

Chapter 13A.33

BACK FLOW AND CROSS CONNECTIONS

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13A.33.010 Definitions.

- A. Air Gap Separation. "Air Gap Separation" shall be the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle, and shall be at least double the diameter of the supply pipe measured vertically above the flood level rim of the vessel. In no case shall the gap be less than one inch.
- B. Atmospheric Vacuum Breaker. "Atmospheric Vacuum Breaker" or "AVB" contains a float check (popet) and an air inlet port.
- C. Back Flow. "Back Flow" shall mean the flow other than the intended direction of flow, of any foreign liquids, gases, or substances into the public water system.
- D. Back Pressure. "Back Pressure" means back flow caused by a pump, elevated tank, boiler, or other means that could create pressure within the system greater than the supply pressure.
- E. Back Flow Prevention Device. "Back Flow Prevention Device" means a device to counteract back pressures or prevent back siphonage.
- F. Back Siphonage. "Back Siphonage" means a form of back flow due to a negative or subatmospheric pressure within the water system.
- G. Cross-Connection. "Cross-Connection" shall mean any physical arrangement whereby the public water system is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains, or may contain, contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water system as a result of back flow, bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and other

temporary or permanent devices through which, or because of which, back flow could occur are considered to be cross-connections.

- H. Domestic Water or Domestic Water System. "Domestic Water or Domestic Water System" shall mean that water, and water system in which it is carried, which is for human consumption and normal household and business or industrial uses provided from the City's supply.
- I. Double Check Valve Assembly. "Double Check Valve Assembly" or "DCVA" shall be an approved assembly composed of two single, independently acting check valves, including tightly closing shutoff valves located at each end of the assembly and suitable connections for testing the water tightness of each check valve.
- J. Health Hazard. "Health Hazard" shall mean any conditions, devices, or practices in the water supply system and its operation which create, or in the judgement of the City or Cross-Connection Control Specialist, may create a danger to the health and well-being of the water consumer.
- K. Pressure Vacuum Breaker Assembly. "Pressure Vacuum Breaker Assembly" or "PVBA" means an assembly that consists of a spring loaded check valve, an independently operating air inlet valve, two resilient seated shutoff valves, and properly located resilient seated test cocks.
- L. Reduced Pressure Back Flow Assembly. "Reduced Pressure Back Flow Assembly" or "RPBA" shall be an approved assembly incorporating two or more check valves, spring loaded to the closed position, separated by a spring loaded differential pressure relief valve loaded to the open position, and installed as a unit with and between two resilient seated shutoff valves and having suitable connections for testing. The assembly shall operate to maintain the pressure in the zone between the two check valves, less than the pressure on the water supply side of the device. At cessation of normal flow, the pressure between the check valves shall be less than the supply pressure. In case of leakage of either check valve the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. When the inlet pressure drops below two pounds per square inch (13.8 kPa) or less, the relief valve shall open to the atmosphere thereby providing an air-gap in the device. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.020 Cross-Connections prohibited. Cross-connections between the domestic water systems and irrigation water systems or equipment are prohibited. Cross-connection between the domestic water systems and other systems or equipment containing water or other substances of unknown or questionable safety are prohibited except when and where, as approved by the Cross-Connection Control Specialist, suitable protective devices as approved by the Cross-Connection Control Specialist are installed, tested and maintained to insure proper operation on a continuing basis. (Ord. 921, 2013; Ord. 667, 1998; Ord. 655, 1997.)

13A.33.030 **Discontinuance of service.** Failure on the part of the person to discontinue the use of any and all cross-connections between the domestic water system and any irrigation water system will be sufficient cause for the discontinuance of water service to the premises. Failure on the part of persons to discontinue the use of any and all cross-connections and to physically separate such cross-connections with any other systems or equipment containing water or other substances of unknown or questionable safety, or install a suitable protective device when ordered to do so by the Cross-Connection Control Specialist will be sufficient cause for the discontinuance of water service to the premises on which the cross connection exists. (Ord. 921, 2013; Ord. 667, 1998; Ord. 655, 1997.)

13A.33.040 **Installation of back flow prevention assemblies.** Except for cross-connections between the domestic water system and an irrigation water system, backflow prevention devices shall be installed at the service connection, or within any premises where in the judgment of the Cross-Connection Control Specialist the nature and extent of activities on the premises, or the materials used in connection with the activities, or materials stored on the premises would present an immediate and dangerous hazard to health should a cross-connection occur, even though such cross-connection does not exist at the time the back flow prevention device is required to be installed. This shall include, but not be limited to the following situations:

- A. Premises having an auxiliary water supply, unless the quality of the auxiliary supply is in compliance with City and State standards for potable water systems.
- B. Premises having internal cross-connections that are not correctable or intricate plumbing arrangements which make it impracticable to ascertain whether or not cross-connections exist.
- C. Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross-connections do not exist.
- D. Premises having a repeated history of cross-connection being established or reestablished.
- E. Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross-connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.
- F. Premises where materials of a toxic or hazardous nature are handled such that if back siphonage should occur, a serious health hazard may result.
- G. The following types of facilities will fall into one of the above categories where a back flow prevention device is required to protect the public water supply. A back flow prevention device shall be installed at these facilities unless the Cross-Connection Control Specialist determines no hazard exists.

1. Agricultural (farms and dairies).
2. Beverage bottling plants.
3. Car washes.
4. Chemical plants.
5. Commercial laundries and dry cleaners.
6. Premises where both reclaimed water and potable are provided.
7. Film processing facilities.
8. Food processing facilities.
9. Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers.
10. Parks, playgrounds, golf course, cemeteries, and other premises with separate irrigation systems.
11. Laboratories.
12. Metal plating industries.
13. Mortuaries.
14. Petroleum processing or storage plants.
15. Piers and docks.
16. Radioactive material processing plants or nuclear reactors.
17. Survey access denied or restricted.
18. Wastewater lift stations and pumping stations.
19. Wastewater treatment plants.
20. Premises with an unapproved auxiliary water supply interconnected with the potable water supply. (Ord. 921, 2013; Ord. 667, 1998; Ord. 655, 1997.)

13A.33.050 **Types of back flow prevention assemblies required.** The type of protective device required shall depend on the degree of hazard which exists as follows:

- A. An air-gap separation or a reduced pressure back flow assembly shall be installed where the water supply may be contaminated with sewage, industrial waste of a toxic nature or other contaminant which would cause a health or system hazard.
- B. In the case of a substance which may be objectionable but not hazardous to health, a double check valve assembly, air gap separation or a reduced pressure back flow assembly shall be installed.
- C. Lawn sprinkler systems, which are supplied by City water only, shall be required to have one pressure type vacuum breaker unit, or atmospheric

vacuum breakers may be installed on each line. The units shall be approved by the Washington State Department of Health, as manufactured. Installation shall be as follows:

1. Pressure Vacuum Breaker Assembly (PVBA). The PVBA must be installed at least twelve inches above the highest fixture or point of water usage and in such a manner that drainage will preclude back pressure. The PVBA unit shall be installed vertically with test cocks and control valves accessibly located for connection of test equipment. This type of assembly shall not be installed higher than 60 inches.
2. Atmospheric Vacuum Breaker (AVB). The AVB shall be installed on the discharge side of the last valve on each sprinkler zone. The AVB shall be installed at least six inches above the highest sprinkler head so at no time will the AVB be subjected to back pressure or drainage. The AVB shall not be installed where it will be under continuous operating pressure for more than 12 hours in any 24 hour period. The AVB unit shall be installed vertically and no higher than 60 inches. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.060 **Location.** Back flow prevention devices where required shall be installed at the meter, at the property line of the premises when meters are not used, or at a location designated by the Cross-Connection Control Specialist. The device shall be located so as to be readily accessible for maintenance and testing, and where no part of the device will be submerged. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.070 **Installation.** The installation of back flow prevention assemblies required by this Chapter shall be subject to inspection by the City's Cross-Connection Control Specialist. It will be the responsibility of the customer or contractor to notify the City's Cross-Connection Control Specialist 48 hours in advance of any new installation of a back flow prevention assembly or device. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.080 **Acceptable types.** Any protective assembly required by this chapter shall be a model approved by the Cross-Connection Control Specialist. A double check valve assembly, reduced pressure back flow assembly, or a pressure vacuum breaker assembly will be approved if it has been approved by the Washington State Department of Health and otherwise meets standards acceptable to the Cross-Connection Control Specialist. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.090 **Identification of piping systems.** Where potable water, non-potable water, chemical feed systems, gas lines, etc. co-exist in an industrial, commercial or residential facility, labeling in accordance with American National Standards A13.1 shall be required to ensure proper identification of each line. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.100 **Customer's inspection and testing requirements.** The reduced pressure

back flow assembly, the double check valve assembly, air gaps, and pressure vacuum breaker assembly shall be inspected and tested at installation, repair, and annually thereafter or more often when successive inspections and tests indicate failure.

- A. The customer is responsible to have their back flow prevention assembly tested or repaired on an annual basis by a Washington State Certified Back Flow Assembly Tester. The customer shall provide written evidence on a City test form to the City's Cross-Connection Specialist within 30 days from the actual test date documenting that the back flow assembly meets all requirements.
- B. Any person inspecting, testing, or repairing back flow prevention assemblies shall be currently certified as a Back Flow Assembly Tester by the State of Washington Department of Health. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.110 **Termination of services.** The failure of the customer to provide water use activity information upon request or meet the requirements relative to the installation, maintenance, testing or inspection of back flow prevention assemblies required by this chapter shall be considered a violation of the BCMC and result in immediate termination of water services to the premises. (Ord. 667, 1998; Ord. 655, 1997)

13A.33.120 **Penalties.** It is unlawful for any persons, firm, or corporation to violate any provision of this chapter or fail to comply with any provision thereof. A violation of this chapter is a misdemeanor unless otherwise provided. A violation of any provision hereof is a continuing violation. (Ord. 667, 1998; Ord. 655, 1997)