

Cross Connection

Pertinent Sections of Florida Administrative Codes 62-550 and 62-555

Defines cross-connections, 62-550.200:(16):

"CROSS-CONNECTION" means any physical arrangement whereby a public water supply 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 supply as the result of backflow. By-pass arrangements, jumper connections, removable sections, swivel or changeable devices and other temporary or permanent devices through which or because of which backflow could occur are considered to be cross connections.

Prohibits cross-connections, 62-555.360(1):

Cross-Connection, as defined in Rule 62-550.200, F.A.C., is prohibited. However, a person who owns or manages a public water system may interconnect to another public water system if that system is operated and maintained in accordance with this Chapter. Requires a cross-connection control program, 62-555.360(2): Community Water systems, and all public water systems which have service areas that are also served by reclaimed water systems as defined in Chapter 62-610, Part III, F.A.C., shall establish a routine cross-connection control program to detect and prevent cross-connections that create or may create an imminent and substantial danger to public health. This program shall include a written plan that is developed using accepted practices of the American Water Works Association as set forth in the reference documents cited in Rules 62-555.330(6) and (7), F.A.C. What shall be done if a cross-connection exists, 62-555.360(3): Upon discovery of a prohibited cross-connection, public water systems shall either eliminate the cross-connection by

installation of an appropriate backflow prevention device acceptable to the Department or shall discontinue service until the contaminant source is eliminated. Requires that backflow preventers be installed under the supervision of the water supplier, also states where backflow preventers should be installed, 62-555.360(4): Only the following are considered to be backflow prevention devices. They shall be installed in agreement with and under the supervision of the supplier of water or his designated representative (plumbing inspector, etc.) at the consumer's meter, at the property line of the consumer when a meter is not used, or at a location designated by the supplier of water or the Department. The devices are:

Backflow preventers that are approved by DEP, 62-555.360(4):

- a. Air gap separation - A physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved airgap separation" shall be at least double the diameter of the supply pipe measured vertically above the top of the rim of the vessel. In no case shall it be less than 1 inch.
- b. Reduced pressure backflow preventer - A device containing within its structure a minimum of two independently acting approved check valves, together with an automatically operating pressure differential relief valve located between the two check valves. The first check valve reduces the supply pressure a predetermined amount so that during normal flow and at cessation of normal flow the pressure between the checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to the atmosphere, shall operate to maintain the pressure between the checks less than the supply pressure. The unit shall include tightly closing shutoff valves located at each end of the device, and each device shall be fitted with properly located test cocks.

- c. Atmospheric vacuum breaker - A backflow prevention device which is operated by atmospheric pressure in combination with the force of gravity. The unit is designed to work on a vertical plane only. The one moving part consists of a poppet valve which must be carefully sized to slide in a guided chamber and effectively shut off the reverse flow water when a negative pressure exists.
- d. Pressure vacuum breaker - A pressure vacuum breaker is similar to an atmospheric vacuum breaker except that the checking unit "poppet valve" is activated by a spring. This type of vacuum breaker does not require a negative pressure to react and can be used on a pressure side of a valve.
- e. Double check valve assembly - An 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. A check valve is a valve that is drip-tight in the normal direction of flow when the inlet pressure is one psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g. clapper) shall be internally weighted or otherwise internally loaded to promote rapid and positive closure.
- f. Residential Dual Check - A compact unit manufactured with two independent spring actuated check valves. The residential dual check is acceptable only as added backflow prevention in areas served by reuse systems defined in Chapter 62-610, Part III, F.A.C., when the cross connection control program identifies activities specific to (5)(a) and (5)(b) of this section.

(5) Cross connection control programs specific to reuse systems defined in Chapter 62-610, Part III, F.A.C., shall consider the following:

- a. Enhanced public education efforts towards prevention of cross-connections.

- b. Enhanced inspection programs for portions of the distribution systems in areas of reuse for detection and elimination of cross connections.
- c. Dual check valves shall be considered acceptable for reducing risks from backflow only at residential properties served by reclaimed water unless:
 - 1. Local codes, ordinances or regulations require greater levels of backflow prevention.
 - 2. Other hazards exist on the property that require a greater level of backflow prevention.

Defines maximum contaminant level (mcl), 62-550.200(40):

"MAXIMUM CONTAMINANT LEVEL" (MCL) means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. Prohibits the introduction of contaminants that do not have a maximum contaminant standard, 62-550.330

Other Contaminants Without a Standard. No contaminant which creates or has the potential to create an imminent and substantial danger to the public shall be introduced into a public water system.

Requires operation and maintenance practices that minimize the potential for a serious backflow incident, 62-555.350(1)

Operation and Maintenance of Equipment.(1) The supplier of water shall maintain all equipment in good operating condition and shall keep in operation all equipment designed for the purification of the water supply. The supplier shall maintain a minimum free chlorine residual of 0.2 mg/l or its equivalent throughout the distribution system at all times. The capacity of the treatment plant and distribution facilities including pumps and pipes shall be increased as system demand is increased to maintain a minimum pressure of 20 psi throughout the distribution system except in extenuating circumstances. The system shall be maintained and operated in accordance with the rules of the Department and the approved plans.

Requires the water purveyor to notify DEP if any malfunctions in the treatment process occur, 62-555.350(3)

No new source of water supply shall be introduced into the system and no purification process or protection provision shall be altered or discontinued unless the operator secures written approval from the Department. In case of a breakdown in purification or protection works, a break in a main transmission line causing a major interruption in service, or any suspicious circumstance, abnormal taste, or abnormal odor occurring in connection with a public water supply, the person responsible for the operation of the works or the treatment plant operator shall notify the Department or the Approved County Public Health Unit, if applicable, by wire or telephone within 24 hours of the occurrence. The Department shall notify the appropriate local public health unit(s) or the Approved County Public Health Unit shall notify the Department.

Requires that records on backflow prevention be maintained for a period of 10 years, 62-550.720(3):

Copies of any written reports, summaries or communications relating to cross connection control programs or sanitary surveys of the system conducted by any local, State or Federal agency, shall be kept for a period of not less than 10 years after completion of the sanitary survey.

62-555.330 Engineering References for Public Water Systems. In addition to the requirements of this chapter, the standards and criteria contained in the following standard water works manuals and technical publications are hereby incorporated by reference and shall be applied in determining whether applications to construct or alter a public water system shall be issued or denied. They do not supersede the specific requirements detailed in these rules. Copies of these technical volumes may be obtained by writing the appropriate publisher at the address indicated.

(6) "Recommended Practice for Backflow Prevention and Cross-Connection Control (M14)," American Water Works Association, 1990, American Water Works Association, 6666 W. Quincy Avenue, Denver, Colorado 80235.

(7) "Cross Connections and Backflow prevention," 2nd Edition, American Water Works Association, 1974, American Water Works Association, 6666 W. Quincy Avenue, Denver, Colorado 80235.