 7.1.1A.1.
- ❑ Sentence (1) in new Article 7.1.3.1. prohibits plumbing fixtures from being located in a room without lighting and ventilation.

General (Section 7.1.) Cont'd

Seismic Restraints and Design (Article 7.1.4.1.)

- Existing Ontario-Specific Article 7.1.4.1. "Facilities Required" has been relocated to Article 7.1.1B.1.

- Sentence (1) in new Article 7.1.4.1. introduces requirements related to seismic protection of plumbing systems, which requires that the plumbing systems in buildings constructed in accordance with Part 3 shall be designed and installed to accommodate the seismic forces addressed in Subsection 4.1.8.

Materials and Equipment (Section 7.2.)

Working Pressure of a Water Service Pipe (Article 7.2.1.6.)

- New Article 7.2.1.6. has been added to regulate the working pressure of a water service pipe to be not less than the maximum watermain pressure at the point of connection.

Materials and Equipment (Section 7.2.) Cont'd

Surface Requirements (Article 7.2.2.1.)

- ❑ Sentence (1) has been updated to remove the exception for areas designed to be slip proof in fixtures.

Conformance to Standards (Article 7.2.2.2.)

- ❑ Fixture standards referenced in Sentences (2) to (8) have been relocated as separate Clauses under revised Sentence (1) with ASME A112.4.2. standard added under Clause (1)(i) for personal hygiene devices for water closets.

Materials and Equipment (Section 7.2.) Cont'd

Traps (Article 7.2.3.1.)

- ❑ Clause 3(b) has been revised so that only part of the trap is required to be removable for cleaning purposes.
- ❑ Clause 3(c) has been removed as an option for cleanout provision when the trap is installed below the floor without a cleanout plug.
- ❑ Sentence (4) no longer makes reference to the S-trap.

Materials and Equipment (Section 7.2.) Cont'd

Fibrocement Pipe and Fittings (Article 7.2.5.1.)

- New Sentence (1) has been added to require fibrocement pipe and fittings for use in drain, waste or vent systems to conform to CAN/CSA-B127.3.

Concrete Pipe and Fittings (Article 7.2.5.2.)

- Sentence (1) has been updated to reference specific standards CSA A257.1 and 257.2 for concrete pipes. Sentence (2) has been amended to reference CSA A257.3 for joints with internal elastomeric gaskets.

Materials and Equipment (Section 7.2.) Cont'd

Crosslinked Polyethylene Pipe and Fittings (Article 7.2.5.6.)

- Sentence (1) has been expanded to allow manufacturer-approved fittings to be used with PEX tubing, provided that they comply with the referenced standard (CSA B137.5).

PVC Pipe and Fittings (Article 7.2.5.7.)

- Sentence (2) is introduced to reference ASTM D2466 and D2467 standards for PVC water pipe fittings Schedule 40 and 80 respectively.

Materials and Equipment (Section 7.2.) Cont'd

Polyethylene of Raised Temperature (PE-RT) Tube and Fittings (Article 7.2.5.15.)

- ❑ Existing Article 7.2.5.15. "Polypropylene Pipe and Fittings" renumbered as 7.2.5.14.
- ❑ Sentence (1) of new Article 7.2.5.15. introduces Polyethylene of Raised Temperature (PE-RT) tube and fittings as new acceptable plumbing material in hot and cold potable water systems and references the CSA B137.18. Standard.
- ❑ Sentence (2) includes Table 7.2.5.15. specifying the permitted uses of the PE-RT tube.

Materials and Equipment (Section 7.2.) Cont'd

Cellular Core PVC Pipe and Fittings (Article 7.2.5.16.)

- This new Article introduces Cellular Core PVC Pipe as an acceptable plumbing material and references the ASTM F3128 standard.
- Sentence (1) references CSA B181.2 for the colour requirements.
- Sentence (2) references CSA B181.2 for the requirements of fittings and solvent cements used for cellular core PVC pipe.
- Sentence (3) limits the use of the cellular core PVC pipe to residential buildings containing a maximum of 2 dwellings and do not exceed 3 storeys in height.

Materials and Equipment (Section 7.2.) Cont'd

Copper and Brass Pipe (Article 7.2.7.1.)

- Sentence (1) has been modified into Clauses with Clause (1)(b) added to reference Table 7.2.7.4. for the permitted use of copper tube and pipe.

Copper Tube (Article 7.2.7.4.)

- Sentence (3) has been amended to extend the prohibition on the use of copper tube to all urinals.

Materials and Equipment (Section 7.2.) Cont'd

Water Temperature Control (Article 7.2.10.7.)

- New Sentence (1) requires water supplied to shower heads or bathtubs to be controlled by an automatic compensating valve conforming either to ASME A112.18.1/ CSA B125.15 or ASSE 1016/ ASME A112.1016/ CSA B125.16 to provide a means of automatically maintaining the selected water temperature.
- New Sentence (2) waives the requirement under Sentence (1) for bathtubs only if the hot water supplied is controlled by an automatic compensating valve conforming to CSA B125.3 or controlled by a temperature-limiting device conforming to ASSE 1070/ ASME A112.1070/ CSA B125.70 and provide performance requirements for temperature-limiting devices.

Materials and Equipment (Section 7.2.) Cont'd

Water Temperature Control (Article 7.2.10.7.) Cont'd

- New Sentence (3) waives the requirement under Sentence (1) if the water is supplied by a single tempered water line controlled by an automatic compensating valve conforming to CSA B125.3.
- New Sentence (5) has been introduced to reduce the maximum water temperature from 49°C to 43°C in health care facilities and seniors' residences.

Temperature Control Devices (Article 7.2.10.7A.)

- Ontario-Specific Sentence (1) has been amended to require hot water temperature control devices in childcare centres.

Materials and Equipment (Section 7.2.) Cont'd

Linings and Coatings of Water Storage Tanks (Article 7.2.10.7C.)

- Ontario-Specific Sentence (1) has been amended to clarify that the existing requirement for linings and coatings of domestic water tanks that come into contact with potable water are not intended to apply to domestic tanks that are within a house or an individual dwelling unit.

Direct Flush Valves (Article 7.2.10.8.)

- New Clause (1)(e) has been added to require direct flush valves conform to a new standard ASSE 1037/ ASME A112.1037/ CSA B125.37.

Materials and Equipment (Section 7.2.) Cont'd

Back-Siphonage Preventers and Backflow Preventers (Article 7.2.10.10.)

- ❑ Sentence (1) has been expanded by making reference to CSA B64.4.1., CSA B64.5.1., CSA B64.6.1. and CSA B64.9.
- ❑ Sentence (2) introduces a new standard ASSE 1002/ ASME A112.1002/ CSA B125.12 for back-siphonage preventers for tank type water closets.

Materials and Equipment (Section 7.2.) Cont'd

Solar Domestic Water Heater (Article 7.2.10.13.)

- Sentence (1) has been amended to reference the CSA F379 Series for equipment for solar heating of potable water.

Vent Pipe Flashing (Article 7.2.10.14.)

- "Alloyed zinc" referenced in Clause (1)(c) is now a defined term.

Flexible Water Connectors (Article 7.2.10.18.)

- Sentence (1) introduces requirements for flexible water connectors by referencing ASME A112.18.6/ CSA B125.6.

Materials and Equipment (Section 7.2.) Cont'd

Tracer Wire (Article 7.2.11.3.)

- Sentence (1) increases options for tracer wire requirements to allow 12-gauge copper clad steel tracer wires to be used for non-metallic water service pipes or fire service mains installed underground.

Piping (Section 7.3.)

Drilled and Tapped Joints (Article 7.3.3.1.)

- Sentence (1) has been amended to allow drilled and tapped joints in sanitary drainage pipe and fittings only if suitable provision for drilling and tapping has been made.

Extracted Tees (Article 7.3.3.2.)

- Sentence (1) introduces conditions for extracting tees in copper tube used in a water distribution system such as the required tool, branch size, flow obstruction prevention and joint filler metal.

Piping (Section 7.3.) Cont'd

Unions and Slip Joints (Article 7.3.3.4.)

- Sentence (1) which prohibits union joints downstream of a trap weir in a drainage system or venting system, has been amended to recognise the existing exception in Sentence 7.4.6.3.(6) which allows the use of union joints for pumped sumps.

Connection of Floor Outlet Fixtures (Article 7.3.3.8.)

- New Sentence (5) has been introduced to allow that floor-mounted water closets can be attached to either the floor or floor flange.

Piping (Section 7.3.) Cont'd

Capability of Support (Article 7.3.4.1.)

- ❑ The Sentences have been restructured to harmonize with the 2020 NPC.

Support for Horizontal Piping (Article 7.3.4.5.)

- ❑ The requirements listed in Clauses (a) to (m) under Sentence (2) have been relocated to new Table 7.3.4.5. referenced by this Sentence.
- ❑ Sentence (3) has been amended to now specify PVC, CPVC or ABS plastic types for hanger support.
- ❑ New Sentence (4) contains additional hanger restrictions for PEX, PE-RT, PP-R, PE/AL/PE or PEX/AL/PEX plastic pipe.

Piping (Section 7.3.) Cont'd

Ball Tests (Article 7.3.6.7.)

- Sentence (2) has been expanded to require the test ball diameter to be not less than 25 mm where the size of the pipe is less than NPS 3.

Drainage Systems (Section 7.4.)

Connections to Sanitary Drainage Systems (Article 7.4.2.1.)

- Subclause (1)(a)(ii) has been amended to require a backwater valve to be installed in the fountain fixture drain when the system is subject to backflow.

Drainage Systems (Section 7.4.) Cont'd

Traps for Sanitary Drainage Systems (Article 7.4.5.1.)

- New Sentence (5) has been introduced to allow an interceptor with an effective water seal of not less than 38 mm to serve as a trap.

Traps for Storm Drainage Systems (Article 7.4.5.2.)

- New Sentence (2) has been introduced to set the requirements for the trap that protects a floor drain connected to a storm drainage system.

Drainage Systems (Section 7.4.) Cont'd

Sumps or Tanks (Article 7.4.6.3.)

- New Sentence (3) has been added to require a water and air-tight cover where the sump or tank receives subsurface water from a subsoil drainage pipe.

Drainage Systems (Section 7.4.) Cont'd

Cleanouts for Drainage Systems (Article 7.4.7.1.)

- New Sentence (5) has been added that allows change in direction for pipes of NPS not more than 6, under certain conditions.
- Clause 7(b) has been amended to require a cleanout fitting not more than 3 m upstream of the bottom of the stack.

Size and Spacing of Cleanouts (Article 7.4.7.2.)

- Sentence (3) increases the maximum developed length of a building sewer between the building and the first manhole to which the sewer connects from 30 m to 75 m.

Drainage Systems (Section 7.4.) Cont'd

Size of Fixture Outlet Pipes (Article 7.4.9.3.)

- ❑ Note (2) has been added to Table 7.4.9.3. to clarify that there is no requirement for hydraulic load for emergency floor drains.
- ❑ Sentence (3) has been amended to specify sizing requirements in terms of the clothes washer trap inlet to be not less than NPS 2, applicable to clothes washers not draining into laundry trays.

Drainage Systems (Section 7.4.) Cont'd

Hydraulic Loads from Fixtures with a Continuous Flow (Article 7.4.10.3.)

- ❑ Title of Article 7.4.10.3. "Hydraulic Loads from Fixtures with Continuous or Semi-Continuous Flow" has been renamed "Hydraulic Loads from Fixtures with a Continuous Flow".
- ❑ Sentence (2) has been amended to address flow drains to a combined sewer or a storm sewer.

Drainage Systems (Section 7.4.) Cont'd

Hydraulic loads harmonized with NPC and are more user friendly now.

Hydraulic Loads to Soil or Waste Pipes (Article 7.4.10.6.)

- ❑ New Tables 7.4.10.6.-B and 7.4.10.6.-C have been added.

Hydraulic Loads on Branches (Article 7.4.10.7.)

- ❑ Reference to Table 7.4.10.7. in Sentence (1) replaced by new Table 7.4.10.6.-B for hydraulic load that is drained to a branch.

Hydraulic Loads on Sanitary Building Drains or Sewers (Article 7.4.10.8.)

- ❑ Title of Article "Hydraulic Loads on Sanitary Horizontal Drain" has been renamed "Hydraulic Loads on Sanitary Building Drains or Sewers".

Drainage Systems (Section 7.4.) Cont'd

Hydraulic Loads to Roof Gutters (Article 7.4.10.10.)

- Sentence (1) in new Article 7.4.10.10. references Table 7.4.10.10. for hydraulic loads drained to roof gutters.

Venting Systems (Section 7.5.)

Fixture Draining into Vent Pipe (Article 7.5.4.5.)

- Sentence (1) has been amended to require the section of the vent pipe that acts as a wet vent to be not less than NPS 2.

Vents for Sewage Sumps, Neutralizing and Dilution Tanks, and Macerating Toilet Systems (Article 7.5.7.7.)

- Sentence (1) adds “neutralization tanks” to the requirements for the sizing of vents for dilution tanks.

Venting Systems (Section 7.5.) Cont'd

Air Admittance Valves (Article 7.5.9.2.)

- Sentence (2) has been amended to require air admittance valves to be located not less than 100 mm above the fixture drain being vented.

Non-Potable Water Systems (Section 7.7.)

General (Article 7.7.1.1.)

- ❑ Sentence (1) has been revised to require non-potable water systems be designed, fabricated and installed to Subsection 7.7.1. and good engineering practice.
- ❑ Sentence (2) replaced by new provisions that describe the fixtures and systems allowed to be supplied by non-potable water systems.
- ❑ Sentence (3) has been added that prohibits the use of non-potable water systems in healthcare facilities.

Non-Potable Water Systems (Section 7.7.) Cont'd

General (Article 7.7.1.1.) Cont'd

- Sentence (4) has been added to ensure that potable water systems are safely connected to non-potable water systems.
- Sentence (5) has been added to align the maximum static pressure of 550 kPa for a fixture in a non-potable water system with Article 7.6.3.3.
- Ontario-Specific Sentence (3) (protection of potable water when both rainwater and potable water is supplied) has been retained and renumbered as Sentence (6).

Non-Potable Water Systems (Section 7.7.) Cont'd

Non-Potable Rainwater Harvesting Systems (Subsection 7.7.2.)

- ❑ New requirements have been introduced for non-potable rainwater harvesting systems. This Subsection also clarifies the permission for storm water and grey water reuse.

General (Subsection 7.7.2.1.)

- ❑ New Article 7.7.2.1. has been added that defines the scope of the new rainwater harvesting requirements.

Permitted Applications (Subsection 7.7.2.2.)

- ❑ New Article 7.7.2.2. has been added that limits the supply of harvested rainwater to applications and fixtures where food consumption, drinking and food preparation are unlikely.

Non-Potable Water Systems (Section 7.7.) Cont'd

Roof Design (Subsection 7.7.2.3.)

- ❑ New Article 7.7.2.3. has been added that introduces requirements for the design of roofs that supply rainwater harvesting systems.

Non-Potable Rainwater Harvesting System Design (Article 7.7.2.4.)

- ❑ New Article 7.7.2.4. has been added that introduces requirements for the design of rainwater harvesting systems.

Conformance to Standards (Article 7.7.3.1.)

- ❑ Article 7.7.4.1. "Conformance to Standards" has been renumbered as Article 7.7.3.1. Ontario-Specific provisions retained.

Q & A

Questions?

Ontario