

CHAPTER 16¹
CROSS-CONNECTION CONTROL RULES AND REGULATIONS

16.01	Cross-Connection Control General Policy
16.02	Definitions
16.03	Water System
16.04	Cross-Connection Prohibited
16.05	Survey and Investigations
16.06	Where Protection is Required

16.01 CROSS-CONNECTION CONTROL GENERAL POLICY

A. The purpose of these rules and regulations is:

1. To protect the public water system from contamination or pollution by isolating within the customer's water system contaminants or pollutants which could backflow through the service connection into the public water system.
2. To eliminate cross-connections between the public or customer's potable water system and non-potable water systems.
3. To provide for cross-connection control which will prevent the contamination or pollution of the public and customer's potable water systems.

B. APPLICATION: These rules and regulations shall apply to all premises served by the public potable water system of the Village.

C. POLICY: The customer shall be responsible for protection of the public water system from contamination due to backflow or back-siphonage of contaminants through the customer's water service connection. If, in the judgment of the Superintendent of the Public Works Department, Water Division backflow prevention device is necessary for the safety of the public water system, the Superintendent shall give notice to the customer to install a backflow prevention device at each service connection to the premises. The customer shall immediately install such device or devices at his or her own expense. Failure, refusal or inability on the part of the customer 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. The customer shall retain records of installation, maintenance, testing and repair as required in Section

¹ Established by Ordinance 1990-91-39, 2/38/91.

16.05-D-4 for a period of at least five years. The Superintendent shall require the customer to submit a cross-connection inspection report to the Public Works Department, Water Division to assist in determining whether or not service line protection will be required. All cross-connection inspections shall be conducted by a Cross-Connection Control Device Inspector certified by the IEPA.

16.02 DEFINITIONS

In addition to the definitions found in Appendix A of this Code, the definitions contained in this Chapter 16 are defined as follows:

Agency: Illinois Environmental Protection Agency (IEPA).

Approved: Backflow prevention devices or methods approved by the Research Foundation for Cross-Connection Control of the University of Southern California, Association of State Sanitary Engineers, American Water Works Association, American National Standards Institute or certified by the National Sanitation Foundation.

Auxiliary Water System: Any water source or system on or available to the premises other than the public water system. These auxiliary waters may include water from another purveyor's public water-system; or water from a source such as wells, lakes or streams; or process fluids; or used water. These waters may be polluted or contaminated or objectionable or constitute a water source or system over which the water purveyor does not have control.

Backflow: The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water system from any source other than the intended source of the potable water supply.

Backflow Prevention Device: Any device, method or type of construction intended to prevent backflow into a potable water system. All devices used for backflow prevention in Illinois must meet the standards of the Illinois Plumbing Code and the IEPA.

CCDI: The Cross-Connection Control Device Inspector, contracted by the customer and approved by the Village and the IEPA.

Customer: The owner, or person in control of any premises supplied by or in any manner connected to a public potable water system.

Customer's Potable Water System: Any water system located on the customer's premises. A building plumbing system is considered to be a customer's water system.

Contamination: An impairment of the quality of the water by entrance of any substance to a degree which could create a health hazard.

Cross-Connection: Any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other a substance of unknown or questionable safety or quality, whereby there may be a flow from one system into the other.

Direct cross-connection means a cross-connection formed when a water system is physically joined to a source of unknown or unsafe substance.

Indirect cross-connection means a cross-connection through which an unknown substance can be forced, drawn by vacuum or otherwise introduced into a safe potable water system.

A potential cross-connection is a fixture or appurtenance with threaded hose connection, tapered spout or other connection which would facilitate extension of the water supply line beyond its legal termination point.

Double Check Valve Assembly: An assembly composed of single, independently acting check valves approved under ASSE Standard 1015. A double check valve assembly must include tight shutoff valves located at each end of the assembly and suitable connections for testing the water-tightness of each check valve.

Fixed Property Air Gap: The unobstructed vertical distance through the free atmosphere between the water discharge point and the flood level rim of the receptacle.

Health Hazard: Any condition, device or practice in a water system or its operation resulting from a real or potential damage to the health and well-being of customers. The word "severe" as used to qualify "health hazard" means a hazard to the health of the user that could be expected to result in death or significant reduction in the quality of life.

Inspection: A plumbing inspection to examine carefully and critically all materials, fixtures, piping and appurtenances, appliances and installations of a plumbing system for compliance with requirements of the Illinois Plumbing Code, 77 Ill. Adm. Code 890.

Non-Potable Water: Water not safe for drinking, personal or culinary use as determined by the requirements of 35 Ill. Adm. Code 604.

Plumbing: The actual installation, repair, maintenance, alteration or extension of a plumbing system by any person. Plumbing includes all piping, fixtures, appurtenances and appliances for a supply of water for all purposes, including without limitation lawn sprinkler systems, from the source of a private water system on the premises or from the main in the street, alley or at the curb to, within and about any building or buildings where a person or persons live, work or assemble. Plumbing includes all piping, from discharge of pumping units to and including pressure tanks in water systems. Plumbing includes all piping, fixtures, appurtenances and appliances for a building drain and a sanitary drainage and related ventilation system of any building or buildings where a person or persons live, work or assemble from the point of connection of such building drain to the building sewer or private sewage disposal system five feet beyond the foundation walls.

Pollution: The presence of any foreign substance (organic, inorganic, radiological or biological) in water that tends to degrade its quality so as to constitute a hazard or impair the usefulness of the water.

Potable Water: Water which meets the requirements of 35 Ill. Adm. Code 604 for drinking, culinary and domestic purposes.

Process Fluid(s): Any fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, pollutional or system hazard if introduced into the public or a customer's potable water system. This includes but is not limited to:

1. Polluted or contaminated waters;
2. Process waters;
3. Used waters originating from the public water system which may have deteriorated in sanitary quality;
4. Cooling waters;

5. Questionable or contaminated natural waters taken from wells, lakes, streams or irrigation systems;
6. Chemicals in solution or suspension; and
7. Oils, gases, acids, alkalis and other liquid and gaseous fluids used in industrial or other processes, or for fire fighting purposes.

Public Water System: All mains, pipes and structures through which water is obtained and distributed to the public, including wells and well structures, pumping stations, treatment plants, reservoirs, storage tanks and appurtenances, collectively or severally, actually used or intended for use for the purpose of furnishing water for drinking or general domestic use and which serve at least 15 service connections or which regularly serve at least 25 persons at least 60 days per year. A public water system is either a "community water supply" or a "non-community water supply."

Reduced Pressure Principle Backflow Prevention Device: A device containing a minimum of two independently acting check valves together with an automatically operated pressure differential relief valve located between the two check valves and approved under ASSE Standard 1013. During normal flow and at the cessation of normal flow, the pressure between these two 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 check valve at less than the supply pressure. The unit must include tightly closing shutoff valves located at each end of the device, and each device shall be fitted with properly located test cocks.

Service Connection: The opening, including all fittings and appurtenances at the water main, through which water is supplied to the user.

Survey: The collection of information pertaining to a customer's piping system regarding the location of all connections to the public water system and must include the location, type and most recent inspection and testing date of all cross-connection control devices and methods located within the customer's piping system. The survey must be in written form, and should not be an actual plumbing inspection.

Superintendent: The Superintendent of Water the Public Works Department Water Division or authorized representative.

System Hazard: A condition through which an aesthetically objectionable or degrading material not dangerous to health may enter the public water system or a customer's potable water system.

Used Water: Any water supplied by a public water system to a customer's water system after it has passed through the service connection and is no longer under the control of the water system official custodian.

Water Purveyor: The owner of a public water system.

16.03 WATER SYSTEM

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

B. The public 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 Superintendent up to the point where the customer's water system begins.

1. The source shall include all components of the facilities utilized in the production, treatment, storage and delivery of water to the public water system distribution system.
2. The public water system distribution system shall include the network of conduits used to deliver water from the source to the customer's water system.

C. The customer's water system shall include all parts of the facilities beyond the service connection used to convey water from the public water system distribution system to points of use.

16.04 CROSS-CONNECTION PROHIBITED

A. Connections between potable water systems and other systems or equipment containing water or other substances of unknown or questionable quality are prohibited except when and where approved backflow prevention devices or methods are installed, tested and maintained to insure proper operation on a continuing basis.

B. PROHIBITIONS:

1. No physical connection shall be permitted between the potable portion of a system and any other water system not of equal or better bacteriological and chemical quality as determined by inspection and analysis by the Agency.
2. There shall be no arrangement or connection by which an unsafe substance may enter a supply.

16.05 SURVEY AND INVESTIGATIONS

A. The customer's premises shall be open at all reasonable times to the Superintendent or designee for the inspection of the presence or absence of cross-connections within the customer's premises, and testing, repair and maintenance of cross-connection control devices within the customer's premises.

B. On request by the Superintendent, the customer shall furnish information regarding the piping system or systems or water use within the customer's premises. The customer's premises shall be open at all reasonable times to the Superintendent for the verification of information submitted by the customer to the Superintendent regarding cross-connection inspection results.

C. It shall be the responsibility of the water customer to arrange periodic surveys of water use practices on his or her premises to determine whether there are actual or potential cross-connections to his or her water system through which contaminants or pollutants could backflow into customer's premises or the public potable water system. All cross-connection control or other plumbing inspections must be conducted in accordance with 225 ILCS 320/3(1).

D. It is the responsibility of the water customer to prevent backflow into the public water system by ensuring that:

1. All cross-connections are removed; or approved backflow prevention devices are installed for control of backflow and back-siphonage.
2. Backflow prevention devices shall be installed in accordance with the manufacturer's instructions.

3. Backflow prevention devices shall be inspected at the time of installation and at least annually by a person approved by the Village and Agency as a CCCDI. The inspection of mechanical devices shall include physical testing in accordance with the manufacturer's instructions.
4. Testing and records:
 - a. Each device shall be tested at the time of installation and at least annually or more frequently if recommended by the manufacturer or as requested by the Superintendent. Copies of all tests shall be submitted to the Village.
 - b. Records submitted to the Lake in the Hills Public Works Department, Water Division shall be available for inspection by Agency personnel in accordance with 415 ILCS 5/4(e).
 - c. Each device shall have a tag attached listing the date of most recent test, name of CCCDI and type and date of repairs.
 - d. A maintenance log shall be maintained by the customer, affixed to the backflow prevention device and shall include:
 - I. Date of each test;
 - II. Name and approval number of person performing the test;
 - III. Test results;
 - IV. Repairs or servicing required;
 - V. Repairs and date completed; and
 - VI. Service performed and date completed.

16.06 WHERE PROTECTION IS REQUIRED

A. An approved backflow device shall be installed on all connections to the public water system as described in the Plumbing Code, 77 Ill. Adm. Code 890 and the Agency's regulations 35 Ill. Adm. Code 680. In addition, an approved backflow prevention device shall be installed on each service

line to a customer's water system which serves the premises, where in the judgment of the Superintendent, actual or potential hazards to the public water system exist.

B. An approved backflow prevention device shall be installed on each service line to a customer's water system which serves the premises where the following conditions exist:

1. Premises having an auxiliary water supply, unless such auxiliary system is accepted as an additional source by the Superintendent and the source is approved by the Agency.
2. Premises on which any substance is handled which can create an actual premises having sources or systems containing process fluids or waters originating from the public water system which are no longer under the sanitary control of the Superintendent.

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