

MELVINDALE BUILDING DEPARTMENT
CERTIFICATE OF OCCUPANCY RESIDENTIAL CHECKLIST

EXTERIOR HOUSE, GARAGE AND GROUNDS

1. Install paved off-street parking spaces as required; concrete sidewalks, driveways and steps in good repair
2. Chimneys, foundation, porches, and brickwork require tuckpointing as needed.
3. Porches and stairs over 30" high require hand and guard rails
4. All peeling painted surfaces to be scraped and re-painted.
5. Storm doors, windows and screens in place and working.
6. No broken or boarded windows.
7. Gutters, soffit, fascia, and downspouts in place and in good repair.
8. Ground sloped away from house for positive drainage.
9. Fence requires maintenance.
10. No junk, debris, high weeds or noxious trees.
11. Proper rat wall on sheds and garages.
12. Address numbers (minimum of 4 inches high with a minimum stroke width of 0.5 inch) to be plainly legible and visible from the street or road fronting the property.

INTERIOR

1. Smoke detectors shall be installed in each sleeping room, outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the dwelling, including basements and cellars but not including crawl spaces and uninhabitable attics. Five-year lithium batteries are required.
2. Handrail on all stairs 3 steps or more.
3. Block open sides of stairways.
4. No basement sleeping rooms.
5. Repair or paint basement walls and leaks.
6. Floor surfaces and coverings in good repair. Water tight in kitchen and bathroom.
7. No double cylinder key locks – thumb turn from inside.
8. All walls and ceilings in good repair.
9. All peeling paint scraped and painted.
10. No concrete laundry tubs.
11. All windows properly glazed and working properly.
12. Unit required to be clean and sanitary, free from infestations.

SECTION R314 STAIRWAYS

R314.1 Width. Stairways shall not be less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4.5 inches (114 mm) on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31.5 inches (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.

Exception: The width of spiral stairways shall be in accordance with Section R314.5.

R314.2 Treads and risers. The maximum riser height shall be 8 1/4 inches (210 mm) and the minimum tread depth shall be 9 inches (229 mm). The riser height shall be measured vertically between leading edges of the adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The walking surface of treads and landings of a stairway shall be sloped no steeper than 1 unit vertical in 48 units horizontal (2% slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 of an inch (9.5 mm). The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 of an inch (9.5 mm).

R 408.30519

R314.2.1 Profile. The radius of curvature at the leading edge of the tread shall be no greater than 3/16 inch (14.3 mm). A nosing not less than 3/4 inch (19.1 mm) but not more than 1 1/2 inches (32 mm) shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch (9.5 mm) between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed 1/2 inch (12.7 mm). Risers shall be vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

1. A nosing is not required where the tread depth is a minimum of 11 inches (279 mm).
2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or

R314.3 Headroom. The minimum headroom in all parts of the stairway shall not be less than 6 feet, 8 inches (2032 mm) measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform.

R314.4 Winders. Winders are permitted, provided that the width of the tread at a point not more than 12 inches (305 mm) from the side where the treads are narrower is not less than 10 inches (254 mm) and the minimum width of any tread is not less than 6 inches (152 mm). The continuous handrail required by Section R315.1 shall be located on the side where the tread is narrower.

R314.5 Spiral stairs. Spiral stairways are permitted, provided the minimum width shall be 26 inches (660 mm) with each tread having a 7 1/2-inch (190 mm) minimum tread width at 12 inches (305 mm) from the narrow edge. All treads shall be identical, and the rise shall be no more than 9 1/2 inches (241 mm). A minimum headroom of 6 feet, 6 inches (1982 mm) shall be provided.

R314.6 Circular stairways. Circular stairways shall have a tread depth at a point not more than 12 inches (305 mm) from the side where the treads are narrower of not less than 11 inches (279 mm) and the minimum depth of any tread shall not be less than 6 inches (152 mm). Tread depth at any walking line, measured a consistent distance from a side of the stairway, shall be uniform as specified in Section R314.2.

R314.7 Illumination. All stairs shall be provided with illumination in accordance with Section R303.4.

R314.8 Under stair protection. Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board.

R314.9 Bulkhead enclosure stairways. Stairways serving bulkhead enclosures not part of the required building egress and providing access from the outside grade level to the basement shall be exempt from the requirements of Sections R312, R314 and R315 when the maximum height from the basement finished floor level to grade adjacent to the stairway is covered by a bulkhead enclosure with hinged doors or other approved means.

SECTION R315 HANDRAILS

R315.1 Handrails. Handrails that have minimum and maximum heights of 34 inches and 38 inches (864 mm and 965 mm), respectively, measured vertically from the nosing of the treads, shall be provided on at least 1 side of stairways. All required handrails shall be continuous the full length of the stairs with 3 or more risers from a point directly above the top riser of a flight to a point directly above the lowest riser of the flight. Ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1.5 inches (38 mm) between the wall and the handrail.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at a turn.
2. The use of a volute, turnout, or starting easing shall be allowed over the lowest tread.

R 408.30520

R315.2 Handrail grip size. The handgrip portion of handrails shall have a circular cross section of 1 1/4 inches (32 mm) minimum to 2 3/8 inches (67 mm) maximum. Other handrail shapes that provide an equivalent grasping surface are permissible. Edges shall have a minimum radius of 1/8 inch (3.2 mm).

SECTION R316 GUARDS

R316.1 Guards required. Porches, balconies or raised floor surfaces located more than 30 inches (762 mm) above the floor or grade below shall have guards not less than 36 inches (914 mm) in height. Open sides of stairs with a total rise of more than 30 inches (762 mm) above the floor or grade below shall have guards not less than 34 inches (864 mm) in height measured vertically from the nosing of the treads.

R316.2 Guard opening limitations. Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 inches (102 mm) in diameter. Required guards shall not be constructed with horizontal rails or other ornamental pattern that results in a ladder effect.

Exception: The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches (152 mm) cannot pass through.

SECTION R317 SMOKE ALARMS

R317.1 Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and cellars but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

All smoke alarms shall be listed and installed in accordance with the provisions of this code and the household fire warning equipment provisions of NFPA 72.

R317.1.1 Alterations, repairs and additions. When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be provided with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard wired.

Exceptions:

1. Smoke alarms in existing areas shall not be required to be interconnected and hard wired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space, or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.
2. Repairs to the exterior surfaces of dwellings are exempt from the requirements of this section.

R317.2 Power source. In new construction, the required smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs or additions regulated by Section R317.1.1.

ELECTRICAL INSPECTION CHECKLIST

1. Increase electrical service to minimum of three (3) wire 100 amperes.
*Install 100 amp circuit breaker panel with 100 amp main breaker.
*Ground and bond electrical service as per National Electrical Code (N.E.C.).
2. Provide a switch controlled light at entrance doorway, front, rear, side.
3. Provide wall switch to control ceiling fixture in all rooms.
4. Provide a switch controlled ceiling light or wall light in bathroom.
5. Provide a switch controlled ceiling light in kitchen.
6. Provide a switch controlled ceiling light/switch controlled duplex.
7. Provide additional duplex electrical receptacles, conveniently located: bedroom(s), dining room, bathroom, living room, kitchen, recreation room.
8. Install multiple switch control at head and foot of stair to second floor or basement with a lighting outlet so placed to adequately illuminate stairs.
9. Install additional lighting outlets in basement so as to provide one lighting outlet per each 200 square feet of floor space.
10. Provide a separate wall mounted 20 ampere laundry circuit.
11. Provide at least one lighting outlet in basement toilet room, basement furnace room, basement utility room.
12. Install correct ampere rated type "s" fuses.
13. Repair/replace defective electrical receptacle(s), wall switches, fixtures, ceiling fixtures in rooms as needed.
14. Discontinue use of extension cords in lieu of permanent wiring where needed.
15. Remove/protect surface wiring located below joists or on walls.
16. Replace missing cover plates on receptacles and switches in rooms as needed.
17. Provide junction box for open splice wiring as needed.
18. Replace/remove unapproved wiring.
19. Install separate 20 amp circuit for kitchen, supplying three (3) duplex outlets.
20. Provide separate 15 amp minimum circuit for furnace.
21. Jumper water meter with a No. 6 minimum copper conductor using approved ground clamps.
22. Remove unused wiring.
23. Replace equipment covers.
24. Install smoke detector(s).
25. Ground kitchen and laundry outlets, and bathroom outlets.
26. Wire pool to code.
27. GFI receptacles are necessary in all receptacles in bathrooms, any plug within six (6) feet of a kitchen sink, and any plug outdoors or in a garage.

MECHANICAL "C of O" INSPECTION CHECKLIST

1. Submit equipment certification on any heating unit older than two years
(Forms available through Building Department)
2. Lever handle AGA approved gas shut off required at all gas fired equipment and appliances
3. Older style gas valves with nut spring will need to be replaced with AGA valve
4. Cap or plug any open gas lines
5. Saddle gas tees must be replaced with Tee's
6. Cooper gas lines are not approved as connectors and must be replaced with pipe.

Note: Gas piping over 10 feet requires a pressure test.

7. Remove incinerator and cap all openings
8. All chimneys must be in good condition. Chimney liner report may be required
9. All flue pipes must maintain clearance to all combustible materials.
10. Flue pipes must be properly pitched at a $\frac{1}{4}$ per foot minimum and be secured with screws
11. All humidifiers must be clean and in working condition. Repair or remove
12. Dryer ducting must be 4" metal through wall
13. Screws are not permitted in dryer ducting. Aluminum foil tape must be used at each joint
14. All registers and grills must be in place and secured to wall
15. Heat must be provided to all habitable rooms
16. A means of return air is required from all rooms except kitchen and bathroom
17. Bathroom and toilet rooms require venting to outdoors through a window or mechanical exhaust fan

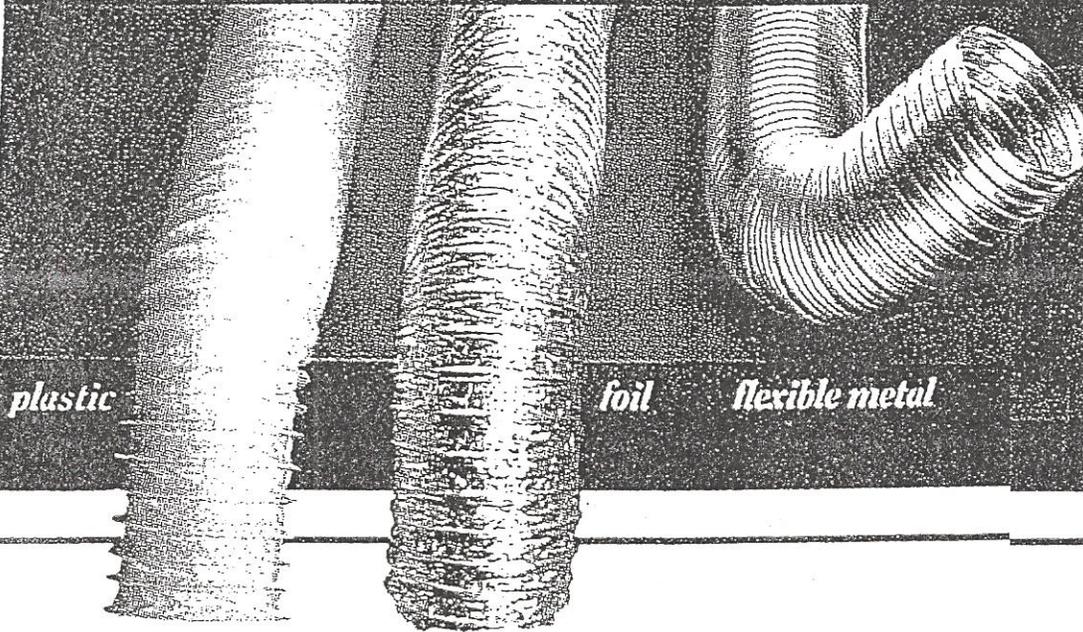
WE HOPE THIS IS HELPFUL TO YOU.

THE INSPECTOR MUST FOLLOW THE STATE OF MICHIGAN AND NATIONAL MECHANICAL CODE WHEN DOING THE INSPECTION AND THE ABOVE IN NO WAY COVERS THE COMPLETE CODE.

How to vent safely

Dryers vent their exhaust, including some lint, through a duct that you or an installer must attach to the machine. Four types of duct are available, but three of those types may be dangerous. Flexible plastic (which looks like an oversized vacuum-cleaner hose), flexible foil, and flexible metal ducts, pictured below, may sag over time and lead to a buildup of lint in the duct. That lint could catch fire. A **rigid metal duct**, pictured below at right, is the only choice allowed.

Ducts to avoid



Ducts to use

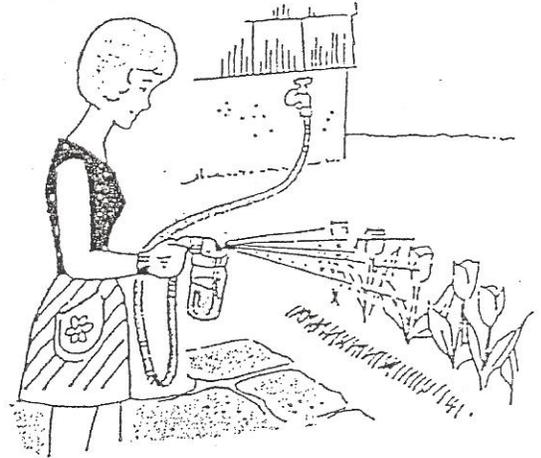


RESIDENTIAL CHECKLIST FOR PLUMBING VIOLATIONS

1. Must have A.V.B. on all hose bibbs and laundry faucets.
2. Repair all leaks on water pipes and drips at faucets.
3. Touch up all chipped porcelain sinks and bathtubs.
4. Clean all fixtures.
5. Must have anti-syphon ballcock installed to code in all toilets. This means 1" air gap between overflow tube and inlet side of ballcock. (NOTE: When in the tank, the valve height should be adjusted so that the critical level marked "C.L." on the top area of valve body is at least 1 inch (25mm) above the top of overflow pipe.)
6. Replace any missing or broken clean-out plugs and floor drain strainer covers.
7. A trap is intended to be a simple U-shaped piping arrangement that offers minimal resistance to flow. Prohibited types of traps have undesirable characteristics and are not allowed. Replace all S-traps and traps with deep trap seals; minimum seal is 2", maximum is 4"; sink traps and P-traps are acceptable.
8. Water meters must have gate valves on both sides of meters; gate valves cold side of water heater.
9. Outside hose bibbs must have stop and waste valve.
10. Cement laundry tubs must be replaced. Old drum traps, also.
11. T & P valve on hot water tank must be rigid pipe. No P.V.C. No threads at end of pipe. Minimum from floor 2", maximum 4".
12. You must not have copper and galvanized pipe connections unless dielectric unions are used.
13. Remove saddle valves from water lines. This is usually valves for humidifiers and ice-makers.
14. No water heaters in bathrooms or bedrooms.
15. Connections between P.V.C. and cast iron must be made with a Fernco Coupling or approved adapter.
16. Caulk the base of all toilets.
17. Remove all black pipe installed with water lines.
18. Secure laundry tubs to floor and secure laundry tub faucet to tub with laundry tub block made of plastic or rubber galvanized metal.
19. Base of all showers must be waterproof.
20. When homeowner secures plumbing permit, homeowner must do the work, not a contractor or semi-skilled person.
21. Commercial building work to be done by licensed contractor only. NO HOMEOWNER.
22. Permits must be pulled and paid for before job repairs start. Permits are good for six months only.

7 What is potentially dangerous about an unprotected sill cock?

The purpose of a sill cock is to permit easy attachment of a hose for outside watering purposes. However, a garden hose can be extremely hazardous because they are left submerged in swimming pools, lay in elevated locations (above the sill cock) watering shrubs, chemical sprayers are attached to hoses for weed-killing, etc.; and hoses are often left laying on the ground which may be contaminated with fertilizer, cess-pools, and garden chemicals.

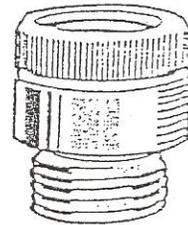


8 What protection is required for sill cocks?

A hose bibb vacuum breaker should be installed on every sill cock to isolate garden hose applications thus protecting the potable water supply from contamination.

9 Should a hose bibb vacuum breaker be used on frost-free hydrants?

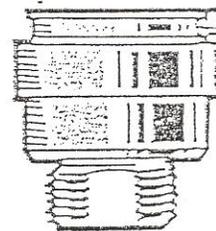
Definitely, providing the device is equipped with means to permit the line to drain after the hydrant is shut-off. A "removable" type hose bibb vacuum breaker could allow the hydrant to be drained, but the possibility exists that users might fail to remove it for draining purposes, thus defeating the benefit of the frost-proof hydrant feature. If the device is of the "Non-Removable" type, be sure it is equipped with means to drain the line to prevent winter freezing.



HOSE BIBB VACUUM BREAKER

10 Can an atmospheric type, anti-siphon vacuum breaker be installed on a hose bibb?

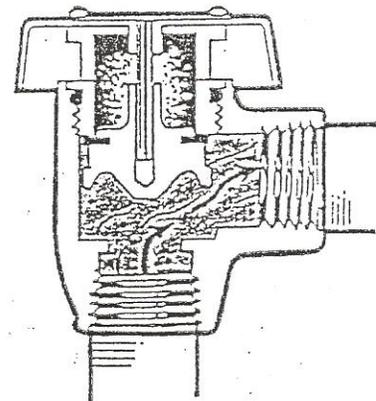
Theoretically yes, but practically no. An anti-siphon vacuum breaker must be elevated above the sill cock to operate properly. This would require elevated piping up to the vacuum breaker and down to the sill cock and is normally not a feasible installation. On the other hand, a hose bibb vacuum breaker can be attached directly to the sill cock, without plumbing changes and at minor cost.



HOSE BIBB VACUUM BREAKER FOR FROST-PROOF HYDRANTS

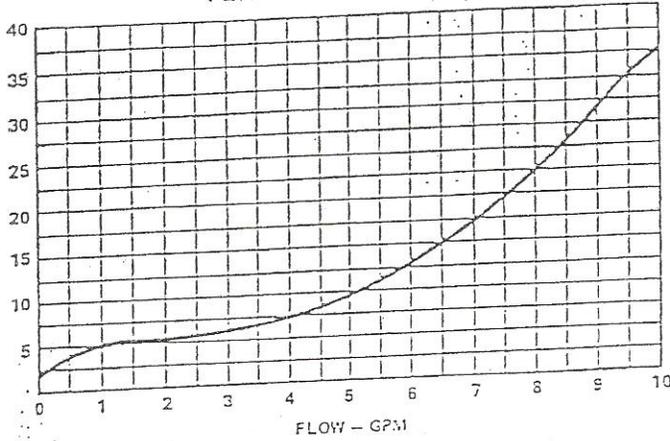
11 What is an atmospheric type vacuum breaker?

The most commonly used atmospheric type anti-siphon vacuum breakers incorporate an atmospheric vent in combination with a check valve. Its operation depends on a supply of potable water to seal off the atmospheric vent, admitting the water to downstream equipment. If a negative pressure develops in the supply line, the loss of pressure permits the check valve to drop sealing the orifice while at the same time the vent opens admitting air to the system to break the vacuum.



CAPACITY

PERFORMANCE CURVE



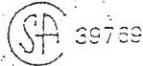
STANDARDS

Tested and approved in Conformance with Standard 1011 of the American Society of Sanitary Engineers and by all principal cities, states and areas having these requirements.

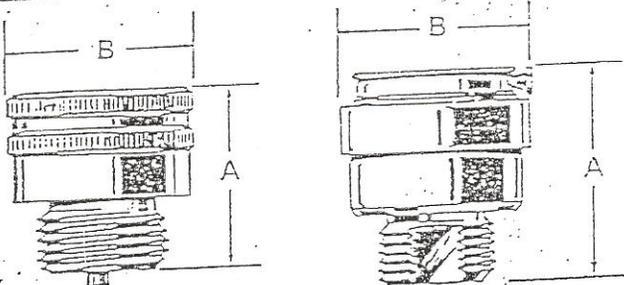
I.A.P.M.O. Uniform Plumbing Code.



Certified by C.S.A.



DIMENSIONS - WEIGHT



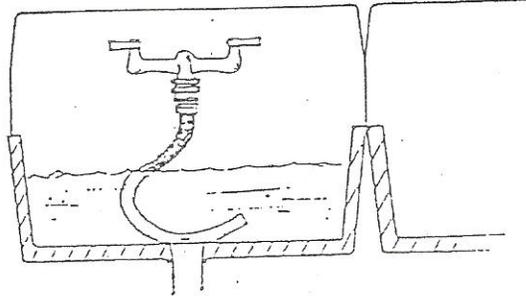
DIMENSIONS

No.	Size	A	B	Weight
8	3/4" HT	1 1/2"	1 3/8"	1/4 lb.
8C	3/4" HT	1 1/2"	1 3/8"	1/4 lb.
8A	3/4" HT	1 1/2"	1 1/2"	1/4 lb.
8AC	3/4" HT	1 1/2"	1 1/2"	1/4 lb.
NF8	3/4" HT	2"	1 1/2"	1/3 lb.
NF8C	3/4" HT	2"	1 1/2"	1/3 lb.

INSTALLATIONS

FOR INSIDE OR OUTSIDE USE

INSTALLATION
Inside-Service Sink



WHAT IS BACK-SIPHONAGE?

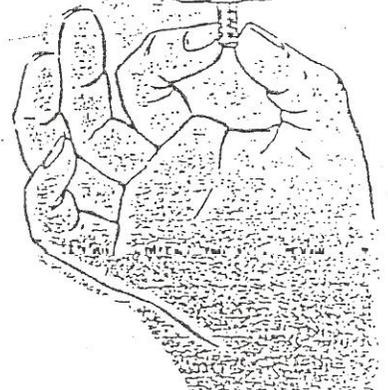
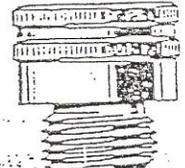
A reversal of normal flow in the system caused by a negative pressure (vacuum or partial vacuum) in the supply piping.



NO. 8A DRAINAGE FEATURE TO PREVENT FREEZING

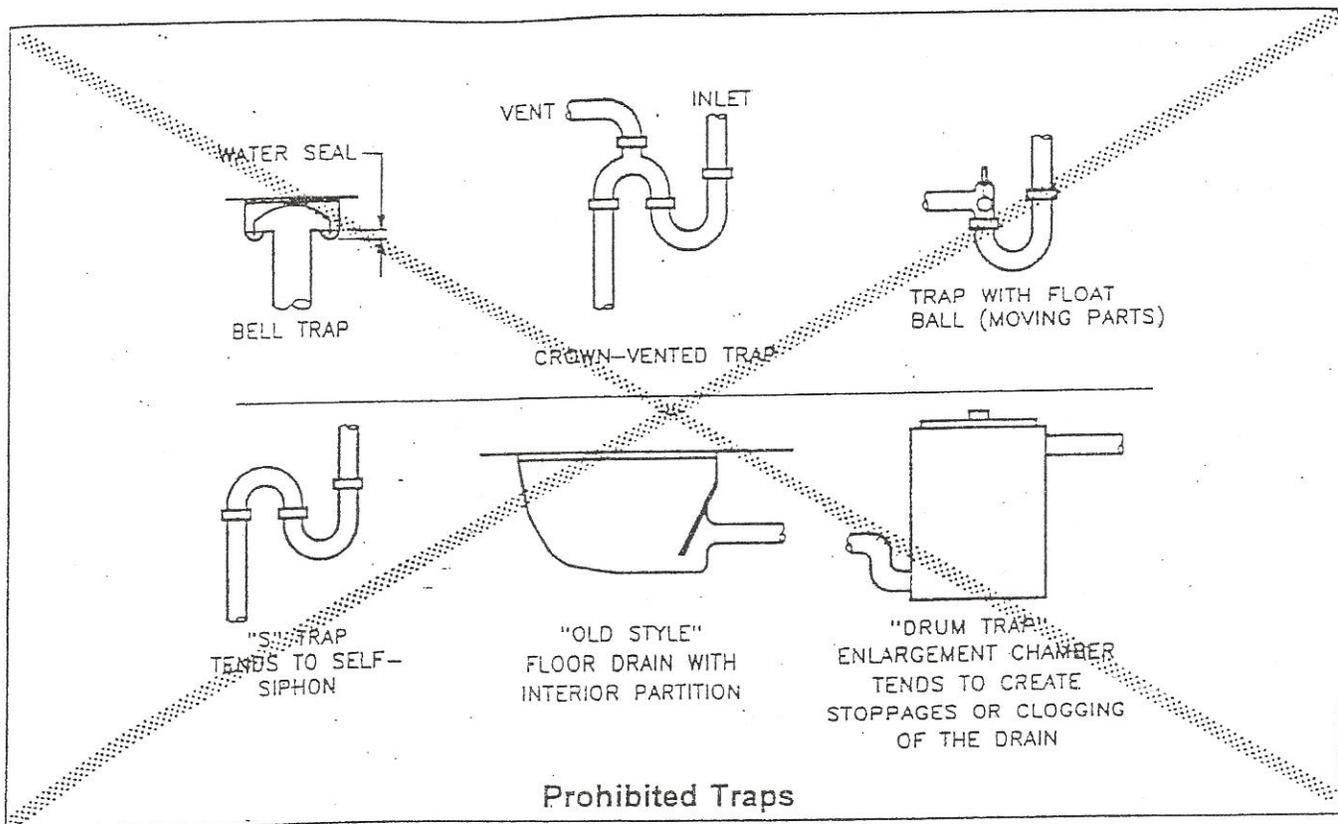
Watts No. 8A is standardly equipped to allow sill cock to be drained. To do this, remove hose coupling and lightly pull knurled tip of stem at outlet of valve to allow drainage of collected water.

NOTE: Do not use No. 8 or 8A Hose Bibb Vacuum Breakers on frost-free hydrants. Specify No. NF8.

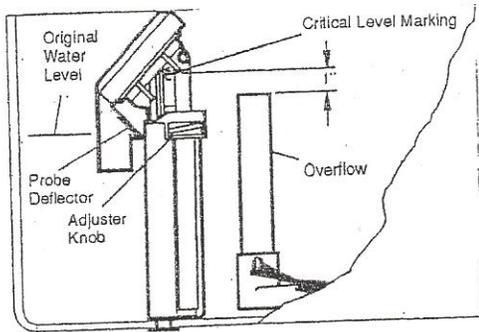


P-1003.3 Prohibited traps

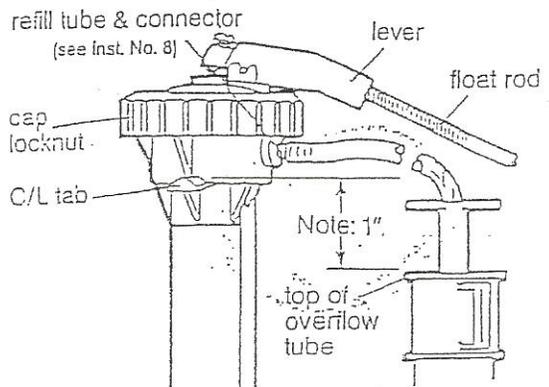
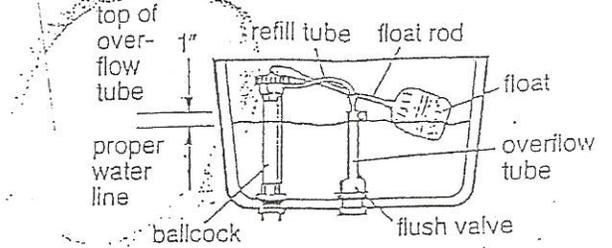
A trap is intended to be a simple U-shaped piping arrangement that offers minimal resistance to flow. The only type of fixture trap permitted by the code is the "P" trap. All other types have undesirable characteristics and are prohibited (see figure).



Item No. 1 refers to mechanical traps that employ moving parts such as floats or flappers. Such designs are not dependable because of corrosive, clogging and waste deposits that interfere with the operation of moving components and seals.

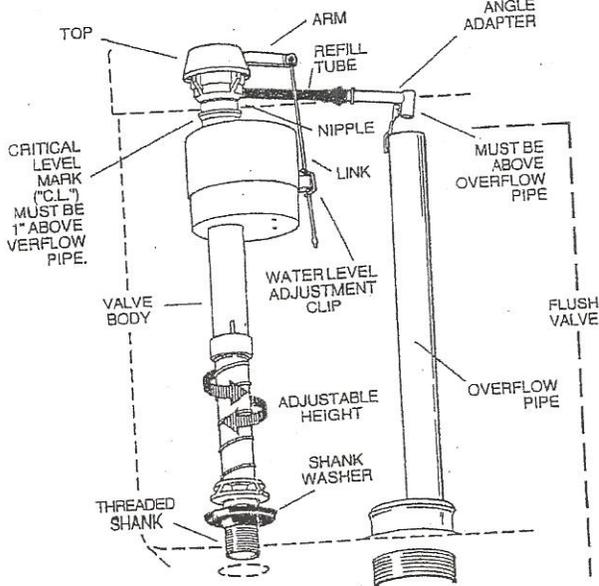
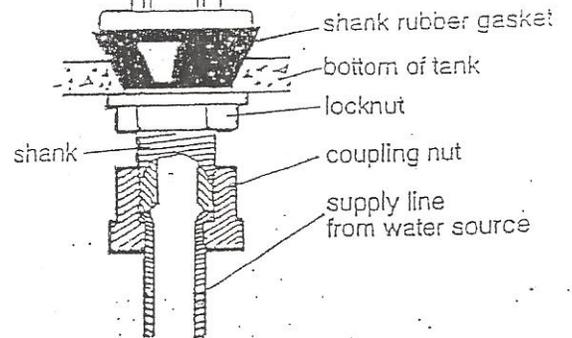


ANTI-SIPHON BALLCOCK



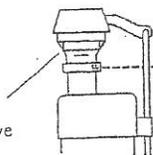
"WINTERIZING" TIP

If you choose to "winterize" a toilet, here's a tip on how to drain the ballcock. After you have shut off the water supply and drained the tank, loosen the coupling nut and detach the supply line from the ballcock shank. Then loosen the cap locknut and gently lift the diaphragm to break the seal and allow water to drain from ballcock. Then be sure to follow the rest of your steps to winterize. Reconnect all fittings when putting the toilet back into service.



adjusts from 9 to 14 inches).
NOTE: When in the tank, the valve height should be adjusted so that the critical level marked "C.L." on the top area of valve body is at least 1 inch (25mm) above the top of overflow pipe.

Critical level mark ("C.L.") must be 1" above overflow pipe.



Sec. 22-61. **Stormwater discharge generally.**

- (a) Discharge of storm, surface or roof water into sanitary sewer prohibited. It is unlawful for any person to permit or to cause water from the roof of any building, or storm or surface water, to be directly connected by downspouts, pipes, conduits or other device or apparatus to a drain connected with the sanitary sewer system of the city; it being the intention of this section to prohibit any person from making, continuing, or allowing the existence of any type of connection with eave troughs or other drains on a building with the city's sanitary sewer system, or any other drain emptying into the city's sanitary sewer system so as to cause storm, surface or roof water from any such building to drain into the sanitary sewer system through eave troughs, drain pipes, downspouts, conduits or other devices. This section is declared to be necessary in the interests of public health, safety and welfare to relieve flooding, to control pollution and to help minimize the city's cost for charges for excess flow entering the sewage disposal system.
- (b) Disconnection, extension, exemption, violation notices.
- (1) Any downspouts, pipes, conduits or other device or apparatus capable of carrying storm, surface or roof water from a building to a sanitary sewer or to sewers or drains leading to any sanitary sewer shall be disconnected. If the owner, lessee, possessor or occupier of any building or structure has not complied with this section, the commissioner of water supply or his designated representative, or any person so designated by the mayor and the council, shall give written notice to any person who shall be in violation of this section, requiring the violation to be corrected forthwith. If the violation is not corrected within 30 days from the date of notice, the commissioner of water supply or his designated representative shall disconnect the downspout or other device and charge the costs thereof to the sewage bill of the resident involved.
 - (2) It is hereby required that on each building there shall be provided extensions to the downspouts, pipes or conduits at the building grade of not less than 36 inches in length and attached in such a manner as to direct any storm, surface or roof water to the rear of the property or to the street as the case may be, in order to prevent storm, surface or roof water from draining directly against the building walls, adjacent property or into any sanitary sewer or drain
 - (3) The owner or the authorized agent of any owner of any property may make written application to the water department for exemption from the requirements of this section. The commissioner of water supply may waive the requirements of this section, if the disconnection, because of existing problems with grade or drainage, causes flooding of the involved property or dwelling, flooding of adjacent property or dwelling, substantial pooling of water or causes other such similar conditions to exist. Within 30 days after receipt of an application for exemption, the commissioner of water supply shall, in writing, notify the applicant of his decision. In granting an exemption, the commissioner of water may require such modification of the drainage of storm, surface or roof water as he deems necessary and appropriate under the circumstances of each case. Any person denied such exemption may appeal the same to the building code board of appeals.
 - (4) This section shall apply to all homes, buildings and structures in the city, or any building using the city's sanitary sewer system, and any exemptions heretofore granted by the commissioner of water supply or by any other official or board of the city are hereby declared void and of no effect; provided, however, that each holder of such a previously granted exemption may reapply for exemption.

(Ord. No. 487, Sections 1, 2; 11-4-87)