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## **ITEM 1107 – CROSS CONNECTION CONTROL**

### **Section 1107.01 Cross Connection Control - General Policy**

Purpose. The purpose of the Cross-Connection Control Program is:

- A. To protect the public potable water supply from contamination or pollution by isolating within the consumer's water system contaminants or pollutants which could backflow through the service connection into the public potable water system.
- B. To promote the elimination or control of existing cross-connections, actual or potential, between the public or consumer's potable water system and non-potable water systems, plumbing fixtures and sources or systems containing process fluids.
- C. To provide for the maintenance of a continuing program of cross-connection control which will systematically and effectively prevent the contamination or pollution of the public and consumer's potable water systems.

Application. These rules and regulations shall apply to all premises served by the public potable water systems owned and/or operated by the Board of County Commissioners, Portage County, Ohio.

Policy. The Sanitary Engineer shall be responsible for the protection of the public potable water system from contamination due to backflow of contaminants through the water service connection. If, in the judgment of the Sanitary Engineer, an approved backflow prevention device is necessary at the water service connection to any consumer's premises for the safety of the water system, the Sanitary Engineer or his authorized representative shall give notice to the consumer to install such approved backflow prevention device at each service connection to his premises. The consumer shall immediately install such approved device or devices at his own expense, and failure, refusal or inability on the part of the consumer to install such device or devices immediately shall constitute grounds for discontinuing water service to the premises until such device or devices have been installed.

### **Section 1107.02 Water System**

The water system shall be considered as made up of two parts: The public potable water system and the consumer's water system.

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The public potable water system shall consist of the source facilities and the distribution system, and shall include all those facilities of the potable water system under the control of the Sanitary Engineer up to the point where the consumer's water supply begins.

The source shall include all components of the facilities utilized in the production, treatment, storage and delivery of water to the public distribution system.

The public distribution system shall include the network of conduits used for delivery of water from the source to the consumer's water system.

The consumer's water system shall include those parts of the facilities beyond the service connections which are utilized in conveying water from the public distribution system to points of use.

**Section 1107.03 Cross-Connections Prohibited**

No water service connection shall be installed or maintained to any premises where actual or potential cross-connections to the public potable water system or consumer's water system exist unless such actual or potential cross-connections are abated or controlled to the satisfaction of the Sanitary Engineer.

No connection shall be installed or maintained whereby water from an auxiliary water system may enter a public water system and the method of connection and use of such system shall have been approved by the Sanitary Engineer and by the Director of the Ohio Environmental Protection Agency as required by Section 6109.13 of the Ohio Revised Code.

**Section 1107.04 Survey And Investigations**

The consumer's premises shall be opened at all reasonable times to the Sanitary Engineer, or his authorized representative, for the purpose of conducting surveys and investigations of water use practices within the consumer's premises to determine whether there are actual or potential cross-connections to the consumer's water system through which contaminants or pollutants could backflow into the public potable water system.

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On request by the Sanitary Engineer, or his authorized representative, the consumer shall furnish information on water use practices within his premises.

It shall be the responsibility of the water consumer to conduct periodic surveys of water use practices on his premises to determine whether there are actual or potential cross-connections in his water system.

#### **Section 1107.05 Backflow Prevention Devices Required**

An approved backflow prevention device shall be installed on each service line to a consumer's water system serving premises, where in the judgment of the Sanitary Engineer or the Director, actual or potential hazards to the public potable water system exist.

An approved backflow prevention device shall be installed on each service line to a consumer's water system serving premises where the following conditions exist:

- A. Premises having an auxiliary water system, unless such auxiliary system is accepted as an additional source by the Sanitary Engineer and the source is approved by the Director of the Ohio Environmental Protection Agency.
- B. Premises on which any substance is handled in such a fashion as to create an actual or potential hazard to the public potable water system. This shall include premises having sources or systems containing process fluids or water originating from the public potable water system which are no longer under the sanitary control of the Sanitary Engineer.
- C. Premises having internal cross-connections that, in the judgment of the Sanitary Engineer, are not correctable, or intricate plumbing arrangements which make it impractical to determine whether or not cross-connections exist.
- D. Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey.
- E. Premises having a repeated history of cross-connections being established or re-established.

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F. Others specified by the Sanitary Engineer or the Director.

An approved backflow prevention device shall be installed on each service line to a consumer's water system serving, but not limited to, the following types of facilities unless the Sanitary Engineer or the Director determines that no actual or potential hazard to the public potable water system exists:

- A. Hospitals, mortuaries, clinics, nursing homes.
- B. Laboratories.
- C. Sewage treatment plants, sewage pumping stations or storm water pumping stations.
- D. Piers, docks, waterfront facilities.
- E. Food or beverage processing plants.
- F. Chemical plants.
- G. Metal plating industries.
- H. Petroleum processing or storage plants.
- I. Radioactive material processing plants or nuclear reactors.
- J. Car washes.
- K. Others specified by the Sanitary Engineer or the Director.

An approved backflow prevention device shall be installed at any point of connection between the public potable or consumer's water system and an auxiliary water system, unless such auxiliary system is accepted as an additional source by the Sanitary Engineer and the source is approved by the Director of the Ohio Environmental Protection Agency.

**Section 1107.06 Type Of Backflow Prevention Required**

The type of protection required under Section 1107.05 of these Rules And Regulations shall depend on the degree of hazard which exists as follows:

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- A. An approved air gap separation shall be installed where the public potable water system may be contaminated with substances that could cause a severe health hazard.
  - B. An approved air gap separation or an approved reduced pressure principle backflow prevention device shall be installed where the public potable water system may be contaminated with any substance that could cause a system or health hazard.
  - C. An approved air gap separation or an approved reduced pressure principle backflow prevention device or an approved double check valve assembly shall be installed where the public potable water system may be polluted with substances that could cause a polluttional hazard not dangerous to health.

The type of protection required under Section 1107.05 of these Rules And Regulations shall be an approved air gap separation or an approved interchangeable connection.

Where an auxiliary water system is used as a secondary source or as water for a fire protection system, the provisions of Section 1107.06 for an approved air gap separation or an approved interchangeable connection may not be required, provided:

- A. At premises where the auxiliary water system may be contaminated with substances that could cause a system or health hazard, the public or consumer's potable water system shall be protected against backflow by installation of an approved reduced pressure principle backflow prevention device.
- B. At all other premises, the public or consumer's potable water system shall be protected against backflow by installation of either an approved reduced pressure principle backflow prevention device or an approved double check valve assembly.
- C. The public or consumer's potable water system shall be the primary source of water for the fire protection system.
- D. The fire protection system shall be normally filled with water from the public or consumer's potable water system.

- E. The water in the fire protection system shall be used for fire protection only, with no regular use of water from the fire protection system downstream from the approved backflow prevention device.
- F. The water in the fire protection system shall contain no additives.

#### **Section 1107.07 Backflow Prevention Devices**

Any backflow prevention device required by these Rules And Regulations shall be of a model or construction approved by the Sanitary Engineer and the Director of the Ohio Environmental Protection Agency and shall comply with the following:

- A. An air gap separation, to be approved, shall be at least twice the diameter of the supply pipe, measured vertically above the top rim of the vessel, but in no case less than one inch.
- B. A double check valve assembly or a reduced pressure principle backflow prevention device shall be approved by the Sanitary Engineer, and shall appear on the current list of approved backflow prevention devices of the Ohio Environmental Protection Agency.
- C. An interchangeable connection, to be approved, shall be either a swing type connector or a four-way valve of the lubricated plug type that operates through a mechanism which unseats the plug, turns it ninety degrees and reseats the plug. Four-way valves shall not be used as stop valves but must have separate stop valves on each pipe connected to the valve. The telltale port on the four-way valve shall have no piping connected and the threads or flange on this port shall be destroyed so that a connection cannot be made.

Existing backflow prevention devices approved by the Sanitary Engineer or the Director of the Ohio EPA at the time of the installation and properly maintained shall, except for inspection, testing and maintenance requirements, be excluded from the requirement of Section 1107.07 of these Rules And Regulations providing the Sanitary Engineer is assured that they will satisfactorily protect the public potable water system. Whenever the existing device is moved from the present location or requires more than minimum maintenance or when the Sanitary Engineer finds that the maintenance of the device constitutes a hazard to health, the device shall be replaced by a backflow prevention device meeting the requirements of these regulations.

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**Section 1107.08**

**Installation**

Backflow prevention devices required by these Rules And Regulations shall be installed at a location and in a manner approved by and at the expense of the water consumer. In addition, any backflow prevention device required by Section 1107.06 of these Rules And Regulations shall be installed at a location and in a manner approved by the Director of the Ohio EPA as required by Section 6109.13 of the Ohio Revised Code.

Backflow prevention devices installed on the service line to a consumer's water system shall be located on the consumer's side of the water meter, as close to the meter as is reasonably practical, and prior to any other connection.

Pits or vaults shall be of watertight construction, be so located and constructed as to prevent flooding and shall be maintained free from standing water by means of either a sump and pump or a suitable drain. Such sump pump or drain shall not connect to a sanitary sewer nor permit flooding of the pit or vault by reverse flow from its point of discharge. An access ladder and adequate natural or artificial lighting shall be installed to permit maintenance, inspection and testing of the backflow prevention device.

Reduced pressure principle backflow prevention devices must be installed above ground level or floor level, whichever is higher.

**Section 1107.09**

**Inspection And Maintenance**

It shall be the duty of the consumer at any premises on which backflow prevention devices required by these Regulations are installed to have inspections, tests, and overhauls made in accordance with the following schedule, or more often where inspections indicate a need:

- A. Air gap separations shall be inspected at the time of installation and at least every 12 months thereafter.
- B. Double check valve assemblies shall be inspected and tested for tightness at the time of installation and at least every 12 months thereafter.
  - 1. They shall be dismantled, inspected internally, cleaned and repaired whenever needed and at least every 30 months.

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- C. Reduced pressure principle backflow prevention devices shall be inspected and tested for tightness at the time of installation and at least every 12 months thereafter.
    - 1. They shall be dismantled, inspected internally, cleaned and repaired whenever needed and at least every five years.
  - D. Interchangeable connections shall be inspected at the time of installation and at least every 12 months thereafter.

Inspections, tests, and overhauls of backflow prevention devices shall be made at the expense of the water consumer and shall be performed by a person approved by the Sanitary Engineer as qualified to inspect, test and overhaul backflow prevention devices.

Whenever backflow prevention devices required by these Rules And Regulations are found to be defective, they shall be repaired, overhauled or replaced at the expense of the consumer without delay.

The water consumer must maintain a complete record of each backflow prevention device from purchase to retirement. This shall include a comprehensive listing that includes a record of all tests, inspections, repairs and overhauls. Records of inspections, tests, repairs and overhauls shall be submitted annually, in January, to the Sanitary Engineer Department.

Backflow prevention devices shall not be bypassed, made inoperative, removed or otherwise made ineffective without specific authorization by the Sanitary Engineer.

**Section 1107.10      Booster Pumps**

Where a booster pump has been installed on the service line to or within any premises, such pump shall be equipped with a low pressure cut-off device designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to 10 pounds per square inch gauge or less.

It shall be the duty of the water consumer to maintain the low pressure cut-off device in proper working order and to certify to the Sanitary Engineer, at least once a year that the device is operating properly.



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**Section 1107.11**

**Violations**

The Sanitary Engineer shall deny or discontinue, after reasonable notice to the occupants thereof, the water service to any premises wherein any backflow prevention device required by these regulations is not installed, tested and maintained in a manner acceptable to the Sanitary Engineer, or if it is found that the backflow prevention device has been removed or by-passed, or if an unprotected cross-connection exists on the premises, or if a low pressure cut-off required by these regulations is not installed and maintained in working order.

Water service to such premises shall not be restored until the consumer has corrected such conditions or defects in conformance with these regulations and to the satisfaction of the Sanitary Engineer.

- END OF ITEM -