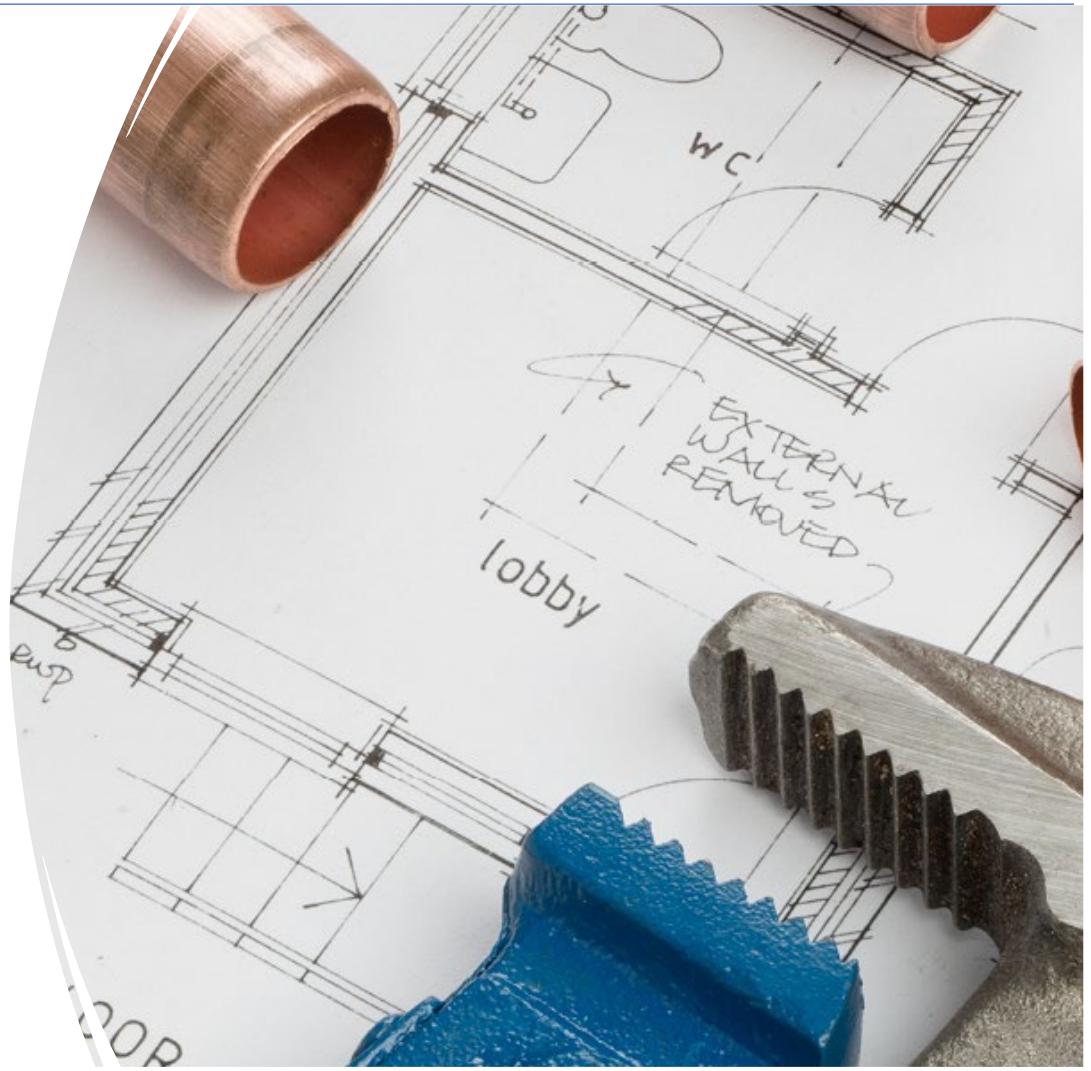
TSASK

TECHNICAL SAFETY AUTHORITY
OF SASKATCHEWAN

Adoption Of 2020 National Plumbing Code In Saskatchewan

Agenda

- Changes from 2015 to 2020 NPC
- Changes to the Saskatchewan Plumbing Code Regulations
- Date of Enforcement
- Permitting and Inspections
- Additional Reference Material
- Question and Answer segment



Changes in 2020 Plumbing Code

- New Defined Terms, abbreviation and wording changes
- Seismic Design
- Piping and tubing material
- Nominal Pipe Size (NPS)
- Asbestos based material
- Water Temperature Control
- Protection from Backflow
- Non-Potable Water System
- Non-Potable Rainwater Harvesting system

New Defined Terms and Abbreviations

Nominal Pipe Size (NPS)

- The nominal diameter by which a pipe, fitting, trap or other similar items is commercially designated

New Defined Terms and Abbreviations

Sanitary Drainage Pipe

- A pipe in a sanitary drainage system

New Defined Terms and Abbreviations

Stack

- A vertical sanitary drainage pipe that passes through one or more stories and includes any offset that is part of the stack

New Defined Terms and Abbreviations

PE-RT

- Polyethylene of Raised Temperature

Sask. Plumbing Code Regulations New Terms

Human Consumptive

Use of water for human consumption, including the following uses and applications:

a) Drinking;
b) Cooking and Food Preparation;
c) Oral hygiene.

Sask. Plumbing Code Regulations New Terms

Hygienic

A use of water for hygienic purposes by humans, including the following uses and applications:

a) Bathing and Personal Hygiene but not including swimming;

b) Showering.

***Does not** include a human consumptive use.*

2.1.2 Service Connections (wording)

NPC 2015

2.1.2. Service Connections

2.1.2.1. Sanitary Drainage Systems

1) Except ~~as provided in Subsection 2.7.4., every~~ sanitary drainage system shall be connected to a public sanitary sewer~~, a public combined sewer~~ or a private sewage disposal system.

2) A combined building drain shall not be installed. (See Note A-2.1.2.1.(2).)

2.1.2.2. Storm Drainage Systems

1) Except as provided in ~~Subsection 2.7.4., every~~ storm drainage system shall be connected to a public storm sewer, a public combined sewer or a designated storm water disposal location.

2.1.2.3. Water Distribution Systems

1) Except as provided in ~~Subsection 2.7.4., every~~ water distribution system shall be connected to a public water main or a potable private water supply system.

NPC 2020

2.1.2. Service Connections

2.1.2.1. Sanitary Drainage Systems

1) Except *where supplying systems that are covered in Section 2.7.,* sanitary drainage systems shall be connected to a public sanitary sewer or a private sewage disposal system.

2) A combined building drain shall not be installed. *(See Note A-2.1.2.1.(2).)*

2.1.2.2. Storm Drainage Systems

1) Except as provided in *Section 2.7.,* storm drainage systems shall be connected to a public storm sewer, a public combined sewer or a designated storm water disposal location.

2.1.2.3. Water Distribution Systems

1) Except as provided in *Section 2.7.,* water distribution systems shall be connected to a public water main or a potable private water supply system.

2.1.4 Seismic Design

2.1.4. Seismic Design

2.1.4.1. Seismic Restraints and Design

1) Plumbing systems in buildings constructed in accordance with Part 3 of Division B of the NBC shall be designed and installed to accommodate the seismic forces addressed in Subsection 4.1.8. of Division B of the NBC. *(See Note A-2.1.4.1.(1).)*

A-2.1.4.(1) Seismic Restraint and Design.

Sentence 2.1.4.1.(1) aims to help ensure that plumbing systems will remain in place for a sufficient amount of time during an earthquake to allow for the safe evacuation of the building.

2.2.2.2 Conformance to Standards

i) Personal hygiene devices for water closets shall conform to ASME A112.4.2/CSA B45.16, “Personal hygiene devices for water closets.”

Standard that bidet style toilet seats must now meet.

2.2.5 Non-Metallic Pipe and Fittings

2.2.5.1. Fibrocement Pipe and Fittings

1) Fibrocement pipe and fittings for use in a drain, waste or vent system shall conform to CAN/CSA-B127.3, “Fibrocement drain, waste, and vent pipe and pipe fittings.”

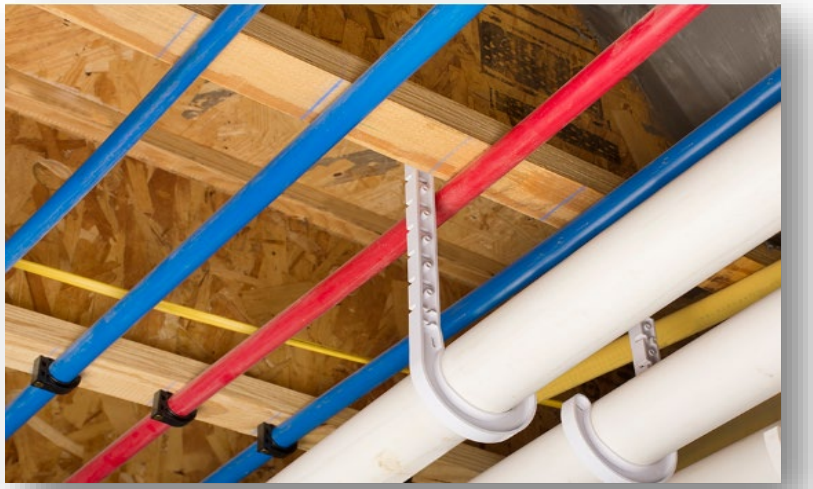
Asbestos Cement Pipe and Fittings has now been removed from National Plumbing Code.

2.2.5 Non-Metallic Pipe and Fittings

2.2.5.6. Crosslinked Polyethylene Pipe and Fittings

1) Crosslinked polyethylene pipe and manufacturer-approved fittings used in hot and cold potable water systems shall conform to CSA B137.5, “Crosslinked polyethylene (PEX) tubing systems for pressure applications.”

(See note A-2.2.5.6.(1).)



Previously referred to associated fittings, changed to manufacturer approved fittings.

2.2.5 Non-Metallic Pipe and Fittings

2.2.5.15. Polyethylene of Raised Temperature Tube and Fittings – *New*

1) Polyethylene of raised temperature (PE-RT) tube and manufacturer-approved fittings used in hot and cold potable water systems shall conform to CSA B137.18, "Polyethylene of raised temperature resistance (PE-RT) tubing systems for pressure applications." (See Note A-2.2.5.15.(1).)

2) The use of PE-RT tube shall conform to Table 2.2.5.15.

Table 2.2.5.15.
Permitted Uses of Polyethylene of Raised Temperature (PE-RT) Tube
Forming Part of Sentence 2.2.5.15.(2)

Type of Tube	Plumbing Purposes(1)								
	Drainage System		*Building Sewer*	*Venting System*		*Potable Water System*			
	Aboveground inside *building*	Underground under *building*		Above-ground	Under-ground	Cold	Hot	Under *building*	Outside *building*
PE-RT	N	N	N	N	N	P	P	P	P

Notes to Table 2.2.5.15.:
(1) P = permitted and N = not permitted.

2.2.5 Non-Metallic Pipe and Fittings

2.2.5.16. Cellular Core PVC Pipe and Fittings

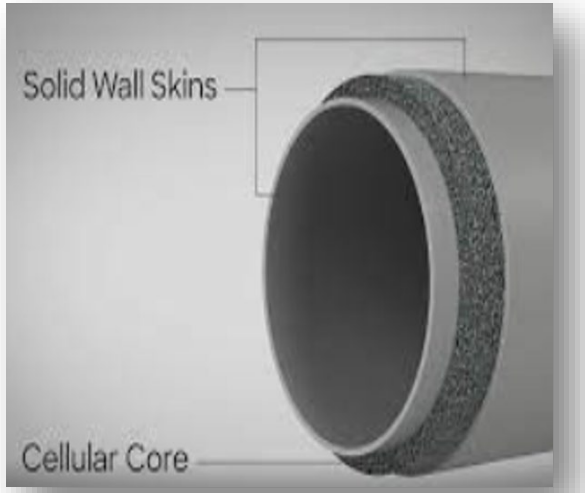
1) Cellular core PVC pipe shall:

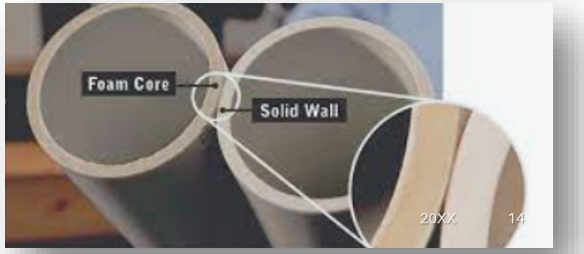
a) conform to ASTM F3128, "Standard Specification for Poly(Vinyl Chloride) (PVC) Schedule 40 Drain, Waste, and Vent Pipe with a Cellular Core," and

b) be light grey, as specified in CSA B181.2, "Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings."

2) Fittings and solvent cements for cellular core PVC pipe shall conform to CSA B181.2, "Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings."

3) *Cellular core PVC pipe shall only be used in residential buildings containing 1 or 2 dwelling units and in row houses that do not exceed 3 storeys in height.*





New material to Canada, restricted to residential.

2.2.7 Non-Ferrous Pipe and Fittings

2.2.7.4. Copper Tube

1) Copper tube shall conform to:

a) ASTM B88, “Standard Specification for Seamless Copper Water Tube,” or

b) ASTM B306, “Standard Specification for Copper Drainage Tube (DWV).”

2) Except as provided in Sentence (3), the use of copper tube shall conform to Table 2.2.7.4.

3) *Copper tube shall not be used for the fixture drain or the portion of the vent pipe below the flood level rim of a urinal.*

All urinals are now unable to use copper drainpipe and fitting as specified in the highlighted clause.

2.2.10.6 (7) Valves, and Supply and Waste Fittings

7) Manually operated valves of NPS 4 or less for use in plumbing systems shall conform to ASME A112.4.14/CSA B125.14, “Manually Operated Valves for Use in Plumbing Systems.” (See Note A-2.2.10.6.(7).)

This clause addition provides performance and lead content requirements for these valves.

2.2.10.7 Water Temperature Control

2015 NPC

2.2.10.7. Water Temperature Control

1) Except as provided in Sentence (2), valves supplying fixed-location shower heads shall be individual pressure-balanced or thermostatic-mixing valves conforming to ASME A112.18.1/CSA B125.1, “Plumbing Supply Fittings.”

2) Individual pressure-balanced or thermostatic-mixing valves shall not be required for shower heads having a single tempered water supply that is controlled by an automatic compensating valve conforming to CSA B125.3, “Plumbing Fittings.”

3) Mixing valves that supply shower heads shall be of the pressure-balanced, thermostatic, or combination pressure-balanced/thermostatic type capable of:

a) maintaining a water outlet temperature that does not exceed 49°C; and

b) limiting thermal shock.

4) The temperature of water discharging into a bathtub shall not exceed 49°C.

(See Note A-2.2.10.7.)

2.2.10.7 Water Temperature Control

2020 NPC

2.2.10.7. Water Temperature Control *(See Note A-2.2.10.7.)*

1) Except as provided in Sentences (2) and (3), water supplied to shower heads or bathtubs shall be controlled by an automatic compensating valve conforming to:

a) ASME A112.18.1/CSA B125.1, “Plumbing Supply Fittings,”; or

b) ASSE 1016/ASME A112.1016/CSA B125.16, “Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations.”

2) The requirement in Sentence (1) is permitted to be waived where hot water supplied only to bathtubs is controlled by:

a) an automatic compensating valve conforming to CSA B125.3, “Plumbing fittings,”; or

b) a temperature-limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70, “Performance requirements for water temperature limiting devices.”

3) The requirement in Sentence (1) is permitted to be waived where the water is supplied by a single tempered water line controlled by an automatic compensating valve conforming to CSA B125.3, “Plumbing fittings.”

4) Except as provided in Sentence (5), the temperature of water discharging from a shower head or into a bathtub shall not exceed 49°C.

5) In healthcare facilities and seniors’ residences, the temperature of water discharging from a shower head or into a bathtub shall:

a) not exceed 43°C, and;

b) be adjusted at the shower or bathtub controls.

Performance Standards

2.2.10.7. Water Temperature Control *(See Note A-2.2.10.7.)*

1) Except as provided in Sentences (2) and (3), water supplied to shower heads or bathtubs shall be controlled by an automatic compensating valve conforming to:

a) ASME A112.18.1/CSA B125.1, “Plumbing Supply Fittings,”; or

b) ASSE 1016/ASME A112.1016/CSA B125.16, “Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations.”

2) The requirement in Sentence (1) is permitted to be waived where hot water supplied only to bathtubs is controlled by:

a) an automatic compensating valve conforming to CSA B125.3, “Plumbing fittings,”; or

b) a temperature-limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70, “Performance requirements for water temperature limiting devices.”

3) The requirement in Sentence (1) is permitted to be waived where the water is supplied by a single tempered water line controlled by an automatic compensating valve conforming to CSA B125.3, “Plumbing fittings.”

These clauses address certification and selection of valves supplying all types of showerheads and bathtub taps. These standards provide the ability to control water temperature discharge.

Standard and Spec Sheet example

ASSE 1016-2017/
ASME A112.1016-2017/
CSA B125.16-17
ANSI Approved: January 2017

Performance Requirements for

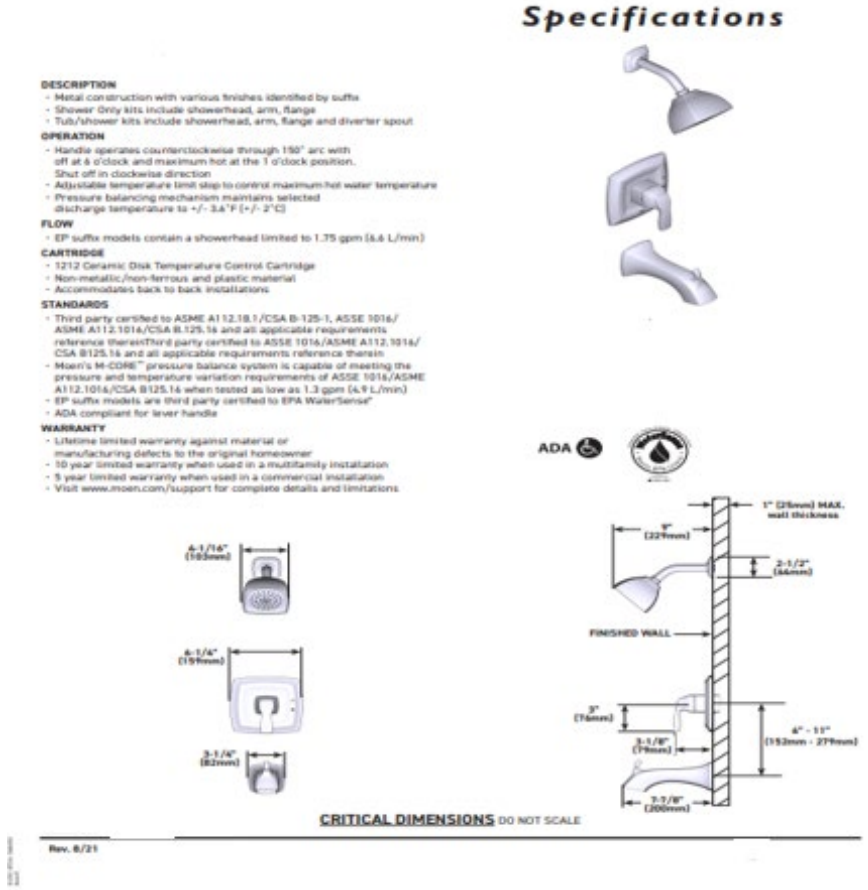
Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations

ASME SETTING THE STANDARD

ASSE ENGINEERING Prevention Rather Than Cure

CSA Group

An American National Standard



Temperature Requirements

4) Except as provided in Sentence (5), the temperature of water discharging from a shower head or into a bathtub shall not exceed 49°C.

5) *In healthcare facilities and seniors' residences, the temperature of water discharging from a shower head or into a bathtub shall:*

a) not exceed 43°C; and

b) be adjusted at the shower or bathtub controls.

The temperature is reduced in healthcare facilities and senior residences.

2.2.10.8 Direct Flush Valves

2.2.10.8. Direct Flush Valves

1) Direct flush valves shall:

a) open fully and close positively under service pressure;

b) complete their cycle of operation automatically;

c) be provided with a means of regulating the volume of water that they discharge;

d) be provided with a vacuum breaker unless the fixture is designed so that back-siphonage cannot occur; and

e) conform to ASSE 1037/CSA B125.37, "Performance requirements for pressurized flushing devices for plumbing fixtures".

Added clause to address performance requirements.

2.2.10.10 Back-Siphonage Preventers and Backflow Preventers

2015 NPC

2.2.10.10. Back-Siphonage Preventers and Backflow Preventers

1) Except as provided in Sentence (2), back-siphonage preventers and backflow preventers shall conform to

a) CSA B64.0, “Definitions, General Requirements, and Test Methods for Vacuum Breakers and Backflow Preventers,”

b) CSA B64.1.1, “Atmospheric Vacuum Breakers (AVB),”

c) CSA B64.1.2, “Pressure Vacuum Breakers (PVB),”

d) CSA B64.1.3, “Spill-Resistant Pressure Vacuum Breakers (SRPVB),”

e) CSA B64.2, “Hose Connection Vacuum Breakers (HCVB),”

f) CSA B64.2.1, “Hose Connection Vacuum Breakers (HCVB) with Manual Draining Feature,”

g) CSA B64.2.2, “Hose Connection Vacuum Breakers (HCVB) with Automatic Draining Feature,”

h) CSA B64.3, “Dual Check Valve Backflow Preventers with Atmospheric Port (DCAP),”

i) CSA B64.4, “Reduced Pressure Principle (RP) Backflow Preventers,”

j) CSA B64.5, “Double Check Valve (DCVA) Backflow Preventers,”

k) CSA B64.6, “Dual Check Valve (DuC) Backflow Preventers,”

l) CSA B64.7, “Laboratory Faucet Vacuum Breakers (LFVB),” or

m) CSA B64.8, “Dual Check Valve Backflow Preventers with Intermediate Vent (DuCV).”

Added clauses referring to Type F (fire) Back Flow Preventers.

2020 NPC

2.2.10.10. Back-Siphonage Preventers and Backflow Preventers

1) Except as provided in Sentence (2), back-siphonage preventers and backflow preventers shall conform to

a) CSA B64.0, “Definitions, general requirements, and test methods for vacuum breakers and backflow preventers,”

b) CSA B64.1.1, “Atmospheric vacuum breakers (AVB),”

c) CSA B64.1.2, “Pressure vacuum breakers (PVB),”

d) CSA B64.1.3, “Spill-resistant pressure vacuum breakers (SRPVB),”

e) CSA B64.2, “Hose connection vacuum breakers (HCVB),”

f) CSA B64.2.1, “Hose connection vacuum breakers (HCVB) with manual draining feature,”

g) CSA B64.2.2, “Hose connection vacuum breakers (HCVB) with automatic draining feature,”

h) CSA B64.3, “Dual check valve backflow preventers with atmospheric port (DCAP),”

i) CSA B64.4, “Reduced pressure principle (RP) backflow preventers,”

j) CSA B64.4.1, “Reduced pressure principle backflow preventers for fire protection systems (RPF),”

k) CSA B64.5, “Double check valve (DCVA) backflow preventers,”

l) CSA B64.5.1, “Double check valve backflow preventers for fire protection systems (DCVAF),”

m) CSA B64.6, “Dual check valve (DuC) backflow preventers,”

n) CSA B64.6.1, “Dual check valve backflow preventers for fire protection systems (DuCF),”

o) CSA B64.7, “Laboratory faucet vacuum breakers (LFVB),”

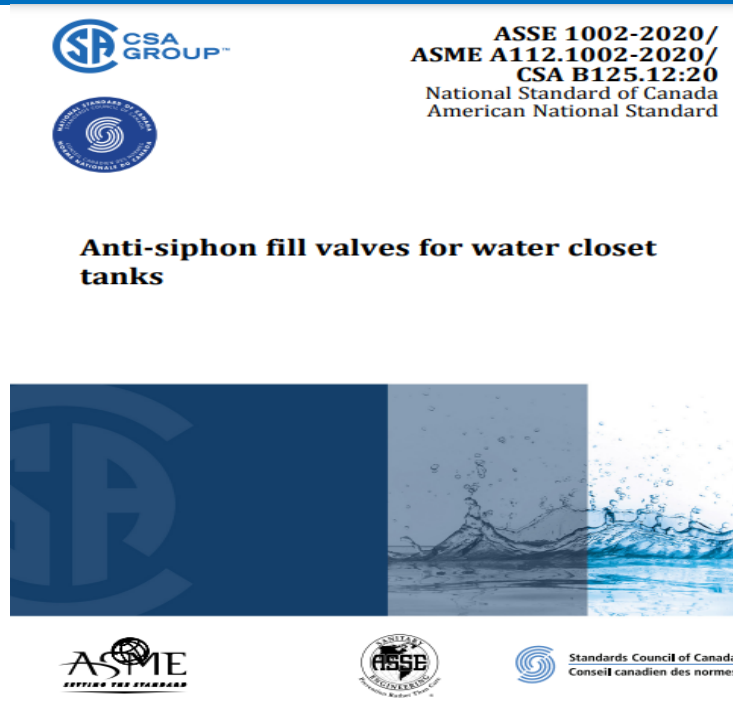
p) CSA B64.8, “Dual check valve backflow preventers with intermediate vent (DuCV),” or

q) CSA B64.9, “Single check valve backflow preventers for fire protection systems (SCVAF).”

2.2.10.10 Back-Siphonage Preventers and Backflow Preventers

2) Back-siphonage preventers for tank-type water closets

(anti-siphon fill valves) shall conform to ASSE 1002/ASME A112.1002/CSA B125.12, “Anti-siphon fill valves for water closet tanks.”



New certification for water closet fill valves

2.2.10.18 Flexible Water Connectors

2.2.10.18. Flexible Water Connectors

1) Flexible water connectors exposed to continuous pressure shall conform to ASME A112.18.6/CSA B125.6, “Flexible water connectors.”

This is a new standard.

2.3.3 Joints and Connections

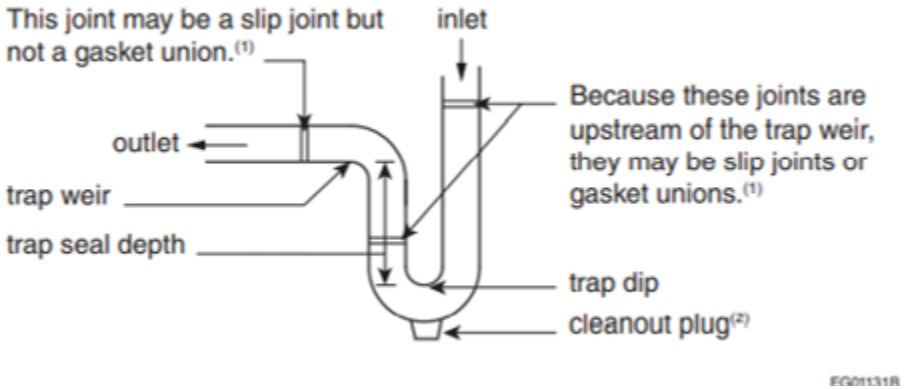
2.3.3.4. Unions and Slip Joints

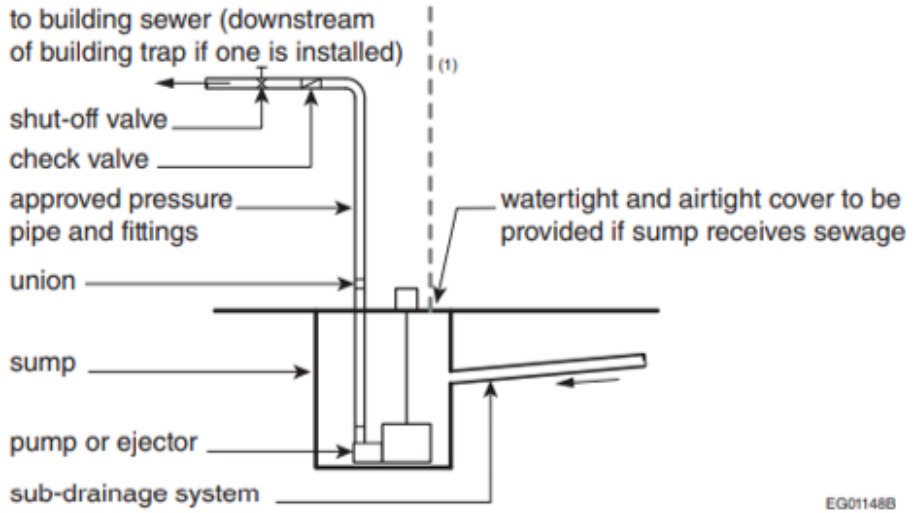
(See Note A-2.2.3.1.(1) and (3).)

1) Except as provided in Sentence 2.4.6.3.(6), running thread and packing nut connections and unions with a gasket seal shall not be used downstream of a trap weir in a drainage system or in a venting system.

6) Where there is a building trap, the discharge pipe from the equipment shall be connected to the building drain downstream of the trap.

Clause 6) provides an exception to clause 1).





2.3.3.8 Connection of Floor or Wall Outlet Fixtures

5) Water-closet bowls shall be securely attached to the floor flange, floor or wall carrier.

Clarification for wall mounted water-closets.

A.2.3.3.9 Expansion and Contraction

PE-RT Tubing was added to the chart.

A-2.3.3.9. Linear Expansion.

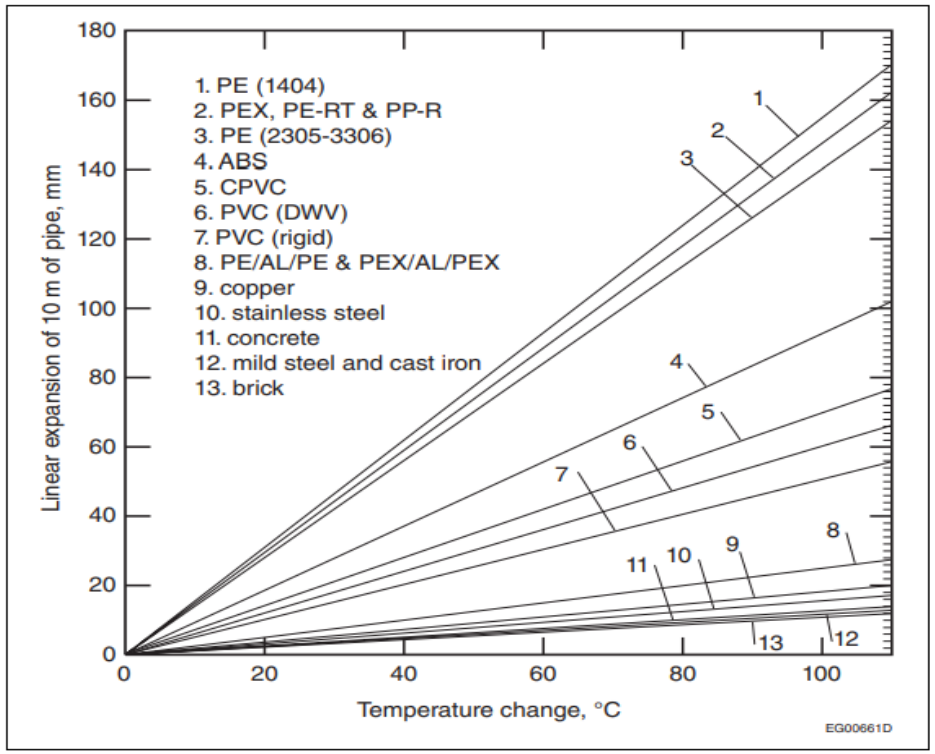


Figure A-2.3.3.9.
Linear expansion

2.3.4.5 Support for Horizontal Piping

4) Where PEX, **PE-RT**, PP-R, PE/AL/PEX plastic pipe or tube is installed, hangers shall not compress, cut or abrade the pipe.

PE-RT was added to the clause and the table.

Table 2.3.4.5.
Support for Nominally Horizontal Piping
Forming Part of Sentence 2.3.4.5.(2)

Piping Material	Maximum Horizontal Spacing of Supports, m	Additional Support Conditions
ABS or PVC plastic pipe	1.2	At the end of *branches* or *fixture drains* and at changes in direction and elevation
ABS or PVC plastic *trap arm* or *fixture drain* pipe > 1 m long	n/a	As close as possible to the *trap*
Cast-iron pipe	3.0	At or adjacent to each hub or joint
Cast-iron pipe with mechanical joints that is ≤ 300 mm long between adjacent fittings	1.0	None
Copper tube or copper and brass pipe, hard temper • diameter > *NPS* 1 • diameter ≤ *NPS* 1	 3.0 2.5	None
Copper tube, soft temper	2.5	None
CPVC pipe	1.0	None
Galvanized iron or steel pipe • diameter ≥ *NPS* 6 • diameter < *NPS* 6	 3.75 2.5	None
Lead pipe	Throughout length of pipe	None
PE/AL/PE composite pipe	1.0	None
PEX/AL/PEX composite pipe	1.0	None
PEX plastic pipe	0.8	None
PE-RT tube	0.8	None

2.3.5.1 Protection of Piping

2.3.5.1. Protection of Piping

1) Underground piping shall be protected

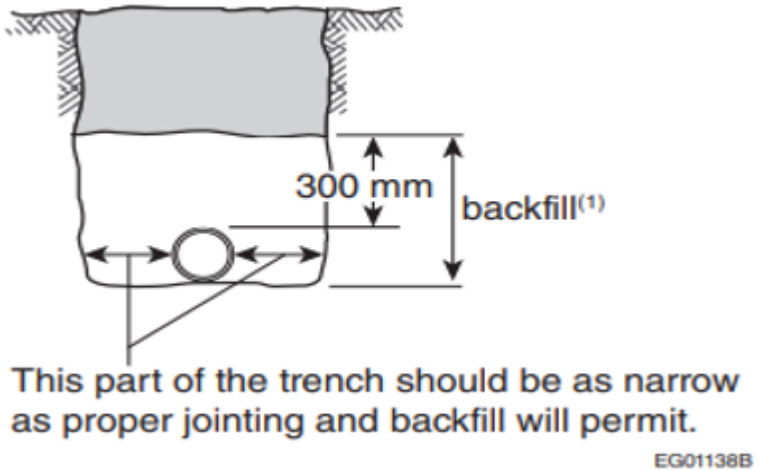
a) in the absence of the pipe manufacturer's instructions for backfill, by backfill that is (see Note A-2.3.5.1.(1)(a))

i) placed and compacted to a height of 300 mm over the top of the pipe, and

ii) free of stones, boulders, cinders and frozen earth or other material capable of damaging the piping, or

b) by concrete that is at least 75 mm thick and at least 200 mm wider than the pipe.

Formerly referred to as Backfilling Protection of Pipe.



2.3.6 Testing of Drainage or Venting Systems

2.3.6.5. Air Pressure Tests

1) Air pressure tests shall be conducted in accordance with the manufacturer's instructions for each piping material; and

a) air shall be forced in the system until a pressure of 35 kPa is created; and

b) this pressure shall be maintained for at least 15 min without a drop in pressure.

(See Note A-2.3.6.5.(1).)

The test substance cannot affect the plumbing system material.

A-2.3.6.5.(1) Air Pressure Tests. The addition of a non-toxic indicating substance, such as an aerosol, fluorescent dye, smoke or an odorant, to an air pressure test may help in identifying the location of a leak. However, the additive must be compatible with the piping material being tested: *the intent is to identify the leak without affecting the outcome of the test or the integrity of the plumbing system.*

2.4.6.3 Sumps or Tanks

3) Where the sump or tank receives subsurface water from a subsoil drainage pipe, it shall be provided with a water and airtight cover.

This follows the direction of the National Building Code.

2.4.6.4 Protection from Backflow

2.4.6.4. Protection from Backflow

1) Except as provided in Sentences (2) and (3), where a building drain or a branch may be subject to backflow, a backwater valve shall be installed on every fixture drain connected to them when the fixture is located below the level of the adjoining street.

2) Where more than one fixture is located on a storey and all are connected to the same branch, the backwater valve is permitted to be installed on the branch.

3) A subsoil drainage pipe that drains into a sanitary drainage system that is subject to surcharge shall be connected in such a manner that sewage cannot back up into the subsoil drainage pipe. (See note A-2.4.6.4.(3).)

4) Except as permitted in Sentence (5), a backwater valve or a gate valve that would prevent the free circulation of air shall not be installed in a building drain or in a building sewer.

5) A backwater valve is permitted to be installed in a building drain, provided that:

a) it is a “normally open” design conforming to:

i) CSA B70, “Cast iron soil pipe, fittings, and means of joining,”;

ii) CSA B181.1, “Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings,”;

iii) CSA B181.2, “Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings,”; or

iv) CSA B182.1, “Plastic drain and sewer pipe and pipe fittings,”; and

b) it does not serve more than one dwelling unit.

No longer recognized as options in the National Plumbing Code.

Sask. Plumbing Code Regulations - Backwater Valves

7 Sentences 2.4.6.4.(1) and (2) of Divisions B are amended:

1) Except as provided in Sentences (2) and (3), where a building drain or a branch may be subject to backflow from a fixture or a public sewer, a backwater valve shall be installed on every fixture drain connected to them when the fixture is located below grade.
2) Where more than one fixture is in the same room and all are connected to the same branch, the backwater valve is permitted to be installed on the branch.

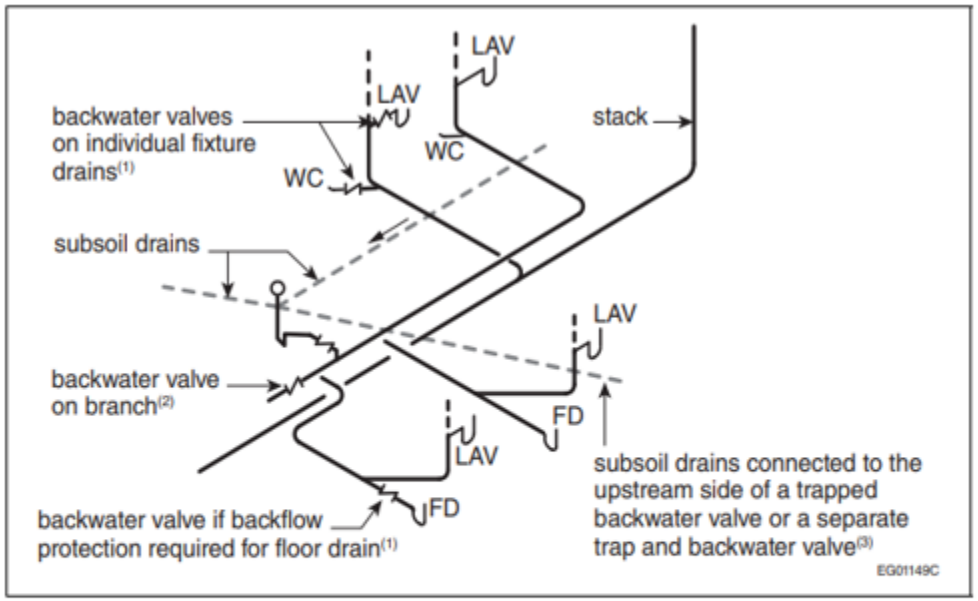


Figure A-2.4.6.4.(3)
Protection from backflow caused by surcharge

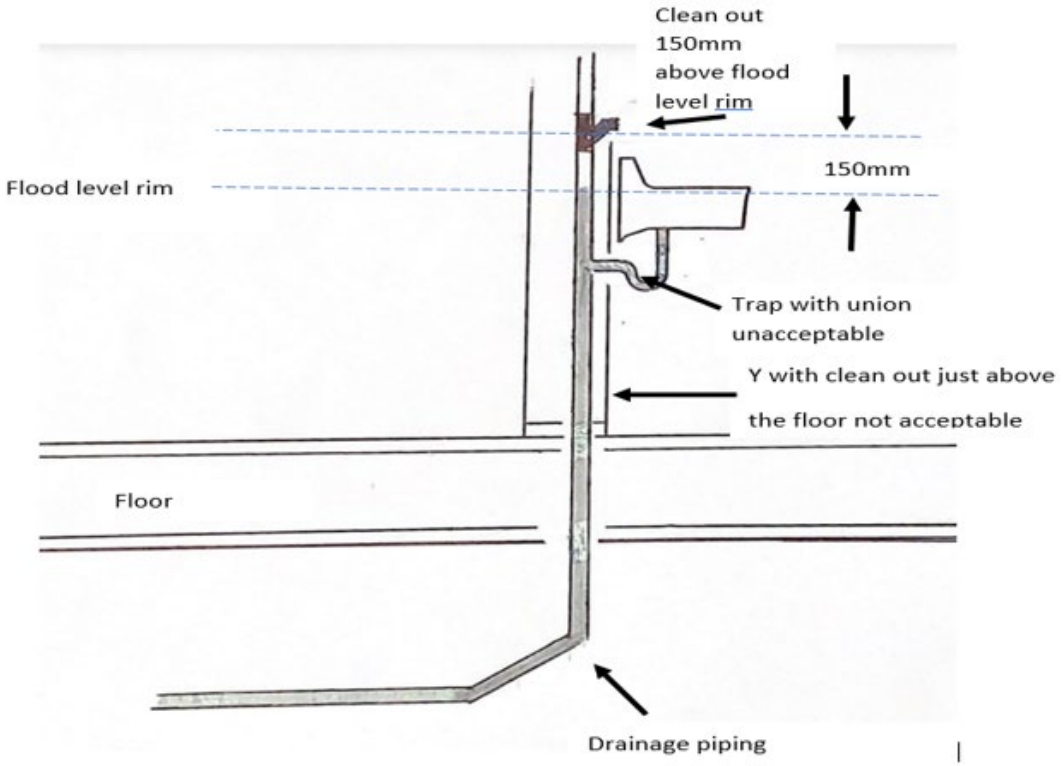
Notes to Figure A-2.4.6.4.(3):
(1) See Sentence 2.4.6.4.(1).
(2) See Sentence 2.4.6.4.(2).
(3) See Sentence 2.4.6.4.(3).

This amendment is to prevent self flooding in a residence.

2.4.7.4 Location of Cleanouts

5) Cleanouts serving fixture drains in healthcare facilities, mortuaries, laboratories and similar occupancies, where contamination by *hazardous waste* is likely, shall be located a minimum of 150 mm above the flood level rim of the fixture. (See Note A-2.4.4.4.(1).)

A-2.4.4.4.(1) ***Hazardous Waste*****.** Chemically loaded and bio-hazardous wastes can be dangerous to private or public sewer systems and hazardous to people. The treatment of corrosive and acid waste is mandated by this Code. The treatment of chemically loaded effluents is usually regulated by sewage collecting and treatment authorities. The treatment of bio-hazardous waste should follow "good engineering practice," such as that described in Laboratory Biosafety Guidelines published by Health Canada. It should be noted that bio-hazardous waste disposal systems require specific engineering expertise and remain outside the scope of this Code.



Terminology change from body fluids to hazardous waste.

2.4.9.3 Size of Fixture Outlet Pipes

Fixture	Minimum *Nominal Pipe Size of Fixture Outlet Pipe, NPS*	Hydraulic Load, *fixture units*
Shower drain		
Total volume of discharge from all shower heads and body sprays:		
(a) < 9.5 LPM	1½	1½
(b) 9.5 LPM to 20 LPM	2	3
(c) > 20 LPM	3	6

A change in how fixture units are calculated for shower drains.

2.4.9.3 Size of Fixture Outlet Pipes

3) Where clothes washers do not drain to a laundry tray, *the trap inlet shall be not less than NPS 2* and be fitted with a vertical standpipe that is not less that 600 mm long measured from the trap weir and terminates above the flood level rim of the clothes washer. (See Note A-2.4.9.3.(3).)

Amended for clothes washers.

A-2.4.9.3.(3) Standpipe Illustration.

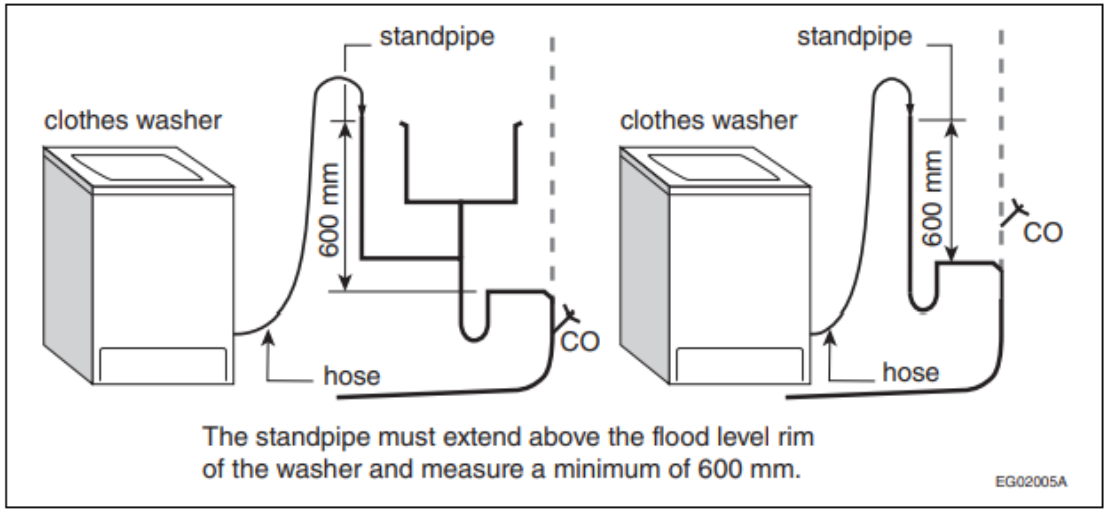


Figure A-2.4.9.3.(3)
Standpipe installation for clothes washers

2.4.10 Hydraulic Loads

Table 2.4.10.2.
Permitted Hydraulic Load from a Fixture Based on Size of Trap
Forming Part of Sentence 2.4.10.2.(2)

Nominal Pipe Size of Trap, NPS	Hydraulic Load, *fixture units*
1¼	1
1½	2
2	3
3	5
4	6

2 ½" trap has been removed from this table.

2.5.5 Miscellaneous Vent Pipes

2.5.5.3. Venting of Drain Piping and Tanks for Corrosive Waste

1) Venting systems for drain piping, neutralizing tanks, or dilution tanks conveying corrosive waste shall extend independently and terminate outdoors.

(See Article 2.5.7.7. for sizing of these vents.)

A wording change that removed dilution from the title and changed outside to outdoors.

2.5.7 Minimum Size of Vent Pipes

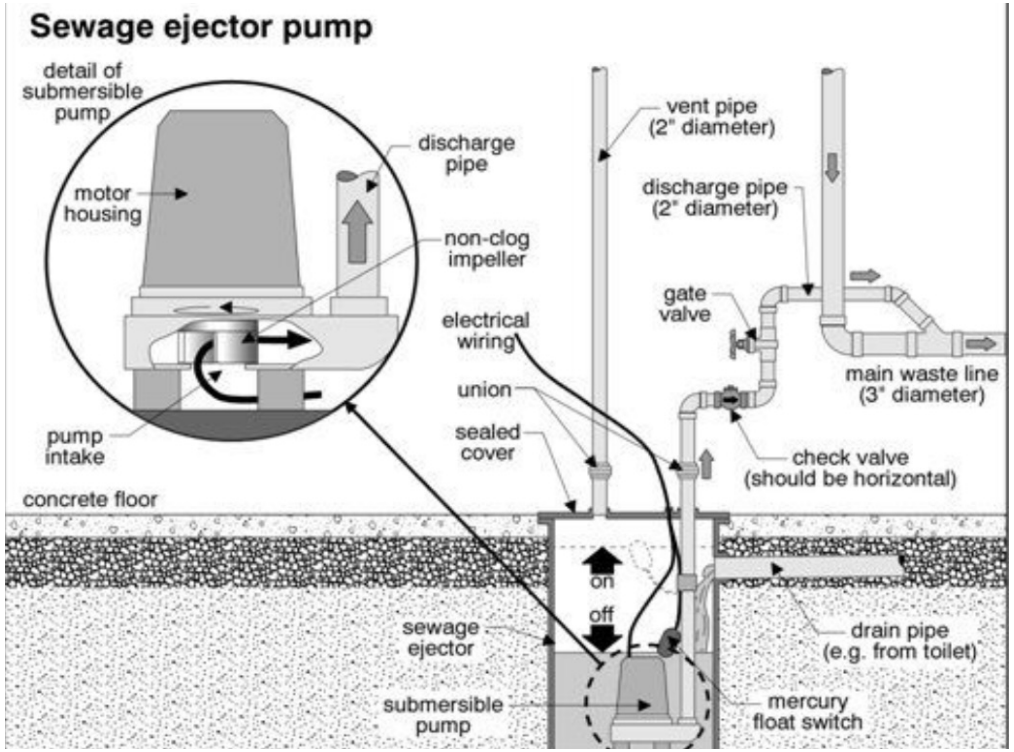
2.5.7.7. Vents for Sewage Sumps, Neutralizing and Dilution Tanks, and Macerating Toilet Systems

1) Except as provided in Sentences (2) and (3), the minimum nominal pipe size of the vent pipe for a sewage sump or *neutralizing* or dilution tank shall be one *NPS* smaller that the *NPS* of the largest branch or fixture drain draining to the sump.

2) The nominal pipe size of every vent pipe for a sewage sump or neutralizing or dilution tank shall be not less that NPS 2 but need not be great than *NPS* 4.

3) The nominal pipe size of a vent pipe for a macerating toilet system with a sump shall not be less that *NPS* 1 ½.

A wording change adding "NPS" and "Neutralizing Tank".



2.6.2. Protection from Contamination

2.6.2.1. Connection of Systems

1) Except as provided in Sentence (2), connections to potable water systems shall be designed and installed so that non-potable water or substances that may render the water non-potable cannot enter the system.

2) A water treatment device or apparatus shall not be installed unless it can be demonstrated that the device or apparatus will not introduce substances into the system that may endanger health.

3) Backflow preventers shall be selected and installed in conformance with CSA B64.10, “Selection and installation of backflow preventers.”

The reference to maintenance of a backflow preventer was removed. Maintenance is not in the scope of the National Plumbing Code.

2.6.2 Protection from Contamination

2.6.2.4 Backflow from Fire Protection Systems

1) A *backflow preventer* shall not be required in *residential full flow-through fire sprinkler/standpipe systems* in which the pipes and fittings are constructed of *potable water system* materials.

2) Except as required by Sentence (4), *potable water system* connections to fire sprinkler and standpipe systems shall be protected against *backflow* caused by *back-siphonage* or *back pressure* in conformance with Clauses (a) to (g), as applicable:

a) *residential partial flow-through fire sprinkler/standpipe systems* in which the pipes and fittings are constructed of *potable water system* materials shall be protected by a dual *check valve backflow preventer* conforming to
   i) CSA B64.6, "Dual check valve (DuC) backflow preventers," or
   ii) CSA B64.6.1, "Dual check valve backflow preventers for fire protection systems (DuCF),"

b) provided that the systems do not use antifreeze or other additives of any kind and that all pipes and fittings are constructed of *potable water system* materials, *Class 1 fire sprinkler/standpipe systems* shall be protected by a single or dual *check valve backflow preventer* conforming to
   i) CSA B64.6, "Dual check valve (DuC) backflow preventers," or
   ii) CSA B64.9, "Single check valve backflow preventers for fire protection systems (SCVAF),"

c) provided that the systems do not use antifreeze or other additives of any kind, *Class 1 fire sprinkler/standpipe systems* not covered by Clause (b) as well as *Class 2* and *Class 3 fire sprinkler/standpipe systems* shall be protected by a double *check valve backflow preventer* conforming to
   i) CSA B64.5, "Double check valve (DCVA) backflow preventers," or
   ii) CSA B64.5.1, "Double check valve backflow preventers for fire protection systems (DCVAF),"

d) *Class 1*, *Class 2* and *Class 3 fire sprinkler/standpipe systems* in which antifreeze or other additives are used shall be protected by a reduced pressure principle *backflow preventer* conforming to
   i) CSA B64.4, "Reduced pressure principle (RP) backflow preventers," or
   ii) CSA B64.4.1, "Reduced pressure principle backflow preventers for fire protection systems (RPF),"

installed on the portion of the system that uses the additives and the balance of the system shall be protected as required by Clause (b) or (c),

e) *Class 4* and *Class 5 fire sprinkler/standpipe systems* shall be protected by a reduced pressure principle *backflow preventer* conforming to
   i) CSA B64.4, "Reduced pressure principle (RP) backflow preventers," or
   ii) CSA B64.4.1, "Reduced pressure principle backflow preventers for fire protection systems (RPF),"

f) *Class 6 fire sprinkler/standpipe systems* shall be protected by a double *check valve backflow preventer* conforming to
   i) CSA B64.5, "Double check valve (DCVA) backflow preventers," or
   ii) CSA B64.5.1, "Double check valve backflow preventers for fire protection systems (DCVAF)," or

g) where a potentially severe health hazard may be caused by *backflow*, *Class 6 fire sprinkler/standpipe systems* shall be protected by a reduced pressure principle *backflow preventer* conforming to
   i) CSA B64.4, "Reduced pressure principle (RP) backflow preventers," or
   ii) CSA B64.4.1, "Reduced pressure principle backflow preventers for fire protection systems (RPF)."

(See Note A-2.6.2.4.(2).)

2.6.2 Protection from Contamination

2) Except as required by Sentence (4), potable water system connections to fire sprinkler and standpipe systems shall be protected against backflow caused by back-siphonage or back pressure in conformance with clause (a) to (g), as applicable:

a) residential partial flow-through fire sprinkler/standpipe systems in which the pipes and fittings are constructed of potable water system material shall be protected a dual check valve backflow preventer conforming to:

i) CSA B64.6, “Dual check valve (DuC) backflow preventers”; or

ii) CSA B64.6.1, “Dual check valve backflow preventers for fire protection systems (DuCF)”.

b) provided that the systems do not use antifreeze or other additives of any kind and that all pipe and fittings are constructed of potable water system materials, Class 1 fire sprinkler/standpipe systems shall be protected by a single or dual check valve backflow preventer conforming to

i) CSA B64.6, “Dual check valve (DuC) backflow preventer”; or

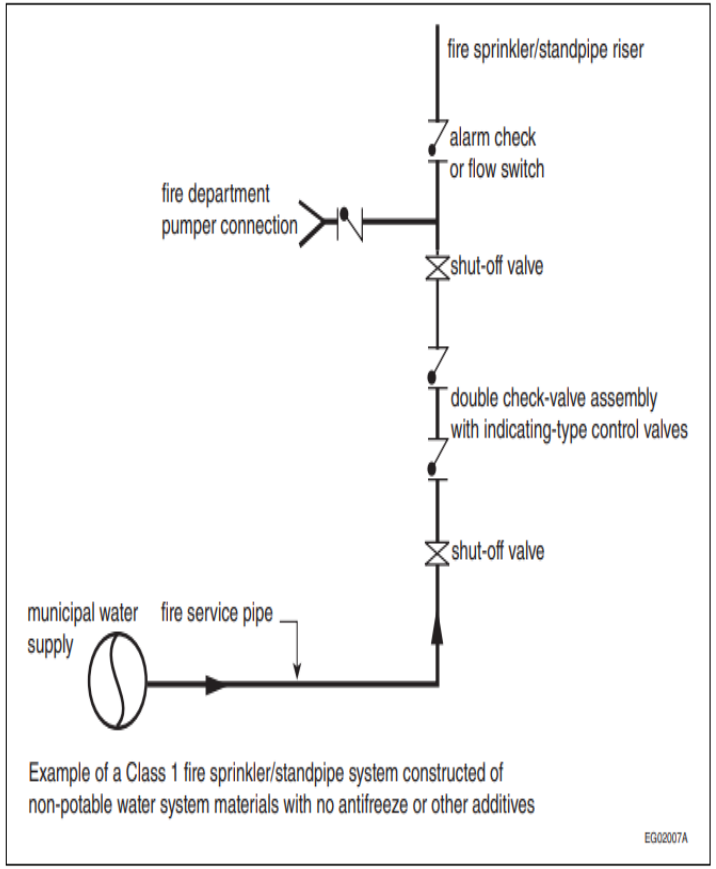
ii) CSA B64.9,”Single check valve backflow preventers for fire protection system(SCVAF)”.

Saskatchewan Plumbing Code Regulations

2.6.2.4(3) Backflow preventers required in Sentence (2) *shall not adversely affect* the designed performance of the system and be *installed upstream of the fire department pumper connection.*

(See Note a-2.6.2.4(3)).

This is an extra requirement for installations in Saskatchewan.



2.6.2 Protection from Contamination

2015 NPC

2.6.2.5. Separation of Water Supply Systems

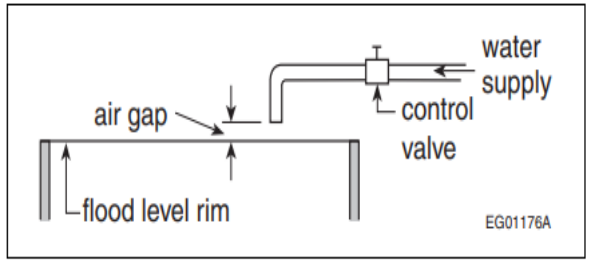
1) No private water supply system shall be interconnected with a public water supply system.

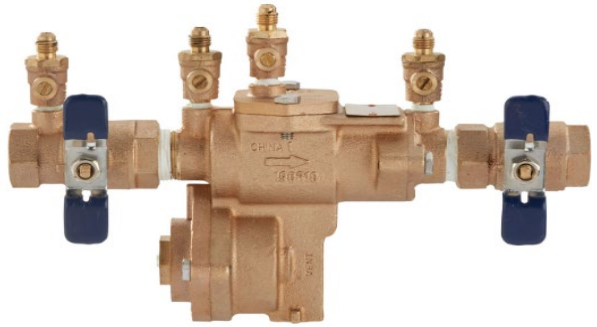
Clause changed for 2020.

2020 NPC

2.6.2.5. Separation of Water Supply Systems

1) Where a private water supply system or a non-potable water system is supplied by a public water supply system, the public water supply system shall be protected in accordance with Article 2.6.2.1.





2.6.3 Size and Capacity of Pipes

2.6.3.4. Size

1) Water service pipes shall be sized according to the peak Demand flow but shall not be less than *NPS* ¾.

2) Except as provided in Sentence (3), the nominal pipe size of a supply pipe that serves a fixture shall conform to Table 2.6.3.2.-A.

3) For fixtures listed in Table 2.6.3.2.-A that are permitted to have an *NPS* 3/8 supply pipe, a connector not more than 750 mm long and not less than *NPS* ¼ may be used to supply water to the fixture.

4) No water system between the point of connection with the water service pipe or the water meter and the first *water distribution pipe* that supplies a water heater that serves more than one fixture shall be sized less than *NPS* ¾.

Wording change that adds NPS and the term water distribution pipe.

2.7 Non-Potable Water Systems

2.7.1.1. General

(See Note A-2.7.1.1.)

1) Non-*potable water systems* shall be designed, fabricated and installed in accordance with this Subsection and good engineering practice. (See Note A-2.7.1.1.(1).)

2) Except as provided in Sentence (3) and Subsection 2.7.2., non-*potable water systems* shall only be used to supply water closets, urinals, *trap* seal primers, and *directly connected* underground irrigation systems that only dispense water below the surface of the ground.

3) Non-*potable water systems* shall not be used to supply *fixtures* in healthcare facilities.

4) Where a non-*potable water system* is supplied by a *potable water system*, the *potable water system* shall be protected in accordance with Article 2.6.2.1.

5) Where the static pressure at any *fixture* in a non-*potable water system* may exceed 550 kPa, a pressure-reducing valve shall be installed to limit the maximum static pressure at the *fixture* to 550 kPa.

A-2.7.1.1. Non-Potable Water System Design. There is a growing interest in Canada in using available non-potable water supplies in the place of potable ones for selected purposes such as flushing water closets and irrigating lawns and gardens. Article 2.7.1.1. applies to non-potable water systems, regardless of the origin of the water. The non-potable water must meet applicable water quality standards as determined by an authority having jurisdiction.

A-2.7.1.1.(1) Good Engineering Practice. Examples of good engineering practice in the design, fabrication and installation of non-potable water systems can be found in

- the ASHRAE Handbooks,
- the ASPE Handbooks, and
- CAN/CSA-B128.1, "Design and Installation of Non-Potable Water Systems."

Saskatchewan Plumbing Regulations

2.7.1.1

6) Where a non-potable water system that utilizes sewage is installed, it shall conform to CSA B128.3, 'Performance of non-potable water reuse systems' and produce an effluent with a water quality suitable for the use to which it is put.

This is an extra requirement in Saskatchewan to increase safety in these situations.

2.7 Non-Potable Water Systems

2.7.1.2. Identification and Marking

1) Non-potable water piping and outlets shall be identified and marked in accordance with CAN/CSA-B128.1, “Design and Installation of Non-Potable Water Systems.”

Non-potable systems must be identified.

2.7 Non-Potable Water Systems

2.7.1.3. Location of Pipes

1) Non-potable water piping shall not be located directly above:

a) *areas where food, drink or products that are intended for human consumption are prepared, handled, dispensed or stored; or*

b) a non-pressurized or pressurized potable water tank.

2.7 Non-Potable Water Systems

2.7.1.4. Location of Outlets

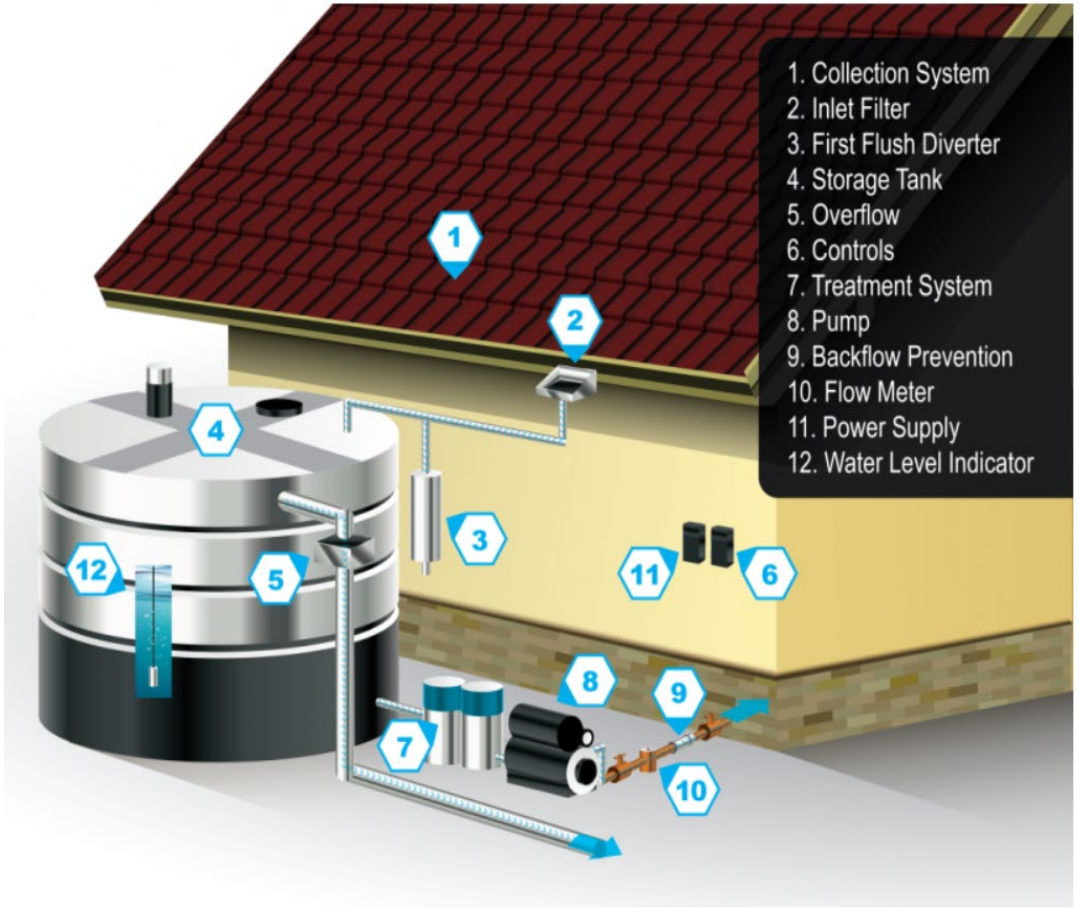
1) Except as provided in Subsection 2.7.2., an outlet from a non-potable water system shall not be located where it can discharge into:

a) a fixture into which an outlet from a potable water system is discharged; or

b) a fixture that is used for the preparation, handling or dispensing of food, drink or products that are intended for human consumption.

The non-potable piping cannot discharge into a fixture that is used for food or drink.

2.7.2 Non-Potable Rainwater Harvesting Systems



2.7.2.1. General

1) For purposes of this Subsection, rainwater shall mean storm water discharged from an above-ground roof surface. (See Note A-2.7.2.1.(1).)

2) For purposes of this Subsection, a non-potable rainwater harvesting system shall mean a storage tank, a pump, pipes, fittings and other plumbing appurtenances used to collect and distribute rainwater, *but shall not include a rain barrel not connected to a plumbing system.*

2.7.2 Non-Potable Rainwater Harvesting System

2.7.2.2. Permitted Applications

1) Non-potable rainwater harvesting systems are only permitted to supply:

a) water closets and urinals;

b) clothes washers;

c) floor-mounted service sinks and laundry trays;

d) trap primers;

e) irrigation systems;

f) hydronic systems;

g) make-up water systems for heat rejection systems; or

h) any other application where the harvested rainwater is not expected to be ingested or inhaled.

(See Note A-2.7.2.2.(1) and 2.7.2.4.(3) and (4).)

2.7.2 Non-Potable Rainwater Harvesting System

2.7.2.4. Non-Potable Rainwater Harvesting System Design

1) Non-potable rainwater harvesting systems and their connections *shall be designed, fabricated and installed in accordance with this Subsection and good engineering practice.* *(See Note A-2.7.2.4.(1).)*

2) Non-potable rainwater harvesting systems *shall not collect water discharged from an evaporative heat rejection system.*

3) Non-potable rainwater harvesting systems shall be provided with a means to treat the harvested rainwater in such a manner that the quality of the delivered non-potable water conforms to appropriate provincial or territorial requirements or, in the absence of such requirements, the systems shall conform to Sentence (4).

(See Note A-2.7.2.2.(1) and 2.7.2.4.(3) and (4).)

2.7.2 Non-Potable Rainwater Harvesting System

4) Except as provided in Sentence (3), non-potable rainwater harvesting systems shall be provided with:

a) a water treatment system consisting of:

i) a debris screen with a mesh size of not more than 6mm ahead of the storage tank inlet;

ii) a first-flush diversion system with a capacity of not less than 0.3 L/m2 of roof area ahead of the storage tank inlet;

iii) a calming inlet or settling chamber ahead of the storage tank inlet;

iv) a device to prevent the entrainment of sediment into the pump; and

v) where the harvested rainwater is used for an indoor application, a filter with a mesh size of not more than 50 µm ahead of the storage tank inlet; or

b) a means to treat the harvested rainwater in such a manner that the delivered non-potable water contains not more than the maximum acceptable levels of contaminants stated in CSA B805/ICC 805, “Rainwater harvesting systems”.

(See Note A-2.7.2.2.(1) and 2.7.2.4.(3) and (4).)

5) *Where the static pressure at any fixture in a non-potable rainwater harvesting system may exceed 550 kPa, a pressure-reducing valve shall be installed to limit the maximum static pressure at the fixture to 550 kPa.*

2.7.2 Non-Potable Rainwater Harvesting System

6) Storage tanks in non-potable rainwater harvesting systems shall be designed and installed in accordance with:

a) CAN/CSA-B126.0, “General requirements and methods of testing for water cisterns”; and

b) CAN/CSA-B126.1, “Installation of water cisterns”.

7) Storage tanks in non-potable rainwater harvesting systems shall be equipped with an overflow that directs excess rainwater to:

a) a public storm sewer;

b) a public combined sewer;

c) a storm water management system; or

d) a designated storm water disposal location.

8) Where the storage tank outlet is located below the level of the adjoining street, the storage tank overflow required by Sentence (7) shall:

a) terminate with an indirect connection that is not located within the building, or

b) be equipped with a backwater valve.

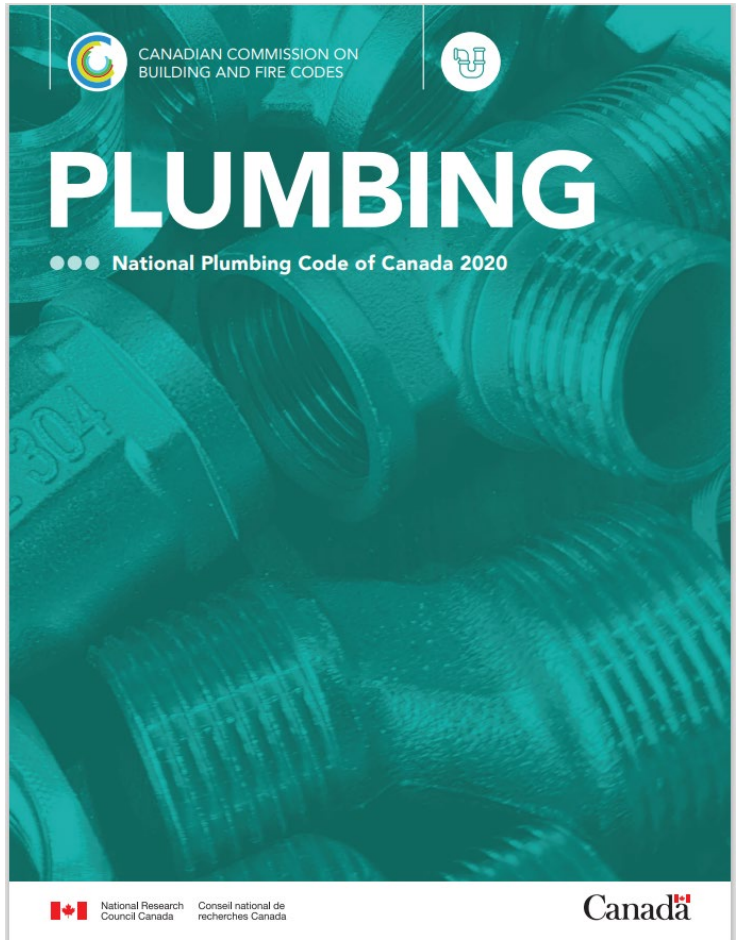
9) Make-up water connections to non-potable rainwater harvesting systems shall:

a) be equipped with a reduced pressure principle backflow preventer; or

b) have an air gap.

10) Where a fixture combines water from a non-potable rainwater harvesting system and potable water at the fixture supply fitting, the potable water system shall be protected by a backflow preventer as described in Sentence 2.6.2.1.(3).

When does enforcement of the 2020 NPC begin?

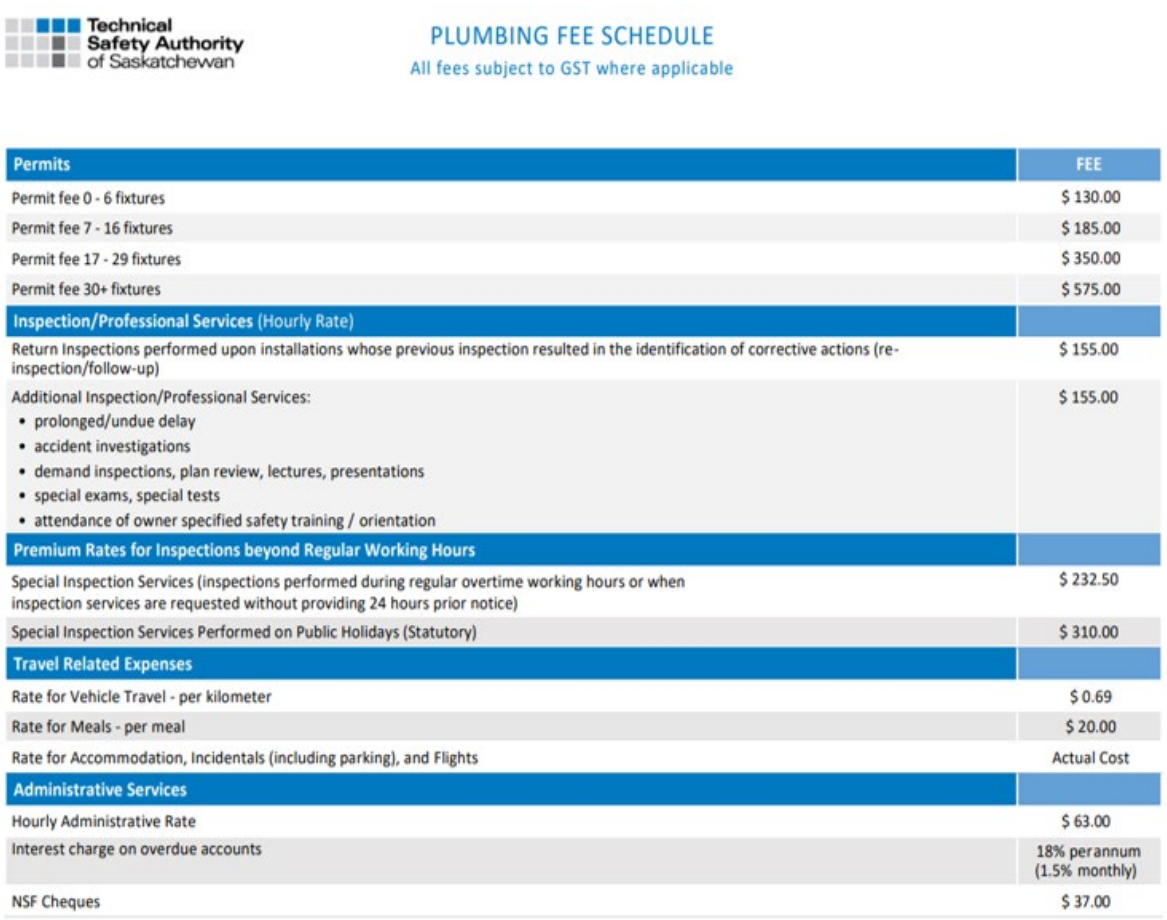


- **2020 National Plumbing Code will come into enforcement in Saskatchewan on January 1, 2024.**

TSASK Plumbing Fee Schedule

Permits Are Required to:

- Extend
- Install
- Construct
- Renovate
- Establish
- Alter
- Repair
- Remove a Plumbing System
- Connect a Plumbing System to communal sewage or communal waterworks



Technical Safety Authority of Saskatchewan

PLUMBING FEE SCHEDULE

All fees subject to GST where applicable

Permits	FEE
Permit fee 0 - 6 fixtures	$ 130.00
Permit fee 7 - 16 fixtures	$ 185.00
Permit fee 17 - 29 fixtures	$ 350.00
Permit fee 30+ fixtures	$ 575.00
Inspection/Professional Services (Hourly Rate)	
Return Inspections performed upon installations whose previous inspection resulted in the identification of corrective actions (re-inspection/follow-up)	$ 155.00
Additional Inspection/Professional Services: • prolonged/undue delay • accident investigations • demand inspections, plan review, lectures, presentations • special exams, special tests • attendance of owner specified safety training / orientation	$ 155.00
Premium Rates for Inspections beyond Regular Working Hours	
Special Inspection Services (inspections performed during regular overtime working hours or when inspection services are requested without providing 24 hours prior notice)	$ 232.50
Special Inspection Services Performed on Public Holidays (Statutory)	$ 310.00
Travel Related Expenses	
Rate for Vehicle Travel - per kilometer	$ 0.69
Rate for Meals - per meal	$ 20.00
Rate for Accommodation, Incidentals (including parking), and Flights	Actual Cost
Administrative Services	
Hourly Administrative Rate	$ 63.00
Interest charge on overdue accounts	18% per annum (1.5% monthly)
NSF Cheques	$ 37.00

Inspections

- TSASK requires **48 hours** notification for service
- Testing of Drainage and Venting as per 2.3.6 in National Plumbing Code
- Owner or Owner's representative needs to be **onsite** for inspection

Local Plumbing Authorities:

REGINA Infinite Horizons

City of Saskatoon

GTH

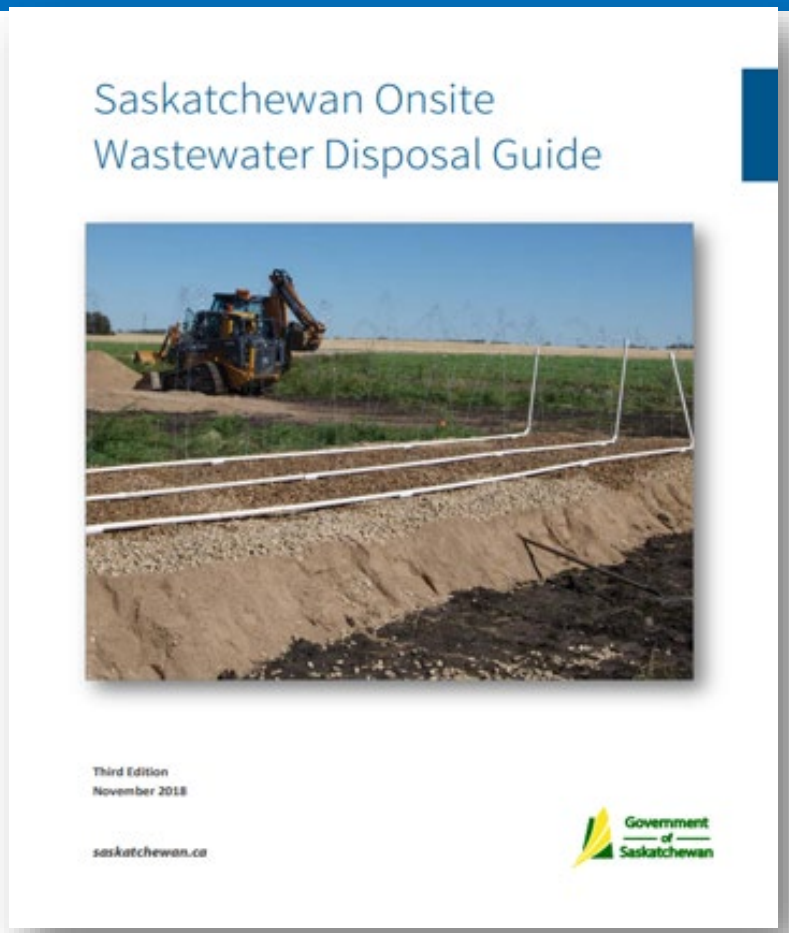
LLOYDMINSTER

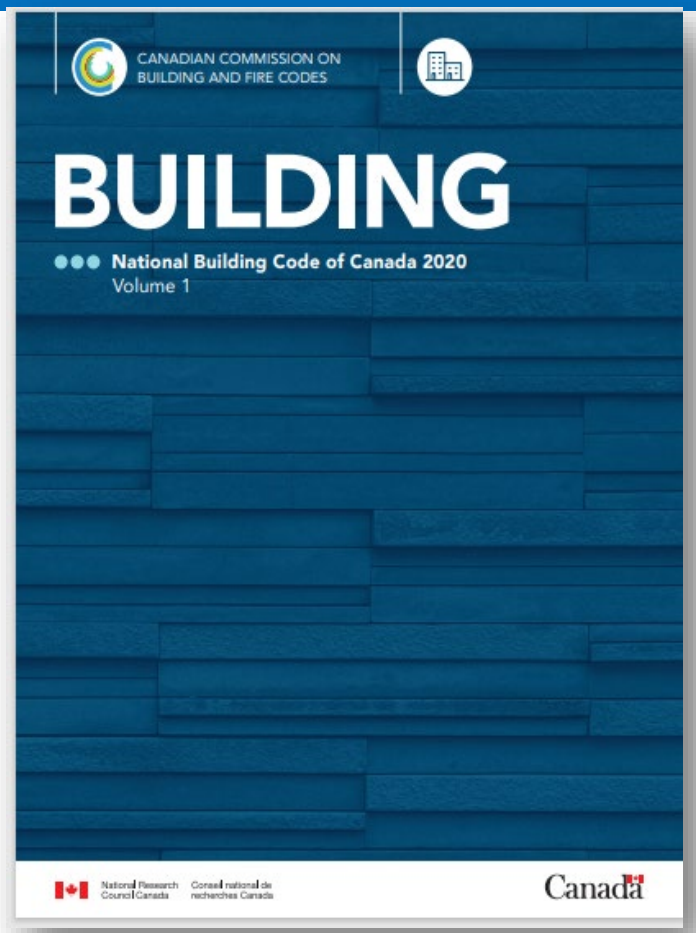
Technical Safety Authority of Saskatchewan

The Two Steps of a Plumbing Inspection

- **Inspection** and **Testing** of Roughed-in Plumbing including **Venting** and **Drainage** system.
- **Final Inspection** including **installation** and **testing** requirements of **all fixtures** in an operational plumbing system that complies with NPC.

Additional Reference Material





NBC Volume 1 3.7 Health Requirements

- **3.7.2 Plumbing Facilities**
  - Gives the ratio for occupancy of types of building to the requirements for toilets and lavatories
  - **3.7.2.6 Floor Drains**
    - A floor drain shall be installed in a washroom containing a urinal equipped with an automatic flushing device

3.8. Accessibility

3.8.3 Design

- Gives information on barrier free pathways and clearances.
- References to A3.8.2.8 1) to 4)

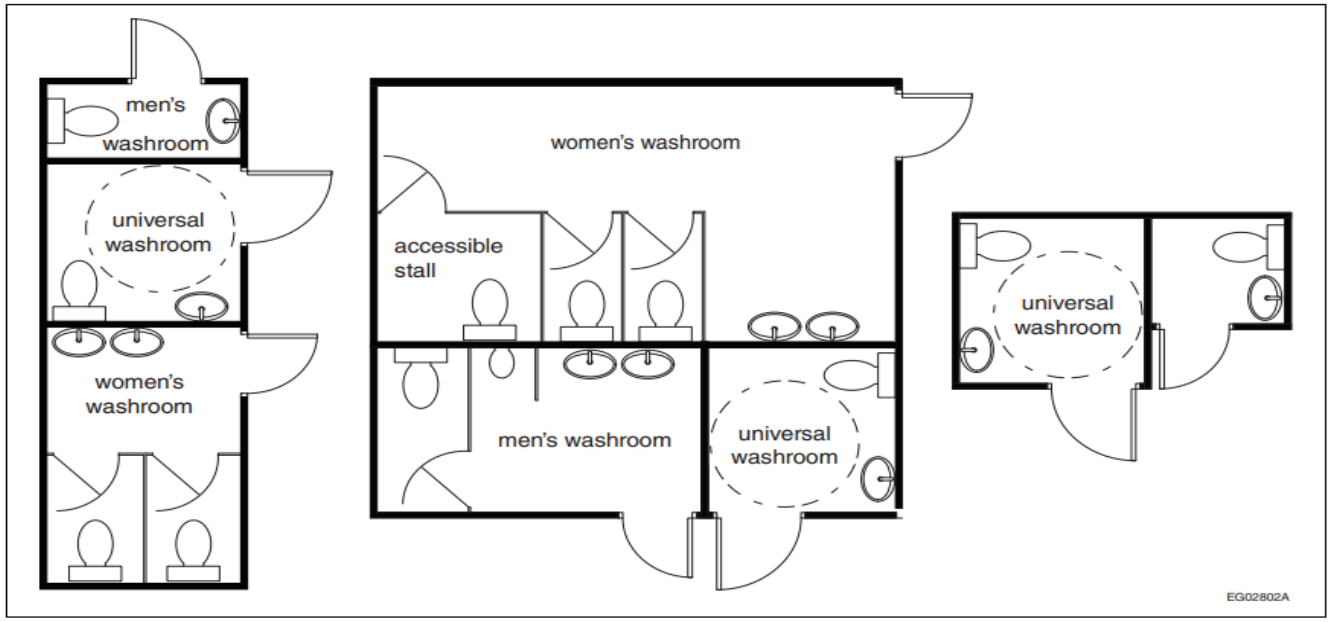


Figure A-3.8.2.8.(1) to (4)
Washroom floor plan options that include accessible and universal washrooms

NBC Volume 2 Part 9 Housing and Small Buildings

- **9.31 Plumbing Facilities**
  - **9.31.4 Required Facilities**
    - **9.31.4.3 Floor Drains**
      1) Where gravity drainage to sewer, drainage ditch or dry well is possible, a floor drain shall be installed in a basement forming part of the dwelling unit.
      2) A floor drain shall be provided in a garbage room, incinerator room or boiler room serving more than one dwelling unit
- **9.16.3.3 Floor Drains**
  1) When floor drains are required (see Section 9.31.), the floor surface shall be sloped so that no water accumulate

Questions?

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Regina, SK
S4P 2S5

TSASK VISION

Recognized as a leading safety authority - a Saskatchewan service provider, inspiring and shaping excellence in public safety.

TSASK MISSION

In collaboration with owners, operators and the industry, TSASK provides professional safety, educational and regulatory services that instill a high level of confidence in our public safety system.