

6) Where a *storm sump* is provided there shall be a *backwater valve* within the *sump* and attached to the outlet pipe, except that a *backwater valve* is not required for properties used for commercial or industrial purposes where the *sump* and the piping entering the *sump* is above the level of the next upstream manhole in the street containing the public *storm sewer*.

7.4.6.5. Mobile Home Sewer Service

- 1) A *building sewer* intended to serve a mobile home shall be
 - a) not less than 4 inches in *size*,
 - 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.

7.4.7. Cleanouts

7.4.7.1. Cleanouts for Drainage Systems

- 1) Every *sanitary drainage system* and *storm drainage system* shall be provided with *cleanouts* that will permit cleaning of the entire system. (See Appendix A.)
- 2) A *cleanout* fitting shall be provided on the upstream side and directly over every running *trap*.
- 3) Every interior *leader* shall be provided with a *cleanout* fitting at the bottom of the *leader* or not more than 3 m upstream from the bottom of the *leader*.
- 4) Where a *cleanout* is required on a *building sewer* 8 inches or larger in *size*, it shall be a manhole.
- 5) A *building sewer* shall not change direction or slope between the *building* and public sewer or between *cleanouts*, except that pipes not more than 6 inches in *size* may change direction
 - a) by not more than 5° every 3 m, or
 - b) by the use of fittings with a cumulative change in direction of not more than 45°.
- 6) Every *building drain* shall be provided with a *cleanout* fitting that is located as close as practical to the place where the *building drain* leaves the *building*. <(See Appendix A.)>
- 7) Every *soil-or-waste stack* shall be provided with a *cleanout* fitting
 - a) at the bottom of the stack,
 - b) not more than 3 m upstream of the bottom of the stack, or
 - c) on a Y fitting connecting the stack to the *building drain* or *branch*.
- 8) A *cleanout* shall be provided to permit the cleaning of the piping downstream of an *interceptor*.
- 9) *Cleanouts* shall be installed so that the cumulative change in direction is not more than 90° between *cleanouts* in a drip pipe from a food receptacle or in a *fixture drain* serving a kitchen sink. (See Appendix A.)

7.4.7.2. Size and Spacing of Cleanouts

- 1) Except as provided in Sentences (2) and (3), the *size* and spacing of *cleanouts* in *nominally horizontal* pipes of a *drainage system* shall conform to Table 7.4.7.2.

Size of Drainage Pipe, inches	Minimum Size of Cleanout, inches	Maximum Spacing, m	
		One-Way Rodding	Two-Way Rodding
less than 3	Same size as drainage pipe	7.5	15
3 and 4	Same size as drainage pipe	15	30
over 4	4	26	52

- 2) The spacing between manholes serving a *building sewer*
 - a) 24 inches or less in *size* shall not exceed 90 m, and
 - b) over 24 inches in *size* shall not exceed 150 m.
- 3) The *developed length* of a *building sewer* between the *building* and the first manhole to which the *building sewer* connects shall not exceed 75 m.
- 4) Where a *building sewer* connects to another *building sewer* other than by a manhole, the *developed length* between the *building* and the *building sewer* to which it connects shall not exceed 30 m.
- 5) *Cleanouts* <that allow> rodding in one direction only shall be installed <to permit rodding> in the direction of flow.

7.4.7.3. Manholes

- 1) A manhole including the cover shall be designed to support all loads imposed upon it.
- 2) A manhole shall be provided with
 - a) a cover that provides an airtight seal if located within a *building*,
 - b) a rigid ladder of a corrosion-resistant material where the depth exceeds 1 m, and
 - c) a vent to the exterior if the manhole is located within a *building*.
- 3) A manhole shall have a minimum horizontal dimension of 1 m, except that the top 1.5 m may be tapered from 1 m down to a minimum of 600 mm at the top.
- 4) A manhole in a *sanitary drainage system* shall be channeled to direct the flow of effluent.

7.4.7.4. Location of Cleanouts

- 1) *Cleanouts* and access covers shall be located so that <their> openings are readily accessible for drain cleaning purposes.
- 2) A *cleanout* shall not be
 - a) located in a floor assembly in a manner that may constitute a hazard, or
 - b) used as a floor drain.
- 3) There shall be no change of direction between a *cleanout* fitting and the *trap* that it serves.
- 4) The piping between a *cleanout* fitting and the drainage piping or vent piping that it serves shall not change direction by more than 45°.

< 5) *Cleanouts serving fixtures* in health care facilities, mortuaries, laboratories and similar *occupancies*, where contamination by body fluids is likely, shall be located a minimum of 150 mm above the *flood level rim* of the *fixture*.>

7.4.8. Minimum Slope and Length of Drainage Pipes

7.4.8.1. Minimum Slope

1) Except as provided in Articles 7.4.10.8. and A-7.4.10.9., every drainage pipe that has a *size* of 3 inches or less, and every *fixture drain* shall have a downward slope in the direction of flow of at least 1 in 50. (See Appendix A.)

7.4.8.2. Length of Fixture Outlet Pipes

1) Except for *fixture outlet pipes* installed in conformance with Sentence 7.4.5.1.(3), the *developed length* of every *fixture outlet pipe* shall not exceed < 1 200 mm. (See Appendix A.) >
(See also A-7.4.5.1.(2) in Appendix A.)

7.4.9. Size of Drainage Pipes

7.4.9.1. No Reduction in Size

- 1) A *soil-or-waste pipe* shall be of a *size* not less than the *size* of
- a *vent pipe* that is connected to it, or
 - the largest *soil-or-waste pipe* that drains into it.

7.4.9.2. Serving Water Closets

1) The *size* of every drainage pipe that serves a water closet shall be not less than 3 inches.

2) The *size* of every *branch* or *building drain* downstream of the third water closet *fixture drain* connection shall be not less than 4 inches.

3) The *size* of every *soil-or-waste stack* that serves more than 6 water closets shall be not less than 4 inches.

< 4) The discharge pipe serving a macerating toilet shall be not less than 3/4 inch in *size* with a hydraulic load of 4 *fixture units*.>

7.4.9.3. Size of Fixture Outlet Pipes

1) Except as provided in Sentence (2), the *size* of every *fixture outlet pipe* shall conform to Table 7.4.9.3.

2) The part of the *fixture outlet pipe* that is common to 3 compartments of a sink shall be one *size* larger than the largest *fixture outlet pipe* of the compartments that it serves. (See Appendix A.)

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

7.4.9.4. Size of Building Drain and Building Sewer

1) The *size* of every *building drain* and *building sewer* connected to the public sewer system downstream of the main *cleanout* (see Sentence 7.4.7.1.(6)) shall be not less than 4 inches.

< 7.4.9.5. Offset in Leaders

1) No change in the *size* of a *leader* with a *nominally horizontal offset* is required if the *offset*

- is located immediately under the roof,
- is not more than 6 m long, and
- has a slope of not less than 1 in 50.>

Fixture	Minimum Size of Fixture Outlet Pipe, inches	Hydraulic Load, fixture units
Autopsy table	1½	2
Bathroom group		
(a) with flush tank	n/a	6
(b) with direct flush valve	n/a	8
Bathtub (with or without shower)	1½	1½
Bath: foot, sitz or slab	1½	1½
Beer cabinet	1½	1½
Bidet	1¼	1
Clothes washer		
(a) domestic ⁽¹⁾	n/a	1½ with 1½-in. trap
(b) commercial	n/a	2 with 1½-in. trap
Dental unit or cuspidor	1¼	1
Dishwasher		
(a) domestic type ⁽¹⁾	1½	1½ no load when connected to garbage grinder or domestic sink
(b) commercial type	2	3
Drinking fountain	1¼	½
Floor drain ⁽²⁾	2	2 with 2-in. trap 3 with 3-in. trap
Garbage grinder, commercial type	2	3
Icebox	1¼	1
Laundry tray		
(a) single or double units or 2 single units with common trap	1½	1½
(b) 3 compartments	1½	2
Lavatory		
(a) barber or beauty parlor	1½	1½
(b) dental	1¼	1
(c) domestic type, single or 2 single with common trap	1¼	1 with 1¼-in. trap 1½ with 1½-in. trap
(d) multiple or industrial type	1½	according to Table 7.4.10.2.

A-7.4.5.5.(1) Maintaining Trap Seals. Periodic manual replenishment of the water in a trap is considered to be an equally effective means of maintaining the trap seal in floor drains in residences. Under pressure differential conditions, special measures are necessary to maintain trap seals.

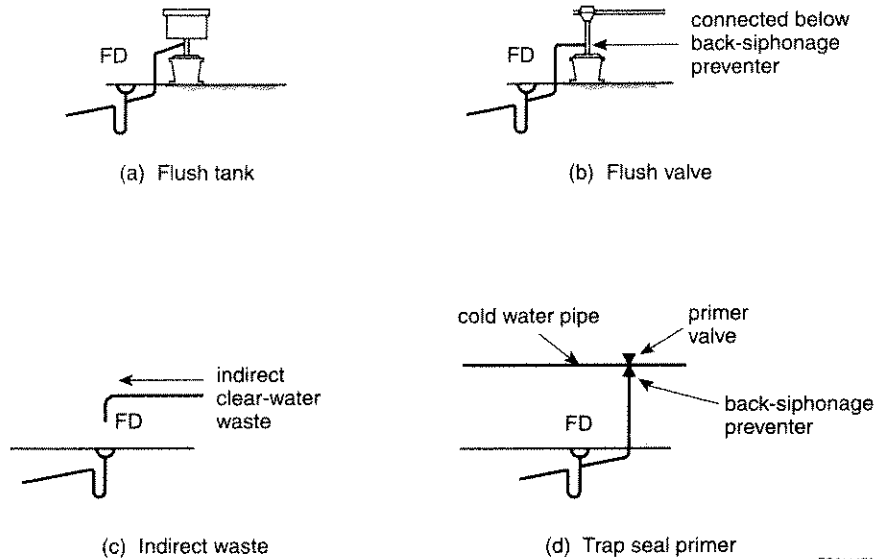


Figure A-7.4.5.5.(1)
Maintaining Trap Seals

A-7.4.6.3. Arrangement of Piping at Sump. In most installations, controls will be installed in conjunction with a float to automatically empty the sump. If such controls are not provided, the capacity of the sump should equal the maximum inflow to the sump that is expected to occur during any 24 h period.

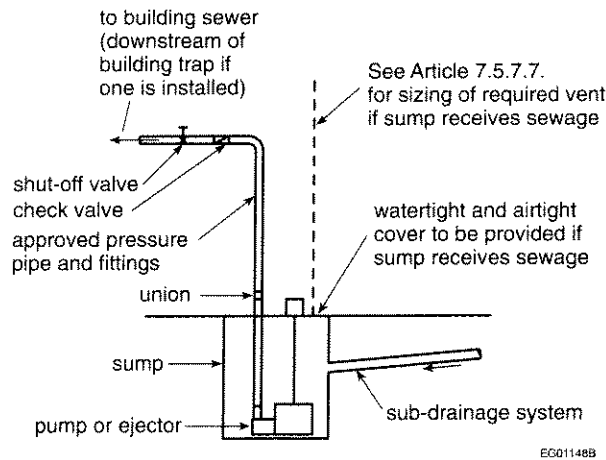


Figure A-7.4.6.3.
Arrangement of Piping at Sump

A-7.4.6.4.(1) Backwater Valve or Gate Valve. The installation of a backwater valve or a gate valve in a building drain or in a building sewer may have proven acceptable on the basis of past performance in some localities, and their acceptance under this ~~By-law~~ may be warranted.

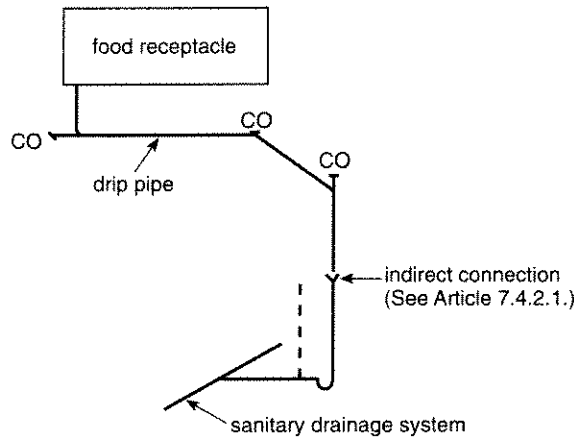
A-7.4.6.4.(6) Protection from Backflow Caused by Surge. Deleted.

A-7.4.7.1.(1) Cleanouts for Fixture Drains. A trap cleanout plug is not acceptable as a cleanout for the fixture drain; hence, either a separate cleanout or a trap with a removable trap dip must be installed.

<A-7.4.7.1.(6) Cleanouts for Drainage Systems.

To accommodate the limitations of sewer cleaning equipment, the cleanout should be located as close as possible to the exterior wall of the building, either inside or outside, and be accessible for sewer cleaning equipment. >

A-7.4.7.1.(9) Cleanouts for Food Receptacle Drip Pipes.

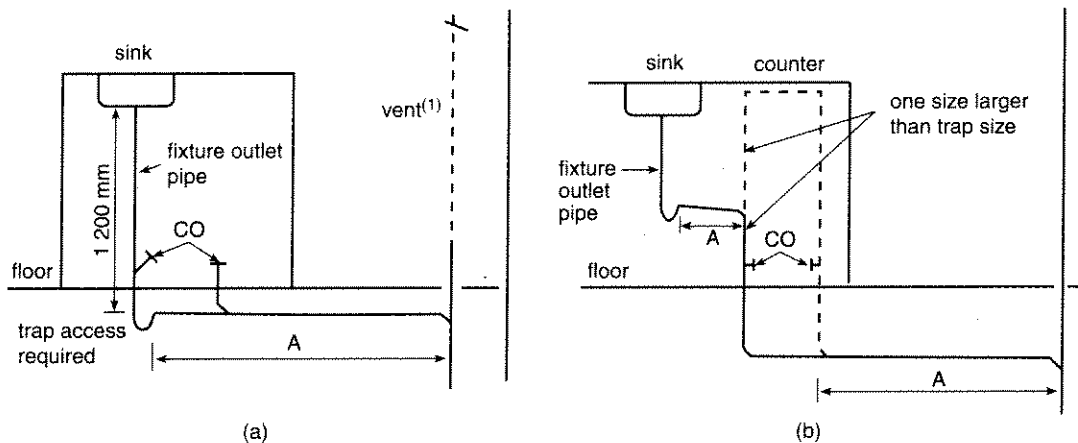


EG01150A

Figure A-7.4.7.1.(9)
Cleanouts for Food Receptacle Drip Pipes

A-7.4.8.1.(1) Minimum Slope. Although slopes below 1 in 100 are permitted for pipes over 4 inches, they should be used only where necessary. Steeper slopes and higher velocities will help to keep pipes clean by moving heavier solids that might tend to clog the pipes.

<A-7.4.8.2.(1) Island Fixture Installation.



Fixture trap size, in.	Length of A, ⁽²⁾ m
1½	1.8
2	2.4
3	3.6

EG02009A

Figure A-7.4.8.2.(1)
Island Fixture Installation⁽³⁾

Notes to Figure A-7.4.8.2.(1)

- ⁽¹⁾ Vent size to be in accordance with Article 7.5.6.3.
- ⁽²⁾ Length of A depends on trap size. Fall cannot exceed size.
- ⁽³⁾ See also Article 7.5.1.1. >