National Plumbing Code of Canada 2020 (NPC)

2025 Revisions and Errata Package

Selected replacement pages have been produced for the NPC.

Please print and insert in your copy of the Code.

Preface

The National Plumbing Code of Canada 2020 (NPC), together with the National Building Code of Canada 2020 (NBC), the National Energy Code of Canada for Buildings 2020 (NECB) and the National Fire Code of Canada 2020 (NFC), was developed by the Canadian Commission on Building and Fire Codes (CCBFC) as an objective-based national model code that can be adopted by provincial and territorial governments.

In Canada, provincial and territorial governments have the authority to enact legislation that regulates the design and installation of plumbing systems within their jurisdictions. This may involve the adoption of the NPC without change or with modifications to suit local needs, and the enactment of other laws and regulations regarding plumbing system design and installation, including requirements for professional involvement.

The NPC is a model code in the sense that it helps promote consistency among provincial and territorial plumbing codes. Persons involved in the design or installation of plumbing systems should consult the provincial or territorial jurisdiction concerned to find out which plumbing code is applicable.

This edition of the NPC succeeds the 2015 edition.

Development of the National Model Codes

GOVERNANCE CHANGE NOTE: The national code development system underwent a governance change in November 2022 to support efforts to harmonize construction codes in jurisdictions throughout Canada. The CCBFC, which had been in place since 1991, was dissolved and replaced by a new governance model in which the Canadian Board for Harmonized Construction Codes (CBHCC) is responsible for developing, approving and maintaining the National Model Codes based on the strategic priorities set by the Canadian Table for Harmonized Construction Codes Policy. The 2020 National Model Codes were developed by the CCBFC. In this section, references to the CCBFC are written in the past tense to reflect the change in governance.

The CCBFC, an independent committee established by the National Research Council of Canada (NRC), was responsible for the content of the 2020 editions of the National Model Codes. The CCBFC was made up of volunteers from across the country and from all facets of the Codes-user community. Members of the CCBFC and its standing committees included builders, engineers, skilled trade workers, architects, building owners, building operators, fire and building officials, manufacturers, and representatives of general interests.

The CCBFC was advised on scope, policy and technical issues pertaining to the Codes by the Provincial/Territorial Policy Advisory Committee on Codes (PTPACC), which was a committee of senior representatives from provincial/territorial ministries responsible for building, fire, plumbing, and energy regulation in their jurisdictions. The PTPACC was created by the provinces and territories, with provision of guidance to the CCBFC as one of its main functions. Through the PTPACC, the provinces and territories were engaged in every phase of the Codes development process.

Codes Canada staff within the Construction Research Centre at the NRC provided technical and administrative support to the CCBFC and its standing committees, and coordinated the provision of evidence-based research to inform Codes development. The NRC publishes the National Model Codes and periodic revisions to the Codes to address pressing issues.

The broader Codes-user community makes significant contributions to the Codes development process by submitting requests for changes or additions to the Codes and by commenting on the proposed changes during the public reviews that precede each new edition.

The CCBFC took into consideration the advice received from the provinces and territories as well as Codes users' comments at each stage of Codes development. The scope and content of the National Model Codes are determined on a consensus basis, which involves the review of technical, policy and practical concerns and discussion of the implications of these concerns.

More information on the Codes development process is available on the CBHCC's website.

National Plumbing Code of Canada 2020

The NPC sets out technical provisions for the design and installation of new plumbing systems. It also applies to the extension, alteration, renewal and repair of existing plumbing systems.

The NPC establishes requirements to address the following four objectives:

- safety
- health
- protection of the building or facility from water and sewage damage
- environment

Code provisions do not necessarily address all the characteristics of buildings and facilities that might be considered to have a bearing on the Code's objectives. Through the extensive consensus process used to develop and maintain the National Model Codes (see the section entitled Development of the National Model Codes), the Codes-user community has decided which characteristics should be regulated through the NPC.

The provisions of the NPC can be considered as the minimum acceptable measures required to adequately achieve the above-listed objectives, as recommended by the CCBFC. Once they are adopted into law or regulation by an authority having jurisdiction, the provisions become minimum acceptable requirements representing the minimum level of performance required to achieve the objectives that is acceptable to the adopting authority.

The NPC is a model code which, when adopted or adapted by a province or territory, becomes a regulation. It is not a guideline on plumbing system design or installation. The design of a technically sound plumbing system depends upon many factors beyond compliance with plumbing regulations. Such factors include the availability of knowledgeable practitioners who have received appropriate education, training and experience and who are familiar with the principles of good plumbing practice and experience using reference manuals and technical guides.

The NPC does not list acceptable proprietary plumbing products. It establishes the criteria that plumbing materials, products and assemblies must meet. Some of these criteria are explicitly stated in the NPC while others are incorporated by reference to material or product standards published by standards development organizations. Only those portions of the standards related to the objectives of this Code are mandatory parts of the NPC.

Code Requirements

Most NPC requirements address at least one of the Code's four stated objectives (safety, health, protection of the building or facility from water and sewage damage, and environment).

In processing proposed changes or additions to any of the National Model Codes, many issues are considered, such as the following:

- Does the proposed requirement provide the minimum level of performance—and no more than the minimum—needed to achieve the Code's objectives?

- Will persons responsible for Code compliance be able to act on or implement the requirement using commonly accepted practices?
- Will enforcement agencies be able to enforce the requirement?
- Are the costs of implementing the requirement justifiable?
- Have the potential policy implications of the requirement been identified and addressed?
- Is there broad consensus on this requirement among Code users representing all facets of the plumbing system design and construction industries, as well as among provincial and territorial governments?

Guidelines for requesting changes to the NPC are available on the CBHCC's website.

Objective-Based Code Format

The NPC has been published in an objective-based code format since 2005.

As described in more detail in the section entitled Structure of the NPC, the Code comprises three Divisions:

- Division A, which defines the scope of the Code and contains the objectives, the functional statements and the conditions necessary to achieve compliance;
- Division B, which contains acceptable solutions (commonly referred to as "technical requirements") deemed to satisfy the objectives and functional statements listed in Division A; and
- Division C, which contains administrative provisions.

Most of the requirements in Division B are linked to three types of information:

- objectives (Code objectives, such as safety or health, which individual requirements help to address),
- functional statements (statements of the functions of the plumbing system that a particular requirement helps to achieve), and
- intent statements (detailed statements of the specific intent of the requirement).

Objectives

The NPC's objectives are fully defined in Section 2.2. of Division A.

The objectives describe, in broad terms, the overall goals that the NPC's requirements are intended to achieve. They serve to define the boundaries of the subject areas the Code addresses. However, the Code does not address all the issues that might be considered to fall within those boundaries.

The objectives describe undesirable situations and their consequences, which the Code aims to prevent from occurring in plumbing systems. The wording of most of the definitions of the objectives includes two key phrases: "limit the probability" and "unacceptable risk." The phrase "limit the probability" is used to acknowledge that the NPC cannot entirely prevent those undesirable situations from happening. The phrase "unacceptable risk" acknowledges that the NPC cannot eliminate all risk: the "acceptable risk" is the risk remaining once compliance with the Code has been achieved.

The objectives are entirely qualitative and are not intended to be used on their own in the design and approval processes.

The objectives attributed to the requirements or portions of requirements in Division B are listed in a table in Section 2.8. of Division B.

Functional Statements

The NPC's functional statements are defined in Section 3.2. of Division A.

The functional statements are more detailed than the objectives. They describe conditions in the plumbing system that help satisfy the objectives. The functional statements and the

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Contact Information

The CBHCC welcomes comments and suggestions for improvements to the NPC. Persons interested in requesting a change to an NPC provision should refer to the guidelines available on the CHBCC's website.

To submit comments or suggestions, please contact:
The Secretary
Canadian Board for Harmonized Construction Codes
1200 Montreal Road
Ottawa, Ontario K1A 0R6
E-mail: CBHCCSecretary-SecretaireCCHCC@nrc-cnrc.gc.ca

Relationship of the NPC to Standards Development and Conformity Assessment

The development of many provisions in the NPC and the assessment of conformity to those provisions are supported by several of the member organizations of Canada's National Standards System (NSS).

The NSS is a network of accredited organizations concerned with standards development, certification, testing and inspection that is established under the auspices of the Standards Council of Canada Act. Activities of the NSS are coordinated by the Standards Council of Canada (SCC), which accredits standards development organizations, certification bodies, testing and calibration laboratories, and inspection bodies, among others.

The SCC is a non-profit federal Crown corporation responsible for the coordination of voluntary standardization in Canada. It also coordinates Canadian participation in voluntary international standardization activities.

Canadian Standards

Many of the standards referenced in the NPC are published by standards development organizations accredited in Canada. As part of the accreditation requirements, these organizations adhere to the principle of consensus, which generally means substantial majority agreement of a committee comprising a balance of producer, user and general interest members, and the consideration of all negative comments. The standards development organizations also have formal procedures for the balloting and second-level review of standards prepared under their oversight.

The following organizations are accredited as standards development organizations in Canada:

- Air-Conditioning, Heating and Refrigeration Institute (AHRI)
- ASTM International
- Bureau de normalisation du Québec (BNQ)
- Canadian General Standards Board (CGSB)
- CSA Group
- International Association of Plumbing and Mechanical Officials (IAPMO)
- ULC Standards
- Underwriters' Laboratories Inc. (UL)

Table 1.3.1.2. of Division B lists the standards referenced in the NPC. Standards proposed to be referenced in the NPC are reviewed to ensure that their content is compatible with the Code. Thereafter, referenced standards are reviewed as needed during each Code cycle. Standards development organizations are asked to provide information on any changes in the status of their standards referenced in the NPC—withdrawals, amendments, new editions, etc. This information is passed on to the CBHCC, its code development committees, and interested stakeholders, all of whom are given the opportunity to identify any problems associated with the changes. These bodies do not necessarily review in detail the revised standards; rather, the approach relies on the consensus process involved in the maintenance of the standards and on the extensive knowledge and experience of committee members, provincial or territorial staff, NRC staff, and consulted stakeholders to identify changes in the standards that might create problems in the Code.

Revisions and Errata

Issued by the Canadian Board for Harmonized Construction Codes

The Change Summary table that follows describes revisions, errata and editorial modifications that apply to the National Plumbing Code of Canada 2020:

- Revisions are changes that have been approved by the Canadian Board for Harmonized Construction Codes for publication between Code editions.
- Errata are corrections to existing text.
- Editorial updates are provided for information purposes only.
- Editorial changes are modifications that improve clarity.

Code pages containing revisions and/or errata are identified with the words "Amended Page" in the footer; pages with editorial modifications and index pages with changes are not flagged.

Code users should contact their local authority having jurisdiction to find out if these revisions and errata apply in their province or territory.

Change Summary (Date: 2025-02) — National Plumbing Code of Canada 2020

Division	Code Reference	Change	Description of Change
Preface	n/a	editorial update	Preface was updated to reflect change in governance of national code development system
A	1.4.1.2.(1)	errata (unless otherwise indicated)	List of defined terms was corrected as follows: *Care**: term and definition were added *Care occupancy**: term and definition were added *Care or detention occupancy*: term and definition were deleted *Detention occupancy**: term and definition were added *Home-type care occupancy**: term and definition were added
		editorial change	*Nominal pipe size (NPS)*: definition was revised to read "... nominal diameter in inches by which the size of a pipe, …" *Treatment**: term and definition were added *Treatment occupancy**: term and definition were added
	A-1.4.1.2.(1)	errata	Note was corrected as follows: Section titled "Care Occupancy" was added Section titled "Home-Type Care Occupancy" was added Section titled "Treatment" was added Section titled "Treatment Occupancy" was added

Change Summary (Date: 2025-02) — National Plumbing Code of Canada 2020 (Continued)

Division	Code Reference	Change	Description of Change
B	1.3.1.1.(1)	revision	Date stated in Sentence was revised to read “15 July 2022”
	Table 1.3.1.2.	revision	Document references were updated as applicable to reflect more recent editions published as of 15 July 2022
	1.3.2.1.	editorial update	List of abbreviations was updated to include “CBHCC”
	2.4.4.3.(1)	erratum	Sentence was corrected to read “... or in a *care*, *treatment* or *detention occupancy*, ...”
	2.4.6.4.	errata	Article was corrected as follows: Sentences were reordered and revised for clarity Sentence (2) was added Sentence (3) was corrected to read “Except as provided in Sentences (4) and (5), ...”
	Table 2.8.1.1.	erratum	Article 2.4.6.4.: entry was added as follows: “(2) [F81-OH2.1]”
	Figure A-2.5.3.1.-E	erratum	Figure was corrected by moving “This stack may act as the relief vent ...” from Example 2 to Example 1
C	A-2.3.1.	editorial update	Last paragraph of Note was updated to read “... on the CBHCC's website.”
Index	Letter C	erratum	“Care or detention occupancy” was corrected to read “Care, treatment or detention occupancy”
	Letter D	erratum	“Detention occupancy”: entry was added
	Letter H	erratum	“Home-type care occupancy”: entry was added
	Letter T	erratum	“Treatment occupancy”: entry was added

Building trap means a *trap* that is installed in a *building drain* or *building sewer* to prevent the circulation of air between a *drainage system* and a public sewer. (See Note A-2.4.5.4.(1) of Division B.)

*Care** means the provision of services other than *treatment* by or through care facility management to residents who require these services because of cognitive, physical or behavioural limitations.

*Care occupancy** (Group B, Division 3) means the *occupancy* or use of a *building* or part thereof, other than a *home-type care occupancy*, where *care* is provided to residents. (See Note A-1.4.1.2.(1).)

Check valve means a valve that permits flow in one direction but prevents a return flow.

Circuit vent means a *vent pipe* that serves a number of *fixtures* and connects to the *fixture drain* of the most upstream *fixture*.

Class 1 fire sprinkler/standpipe system means an assembly of pipes and fittings that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets, is *directly connected* to the public water supply main only, has no pumps or reservoirs, and in which the sprinkler drains discharge to the atmosphere, to dry wells or to other safe outlets.

Class 2 fire sprinkler/standpipe system means a *Class 1 fire sprinkler/standpipe system* that includes a booster pump in its connection to the public water supply main.

Class 3 fire sprinkler/standpipe system means an assembly of pipes and fittings that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets and is *directly connected* to the public water supply main as well as to one or more of the following storage facilities, which are filled from the public water supply main only: elevated water storage, fire pumps supplying water from aboveground covered reservoirs, or pressure tanks. The water in this sprinkler/standpipe system must be maintained in *potable* condition. (See Note A-1.4.1.2.(1).)

Class 4 fire sprinkler/standpipe system means an assembly of pipes and fittings that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets and is *directly connected* to the public water supply main (similar to *Class 1* and *Class 2 fire sprinkler/standpipe systems*) and to an *auxiliary water supply* dedicated to fire department use that is located within 520 m of a pumper connection.

Class 5 fire sprinkler/standpipe system means an assembly of pipes and fittings that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets and is *directly connected* to the public water supply main and also interconnected with an *auxiliary water supply*.

Class 6 fire sprinkler/standpipe system means an assembly of pipes and fittings that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets and acts as a combined industrial water supply and fire protection system supplied from the public water supply main only, with or without gravity storage or pump suction tanks.

Cleanout means an access provided in *drainage* and *venting systems* to provide for cleaning and inspection services.

Clear-water waste means waste water with impurity levels that will not be harmful to health and may include cooling water and condensate drainage from refrigeration and air-conditioning equipment and cooled condensate from steam heating systems, but does not include *storm water*. (See Note A-1.4.1.2.(1).)

Combined building drain means a *building drain* that is intended to conduct *sewage* and *storm water*.

Combined building sewer means a *building sewer* that is intended to conduct *sewage* and *storm water*.

Combined sewer means a sewer that is intended to conduct *sewage* and *storm water*.

*Combustible** means that a material fails to meet the acceptance criteria of CAN/ULC-S114, "Standard Method of Test for Determination of Non-Combustibility in Building Materials."

Continuous vent means a *vent pipe* that is an extension of a vertical section of a *branch* or *fixture drain*. (See Figure A-1.4.1.2.(1)-E in Note A-1.4.1.2.(1).)

Critical level means the level of submergence at which the *back-siphonage preventer* ceases to prevent *back-siphonage*.

Dead end means a pipe that terminates with a closed fitting.

*Detention occupancy** (Group B, Division 1) means the *occupancy* by persons who are restrained from or are incapable of evacuating to a safe location without the assistance of another person because of security measures not under their control.

Developed length means the length along the centre line of the pipe and fittings. (See Note A-2.5.6.3.(1) of Division B.)

Directly connected means physically connected in such a way that water or gas cannot escape from the connection.

Drainage system means an assembly of pipes, fittings, *fixtures*, *traps* and appurtenances that is used to convey *sewage*, *clear-water waste* or *storm water* to a public sewer or a *private sewage disposal system*, but does not include *subsoil drainage pipes*. (See Figure A-1.4.1.2.(1)-F in Note A-1.4.1.2.(1).)

Dual vent means a *vent pipe* that serves 2 *fixtures* and connects at the junction of the *trap arms*. (See Figure A-1.4.1.2.(1)-G in Note A-1.4.1.2.(1).)

*Dwelling unit** means a *suite* operated as a housekeeping unit, used or intended to be used by one or more persons and usually containing cooking, eating, living, sleeping and sanitary facilities.

Emergency floor drain means a *fixture* for the purposes of overflow protection that does not receive regular discharge from other *fixtures*, other than from a *trap* primer. (See Note A-1.4.1.2.(1).)

*Fire separation** means a construction assembly that acts as a barrier against the spread of fire.

Fire service pipe means a pipe that conveys water from a public water main or private water source to the inside of a *building* for the purpose of supplying the fire sprinkler or standpipe systems.

Fixture means a receptacle, appliance, apparatus or other device that discharges *sewage* or *clear-water waste*, and includes a floor drain.

Fixture drain means the pipe that connects a *trap* serving a *fixture* to another part of a *drainage system*.

Fixture outlet pipe means a pipe that connects the waste opening of a *fixture* to the *trap* serving the *fixture*. (See Figure A-1.4.1.2.(1)-H in Note A-1.4.1.2.(1).)

Fixture unit (as applying to *drainage systems*) means the unit of measure based on the rate of discharge, time of operation and frequency of use of a *fixture* that expresses the hydraulic load that is imposed by that *fixture* on the *drainage system*.

Fixture unit (as applying to *water distribution systems*) means the unit of measure based on the rate of supply, time of operation and frequency of use of a *fixture* or outlet that expresses the hydraulic load that is imposed by that *fixture* or outlet on the supply system.

Flood level rim means the top edge at which water can overflow from a *fixture* or device. (See Figure A-1.4.1.2.(1)-B in Note A-1.4.1.2.(1).)

Flow control roof drain means a *roof drain* that restricts the flow of *storm water* into the *storm drainage system*.

Fresh air inlet means a *vent pipe* that is installed in conjunction with a *building trap* and terminates outdoors. (See Note A-2.4.5.4.(1) of Division B.)

*Home-type care occupancy** (Group B, Division 4) means the *occupancy* or use of a *building* consisting of a single detached housekeeping unit where *care* is provided to residents and may include the living space of the caregiver and their family. (See Note A-1.4.1.2.(1).)

Indirectly connected means not *directly connected.* (See Note A-2.3.3.11.(2) of Division B.)

*Indirect service water heater** means a *service water heater* that derives its heat from a heating medium such as warm air, steam or hot water.

Individual vent means a *vent pipe* that serves one *fixture*.

Interceptor means a receptacle that is installed to prevent oil, grease, sand or other materials from passing into a *drainage system*.

Leader means a pipe that is installed to carry *storm water* from a roof to a *storm building drain* or *sewer* or other place of disposal.

Nominally horizontal means at an angle of less than 45° with the horizontal. (See Figure A-1.4.1.2.(1)-J in Note A-1.4.1.2.(1).)

Nominally vertical means at an angle of not more than 45° with the vertical. (See Figure A-1.4.1.2.(1)-J in Note A-1.4.1.2.(1).)

Nominal pipe size (NPS) means the nominal diameter in inches by which the size of a pipe, fitting, *trap* or other similar item is commercially designated.

*Noncombustible** means that a material meets the acceptance criteria of CAN/ULC-S114, "Standard Method of Test for Determination of Non-Combustibility in Building Materials."

*Occupancy** means the use or intended use of a *building* or part thereof for the shelter or support of persons, animals or property.

Offset means the piping that connects the ends of 2 pipes that are parallel. (See Figure A-1.4.1.2.(1)-K in Note A-1.4.1.2.(1).)

Offset relief vent means a *relief vent* that provides additional air circulation upstream and downstream of an *offset* in a *stack*. (See Note A-2.5.4.4.(1) of Division B.)

*Plumbing system** means a *drainage system*, a *venting system* and a *water system* or parts thereof. (See Figure A-1.4.1.2.(1)-L in Note A-1.4.1.2.(1).)

Potable means safe for human consumption.

*Private sewage disposal system** means a privately owned plant for the treatment and disposal of *sewage* (such as a septic tank with an absorption field).

Private use (as applying to the classification of plumbing *fixtures*) means *fixtures* in residences and apartments, in private bathrooms of hotels, and in similar installations in other *buildings* for one family or an individual.

Private water supply system means an assembly of pipes, fittings, valves, equipment and appurtenances that supplies water from a private source to a *water distribution system*.

Public use (as applying to the classification of plumbing *fixtures*) means *fixtures* in general washrooms of schools, gymnasiums, hotels, bars, public comfort stations and other installations where *fixtures* are installed so that their use is unrestricted.

Relief vent means a *vent pipe* that is used in conjunction with a *circuit vent* to provide additional air circulation between a *drainage system* and a *venting system*.

Residential full flow-through fire sprinkler/standpipe system means an assembly of pipes and fittings installed in a one- or two-family dwelling that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets and is fully integrated into the *potable water system* to ensure a regular flow of water through all parts of both systems.

Residential partial flow-through fire sprinkler/standpipe system means an assembly of pipes and fittings installed in a one- or two-family dwelling that conveys water from the *water service pipe* to the sprinkler/standpipe system's outlets and in which flow, during inactive periods of the sprinkler/standpipe system, occurs only through the main header to the water closet located at the farthest point of the two systems.

Riser means a water distribution pipe that extends through at least one full *storey*.

Roof drain means a fitting or device that is installed in the roof to permit *storm water* to discharge into a *leader*.

Roof gutter means an exterior channel installed at the base of a sloped roof to convey *storm water*.

Sanitary building drain means a *building drain* that conducts *sewage* to a *building sewer* from the most upstream *stack*, *branch* or *fixture drain* serving a water closet.

Sanitary building sewer means a *building sewer* that conducts *sewage*.

Sanitary drainage pipe means a pipe in a *sanitary drainage system*.

*Sanitary drainage system** means a *drainage system* that conducts *sewage*.

Sanitary sewer means a sewer that conducts *sewage*.

*Service water heater** means a device for heating water for plumbing services.

Sewage means any liquid waste other than *clear-water waste* or *storm water*.

Stack means a vertical *sanitary drainage pipe* that passes through one or more *storeys*, and includes any *offset* that is part of the *stack*.

Stack vent means a *vent pipe* that connects the top of a *stack* to a *vent header* or to outside air. (See Figure A-1.4.1.2.(1)-G in Note A-1.4.1.2.(1).)

*Storage-type service water heater** means a *service water heater* with an integral hot water storage tank.

Storey for the purposes of this Code, means the interval between 2 successive floor levels, including mezzanine floors that contain plumbing *fixtures*, or between a floor level and roof.

Storm building drain means a *building drain* that conducts *storm water* and is connected at its upstream end to a *leader*, sump or catch basin, and at its downstream end to a *building sewer* or a designated *storm water* disposal location.

Storm building sewer means a *building sewer* that conveys *storm water*.

Storm drainage system means a *drainage system* that conveys *storm water*.

Storm sewer means a sewer that conveys *storm water*.

Storm water means water that is discharged from a surface as a result of rainfall or snowfall.

Subsoil drainage pipe means a pipe that is installed underground to intercept and convey subsurface water.

*Suite** means a single room or series of rooms of complementary use, operated under a single tenancy, and includes *dwelling units*, individual guest rooms in motels, hotels, boarding houses, rooming houses and dormitories as well as individual stores and individual or complementary rooms for business and personal services *occupancies*.

Trap means a fitting or device that is designed to hold a liquid seal that will prevent the passage of gas but will not materially affect the flow of a liquid.

Trap arm means that portion of a *fixture drain* between the *trap weir* and the *vent pipe* fitting. (See Note A-2.5.6.3.(1) of Division B.)

Trap dip means the lowest part of the upper interior surface of a *trap*.

Trap seal depth means the vertical distance between the *trap dip* and the *trap weir*. (See Note A-2.2.3.1.(1) and (3) of Division B.)

Trap standard means the *trap* for a *fixture* that is integral with the support for the *fixture*.

Trap weir means the highest part of the lower interior surface of a *trap*. (See Note A-2.2.3.1.(1) and (3) of Division B.)

*Treatment** means the provision of medical or other health-related intervention to persons, where the administration or lack of administration of these interventions may render them incapable of evacuating to a safe location without the assistance of another person. (See Note A-1.4.1.2.(1).)

*Treatment occupancy** (Group B, Division 2) means the *occupancy* or use of a *building* or part thereof for the provision of *treatment*, and where overnight accommodation is available to facilitate the *treatment*. (See Note A-1.4.1.2.(1).)

Vacuum breaker (see *back-siphonage preventer*).

Vent header means a *vent pipe* that connects any combination of *stack vents* or *vent stacks* to outside air. (See Figure A-1.4.1.2.(1)-I in Note A-1.4.1.2.(1).)

performance targets for alternative solutions. They are published as a separate electronic document entitled "Supplement to the NPC 2020: Intent Statements," which is available on the NRC's website.

Areas of Performance

A subset of the acceptable solutions in Division B may establish criteria for particular types of designs (e.g., certain types of materials, components, assemblies, or systems). Often such subsets of acceptable solutions are all attributed to the same objective: OH2, Sanitation, for example. In some cases, the designs that are normally used to satisfy this subset of acceptable solutions might also provide some benefits that could be related to some other objective: OP5, Protection of the Building or Facility from Water and Sewage Damage, for example. However, if none of the applicable acceptable solutions are linked to Objective OP5, it is not necessary that alternative solutions proposed to replace these acceptable solutions provide a similar benefit related to Protection of the Building or Facility from Water and Sewage Damage. In other words, the acceptable solutions in Division B establish acceptable levels of performance for compliance with the Code only in those areas defined by the objectives and functional statements attributed to the acceptable solutions.

Applicable Acceptable Solutions

In demonstrating that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B, its evaluation should not be limited to comparison with the acceptable solutions to which an alternative is proposed. It is possible that acceptable solutions elsewhere in the Code also apply. The proposed alternative solution may be shown to perform as well as the most apparent acceptable solution, which it is replacing, but may not perform as well as other relevant acceptable solutions. For example, an innovative piping material may perform adequately in a drainage system, but may not meet combustibility requirements elsewhere in the Code. All applicable acceptable solutions should be taken into consideration in demonstrating the compliance of an alternative solution.

A-1.4.1.2.(1) Defined Terms.

Auxiliary Water Supply

The auxiliary water supply may include water from a secondary potable water supply or from any natural source, such as a well, lake, spring, stream or harbour. It may also include waste water (but not sanitary drainage) from industrial processes, such as cooling towers, or from storm retention ponds. These sources may be polluted or contaminated and constitute an unacceptable water source over which the primary water purveyor does not have sanitary control. It is generally accepted that there are two categories of auxiliary water supply:

(a) any public potable water supply over which the primary water purveyor does not have sanitary control, or
(b) any private water supply, other than the primary potable water supply, that is on or available to the premises.

Care Occupancy

Support services rendered by or through care facility management refer to services provided by the organization that is responsible for the care for a period exceeding 24 consecutive hours. They do not refer to services provided by residents of dwelling units or suites, or to services arranged directly by residents of dwelling units or suites with outside agencies.

In the context of care occupancies, these services may include a daily assessment of the resident's functioning, awareness of their whereabouts, the making of appointments for residents and reminding them of those appointments, the ability and readiness to intervene if a crisis arises for a resident, supervision in areas of nutrition or medication, and provision of transient medical services. Services may also include activities of daily living such as bathing, dressing, feeding, and assistance in the use of washroom facilities, etc. No actual treatment is provided by or through care facility management.

Class 3 Fire Sprinkler/Standpipe Systems

In Class 3 fire sprinkler/standpipe systems, water is supplied to the storage facilities from the public water supply and is maintained in potable condition. Class 3 fire sprinkler/standpipe systems resemble Class 1 fire sprinkler/standpipe systems in all other respects.

Clear-Water Waste

Examples of clear-water waste are the waste waters discharged from a drinking fountain, cooling jacket, air conditioner or relief valve outlet.

Emergency Floor Drains

There are two types of floor drains. One is an emergency floor drain installed to avoid flooding in a building from any pipe or fixture failure. The other encompasses floor drains installed to receive discharge from specific pieces of equipment; this type is defined as a fixture.

Home-Type Care Occupancy

Support services rendered to the residents of a home-type care occupancy refer to services provided at a cost by caregivers who are responsible for the care for a period exceeding 24 consecutive hours. They do not refer to services provided by family members of the residents, or to services arranged directly by residents with outside agencies.

In the context of home-type care occupancies, these services may include a daily assessment of the resident's functioning, awareness of their whereabouts, the making of appointments for residents and reminding them of those appointments, the ability and readiness to intervene if a crisis arises for a resident, supervision in areas of nutrition or medication, and provision of transient medical services. Services may also include activities of daily living such as bathing, dressing, feeding, and assistance in the use of washroom facilities, etc. No actual treatment is provided by the caregivers.

Treatment

The ability to evacuate unassisted implies that a person is capable of recognizing and responding to an emergency given their physical, cognitive and behavioural abilities, and able to move to a safe location without the assistance of another person. For example, such persons must be able to arise and walk, or transfer from a bed or chair to a means of mobility, and leave the building or move to a safe location on their own.

Treatment Occupancy

“Treatments” may include such things as surgery, intensive care, and emergency medical intervention. Treatment services differ from the services provided by care occupancies like personal care assistance or the administration of medication, and from those provided by business and personal services occupancies like dentistry or day procedures.

1.2.2. Symbols and Other Abbreviations

1.2.2.1. Symbols and Other Abbreviations

1) The symbols and other abbreviations in Division B shall have the meanings assigned to them in Article 1.4.2.1. of Division A and Article 1.3.2.1.

Section 1.3. Referenced Documents and Organizations

1.3.1. Referenced Documents

1.3.1.1. Effective Date

1) Unless otherwise specified herein, the documents referenced in this Code shall include all amendments, revisions, reaffirmations, reapprovals, addenda and supplements effective to 15 July 2022.

1.3.1.2. Applicable Editions

1) Where documents are referenced in this Code, they shall be the editions designated in Table 1.3.1.2.

Table 1.3.1.2.
Documents Referenced in the National Plumbing Code of Canada 2020(1)
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number(2)	Title of Document	Code Reference
ANSI/CSA	ANSI Z21.22-2015/CSA 4.4-2015	Relief Valves For Hot Water Supply Systems	2.2.10.11.(1)
ARCSA/ASPE/ANSI	63-2013	Rainwater Catchment Systems	A-2.7.2.4.(1)
ASHRAE	2011	ASHRAE Handbook – HVAC Applications	A-2.6.3.1.(2)
ASHRAE	2013	ASHRAE Handbook – Fundamentals	A-2.6.3.1.(2)
ASME/CSA	ASME A112.3.4-2018/CSA B45.9-18	Macerating Toilet Systems and Waste-Pumping Systems for Plumbing Fixtures	2.2.2.2.(1)
ASME/CSA	ASME A112.4.2-2021/CSA B45.16:21	Personal hygiene devices for water closets	2.2.2.2.(1)
ASME/CSA	ASME A112.4.14-2017/CSA B125.14-17	Manually Operated Valves for Use in Plumbing Systems	2.2.10.6.(7)
ASME/CSA	ASME A112.18.1-2018/CSA B125.1-18	Plumbing Supply Fittings	2.2.10.6.(1) 2.2.10.7.(1)
ASME/CSA	ASME A112.18.2-2020/CSA B125.2:20	Plumbing Waste Fittings	2.2.3.3.(1) 2.2.10.6.(6)
ASME/CSA	ASME A112.18.6-2017/CSA B125.6-17	Flexible water connectors	2.2.10.18.(1)
ASME/CSA	ASME A112.19.1-2018/CSA B45.2-18	Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures	2.2.2.2.(1)
ASME/CSA	ASME A112.19.2-2018/CSA B45.1-18	Ceramic Plumbing Fixtures	2.2.2.2.(1)
ASME/CSA	ASME A112.19.3-2017/CSA B45.4-17	Stainless Steel Plumbing Fixtures	2.2.2.2.(1)
ASME/CSA	ASME A112.19.7-2020/CSA B45.10:20	Hydromassage bathtub systems	2.2.2.2.(1)
ASME	B16.3-2021	Malleable Iron Threaded Fittings: Classes 150 and 300	2.2.6.6.(1) A-2.2.5. to 2.2.8.
ASME	B16.4-2021	Gray Iron Threaded Fittings: Classes 125 and 250	2.2.6.5.(1) A-2.2.5. to 2.2.8.
ASME	B16.5-2020	Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch Standard	2.2.6.12.(1)
ASME	B16.9-2018	Factory-Made Wrought Buttwelding Fittings	2.2.6.11.(1) 2.2.6.14.(1)

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number[2]	Title of Document	Code Reference
ASME	B16.12-2019	Cast Iron Threaded Drainage Fittings	2.2.6.3.(1)
ASME	B16.15-2018	Cast Copper Alloy Threaded Fittings: Classes 125 and 250	2.2.7.3.(1) A-2.2.5. to 2.2.8.
ASME	B16.18-2021	Cast Copper Alloy Solder Joint Pressure Fittings	2.2.7.6.(1) 2.2.7.6.(2) A-2.2.5. to 2.2.8.
ASME	B16.22-2021	Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings	2.2.7.6.(1) A-2.2.5. to 2.2.8.
ASME	B16.23-2016	Cast Copper Alloy Solder Joint Drainage Fittings: DWV	2.2.7.5.(1) A-2.2.5. to 2.2.8.
ASME	B16.24-2016	Cast Copper Alloy Pipe Flanges, Flanged Fittings, and Valves: Classes 150, 300, 600, 900, 1500, and 2500	2.2.7.2.(1)
ASME	B16.26-2018	Cast Copper Alloy Fittings for Flared Copper Tubes	2.2.7.7.(1) 2.2.7.7.(2)
ASME	B16.29-2017	Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings – DWV	2.2.7.5.(1) A-2.2.5. to 2.2.8.
ASME	B31.9-2020	Building Services Piping	2.3.2.8.(1)
ASME	B36.19M-2018	Stainless Steel Pipe	2.2.6.10.(1)
ASPE	2010	Plumbing Engineering Design Handbook, Volume 2	A-2.6.3.1.(2)
ASPE	2012	Plumbing Engineering Design Handbook, Volume 4, Chapter 8, Grease Interceptors	A-2.4.4.3.(1)
ASSE/ASME/CSA	ASSE 1002-2020/ASME A112.1002-2020/CSA B125.12-20	Anti-siphon fill valves for water closet tanks	2.2.10.10.(2)
ASSE	ANSI/ASSE 1010-2021	Water Hammer Arresters	2.2.10.15.(1)
ASSE/ASME/CSA	ASSE 1016-2017/ASME A112.1016-2017/CSA B125.16-17	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	2.2.10.7.(1) A-2.2.10.6.(3)
ASSE/ASME/CSA	ASSE 1037-2020/ASME A112.1037-2020/CSA B125.37-20	Performance requirements for pressurized flushing devices for plumbing fixtures	2.2.10.8.(1)
ASSE	1051-2021	Individual and Branch Type Air Admittance Valves for Sanitary Drainage Systems	2.2.10.16.(1)
ASSE/ASME/CSA	ASSE 1070-2020/ASME A112.1070-2020/CSA B125.70-20	Performance requirements for water temperature limiting devices	2.2.10.7.(2)
ASTM	A53/A53M-20	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless	2.2.6.7.(4) A-2.2.5. to 2.2.8.
ASTM	A182/A182M-21	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service	2.2.6.12.(1) 2.2.6.13.(1)
ASTM	A269/A269M-15a	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	2.2.6.14.(1) A-2.2.5. to 2.2.8.
ASTM	A312/A312M-22	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	2.2.6.10.(1) A-2.2.5. to 2.2.8.
ASTM	A351/A351M-18e1	Standard Specification for Castings, Austenitic, for Pressure-Containing Parts	2.2.6.13.(1)
ASTM	A403/A403M-22	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	2.2.6.11.(1)
ASTM	A518/A518M-99	Standard Specification for Corrosion-Resistant High-Silicon Iron Castings	2.2.8.1.(1)
ASTM	B32-20	Standard Specification for Solder Metal	2.2.9.2.(1)
ASTM	B42-20	Standard Specification for Seamless Copper Pipe, Standard Sizes	2.2.7.1.(1) A-2.2.5. to 2.2.8.

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number(2)	Title of Document	Code Reference
ASTM	B43-20	Standard Specification for Seamless Red Brass Pipe, Standard Sizes	2.2.7.1.(2) A-2.2.5. to 2.2.8.
ASTM	B88-20	Standard Specification for Seamless Copper Water Tube	2.2.7.4.(1) A-2.2.5. to 2.2.8.
ASTM	B306-20	Standard Specification for Copper Drainage Tube (DWV)	2.2.7.4.(1) A-2.2.5. to 2.2.8.
ASTM	B813-16	Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	2.2.9.2.(3)
ASTM	B828-16	Standard Specification for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	2.3.2.4.(1)
ASTM	C1053-00	Standard Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications	2.2.8.1.(1)
ASTM	D2466-21	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	2.2.5.7.(2) A-2.2.5. to 2.2.8.
ASTM	D2467-20	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	2.2.5.7.(2) A-2.2.5. to 2.2.8.
ASTM	D3138-21	Standard Specification for Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non-Pressure Piping Components	A-2.2.5.9. to 2.2.5.11.
ASTM	D3261-16	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	2.2.5.4.(3)
ASTM	F628-22	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe With a Cellular Core	2.2.5.9.(1) 2.2.5.11.(1) A-2.2.5. to 2.2.8.
ASTM	F714-22	Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter	2.2.5.5.(1) A-2.2.5. to 2.2.8.
ASTM	F3128-19	Standard Specification for Poly(Vinyl Chloride) (PVC) Schedule 40 Drain, Waste, and Vent Pipe with a Cellular Core	2.2.5.16.(1) A-2.2.5. to 2.2.8.
AWS	ANSI/AWS A5.8M/A5.8:2011	Specification for Filler Metals for Brazing and Braze Welding	2.2.9.2.(4)
AWWA	ANSI/AWWA C104/A21.4-13	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings	2.2.6.4.(2)
AWWA	ANSI/AWWA C110/A21.10-12	Ductile-Iron and Gray-Iron Fittings	2.2.6.4.(3)
AWWA	ANSI/AWWA C111/A21.11-12	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	2.2.6.4.(4)
AWWA	ANSI/AWWA C151/A21.51-09	Ductile-Iron Pipe, Centrifugally Cast	2.2.6.4.(1) A-2.2.5. to 2.2.8.
AWWA	ANSI/AWWA C228-08	Stainless-Steel Pipe Flanges for Water Service – Sizes 2 in. through 72 in. (50 mm through 1,800 mm)	2.2.6.12.(1)
AWWA	M14-2004	Recommended Practice for Backflow Prevention and Cross-Connection Control	A-2.6.2.4.(2)

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number[2]	Title of Document	Code Reference
CCBFC	NRCC-CONST-56435E	National Building Code of Canada 2020	1.1.1.1.(3)[3] 1.4.1.2.(1)[3] 2.1.3.1.(1) 2.1.4.1.(1) 2.2.5.11.(2) 2.2.5.11.(3) 2.2.6.7.(3) 2.4.3.1.(1) 2.4.10.4.(1) A-2.2.1.1.(1)[3] A-2.2.5. to 2.2.8. A-2.4.10. A-2.4.10.4.(1) A-3.2.1.1.(1)[3]
CCBFC	NRCC-CONST-56438E	National Energy Code of Canada for Buildings 2020	A-2.2.1.1.(1)[3] A-3.2.1.1.(1)[3]
CCBFC	NRCC-CONST-56437E	National Fire Code of Canada 2020	2.5.5.2. A-2.2.1.1.(1)[3] A-3.2.1.1.(1)[3]
CSA	A60.1-M1976	Vitrified Clay Pipe	2.2.5.3.(1) A-2.2.5. to 2.2.8.
CSA	A60.3-M1976	Vitrified Clay Pipe Joints	2.2.5.3.(2)
CSA	A257.1:19	Non-reinforced circular concrete culvert, storm drain, sewer pipe, and fittings	2.2.5.2.(1) A-2.2.5. to 2.2.8.
CSA	A257.2:19	Reinforced circular concrete culvert, storm drain, sewer pipe, and fittings	2.2.5.2.(1) A-2.2.5. to 2.2.8.
CSA	A257.3:19	Joints for circular concrete sewer and culvert pipe, manhole sections, and fittings using rubber gaskets	2.2.5.2.(2)
CSA	A257.4:19	Precast reinforced circular concrete manhole sections, catch basins, and fittings	2.2.5.2.(5)
CSA	CAN/CSA-B45 Series-02	Plumbing Fixtures	2.2.2.2.(1)
CSA/IAPMO	CSA B45.5-17/IAPMO Z124-2017	Plastic plumbing fixtures	2.2.2.2.(1)
CSA	B64.0:21	Definitions, general requirements, and test methods for vacuum breakers and backflow preventers	2.2.10.10.(1)
CSA	B64.1.1:21	Atmospheric vacuum breakers (AVB)	2.2.10.10.(1)
CSA	B64.1.2:21	Pressure vacuum breakers (PVB)	2.2.10.10.(1)
CSA	B64.1.3:21	Spill-resistant pressure vacuum breakers (SRPVB)	2.2.10.10.(1)
CSA	B64.2:21	Hose connection vacuum breakers (HCVB)	2.2.10.10.(1)
CSA	B64.2.1:21	Hose connection vacuum breakers (HCVB) with manual draining feature	2.2.10.10.(1)
CSA	B64.2.2:21	Hose connection vacuum breakers (HCVB) with automatic draining feature	2.2.10.10.(1)
CSA	B64.3:21	Dual check valve backflow preventers with atmospheric port (DCAP)	2.2.10.10.(1)
CSA	B64.4:21	Reduced pressure principle (RP) backflow preventers	2.2.10.10.(1) 2.6.2.4.(2)
CSA	B64.4.1:21	Reduced pressure principle backflow preventers for fire protection systems (RPF)	2.2.10.10.(1) 2.6.2.4.(2) 2.6.2.4.(4) A-2.6.2.4.(2)
CSA	B64.5:21	Double check valve (DCVA) backflow preventers	2.2.10.10.(1) 2.6.2.4.(2)

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number[2]	Title of Document	Code Reference
CSA	B64.5.1:21	Double check valve backflow preventers for fire protection systems (DCVAF)	2.2.10.10.(1) 2.6.2.4.(2) A-2.6.2.4.(2)
CSA	B64.6:21	Dual check valve (DuC) backflow preventers	2.2.10.10.(1) 2.6.2.4.(2)
CSA	B64.6.1:21	Dual check valve backflow preventers for fire protection systems (DuCF)	2.2.10.10.(1) 2.6.2.4.(2) A-2.6.2.4.(2)
CSA	B64.7:21	Laboratory faucet vacuum breakers (LFVB)	2.2.10.10.(1)
CSA	B64.8:21	Dual check valve backflow preventers with intermediate vent (DuCV)	2.2.10.10.(1)
CSA	B64.9:21	Single check valve backflow preventers for fire protection systems (SCVAF)	2.2.10.10.(1) 2.6.2.4.(2) A-2.6.2.4.(2)
CSA	B64.10-17	Selection and installation of backflow preventers	2.6.2.1.(3)
CSA	B70:19	Cast iron soil pipe, fittings, and means of joining	2.2.6.1.(1) 2.4.6.4.(5) A-2.2.5. to 2.2.8.
CSA	B70.1-03	Frames and Covers for Maintenance Holes and Catchbasins	2.2.6.2.(1)
CSA	B125.3-18	Plumbing fittings	2.2.10.6.(1) 2.2.10.7.(2) 2.2.10.7.(3) A-2.6.1.11.(1)
CSA	CAN/CSA-B126.0-13	General requirements and methods of testing for water cisterns	2.7.2.4.(6)
CSA	CAN/CSA-B126.1-13	Installation of water cisterns	2.7.2.4.(6)
CSA	CAN/CSA-B127.3:21	Fibrocement drain, waste, and vent pipe and pipe fittings	2.2.5.1.(1) A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B128.1-06	Design and Installation of Non-Potable Water Systems	2.7.1.2.(1) A-2.7.1.1.(1)
CSA	B137.1:20	Polyethylene (PE) pipe, tubing, and fittings for cold-water pressure services	2.2.5.4.(1) A-2.2.5. to 2.2.8.
CSA	B137.2:20	Polyvinylchloride (PVC) injection-moulded gasketed fittings for pressure applications	2.2.5.7.(3) A-2.2.5. to 2.2.8.
CSA	B137.3:20	Rigid polyvinylchloride (PVC) pipe and fittings for pressure applications	2.2.5.7.(1) A-2.2.5. to 2.2.8.
CSA	B137.5:20	Crosslinked polyethylene (PEX) tubing systems for pressure applications	2.2.5.6.(1) A-2.2.5. to 2.2.8. A-2.2.5.6.(1)
CSA	B137.6:20	Chlorinated polyvinylchloride (CPVC) pipe, tubing, and fittings for hot- and cold-water distribution systems	2.2.5.8.(1) A-2.2.5. to 2.2.8. A-2.2.5.9. to 2.2.5.11.
CSA	B137.9:20	Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pressure-pipe systems	2.2.5.12.(1) A-2.2.5. to 2.2.8. A-2.2.5.12.(1)
CSA	B137.10:20	Crosslinked polyethylene/aluminum/crosslinked polyethylene (PEX-AL-PEX) composite pressure-pipe systems	2.2.5.12.(4) 2.2.5.13.(1) A-2.2.5. to 2.2.8. A-2.2.5.13.(1)

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number[2]	Title of Document	Code Reference
CSA	B137.11:20	Polypropylene (PP-R & PP-RCT) pipe and fittings for pressure applications	2.2.5.14.(1) A-2.2.5. to 2.2.8. A-2.2.5.14.(1)
CSA	B137.18:20	Polyethylene of raised temperature resistance (PE-RT) tubing systems for pressure applications	2.2.5.15.(1) A-2.2.5. to 2.2.8. A-2.2.5.15.(1)
CSA	B158.1-1976	Cast Brass Solder Joint Drainage, Waste and Vent Fittings	2.2.10.1.(1)
CSA	B181.1:21	Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings	2.2.5.9.(1) 2.2.5.10.(1) 2.2.5.11.(1) 2.4.6.4.(5) A-2.2.5. to 2.2.8. A-2.2.5.9. to 2.2.5.11.
CSA	B181.2:21	Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings	2.2.5.9.(1) 2.2.5.10.(1) 2.2.5.11.(1) 2.2.5.16.(1) 2.2.5.16.(2) 2.4.6.4.(5) A-2.2.5. to 2.2.8. A-2.2.5.9. to 2.2.5.11.
CSA	B181.3:21	Polyolefin and polyvinylidene fluoride (PVDF) laboratory drainage systems	2.2.8.1.(1) A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.1:21	Plastic drain and sewer pipe and pipe fittings	2.2.5.9.(1) 2.4.6.4.(5) A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.2:21	PSM type polyvinylchloride (PVC) sewer pipe and fittings	2.2.5.9.(1) A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.4:21	Profile polyvinylchloride (PVC) sewer pipe and fittings	2.2.5.9.(1) A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.6:21	Profile polyethylene (PE) sewer pipe and fittings for leak-proof sewer applications	2.2.5.9.(1) A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.8:21	Profile polyethylene (PE) storm sewer and drainage pipe and fittings	2.2.5.9.(1)
CSA	B242-05	Groove- and Shoulder-Type Mechanical Pipe Couplings	2.2.10.4.(1)
CSA	B272-93	Prefabricated Self-Sealing Roof Vent Flashings	2.2.10.14.(2)
CSA	CAN/CSA-B356-10	Water pressure reducing valves for domestic water supply systems	2.2.10.12.(1)
CSA	B481.0-12	Material, design, and construction requirements for grease interceptors	2.2.3.2.(3)
CSA	B481.3-12	Sizing, selection, location, and installation of grease interceptors	2.2.3.2.(3)
CSA	B481.4-12	Maintenance of grease interceptors	A-2.2.3.2.(3)
CSA	CAN/CSA-B483.1:21	Drinking Water Treatment Systems	2.2.10.17.(1)
CSA	B602:20	Mechanical couplings for drain, waste, and vent pipe and sewer pipe	2.2.10.4.(2)
CSA/ICC	CSA B805-18/ICC 805-2018	Rainwater harvesting systems	2.7.2.4.(4) A-2.7.2.4.(1)
CSA	CAN/CSA-F379 SERIES-09 (excluding Supplement F379S1-11)	Packaged solar domestic hot water systems (liquid-to-liquid heat transfer)	2.2.10.13.(1)
CSA	CAN/CSA-F383-08	Installation of packaged solar domestic hot water systems	2.6.1.8.(1)

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number[2]	Title of Document	Code Reference
CSA	CAN/CSA-G401-14	Corrugated steel pipe products	2.2.6.8.(1) A-2.2.5. to 2.2.8.
McGraw-Hill	2009	International Plumbing Codes Handbook	A-2.6.3.
NFPA	13D-2016	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	2.6.3.1.(3)
NIST	Building Materials and Structures Report BMS 79, 1941	Water-Distributing Systems for Buildings	A-2.6.3.
NSF	NSF Pro 151-8-1-95	Health Effects from Rainwater Catchment System Components	A-2.7.2.3.(2)
TIAC	2013	Mechanical Insulation Best Practices Guide	A-2.3.5.3.
ULC	CAN/ULC-S114:2018	Standard Method of Test for Determination of Non-Combustibility in Building Materials	1.4.1.2.(1)[3]

Notes to Table 1.3.1.2.:

(1) While every effort was made to ensure the accuracy of the information in this Table, the NRC is not responsible for the accuracy, timeliness or reliability of the content presented therein. For all purposes of interpreting and applying the referenced standards, Code users should refer to the most recent official versions of the referenced editions.

(2) Some documents may have been reaffirmed or reapproved. Check with the applicable issuing agency for up-to-date information.

(3) Code reference is in Division A.

1.3.2. Organizations

1.3.2.1. Abbreviations of Proper Names

1) The abbreviations of proper names in this Code shall have the meanings assigned to them in this Article.

ANSI ..... American National Standards Institute (www.ansi.org)

ARCSA ..... American Rainwater Catchment Systems Association (www.arcsa.org)

ASHRAE ..... American Society of Heating, Refrigerating and Air-Conditioning Engineers (www.ashrae.org)

ASME ..... American Society of Mechanical Engineers (www.asme.org)

ASPE ..... American Society of Plumbing Engineers (www.aspe.org)

ASSE ..... American Society of Sanitary Engineering (www.asse-plumbing.org)

ASTM ..... ASTM International (www.astm.org)

AWS ..... American Welding Society (www.aws.org)

AWWA ..... American Water Works Association (www.awwa.org)

CAN ..... National Standard of Canada designation (www.scc.ca)

CBHCC ..... Canadian Board for Harmonized Construction Codes (cbhcc-cchcc.ca)

CCBFC ..... Canadian Commission on Building and Fire Codes (see NRC)

CSA ..... CSA Group (www.csagroup.ca)

IAPMO ..... International Association of Plumbing and Mechanical Officials (www.iapmo.org)

ICC ..... International Code Council (www.iccsafe.org)

NBC ..... National Building Code of Canada 2020

NFC ..... National Fire Code of Canada 2020

NFPA ..... National Fire Protection Association (www.nfpa.org)

NIST ..... National Institute of Standards and Technology (www.nist.gov)

NPC ..... National Plumbing Code of Canada 2020

3) *Fixture drains* from *fixtures* that are listed in Subclauses 2.4.2.1.(1)(e)(iii) to (e)(vi) are permitted to be *directly connected* to a pipe that

a) is terminated to form an *air break* above the *flood level rim* of a *fixture* that is *directly connected* to a *storm drainage system*, and
b) is extended through the roof when *fixtures* on 3 or more *storeys* are connected to it.

2.4.3. Location of Fixtures

2.4.3.1. Urinals

1) Urinals shall not be installed adjacent to wall and floor surfaces that are pervious to water. (See Article 3.7.2.5. of Division B of the NBC.)

2.4.3.2. Restricted Locations of Indirect Connections and Traps

1) Indirect connections or any *trap* that may overflow shall not be located in a crawl space or any other unfrequented area.

2.4.3.3. Equipment Restrictions Upstream of Grease Interceptors

1) Except as provided in Sentence (2), equipment discharging waste with organic solids shall not be located upstream of a grease *interceptor*. (See Note A-2.4.3.3.(1).)

2) An organic solids *interceptor* is permitted to be installed upstream of a grease *interceptor*.

2.4.3.4. Fixtures Located in Chemical Storage Locations

1) A floor drain or other *fixture* located in an oil transformer vault, a high voltage room or any room where flammable, dangerous or toxic chemicals are stored or handled shall not be connected to a *drainage system*.

2.4.3.5. Macerating Toilet Systems

1) A macerating toilet system shall only be installed where no connection to a gravity *sanitary drainage system* is available.

2.4.3.6. Drains Serving Elevator Pits

1) Where a drain is provided in an elevator pit,

a) it shall be connected directly to a sump located outside the elevator pit, and
b) the drain pipe that connects the sump to the *drainage system* shall have a *backwater valve*.

2.4.4. Treatment of Sewage and Waste

2.4.4.1. Sewage Treatment

1) Where a *fixture* or equipment discharges *sewage* or waste that may damage or impair the *sanitary drainage system* or the functioning of a public or *private sewage disposal system*, provision shall be made for treatment of the *sewage* or waste before it is discharged to the *sanitary drainage system*.

2.4.4.2. Cooling of Hot Water or Sewage

1) Where a *fixture* discharges *sewage* or *clear-water waste* that is at a temperature above 75°C, provision shall be made for cooling of the waste to 75°C or less before it is discharged to the *drainage system*.

2.4.4.3. Interceptors

1) Where a *fixture* discharges *sewage* that includes fats, oils or grease and is located in a public kitchen, in a restaurant or in a *care*, *treatment* or *detention occupancy*, it shall discharge through a grease *interceptor*. (See Note A-2.4.4.3.(1).)

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

4) Equipment such as a pump or ejector that can lift the contents of the sump or tank and discharge it into the *building drain* or *building sewer* shall be installed.

5) Where the equipment does not operate automatically, the capacity of the sump shall be sufficient to hold at least a 24 h accumulation of liquid.

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

7) The discharge pipe from every pumped sump shall be equipped with a union, a *backwater valve* and a shut-off valve installed in that sequence in the direction of discharge.

8) The discharge piping from a pump or ejector shall be sized for optimum flow velocities at pump design conditions.

2.4.6.4. Protection from Backflow

1) 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.(1).)

2) Where a *building drain* or *branch* may be subject to *backflow*, a *backwater valve* shall be installed in accordance with Sentences (3) to (6).

3) Except as provided in Sentences (4) and (5), the *backwater valve* required by Sentence (2) shall be installed on every *fixture drain* connected to the *building drain* or *branch* where the *fixture* is located below the level of the adjoining street.

4) Where two or more *fixtures* located on a *storey* are connected to the same *branch*, the *backwater valve* required by Sentence (2) is permitted to be installed on the *branch*.

5) Except as provided in Sentence (6), the *backwater valve* required by Sentence (2) is permitted to be installed in the *building drain*, provided the *backwater valve*

a) does not serve more than one *dwelling unit*, and
b) has 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) CAN/CSA-B182.1, "Plastic drain and sewer pipe and pipe fittings."

6) 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*.

2.4.6.5. Mobile Home Sewer Service

1) A *building sewer* intended to serve a mobile home shall be

a) not less than *NPS* 4,
b) terminated above ground,
c) provided with
   i) a tamperproof terminal connection that is capable of being repeatedly connected, disconnected and sealed,
   ii) a protective concrete pad, and
   iii) a means to protect it from frost heave, and
d) designed and constructed in accordance with good engineering practice.

Table 2.8.1.1. (Continued)

Provision	Functional Statements and Objectives[1]
2.4.3.2. Restricted Locations of Indirect Connections and Traps	
(1)	[F81-OH2.1,OH2.4]
2.4.3.3. Equipment Restrictions Upstream of Grease Interceptors	
(1)	[F81-OH2.1]
2.4.3.4. Fixtures Located in Chemical Storage Locations	
(1)	[F81-OS1.1]
	[F43-OH5]
2.4.3.5. Macerating Toilet Systems	
(1)	[F72-OH2.1]
2.4.3.6. Drains Serving Elevator Pits	
(1)	(a) [F62-OP5]
	(b) [F81-OH2.1]
2.4.4.1. Sewage Treatment	
(1)	[F81-OH2.1]
2.4.4.2. Cooling of Hot Water or Sewage	
(1)	[F81-OH2.1]
2.4.4.3. Interceptors	
(1)	[F81-OH2.1]
(2)	[F81-OS1.1]
	[F43-OH5]
(3)	[F81-OH2.1]
(4)	[F81-OH2.1]
2.4.4.4. Neutralizing and Dilution Tanks	
(1)	[F80-OS3.4]
(2)	[F43-OH5]
	[F80-OH2.1]
2.4.5.1. Traps for Sanitary Drainage Systems	
(1)	[F81-OH1.1]
(6)	[F81-OH1.1]
	[F81-OP5]
2.4.5.2. Traps for Storm Drainage Systems	
(1)	[F81-OH1.1]
(2)	[F81-OH1.1]
(3)	[F81-OP5]
2.4.5.3. Connection of Subsoil Drainage Pipe to a Sanitary Drainage System	
(1)	[F81-OH2.1]
	[F81-OH1.1]
2.4.5.4. Location and Cleanout for Building Traps	
(1)	[F81-OH2.1]
2.4.5.5. Trap Seals	
(1)	[F81-OH1.1]

Table 2.8.1.1. (Continued)

Provision	Functional Statements and Objectives[1]
2.4.6.1. Separate Systems	
(1)	[F81-OH2.1]
(2)	[F81-OH2.1]
(3)	[F81-OH1.1]
2.4.6.2. Location of Sanitary Drainage Pipes	
(1)	[F81-OH2.2]
2.4.6.3. Sumps or Tanks	
(1)	[F81-OH2.1]
(2)	[F81-OH2.1] Applies to the watertightness of sumps or tanks.
	[F40,F81-OH1.1]
(3)	[F40,F81-OH2.1]
	[F40,F81-OH1.1]
(4)	[F81-OH2.1]
(5)	[F81-OH2.1]
(6)	[F81-OH2.1]
(7)	[F81-OH2.1]
(8)	[F81-OH2.1]
2.4.6.4. Protection from Backflow	
(1)	[F81-OH2.1]
(2)	[F81-OH2.1]
(3)	[F81-OH2.1]
(5)	[F81-OH1.1]
	[F81-OH2.1]
(6)	[F81-OH2.1]
	[F81-OH1.1]
2.4.6.5. Mobile Home Sewer Service	
(1)	[F81-OH2.1]
2.4.7.1. Cleanouts for Drainage Systems	
(1)	[F81-OH2.1]
(2)	[F81-OH2.1]
(3)	[F81-OH2.1]
(4)	[F81-OH2.1]
(5)	[F81-OH2.1]
(6)	[F81-OH2.1]
(7)	[F81-OH2.1]
(8)	[F81-OH2.1]
(9)	[F81-OH2.1]
(10)	[F82-OH2.1]
	[F82-OP5]
(11)	[F81-OH2.1]
	[F81-OP5]

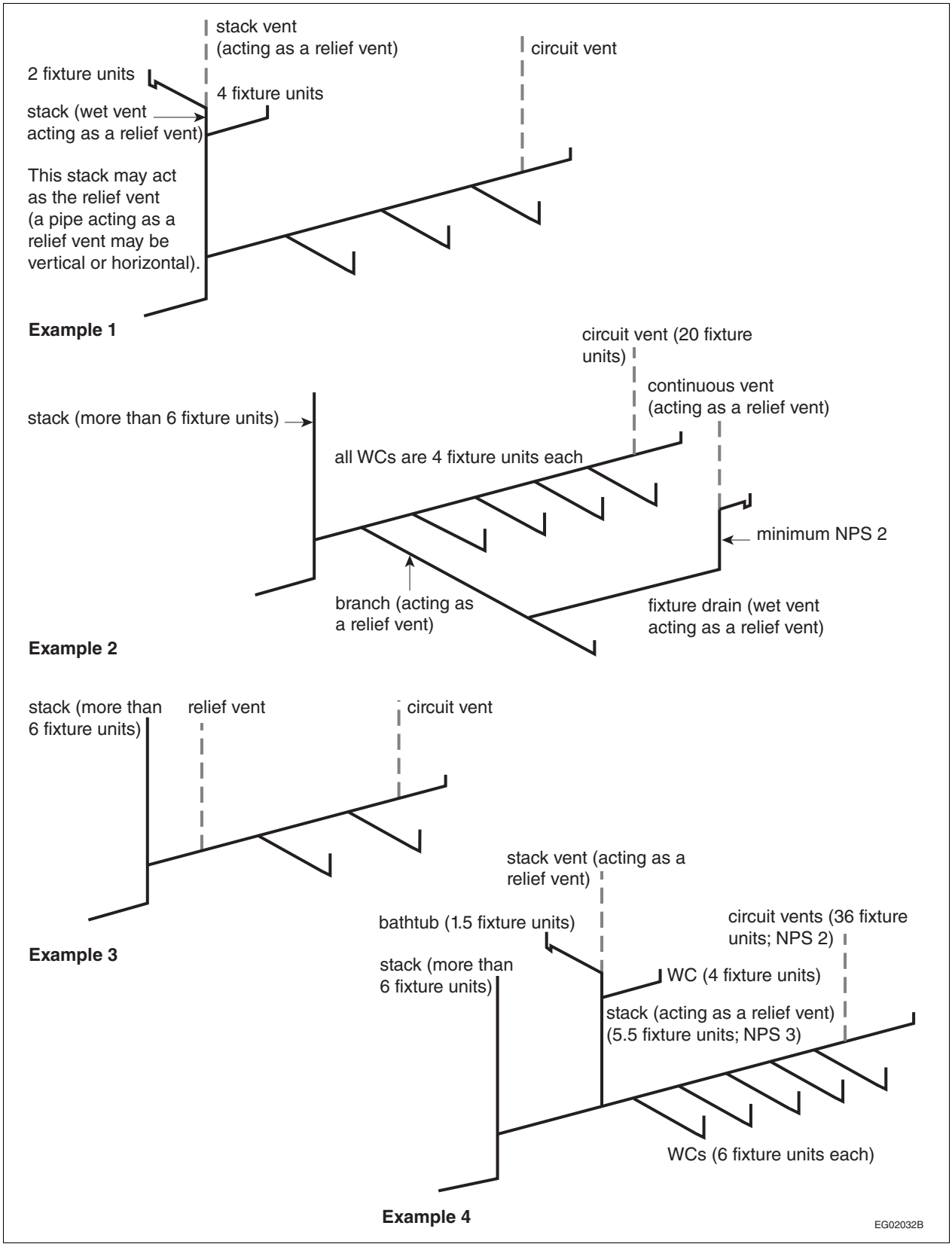

Figure A-2.5.3.1.-E
Example of circuit venting described in Sentence 2.5.3.1.(4)

Notes to Part 2 Administrative Provisions

A-2.3.1. Documentation of Alternative Solutions. Beyond the purposes of demonstrating compliance and acquiring an installation permit, there are other important reasons for requiring that the proponent of an alternative solution submit project documentation (i.e. a compliance report) to the authority having jurisdiction and for the authority having jurisdiction to retain that documentation for a substantial period following the installation of a plumbing system:

- Most jurisdictions require that a plumbing system be maintained in compliance with the codes under which it was installed. Alternative solutions made possible by objective-based codes may have special maintenance requirements, which would be described in the documentation.
- Documentation helps consultants perform code compliance assessments of existing buildings or facilities before they are sold and informs current owners or prospective buyers of existing buildings or facilities of any limitations pertaining to their future use or development.
- Documentation provides design professionals with the basic information necessary to design changes to an existing plumbing system.
- An alternative solution could be invalidated by a proposed alteration to a plumbing system. Designers and regulators must therefore know the details of the particular alternative solutions that were integral to the original design. Complete documentation should provide insight as to why one alternative solution was chosen over another.
- Documentation is the "paper trail" of the alternative solution negotiated between the designer and the regulator and should demonstrate that a rational process led to the acceptance of the alternative solution as an equivalency.
- It is possible that over time a particular alternative solution may be shown to be inadequate. It would be advantageous for a jurisdiction to know which plumbing systems included that alternative solution as part of their design: documentation will facilitate this type of analysis.
- Project documentation provides important information to a forensic team that is called to investigate an accident or why a design failed to provide the level of performance expected.

This subject is discussed in further detail in "Recommended Documentation Requirements for Projects Using Alternative Solutions in the Context of Objective-Based Codes," which was prepared for the CCBFC Task Group on Implementation of Objective-Based Codes and is available on the CBHCC's website.

These Notes are included for explanatory purposes only and do not form part of the requirements. The number that introduces each Note corresponds to the applicable requirement in this Part.

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