

CROSS CONNECTIONS AND BACKFLOW PROTECTION

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For the purpose of this article the following definitions shall apply unless the context clearly indicates or requires a different meaning:

AIR GAP SEPARATION: A physical break between a supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe measured vertically above the top rim of the vessel, and in no case less than one inch (1").

APPROVED CHECK VALVE: A check valve that seats readily and completely. It must be carefully machined to have free moving parts and assured watertightness. The face of the closure element and valve seat must be bronze, composition, or other noncorrodible material which will seat tightly under all prevailing conditions of field use. Pins and bushings shall be bronze or other noncorrodible, nonsticking material, machined for easy, dependable operation. The closure element (e.g., clapper) shall be internally weighted or otherwise internally equipped to promote rapid and positive closure in all sizes where this feature is obtainable.

APPROVED DOUBLE CHECK VALVE ASSEMBLY: An assembly of at least two (2) independently acting approved check valves including tightly closing shutoff valves on each side of the check valve assembly and suitable leak detector drains plus connections available for testing the watertightness of each check valve. Unless otherwise authorized by the superintendent of public works, a pressure relief valve,

rated at no more than fifty (50) psi greater than the water service pressure, shall be installed on the downstream side of the double check valve assembly.

APPROVED REDUCED CHECK PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE: A device incorporating two (2) or more valves and an automatically operating differential relief valve located between the two (2) checks, two (2) shutoff valves, and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two (2) check valves, less than the pressure on the public water supply side of the device. At cessation of normal flow the pressure between the check valves shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. When the inlet pressure is two (2) pounds per square inch or less, the relief valve shall open to the atmosphere thereby providing an air gap in the device. To be approved, these devices must be readily accessible for maintenance and testing and installed in a location where no part of the device will be submerged. Unless otherwise authorized by the superintendent of public works, a pressure relief valve rated at no more than fifty (50) psi greater than the water service pressure, shall be installed on the downstream side of the reduced pressure principle flow prevention device.

APPROVED WATER SUPPLY: Any water supply approved by, or under the public supervision of the superintendent of public works. In determining what constitutes an approved water supply, the superintendent shall have the final judgment as to its safety and potability.

AUXILIARY WATER SUPPLY: Any water supply on or available to the premises other than the City water supply.

CONSUMER: Any person to whom water is sold and furnished from the City water supply by the City.

CONTAMINATION: An impairment of the quality of the City water supply by the presence of any foreign substance (organic, inorganic, radiological, or biological) to a degree which creates a hazard to the public health through poisoning or through the spread of disease.

CROSS CONNECTION: Any unprotected connection between any part of the City waterworks system used or intended to supply water for drinking purposes, and any source or system containing water or substances that are not or cannot be approved as safe, wholesome, and potable for human consumption.

PERSON: Any natural person, firm, association, organization, partnership, trust, or association of persons, joint venture, corporation, or company.

PREMISES: Integrated land area, including improvements thereon, undivided by public thoroughfares or water distribution mains of the City where all parts of the premises are operated under the same management and for the same purpose.

PROTECTIVE DEVICE: Any of the following devices:

- A. Air gap separation;
- B. Approved reduced pressure principle backflow prevention device; or
- C. Approved double check valve assembly.

SERVICE CONNECTION: The terminal end of a service connection from the City water supply at its point of delivery to the consumer. If a meter is installed, "service connection" means the downstream end of the meter. No unprotected takeoffs from the service line ahead of any meter or backflow protective device located at the point of delivery to the consumer shall be permitted.

SUPERINTENDENT: The superintendent of public works of the City or his authorized representatives.

WATER SUPPLY OF CITY: An approved water supply sold and delivered to consumers' premises through the waterworks system of the City.

Sec. ___: **AUXILIARY WATER SUPPLY:**

- A. Each service connection from the City water supply for furnishing water to premises having an auxiliary water supply shall be protected against backflow of water from the premises into the City water supply, unless the auxiliary water supply is an approved water supply or is accepted as an additional source by the superintendent of public works.
- B. If the auxiliary water supply is not an approved water supply or if it is not accepted as an additional source and approved in the manner specified in subsection A of this section, and the auxiliary water supply is handled in a separate piping system with no known cross connection, the City water supply shall be protected by an approved double check valve assembly installed at the service connection to the premises. When the auxiliary water supply may be contaminated, the superintendent may order the City water supply protected by an air gap separation or an approved reduced pressure principle backflow prevention device installed at the service connection.
- C. If the auxiliary water supply is not an approved water supply or if it is not accepted as an additional source and approved in the manner specified in subsection A of this section, and cross connections are known to exist between the City water supply and the auxiliary water supply which cannot presently be eliminated, the City water supply shall be protected by an approved reduced pressure principle backflow prevention device installed at the service connection to the premises. A double check valve assembly may be used in lieu of such device if the experience of the superintendent indicates that double check valves are reliably operated, and if approved by the superintendent.

D. When the auxiliary water supply may be contaminated, the superintendent may order the City water supply protected by an air gap separation installed at the service connection.

Sec. ___: TOXIC OR HAZARDOUS SUBSTANCES UNDER PRESSURE:

At the service connection to any premises on which any material dangerous to health or toxic substance in toxic concentration is or may be handled under pressure, the City water supply shall be protected by an air gap separation. The air gap shall be located as close as practicable to the service cock and all piping between the service cock and receiving tank shall be entirely visible. If these conditions cannot reasonably be met, the City water supply shall be protected with an approved reduced pressure principle backflow prevention device which is acceptable to the superintendent of public works.

Sec. ___: TOXIC OR HAZARDOUS SUBSTANCES NOT UNDER PRESSURE:

At the service connection to any premises on which any material dangerous to health or toxic substance in toxic concentration is not handled under pressure but is otherwise handled in such a manner as to constitute a cross connection, the City water supply shall be protected by an approved reduced pressure principle backflow prevention device, unless such cross connection is abated to the satisfaction of the superintendent of public works. An approved double check valve assembly may be used in lieu of such device if experience indicates that double check valves are reliably operated and if approved by the superintendent.

Sec. ___: NONHAZARDOUS SUBSTANCES:

At the service connection to any premises on which a substance that would be objectionable (but not necessarily hazardous to health) if introduced into the City water supply is handled in such a manner as to constitute a cross connection, the City water supply shall be protected by an approved double check valve assembly unless such cross connection is abated to the satisfaction of the superintendent of public works. (Ord. 1253, 6-24-1991)

Sec. ___: SEWAGE TREATMENT PLANTS AND PUMPING STATIONS:

At the sewage treatment plant or sewage pumping station, the City water supply shall be protected by an air gap separation. The air gap shall be located as close as practicable to the service cock and all piping between the service cock and receiving tank shall be entirely visible. If these conditions cannot be reasonably met, the City water supply shall be protected with an approved reduced pressure

principle backflow prevention device, provided this alternative is acceptable to the superintendent of public works.

Sec. ___: SERVICE CONNECTIONS FROM CITY WATER SUPPLY:

A. Each service connection from the City water supply for furnishing water to premises on which any substance is or may be handled in such a manner as to permit entry into the City water supply shall be protected against backflow of the substance from the premises into the City water supply. This shall include the handling of process waters and waters originating from the City water supply which have been subject to change in quality.

B. Backflow protection devices shall be installed on the service connection to any premises that have internal cross connections unless such cross connections are abated to the satisfaction of the superintendent of public works.

Sec. ___: CONSUMER TO INSTALL, MAINTAIN REQUIRED PROTECTION DEVICES:

A. It shall be the responsibility of each consumer at his own expense to furnish, install, and keep in good working order and safe condition any and all protective devices required in this article. The City shall not be responsible for any loss or damage directly or indirectly resulting from or caused by the improper or negligent installation, operation, use, repair, maintenance of, or interference with any protective device by any consumer or any other person.

B. Whenever two (2) or more conditions exist on any premises for the correction of which different protective devices are required in this article, the consumer shall be required only to install the protective device which, in the opinion of the superintendent of public works, affords the maximum protection to the City water supply.

Sec. ___: WATER MAINS; HORIZONTAL SEPARATION:

A. A water main shall be laid at least ten feet (10') horizontally from any existing or proposed drain or sewer line. However, should local conditions prevail which would prevent a lateral separation of ten feet (10'), a water main may be laid closer than ten feet (10') to, or in the same trench as a storm or sanitary sewer provided the main is laid in a separate trench or on an undisturbed earth shelf located to one side of the sewer and at such an elevation that the bottom of the water main is at least eighteen inches (18") above the top of the sewer.

B. If it is impossible to obtain proper horizontal and vertical separation as stipulated in this section and section 7-3F-10 of this article, both the water main and

sewer shall be constructed of mechanical joint, cast iron pipe and shall be pressure tested to assure watertightness before backfilling.

Sec. ___: WATER MAINS; VERTICAL SEPARATION:

A. Whenever water mains must cross house sewers, storm drains, or sanitary sewers, the water main shall be laid at such an elevation that the bottom of the water main is eighteen inches (18") above the top of the drain or sewer. This vertical separation shall be maintained for that portion of the water main located within ten feet (10'), horizontally, of any sewer or drain crossed, this ten feet (10') to be measured as the normal distance from the water main to the drain or sewer.

B. However, where conditions exist such that the minimum vertical separation set forth in subsection A of this section cannot be maintained, or it is necessary for the water main to pass under a sewer or drain, the water main shall be laid with mechanical joint, cast iron pipe; and the mechanical joint pipe shall extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten feet (10'). Where a water main must cross under a sewer, a vertical separation of eighteen inches (18") between the bottom of the sewer and the top of the water main shall be maintained, along with means to support the larger sized sewer lines to prevent their settling and breaking the water main.

Sec. ___: WATER SERVICE LINES:

The horizontal and vertical separation between water service lines and all sanitary sewer, storm sewers, or any drain shall be the same as for water mains as detailed in sections 7-3F-9 and 7-3F-10 of this article. However, when minimum horizontal and vertical separation cannot be maintained, brass, copper, in addition to mechanical joint, cast iron pipe, may be used for water service lines.

Sec. ___: INSPECTIONS OF PROTECTION DEVICES REQUIRED ANNUALLY; COSTS:

A. The consumer on whose premises any protective device is installed shall have each device inspected annually. If successive inspections disclose repeated failures in the operation of any device, the superintendent of public works may require more frequent inspections. Each device shall be repaired, overhauled, or replaced at the expense of the consumer whenever it is found to be defective. **Test results must be entered into the third-party software platform contracted by the municipality within ten (10) days of the completed test.** The superintendent shall have the duty of determining that the inspections required herein are performed properly.

B. If following demand therefor, the consumer fails to have any of the inspections made as required herein or to make the above described records available, the

superintendent shall have the right to arrange the inspection of the device and the consumer shall pay the cost thereof. The cost of any inspection made by the superintendent shall be included as part of the next ensuing municipal water bill presented to the consumer.

C. For the purpose of making any inspections or discharging the duties imposed by this article, the superintendent shall have the right to enter upon the premises of any consumer. Each consumer, as a condition of the continued delivery to his premises of the water from the City water supply, shall be considered as having stated his consent to the entry upon his premises of the superintendent for the purposes stated herein.

Sec. ____: CROSS CONNECTION ONLINE SURVEYS REQUIRED; ACCESS AND ENFORCEMENT

A. Each consumer supplied by the municipal water system shall complete a cross connection control survey of their premises in accordance with the requirements of Section 604.1505 of Title 35 of the Illinois Administrative Code. The purpose of the survey is to identify any actual or potential cross connections between the potable water supply and sources of contamination or pollution without a physical site visit.

Online Surveys shall be completed:

1. At intervals not exceeding three (3) years thereafter for all properties;
2. For commercial properties, if a potential cross connection is identified through the submitted online survey, a physical site inspection shall be required to verify and assess the identified condition.

B. Each water customer shall be required to complete and return the cross connection control survey in the official format prescribed and provided by the superintendent. The survey must be submitted within thirty (30) days of notification. Surveys submitted in any form other than that provided or approved by the superintendent shall be deemed noncompliant.

C. In the event that the consumer fails to complete the required survey following notification, the superintendent shall have the right to perform or contract the performance of a site inspection at the consumer's premises. The full cost of such inspection and documentation shall be charged to the consumer and included on the next municipal water bill.

D. The superintendent, or their designee, shall have the right of entry onto the consumer's premises for the purposes of conducting surveys, inspections, or verifying survey information, during reasonable hours and upon proper identification. Continued water service shall be conditional upon the consumer's consent to such entry for compliance purposes.

E. Any identified actual or potential cross connections shall be corrected within a timeframe established by the superintendent. Failure to comply may result in disconnection of water service until proper corrective action is taken and verified by the municipality.

F. The superintendent shall maintain records of all submitted surveys, inspections, and follow-up actions taken, and shall enforce the provisions of this article in accordance with the requirements of the Illinois Environmental Protection Agency and the Illinois State Plumbing Code.

Sec. ____: CROSS CONNECTION PHYSICAL SITE INSPECTIONS REQUIRED; ACCESS AND ENFORCEMENT

A. The superintendent of public works, or their designee, shall have the authority to require a physical on-site inspection of any premises served by the municipal water system to determine the presence of actual or potential cross connections. Such inspections may be initiated based on responses to an online survey, identification of a commercial or high-risk property, or at the discretion of the superintendent when deemed necessary to protect the public water supply.

B. All commercial and high-risk properties shall be subject to routine site inspections at intervals not to exceed one (1) year, or at a greater frequency if deemed necessary by the superintendent based on past violations, survey results, or operational risk.

C. Residential properties shall be subject to site inspection when the completed online survey indicates the presence of irrigation systems, secondary water sources, or other potential cross connections, or when otherwise directed by the superintendent.

D. The property owner or occupant shall be provided with written notice of the required inspection and shall make reasonable accommodations for the inspection to be conducted within fifteen (15) days of such notice. Failure to comply with the inspection requirement may result in termination of water service until the inspection is completed and any corrective actions are taken.

E. The superintendent, or their authorized representative, shall have the right to enter upon any premises supplied with water from the municipal system during reasonable hours and upon proper identification, for the purposes of conducting a cross connection site inspection, verifying survey information, or enforcing any provisions of this article. Continued water service shall be conditioned upon consent to such entry.

F. Any actual or potential cross connection identified during a physical site inspection shall be corrected, isolated, or otherwise brought into full compliance within the timeframe specified in the written notice provided to the property owner

or water customer. Failure to correct the condition may result in the discontinuation of water service until compliance is achieved.

Sec. ___: DISCONTINUANCE OF WATER SERVICE UPON NONCOMPLIANCE:

- A. No water service connection shall be installed on the premises of any consumer unless the City water supply is protected as required by this article.
- B. Delivery of water to the premises of any consumer may be discontinued by the superintendent of public works if any protective device required by this article has not been installed, inspected, tested, and maintained, is defective, or has been removed or bypassed.
- C. Delivery of water shall be discontinued immediately and without notice to the consumer if the superintendent determines that:
 1. The City water supply is being contaminated or is in immediate danger of contamination;
 2. A protective device required by this article has not been installed, is defective, or has been removed or bypassed; and
 3. The consumer cannot immediately be located.
- D. Delivery of water shall not be resumed until any protective device required by this article and approved by the superintendent has been properly installed, or until conditions at the consumer's premises causing the contamination or danger of contamination have been abated or corrected to the satisfaction of the superintendent.

Sec. ___: NOTICE OF DISCONTINUANCE:

- A. Except as provided in subsection 7-3F-13C of this article, delivery of water shall not be discontinued until written notice thereof has been given to the consumer. The notice shall state:
 1. The conditions or defects which must be corrected;
 2. The manner in which the stated conditions or defects are to be corrected; and
 3. The date on or after which delivery of water will be discontinued, which shall not be less than fifteen (15) nor more than ninety (90) days following the date of delivery of mailing of this notice.
- B. The superintendent of public works may grant the consumer an extension of an additional period not to exceed ninety (90) days if he determines the consumer has exercised due diligence but has been unable to comply with the notice within the time originally allowed.
- C. The notice shall be given by delivering it to the consumer, the manager or agent thereof, or to any person in charge of or employed in the place of business of

the consumer; or, if the consumer has no place of business, then at the place of residence of the consumer if known, or by leaving the notice at either the place of business or the residence of the consumer. If the consumer cannot be found and service of the notice cannot be made in the manner provided herein, then a copy of the notice shall be mailed, postage fully prepaid, addressed to the consumer at the place of business or residence set forth in the application of the consumer for water service in the records of the City.

Sec. ___: RESUMPTION OF SERVICE:

Once discontinued, delivery of water shall not be resumed until any protection device required by this article and approved by the superintendent of public works has been properly installed, or until the conditions at the consumer's premises creating the need for a protective device have been abated or corrected to the satisfaction of the superintendent.