

**Chapter 13D**  
**CROSS-CONNECTION CONTROL RULES AND REGULATIONS**

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**13D.01 CROSS-CONNECTION CONTROL GENERAL POLICY**

A. The purpose of these rules and regulations is:

1. To protect the public water supply system from contaminant or pollution by isolating within the user's water system contaminants or pollutants which could backflow through the service connection into the public water supply system.
2. To promote the elimination or control of existing cross-connections, actual or potential, between the user's potable water system and non-potable water systems, plumbing fixtures and sources or systems containing substances of unknown or questionable safety.
3. To provide for the maintenance of a continuing program of cross-connection control which will prevent the contamination or pollution of the public and user's potable water systems.

B. Application. These rule and regulations shall apply to all premises served by the public potable water supply system of the City.

C. Policy. The Superintendent of Public Works ("Superintendent") shall be responsible for protection of the public water supply system from contamination due to back up or back siphonage of contaminants through the user's water service connection. If, in the judgment of the Superintendent, an approved backflow prevention device is necessary for the safety of the public water supply system, the Superintendent shall give notice to the user to install such approved backflow prevention device at each service

connection to the premises. The user shall immediately install such approved device or devices at his own expense. Failure, refusal or inability on the part of the user 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 user shall retain records of installation, maintenance, testing and repair as required in Section 13D.05-D-4 for a period of at least five years. The Superintendent may require the user to submit a cross-connection inspection report to the City 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.

### **13D.02 DEFINITIONS**

Terms used in this chapter can be found in Chapter 13E and Appendix A of this Code.

### **13D.03 WATER SYSTEM**

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

B. The public water supply 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 user's water system begins, as defined in Chapter 13B of this Code.

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

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

### **13D.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 cross-connection control 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 supply and any other water supply.
2. There shall be no arrangement or connection by which an unsafe substance may enter a supply.

**13D.05 SURVEY AND INVESTIGATIONS**

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

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

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

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

1. All cross-connections are removed; or approved cross-connection control devices are installed for control of backflow and back-siphonage.
2. Cross-connection control devices shall be installed in accordance with the manufacturer's instructions.
3. Cross-connection control devices shall be inspected at the time of installation and at least annually. 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.

- b. Records submitted to the City shall be available for inspection by IEPA personnel in accordance with 415 ILCS 5/4 et seq.
- c. Each device shall have a tag attached listing the date of most recent test, name of the CCCDI and type and date of repairs.
- d. A maintenance log shall be maintained and 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.

**13D.06 WHERE PROTECTION IS REQUIRED**

A. An approved backflow device shall be installed on all connections to the public water supply as described in the Plumbing Code, 77 Illinois Administrative Code 890 and the IEPA's regulations 35 Illinois Administrative Code 680. In addition, an approved backflow prevention device shall be installed in each service line to a user's water system serving premises, where in the judgment of the Superintendent and/or Building and Zoning Commissioner, actual or potential hazards to the public water supply system exist.

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

- 1. 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 supply system which are no longer under the sanitary control of the Superintendent.
- 2. Premises having internal cross-connections that, in the judgment of the Superintendent and/or the Building and Zoning Commissioner, are not correct-

able or intricate plumbing arrangements which make it impractical to determine whether or not cross-connections exist.

3. Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey.
4. Premises having a repeated history of cross-connections being established or re-established.

C. An approved backflow device shall be installed on all connections to the public water supply as described in the Plumbing Code, 77 Illinois Administrative Code 890 and the IEPA's regulations 35 Illinois Administrative Code 653. In addition, an approved backflow prevention device shall be installed on each service line to a user's water system serving, but not necessarily limited to, the following types of facilities unless the Superintendent determines that no actual or potential hazard to the public water supply system exists:

1. Hospitals, mortuaries, clinics, nursing homes.
2. Laboratories.
3. Food or beverage processing plants.
4. Chemical plants.
5. Metal plating industries.
6. Petroleum processing or storage plants.
7. Radioactive material processing plants or nuclear reactors.
8. Car washes.
9. Pesticide, herbicide or extermination plants and trucks.
10. Farm service and fertilizer plants and trucks.
11. Premises that are located on elevations relative to the water system which could, due to pressure decreases in the system, cause backflow from the user's water system into the public water supply system.

**13D.07 TYPE OF PROTECTION REQUIRED**

A. The type of protection required under Sections 13D.06-B-1, 2 and 3 of these regulations shall depend on the degree of hazard which exists as follows:

1. An approved fixed proper air gap separation shall be installed where the public water supply system may be contaminated with substances that could cause a severe health hazard.
2. An approved fixed proper air gap separation or an approved reduced pressure principle backflow prevention assembly shall be installed where the public water supply system may be contaminated with a substance that could cause a system or health hazard.
3. An approved fixed proper air gap separation or an approved reduced pressure principle backflow prevention assembly or a double check valve assembly shall be installed where the public water supply system may be polluted with substances that could cause a pollution hazard not dangerous to health.

B. The type of protection required under Section 13D.06-B-4 and 5 of these regulations shall be an approved fixed proper air gap separation or an approved reduced pressure principle backflow prevention device.

C. Where a public water supply is used for a fire protection system, reduced pressure principle backflow preventers shall be installed on fire safety systems connected to the public water supply when:

1. The fire safety system contains antifreeze, fire retardant or other chemicals; and
2. Water flows by gravity from a non-potable source; or water can be pumped into the fire safety system from any other source.

D. All other fire safety systems connected to the potable water supply shall be protected by a double check valve assembly on metered service lines and a double detector check valve assembly on unmetered service lines.

#### **13D.08 BACKFLOW PREVENTION DEVICES**

A. All backflow prevention devices or methods required by these rules and regulations shall be approved by the Research Foundation for Cross-Connection Control of the University of Southern California, American Water Works Association, American

Society of Sanitary Engineering or American National Standards Institute or certified by the National Sanitation Foundation to be in compliance with applicable industry specification.

B. Installation of approved devices shall be made in accordance with the manufacturer's instructions. Maintenance as recommended by the manufacturing of the device shall be performed. Manufacturer's maintenance manual shall be available on-site.

#### **13D.09 INSPECTION AND MAINTENANCE**

A. It shall be the duty of the user at any premises on which backflow prevention devices required by these regulations are installed to have inspection, tests, maintenance and repairs made in accordance with the following schedule or more often where inspections indicate a need or are specified in manufacturer's instructions.

1. Fixed proper air gap separations shall be inspected to document that a proper vertical distance is maintained between the discharge point of the service line and the flood level rim of the receptacle at the time of installation and at least annually thereafter. Corrections to improper or bypassed air gaps shall be made within 24 hours.
2. Double check valve assemblies shall be inspected and tested at time of installation and at least annually thereafter, and required service performed within five days.
3. Reduced pressure principle backflow prevention assemblies shall be tested at the time of installation and at least annually or more frequently if recommended by the manufacturer, and required service performed within five days.

B. Testing shall be performed by the CCCDI. Proof of approval shall be in writing.

C. Each device shall have a tag attached listing the date of most recent test or visual inspection, name of tester and type and date of repairs.

- D. A maintenance log shall be maintained and include:
1. date of each test or visual inspection;
  2. name and approval number of person performing the test or visual inspection;
  3. test results;

4. repairs or servicing required;
5. repairs and date completed; and
6. servicing performed and date completed.

E. Whenever backflow prevention devices required by these regulations are found to be defective, they shall be repaired or replaced at the expense of the user without delay as required by Section 13D.09-A.

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

#### **13D.10 BOOSTER PUMPS**

A. 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 20 psi or less.

B. It shall be the duty of the water user to maintain the low pressure cut-off device in proper working order and to certify to the Superintendent, at least once a year, that the device is operable.

#### **13D.11 VIOLATIONS**

A. The Superintendent shall deny or discontinue, after notice as provided in Section 13D.12-E of this ordinance to the occupants thereof, the water service to any premises wherein any backflow prevention device required by these regulations is not installed, tested, maintained and repaired in a manner acceptable to the Superintendent, or if it is found that the backflow prevention device has been removed or bypassed, 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.

B. Water service to such premises shall not be restored until the user has corrected or eliminated such conditions or defects in conformance with these regulations and to the satisfaction of the Superintendent, and the required reconnection fee is paid.

C. Water service to such premises shall not be restored until the user has corrected or eliminated such conditions or defects on conformance with these regulations and to the satisfaction of the Superintendent.

D. Neither the City or the Superintendent or their agents shall be liable to any users of the City public water supply for any injury or lost revenue which may result from termination of said customer's water supply in accordance with the terms of this ordinance, whether or not said termination of the water supply was with or without notice.

E. The user responsible for back-siphoned material or contamination through backflow, if contamination of the potable water supply system occurs through an illegal cross-connection or an improperly installed, maintained or repaired device, or a device which has been bypassed, must bear the cost of clean-up of the potable water supply system.

F. Any person found to be in violation of any provision of this Ordinance shall be served with written notice stating the notice of the violation and, as provided in Section 13D.13 of this chapter, require the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violation.

#### **13D.12 BACKFLOW PREVENTION**

A. All plumbing installed within the City shall be installed in accordance with Illinois Plumbing License Law, 77 Illinois Administrative Code 890. That, if in accordance with the Illinois Plumbing Code or in the judgment of the Superintendent, an approved backflow prevention device is necessary for the safety of the public water supply system, the Superintendent shall give notice to the water customer to install such an approved device immediately. The water customer shall, at his own expense, install such an approved device at a location and in a manner in accordance with the Illinois Plumbing License Law, IEPA and all applicable local regulations, and shall have inspections and tests made of such approved devices upon installation and as required by the Illinois Plumbing License Law, IEPA and local regulations.

B. No person, firm or corporation shall establish or permit to be established or maintain or permit to be maintained any connection whereby a private, auxiliary or emergency water supply, other than the regular public water supply of the City, may enter the supply or distribution system of the City unless such private, auxiliary or emergency water supply and the method of connection and use of such supplies have been approved by the Superintendent and the IEPA.

C. It shall be the duty of the Superintendent to cause surveys and investigations to be made of commercial and other properties served by the public water supply to determine whether actual or potential hazards to the public water supply may exist. Such surveys and investigations shall be made a matter of public

record and shall be repeated at least every two years, or as often as the Superintendent shall deem necessary. Records of such surveys shall be maintained and available for review for a period of at least five years.

D. The approved cross-connection control device inspector shall have the right to enter at any reasonable time any property served by a connection to the public water supply or distribution system of the City for the purpose of verifying the presence or absence of cross-connections, and that the Superintendent or his authorized agent shall have the right to enter at any reasonable time any property served by a connection to the public water supply or distribution system of the City for the purpose of verifying information submitted by the user regarding the required cross-connection control inspection. On demand the owner, lessees or occupants of any property so served shall furnish to the Superintendent any information which he may request regarding the piping system or systems or water use on such property. The refusal of such information, when demanded, shall, within the discretion of the Superintendent, be deemed evidence of the presence of improper connections as provided by this section.

D. The Superintendent is hereby authorized and directed to discontinue, after reasonable notice to the occupant thereof, the water service to any property wherein any connection in violation of the provisions of this section is known to exist, and to take such other precautionary measures as he may deem necessary to eliminate any danger of contamination of the public water supply distribution mains. Water service to such property shall not be restored until such conditions have been eliminated or corrected in compliance with the provisions of this section, and until a reconnection fee of \$50.00 is paid to the City. Immediate disconnection with verbal notice can be effected when the Superintendent is assured that imminent danger of harmful contamination of the public water supply system exists. Such action shall be followed by written notification of the cause of disconnection. Immediate disconnection without notice to any part can be effected to prevent actual or anticipated contamination or pollution of the public water supply, provided that, in the reasonable opinion of the Superintendent or the IEPA, such action is required to prevent actual or potential contamination or pollution of the public water supply. Neither the City or the Superintendent or their agents shall be liable to any user for any injury, damages or lost revenue which may result from termination of said customer's water supply in accordance with the terms of this section, whether or not said termination was with or without notice.

F. The customer is responsible for back siphoned or back pressured material or contamination through backflow, if contamination of the potable water supply system occurs through an illegal cross-connection of an improperly installed, maintained or repaired device, or a device which has been bypassed, must bear

the cost of clean-up of the potable water supply system.

**13D.13 PENALTY**

Unless another penalty is specifically provided by this chapter for the violation of any particular section hereof, any person violating any provision of this chapter or any rule or regulation adopted or issued in pursuance hereof, or any lawful order made by a City official hereunder, shall, upon conviction, be subject to a fine of not less than \$50.00 nor more than \$500.00, plus all costs of prosecution, including but not limited to filing fees, witness fees, attorneys fees and the revocation of any permit for water or sewer service.