# Notes to Part 1 Compliance

**A-1.1.1.1.(1) Application to Existing Buildings.**
(See Part 11 of Division B of Book I (General) of the Building By-law)

**A-1.2.1.1.(1)(a) By-law Compliance via Acceptable Solutions.** If a plumbing system design (e.g., material, component, assembly or system) can be shown to meet all provisions of the applicable acceptable solutions in Division B (e.g., it complies with the applicable provisions of a referenced standard), it is deemed to have satisfied the objectives and functional statements linked to those provisions and thus to have complied with that part of the By-law. In fact, if it can be determined that a design meets all the applicable acceptable solutions in Division B, there is no need to consult the objectives and functional statements in Division A to determine its compliance.

**A-1.2.1.1.(1)(b) By-law Compliance via Alternative Solutions.** Where a design differs from the acceptable solutions in Division B, then it should be treated as an "alternative solution." A proponent of an alternative solution must demonstrate that the alternative solution addresses the same issues as the applicable acceptable solutions in Division B and their attributed objectives and functional statements. However, because the objectives and functional statements are entirely qualitative, demonstrating compliance with them in isolation is not possible. Therefore, Clause 1.2.1.1.(1)(b) identifies the principle that Division B establishes the quantitative performance targets that alternative solutions must meet. In many cases, these targets are not defined very precisely by the acceptable solutions – certainly far less precisely than would be the case with a true performance code, which would have quantitative performance targets and prescribed methods of performance measurement for all aspects of building performance. Nevertheless, Clause 1.2.1.1.(1)(b) makes it clear that an effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B – not "well enough" but "as well as."

In this sense, it is Division B that defines the boundaries between acceptable risks and the "unacceptable" risks referred to in the statements of the By-law's objectives, i.e., the risk remaining once the applicable acceptable solutions in Division B have been implemented represents the residual level of risk deemed to be acceptable by the broad base of Canadians who have taken part in the consensus process used to develop the Model Building Code.

### Level of Performance

Where Division B offers a choice between several possible designs, it is likely that these designs may not all provide exactly the same level of performance. Among a number of possible designs satisfying acceptable solutions in Division B, the design providing the lowest level of performance should generally be considered to establish the minimum acceptable level of performance to be used in evaluating alternative solutions for compliance with the By-law.

Sometimes a single design will be used as an alternative solution to several sets of acceptable solutions in Division B. In this case, the level of performance required of the alternative solution should be at least equivalent to the overall level of performance established by all the applicable sets of acceptable solutions taken as a whole.

Each provision in Division B has been analyzed to determine what it is intended to achieve. The resultant intent statements clarify what undesirable results each provision seeks to preclude. These statements are not a legal component of the By-law, but are advisory in nature, and can help By-law users establish performance targets for alternative solutions. They are published as part of the online Code subscriptions and as a separate electronic document entitled "Supplement to the NPC 2015: Intent Statements," which is available on NRC's Web site.

### 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: 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: 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, Protection of the Building or Facility from Water and Sewage Damage, 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 By-law only in those areas defined by the objectives and functional statements attributed to the acceptable solutions.



Effective February 8, 2022 to June 30, 2022

### 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 By-law 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 By-law. 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:

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

### 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.

### Cooling Tower

Rev. 13259

From a Legionnaires' disease prevention perspective, the fluid flow of interest is the water sprayed, evaporated, collected and recirculated within a *cooling tower* (the so-called "external circuit"). It is this water that requires appropriate treatment to keep *Legionella pneumophila* levels controlled.

For a *cooling tower* with multiple cells, if all of the cells share the same basin and the same recirculated water, the whole unit can be considered one *cooling tower*. However, as a cautionary note for large systems, even with the same water flowing to all parts, it has been found by New York City's Department of Health and Mental Hygiene that different locations within the same *cooling tower* can test positive and others can test negative for *Legionella pneumophila*.

For buildings with multiple cooling tower structures, in certain, rare configurations, and at the sole discretion of the *Chief Building Official*, it may be determined that the multiple cooling tower structures can be considered as one *cooling tower* for the purpose of this defined term. To be considered as one *cooling tower*, the recirculating water loops of the multiple cooling tower structures must share the same recirculated water and treatment and the recirculating loops must always operate together. The *Chief Building Official* must be satisfied with the equipment owner's reasoning and supporting evidence that there is a reasonable basis to presume that the water quality should be identical at all times across the multiple cooling tower structures. This assessment would consider the location, size, condition and mechanical configuration of the cooling towers, including valves and pipes; differences in exposure to sunshine, heat sources, neighbouring buildings, potential pollution sources, and mechanical equipment, such as exhaust fans; the control system and operational philosophy for the cooling towers; water quality data and compliance history; and maintenance records.

### Decorative Water Feature

Rev. 12717

A living or green wall is not considered a *decorative water feature*, but should be reviewed to identify hazards and to establish procedures to reduce risks. To preclude the growth of *Legionella*, consideration should be given to including non-chemical water treatment (such as UV), maintaining water temperature below 20°C, and removing organic matter from the water. Water flow should be behind the plant material and airflow should be directed toward the living wall to minimize aerosolization into the occupied space.

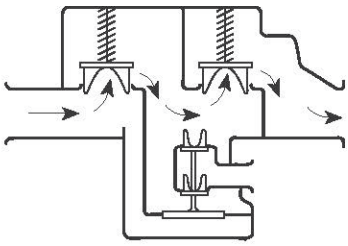


Effective February 8, 2022 to June 30, 2022

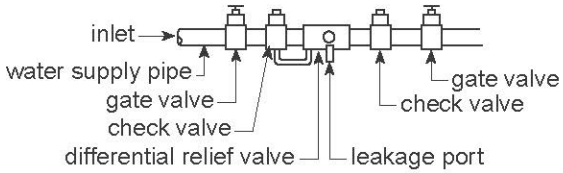
### Emergency Floor Drains

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.

### Illustrations for Defined Terms




(a) Reduced pressure backflow preventer




(b) Assembly of differential valves and check valves used as a backflow preventer

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**Figure A-1.4.1.2.(1)-A**
**Backflow Preventer**



Effective February 8, 2022 to June 30, 2022

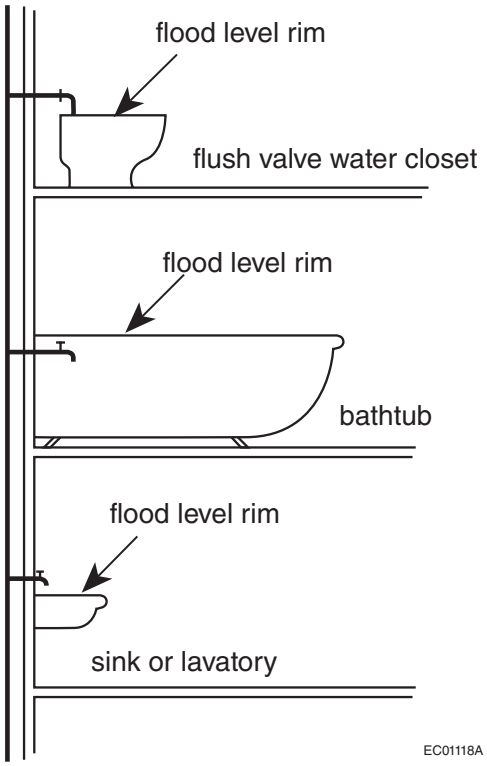


**Figure A-1.4.1.2.(1)-B**
**Back-siphonage**

**Notes to Figure A-1.4.1.2.(1)-B:**

(1) Figure A-1.4.1.2.(1)-B shows a situation that is fairly common in old buildings. If the bathtub is filled to a level above the faucet outlet, or if the flush valve of the water closet is faulty, and if the faucet at the sink or lavatory on the lower floor is opened, water can be drawn (siphoned) from the bathtub or the water closet into the water system when the pressure in the water system is low or the water supply has been shut off.

(2) Back-siphonage can be prevented in the above situations by providing an air gap or a back-siphonage preventer (See Subsection 2.6.2. of Division B).

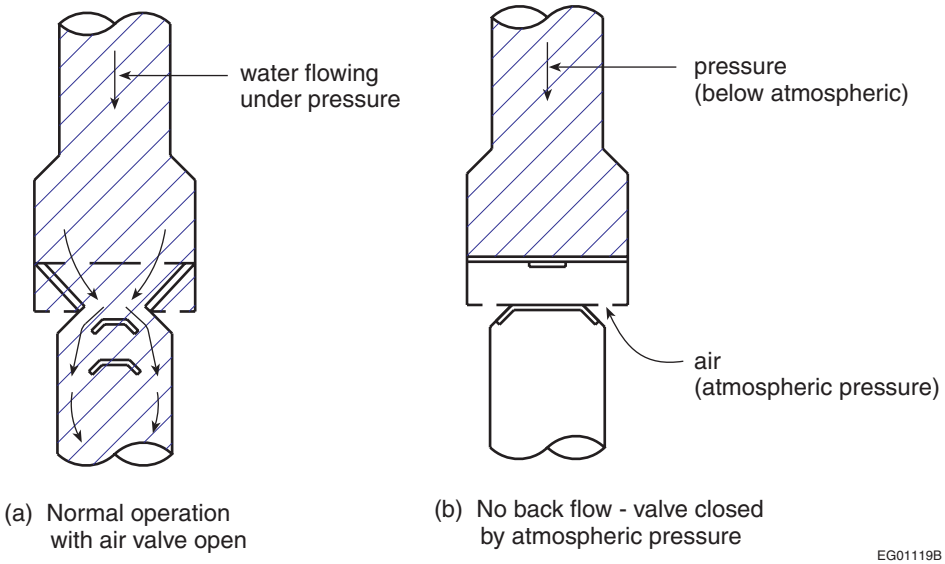


**Figure A-1.4.1.2.(1)-C**
**Back-siphonage Preventer**



Effective February 8, 2022 to June 30, 2022

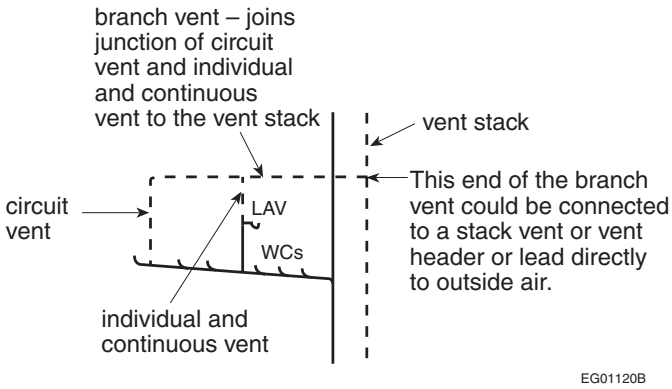


**Figure A-1.4.1.2.(1)-D**
**Branch Vent**

**Note to Figure A-1.4.1.2.(1)-D:**

(1) See also the definitions of header and drainage system in Article 1.4.1.2.

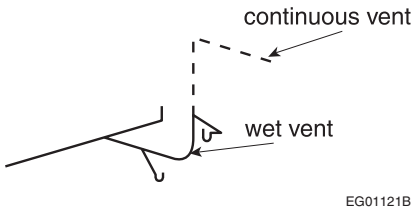


**Figure A-1.4.1.2.(1)-E**
**Continuous Vent**



Effective February 8, 2022 to June 30, 2022

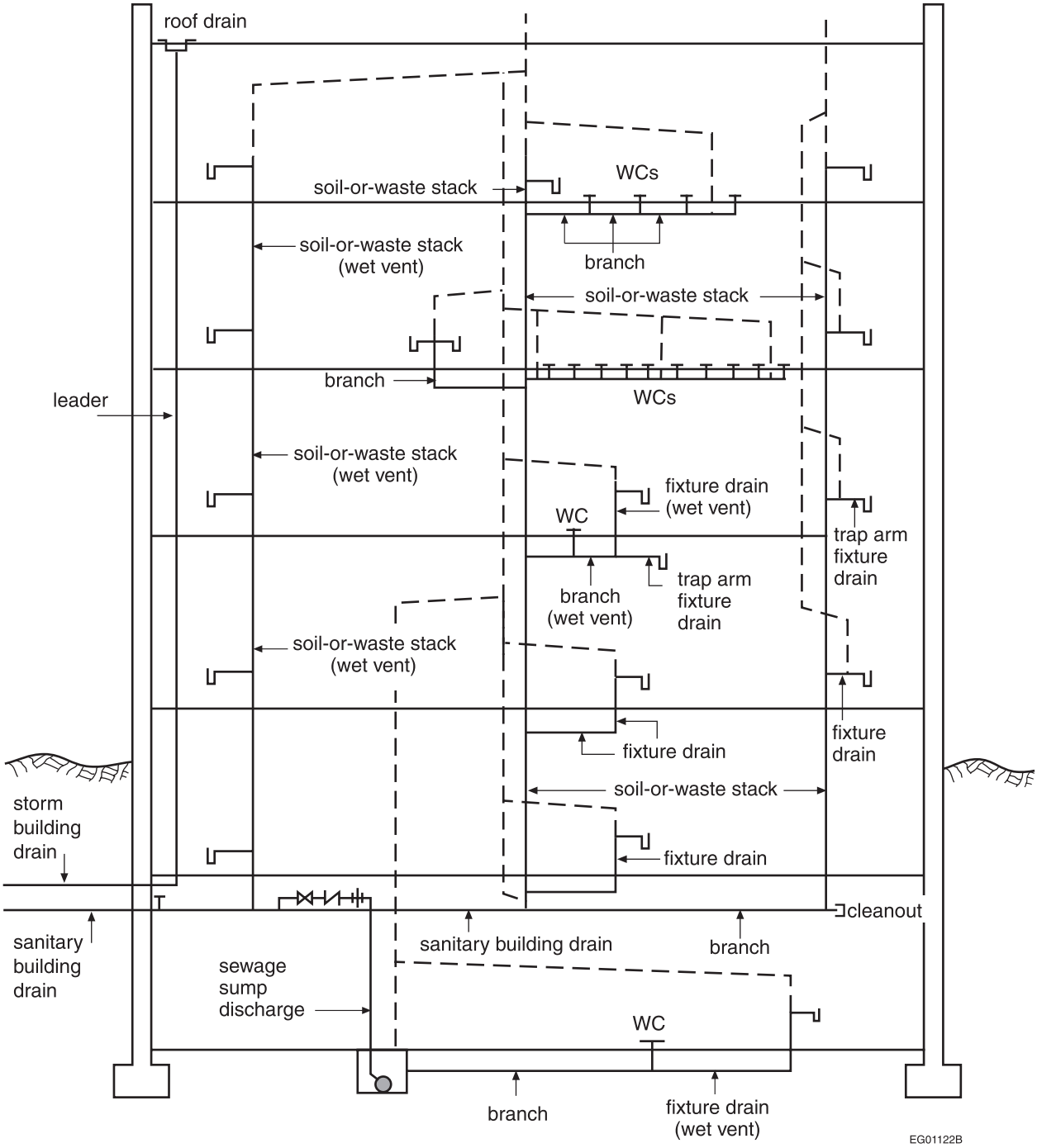


**Figure A-1.4.1.2.(1)-F**
**Drainage System**



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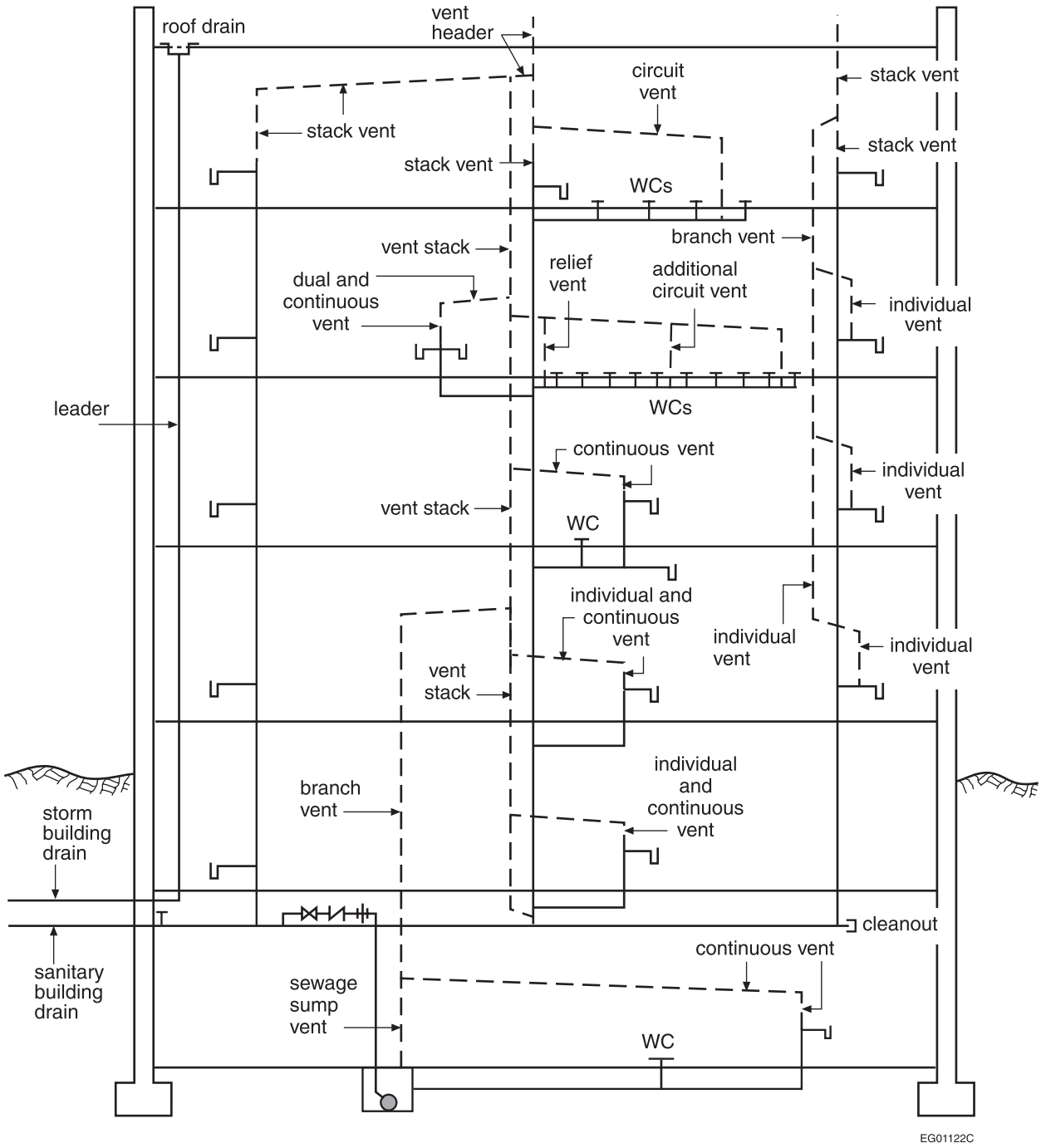


**Figure A-1.4.1.2.(1)-G**
**Venting System**



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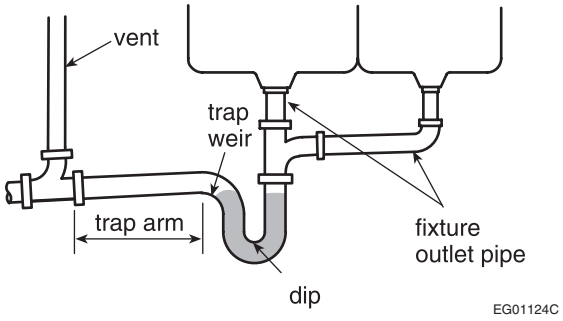


**Figure A-1.4.1.2.(1)-H**
**Fixture Outlet Pipe and Trap Arm**

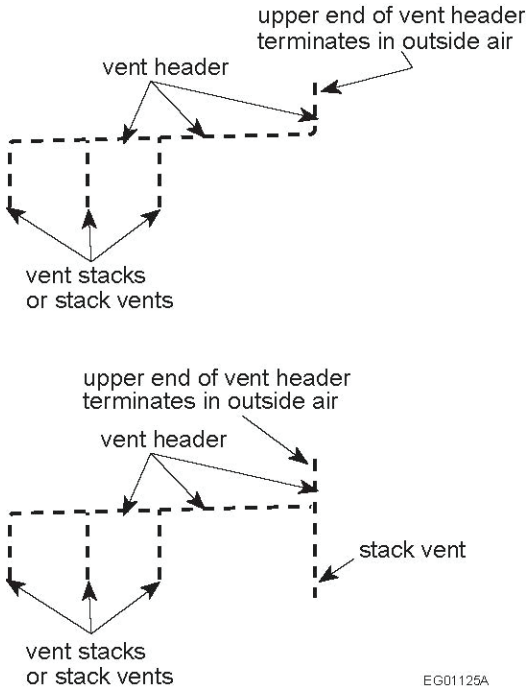


**Figure A-1.4.1.2.(1)-I**
**Vent Header**

**Note to Figure A-1.4.1.2.(1)-I:**

(1) Although a vent header is similar to a branch vent, it serves the special purpose of connecting the tops of stack vents or vent stacks. To make certain that it is adequate for that purpose, it is made larger than a branch vent. The developed length used to determine its size is the total length from the most distant soil-or-waste pipe to outside air, rather than the shorter length used to size a branch vent.



Effective February 8, 2022 to June 30, 2022

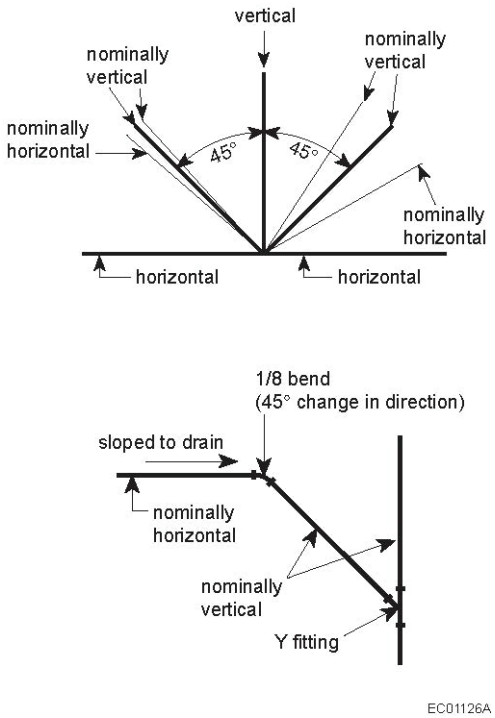


**Figure A-1.4.1.2.(1)-J**
**Nominally Horizontal and Nominally Vertical**



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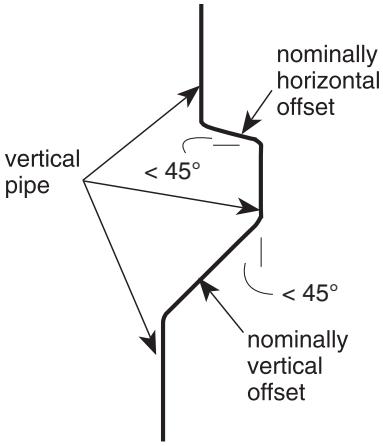
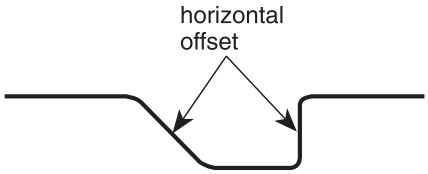
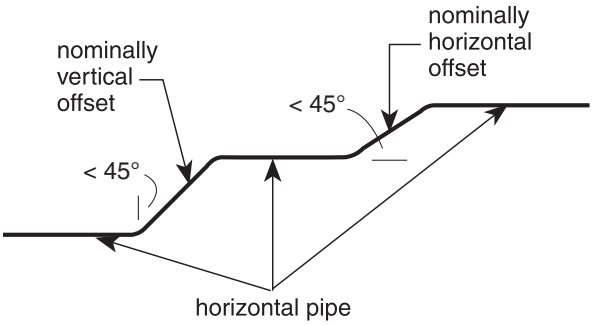



(a) Elevation view of vertical pipe




(b) Plan view of horizontal pipe




(c) Elevation view of horizontal pipe

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**Figure A-1.4.1.2.(1)-K**
**Offset**



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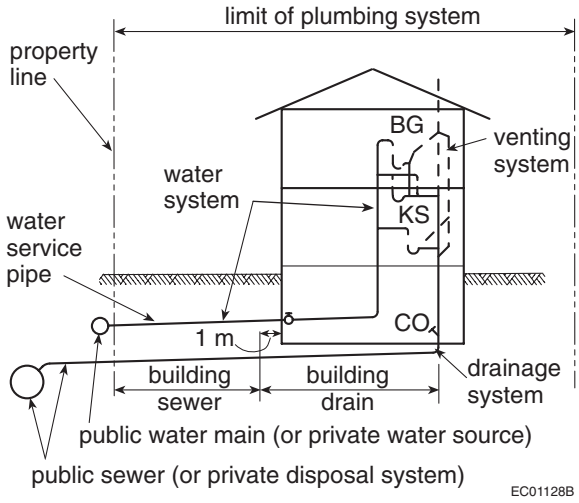


**Figure A-1.4.1.2.(1)-L**
**Plumbing System**

**A-1.5.1.1.(1) Application of Referenced Documents.** Documents referenced in the By-law may contain provisions covering a wide range of issues, including issues that are unrelated to the objectives and functional statements stated in Parts 2 and 3 of Division A respectively; e.g. conservation of water resources. Sentence 1.5.1.1.(1) is intended to make it clear that, whereas referencing these documents in the By-law generally has the effect of making the provisions of those documents part of the By-law, provisions that are unrelated to plumbing systems or to the objectives and functional statements attributed to the provisions in Division B where the document is referenced are excluded.

Furthermore, many documents referenced in the By-law contain references to other documents, which may also, in turn, refer to other documents. These secondary and tertiary referenced documents may contain provisions that are unrelated to plumbing systems or to the objectives and functional statements of the By-law: such provisions – no matter how far down the chain of references they occur – are not included in the intent of Sentence 1.5.1.1.(1).



Effective February 8, 2022 to June 30, 2022