

## 9.414: CROSS CONNECTIONS PROHIBITED:

### A. General Policy:

1. The director of public works and the director of community development shall be responsible for protection of the public water supply system from contamination due to backflow or back siphonage of contaminants through the customer's water service connection. If, in accordance with the Illinois plumbing code, hereinafter referred to as the "code", or in the judgment of the director of community development or the director of public works, an approved backflow prevention device is necessary for the safety of the public water supply system, notice will be given 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 code and all applicable local regulations and shall have inspections and tests made of such approved device upon installation and as required by the code and this article.
2. 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 village or distribution system of said municipality, unless such private, auxiliary or emergency water supply and use of such supply shall have been approved by the director of community development and the director of public works. The method of connection shall conform to the rules and regulations of the code and shall be approved by the director of community development or authorized representatives.
3. It shall be the duty of the director of public works or authorized representatives to cause surveys and investigations to be made of industrial, commercial, and other properties served by the public water supply to determine whether or not actual or potential hazards to the public water supply may exist. Such surveys and investigations shall be made a matter of record and shall be repeated at least every two (2) years or as often as the director of public works shall deem necessary. Completion of these surveys is mandatory. Failure to submit a completed survey will be considered a violation of this article and will subject the offending consumer to a discontinuation of water service. Records of such surveys shall be maintained by the village and available for review for a period of at least five (5) years.
4. If ordered by the director of community development, any owner of property served by a connection to the public water supply or distribution system of the village shall procure the services of a licensed cross connection control device inspector for the purpose of verifying the presence or absence of cross connections, and that the director of community development or authorized agent shall have the right to request entry at any reasonable time any property served by a connection to the public water supply or distribution system of the village for the purpose of verifying information submitted by the customer regarding the required cross connection control inspection. Upon request, the owner, lessees or occupants of any property so served shall furnish to the director of community development any information 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 director of community development, be deemed evidence of the presence of cross connections, as provided in this article.
5. The director of community development of the village is hereby authorized to direct and

request the director of public works to discontinue, and the director of public works is authorized to discontinue, after reasonable notice to the occupant and/or owner thereof, the water service to any property wherein any connection in violation of the provisions of this article is known to exist, and to take such other precautionary measures deemed 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 article. Immediate disconnection with verbal notice can be effected when the director of community development or the director of public works 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 party can be effected to prevent actual or anticipated contamination or pollution of the public water supply, provided that, in the reasonable opinion of the director of community development, or the director of public works or authorized agent(s), such action is required to prevent actual or potential contamination or pollution of the public water supply. Neither the village, its director of community development, director of public works, nor its agents or assigns shall be liable to any customer for any injury, damages or lost revenues which may result from termination of said customer's water supply in accordance with the terms of this article, whether or not said termination was with or without notice.

6. A backflow prevention device approved by the director of community development, or authorized representative(s), shall be installed on all service connections to the village water supply at a location and in a manner in accordance with the code and all applicable local regulations and shall have inspections and tests made of such approved device upon installation and as required by the code and this article.

#### B. Purpose And Application:

1. Purpose: The purpose of this article and cross connection control program is:

- a. To protect the public water supply 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 supply 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 nonpotable water systems, plumbing fixtures and sources or systems containing substances of unknown or questionable safety.
- c. To provide for the maintenance of a continuing program of cross connection control which will prevent the contamination or pollution of the public and consumer's potable water systems.

2. Application: Provisions of this article shall apply to all premises served by the public potable water supply system of the village.

#### C. Cross Connections Prohibited:

1. Connections between potable water systems and other systems or equipment containing water or 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 ensure proper operation on a continuing basis.

2. No physical connection shall be permitted between the potable portion of a supply and any other water supply not of equal or better bacteriological and chemical quality, as determined by inspection and analysis by the director of community development.

3. There shall be no arrangement or connection by which an unsafe substance may enter a supply.

#### D. Surveys And Investigations:

1. The director of public works shall circulate a cross connection control device survey to all consumers with a potential risk of backflow or back pressure to the village potable water supply. This survey shall be completed by the property owner or consumer at the premises served and returned to the public works department within thirty (30) days of the date of issue. Failure to submit a completed survey will subject the property owner or consumer to the penalties outlined in subsection K of this section.

2. The consumer, if ordered by the director of community development or authorized representative, shall procure the services of an approved cross connection control device inspector for the inspection of the presence or absence of cross connections within the consumer's premises and for testing, repair and maintenance of cross connection control devices within the consumer's premises, and the consumer shall be responsible for all costs related thereto.

3. On request by the director of community development or authorized representative, the consumer shall furnish information regarding the piping system or systems or water use within the customer's premises. The consumer's premises shall be open at all reasonable times to the director of community development or authorized representative for the verification of information submitted by the inspection consumer to the public water supply custodian regarding cross connection inspection results.

4. It shall be the responsibility of the water consumer to arrange periodic surveys of water use practices on the premises to determine whether or not there are actual or potential cross connections to the water system through which contaminants or pollutants could backflow into the private water service or the public potable water system. All cross connection control or other plumbing inspections must be conducted in accordance with 225 Illinois Compiled Statutes 320/3.

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

a. Cross Connection Control: All cross connections are removed, or approved cross connection control devices are installed for control of backflow and back siphonage.

b. Installation: Cross connection control devices shall be installed in accordance with the manufacturer's instructions.

c. Inspection: Cross connection control devices shall be inspected at the time of

installation and at least annually by a person certified by the IEPA as a cross connection control device inspector (CCCDI). The inspection of mechanical devices shall include physical testing in accordance with the manufacturer's instructions.

d. Testing And Records:

(1) 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, maintenance, and repairs made in accordance with the schedules noted in these regulations. Each device shall be tested at the time of installation and annually or more frequently if recommended by the manufacturer.

(2) A copy of all testing reports must be submitted to the director of community development within ten (10) working days of the installation. The test results for recertification must be submitted to the director of community development within ten (10) working days of the required renewal date. The date and time of the test, name and license number of cross connection control device inspector, and test results must be listed on each report.

(3) Double check valve assemblies shall be inspected and tested at time of installation and annually thereafter, and required service performed within fifteen (15) days.

(4) Reduced pressure principle backflow prevention assemblies shall be tested at the time of installation and annually or more frequently if recommended by the manufacturer, and required service shall be performed within five (5) days.

(5) Testing shall be performed by a person who has been certified by the IEPA as competent to service the device. Proof of approval shall be in writing.

(6) Records submitted to the village water supply shall be available for inspection by IEPA personnel in accordance with 415 Illinois Compiled Statutes 5/4.

(7) Each device shall have a tag attached listing the date of most recent test, name of CCCDI, and type and date of repairs.

(8) Whenever backflow prevention devices required by these regulations are found to be defective, they shall be repaired or replaced at the expense of the consumer without delay.

(9) Backflow prevention devices shall not be bypassed, made inoperative, removed, or otherwise made ineffective without specific authorization by the director of community development.

(10) A maintenance log shall be maintained and include:

Date of each test.

Name and CCCDI license number of person(s) performing the test.

Test results.

Repairs or servicing required.

Repairs and date completed.

Service performed and date completed.

E. Where And When Protection Is Required:

1. An approved backflow device shall be installed on all connections to the public water supply, as described in the Illinois 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 on each service line to a consumer's water system serving premises where, in the judgment of the director of community development, the director of public works, or their authorized representative(s), actual or potential hazards to the public water supply system exist.

2. If ordered by the director of community development, the water customer at subject premises shall install, test, and submit a copy of said test results to the director of community development within sixty (60) days of being so ordered unless the director of community development or the director of public works or their authorized representatives determine that the nature of the threat to the public potable water supply requires more timely compliance.

3. An approved backflow prevention device shall be installed on each service line to a consumer's water system including, but not limited to, situations where the following conditions exist:

a. Premises having an auxiliary water supply, unless such auxiliary supply is accepted as an additional source by the director of community development.

b. Premises on which any substance is handled which can create an actual or potential hazard to the public water supply system. This shall include 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 director of public works.

c. Premises having internal cross connections that, in the judgment of the director of community development or a cross connection control device inspector, are not correctable or that have 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 reestablished.

4. 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 consumer's water system

serving, but not necessarily limited to, the following types of facilities, unless the director of community development determines that no actual potential hazard to the public water supply system exists:

- a. Hospitals, mortuaries, clinics, nursing homes.
- b. Laboratories.
- c. Piers, docks, waterfront facilities.
- d. Sewage treatment plants, sewage pumping stations or storm water pumping stations.
- 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. Pesticide, or herbicide, or extermination plants and trucks.
- l. Farm service and fertilizer plants and trucks.

#### F. Type Of Protection Required:

1. The type of protection required under subsections E3a through E3c of this section shall depend on the degree of hazard which exists as follows:
  - a. 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.
  - b. 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.
  - c. An approved, fixed, proper air gap separation, or an approved, reduced pressure principle backflow prevention assembly or double check valve assembly shall be installed where public water supply system may be polluted with substances that could cause a pollution hazard not dangerous to health.
2. The type of protection required under subsections E3d and E3e of this section shall be an approved, fixed, proper air gap separation or an approved, reduced pressure principle

backflow prevention device.

3. Where a public water supply or an auxiliary 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 under the following conditions:

- a. When the fire safety system contains antifreeze, fire retardant, or other chemicals.
- b. When water is pumped into the system from another source.
- c. When water flows by gravity from a nonpotable source; or when water can be pumped into the fire safety system from another source.
- d. When there is a connection whereby another source can be connected to the fire safety system.

4. Any addition or alteration to an automatic sprinkler system shall be in accordance with the appropriate design standard for the system. If the addition of a backflow prevention device decreases the water pressure below the required pressure for the fire safety system, additional measures shall be taken in each such case to restore the pressure to the operating level required by mechanical means (i.e., a fire pump).

5. Before a backflow prevention device is installed retroactively on a fire sprinkler system, a thorough hydraulic analysis shall be performed including:

- a. Revised hydraulic calculations for hydraulically calculated systems in accordance with NFPA 13, 13R, or 13D. Submitted calculations should include the pressure loss anticipated through the backflow prevention device,
- b. Revised sprinkler system demand for pipe schedule systems,
- c. Current water supply data based on a water supply test, including a comparison assuring that any additional pipe lengths or fittings necessary to accommodate the proper installation of the backflow prevention device will not increase the sprinkler system demand beyond the available water supply, and
- d. All necessary modifications contributing to the additional friction loss.

These items, including a manufacturer's data sheet indicating the expected pressure loss, must be submitted to the fire department fire prevention bureau prior to the installation of the backflow prevention assembly.

#### G. Backflow Prevention Devices:

1. 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 specifications.

2. Installation of approved devices shall be made in accordance with 35 Illinois administrative code 653.802, and only as specified by the Research Foundation for Cross Connection Control of the University of Southern California, or applicable industry specifications. Maintenance, as recommended by the manufacturer of the device, shall be performed. Manufacturer's maintenance manual shall be available on site.

#### H. Booster Pumps:

1. 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, cutoff device designed to shut off the booster pump when the pressure in the service line on the suction side of the pump drops to twenty (20) psi or less.

2. It shall be the duty of the water consumer to maintain the low pressure, cutoff device in proper working order and to certify to the director of community development, at least once a year, that the device is operable.

I. Fire Pumps: Fire pumps shall be installed per NFPA 20, "Standard For The Installation Of Centrifugal Fire Pumps", and all applicable state of Illinois regulations.

J. Cross Connection Control Program Administration Fee: For each cross connection control device installed, a fee as set forth in appendix A, division II of this code shall be paid by the property owner upon whose premises the device was installed. The village treasurer shall bill each such water customer at the date of installation and thereafter at the annual anniversary of said date. Property owners with cross connection control devices installed prior to September 1, 1994, shall be billed the appropriate amount by the village treasurer upon notification of the presence of said devices and annually thereafter upon the anniversary of said notification date.

#### K. Violations:

1. The director of community development shall request or direct the director of public works to deny or discontinue, after reasonable notice to the occupants and owners 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 director of community development, 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, cutoff device required by this article is not installed and maintained in working order.

2. Water service to such premises shall not be restored until the consumer has corrected or eliminated such conditions or defects in conformance with this article and to the satisfaction of the director of community development and until a reconnection fee, as set forth in appendix A, division II of this code, for expenses incurred disconnecting and reconnecting the water services, is paid to the village. This fee must be paid in addition to any other fines described in subsection K4 of this section.

3. The consumer responsible for back siphoned or back pressured material or contamination through backflow must bear the cost of clean up of the potable water supply system and shall be totally liable for all claims that may result from such incidents 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.

4. Any person, firm or corporation who/which violates, disobeys, omits, neglects, or resists enforcement of any of the provisions of this article shall be fined for each offense as set forth in appendix A, division III of this code, and each day upon which such a violation continues shall constitute a separate offense. (Ord. 5253, 5-21-2002)