

# Cross Connection and Backflow Prevention Regulation of the Kingston Water Department

## Section I: General Policy

The purpose of this regulation is:

1. To protect the public potable water supply of the City of Kingston from the possibility of contamination by isolating within its customer's internal distribution system or its customer's private water system such contaminations or pollutants which could backflow into the public water supply system; and
2. To comply with the requirements of the New York State Sanitary Code 5-1.31.

## Section II: Definitions

1. **Air Gap Separation** means 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 1 inch.
2. **Approved Check Valve** means a check valve that seats readily and completely. It must be carefully machined to have free-moving parts and assured water tightness. The face of the closure element and valve seat must be bronze, composition or other non-corrodible, non-sticking material which will seat tightly under all prevailing conditions of field use. Pins and bushings shall be bronze or other non-corrodible, non-sticking 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.
3. **Approved Double Check Valve Assembly** means an assembly of at least two independently acting approved check valves including tightly closed shutoff valves on each side of the check valve assembly and suitable test cocks plus connections available for testing the water tightness of each check valve.
4. **Approved Reduced Pressure Principle Backflow Prevention Device** means a device incorporating two or more check valves and an automatically operating differential relief valve located between the two checks, two shutoff valves, and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two 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 valve, the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. 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.
5. **Approved Water Supply means** any water supply approved by, or under the public health supervision of a public health agency of the State of New York, the County of Ulster, or the City of Kingston. In determining what constitutes an approved water supply, the Department of Public Health of the State of New York

(herein called State Department of Health) shall have the final judgment as to its safety and potability.

6. **Auxiliary Water Supply** means any water supply on or available to the premises other than the City Water Supply.
7. **City** means the City of Kingston
8. **City Water Supply** means an approved supply sold and delivered to consumer's premises through the Water Works System of the City of Kingston.
9. **Consumer** means any person to whom water is sold and furnished from the City of Kingston.
10. **Contamination** means 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.
11. **County Health Officer** means the Director of the Ulster County Health Department, his/her assistants, or authorized deputies acting as, or any other person appointed as, Health Officer of the County of Ulster.
12. **Cross Connection** means any unprotected connection between any part of the City Water Works System used or intended to supply water for drinking purposes and any source or system containing water or substance that is not or cannot be approved as safe, wholesome, and potable for human consumption.
13. **Multifamily Dwelling** means a building that contains three or more separate residential dwelling units.
14. **Person** means any natural person, firm, association, organization, partnership, trust, or association of persons, joint venture, corporation, or company, and includes the United States, the State of New York, the County of Ulster, any Special Purpose District, and any officer or agent thereof.
15. **Premises** means any integrated land area including improvements thereon undivided by public thoroughfares or water distribution mains of the City of Kingston and where all parts of the premises are operated under the same management and for the same purpose.
16. **Protective Device** means any of the following devices:
  - a. Air Gap Separation
  - b. Approved Reduced Pressure Principle Backflow Prevention Device (RPZ)
  - c. Approved Double Check Valve Assembly
17. **Service Connection** means the terminal end of a service connection from the Water Supply at its point of delivery to the consumer. If a meter is installed, "service connection" means the downstream end of a 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.
18. **Shall** is mandatory; **May** is permissive.
19. **Superintendent** means the Superintendent of the Kingston Water Department or his/her authorized representatives.
20. **Toxic Substance** means any substance (liquid, solid, gaseous), including raw sewage and lethal substances, that when introduced into the water supply creates or may create a danger to the health and well-being of the consumer.
21. **Non-Toxic Substance** means any substance of a non-poisonous nature that may create a moderate or minor hazard to the water supply system.

Section III: Where Protection Required: Type of Protection, Location

1. **Auxiliary Water Supply.** Each service connection from the city water supply for furnishing water to the premises having an auxiliary water supply shall be protected against backflow of water from the premises into the City Water Supply by an air gap separation or an approved reduced pressure principle backflow prevention device installed at the service connection. Alternatively, the auxiliary water supply may be abandoned in a manner acceptable to the Superintendent and the County Health Officer.
2. **Toxic or Hazardous Substances.** Should a facility be rated hazardous, an air gap separation or a reduced pressure zone device (RPZ) is required. An actual cross connection need not exist, merely the potential for a cross connection is sufficient to require the installation of either an air gap separation or an RPZ. The determination of hazard shall be determined by the Superintendent whose decision is final.
3. **Non-Hazardous 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 or a potential cross connection, the City Water Supply shall be protected by an approved double check valve assembly. The determination of hazard shall be determined by the Superintendent whose decision is final.
4. **Non-Hazardous to Hazardous.** In the event that a facility is rated non-hazardous and on such a date becomes hazardous, notification of at least thirty (30) days is given to the Superintendent before the change takes place. Protection by the use of a protective device as required on hazardous substances must be installed.
5. **Sewage Treatment Plant and Pumping Stations.** At the service connection to any 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 practical to the service connection and all piping between the service connection and the receiving tank shall be entirely visible. If these conditions can not be reasonably met, the City Water Supply shall be protected with an approved reduced pressure principle backflow prevention device, providing this alternative is acceptable to the Superintendent and the County Health Officer.
6. **Fire System.** At the service connection to any premises in which a fire protection system is installed, the City Water Supply shall be protected based on the water source and arrangement of supplies in accordance with the following classifications:

**Class 1:** Direct connection from public water mains only; no pumps, tanks or reservoirs; no physical connections from auxiliary water supplies, no antifreeze or other additives of any kind; all sprinkler drains discharging to atmosphere, dry wells or other safe outlets.

**Protection: Double Check Valve Assembly**

**Class 2:** Same as Class 1, except booster pumps may be installed in the connections from the street mains.

**Protection: Double Check Valve Assembly**

**Class 3:** Direct connection from the public water supply main plus one of the following: elevated storage tanks; fire pumps taking suction from above-ground covered reservoirs or tanks; and pressure tanks.

**Protection: Double Check valve Assembly**

**Class 4:** Directly supplied from public mains similar to Classes 1 and 2, with an auxiliary water supply on or available to the premises; or an auxiliary supply may be located within 1,700 feet of the pumper connection.

**Protection: Air gap or reduced pressure principle backflow prevention device.**

**Class 5:** Directly supplied from public mains, and interconnected with auxiliary supplies, such as pumps taking suction from reservoirs exposed to contamination or rivers and ponds; driven wells; mills or other industrial water systems; or where antifreeze or other additives are used.

**Protection: Air gap or reduced pressure principle backflow prevention device.**

**Class 6:** Combined industrial and fire protections systems supplied from the public water mains only, with or without gravity storage or pump suction tanks.

**Protection: As determined by the Superintendent upon review of engineering drawings of the system.**

7. **Lawn Sprinkling Systems:** At the service connection to any permanently installed lawn sprinkling system, the City Water Supply shall be protected by an approved air gap separation or a reduced pressure zone device (RPZ). The Superintendent may allow an RPZ to be installed in the internal supply pipes to a lawn sprinkler or irrigation system provided that there are not other hazards present that would dictate the installation of the RPZ device on the service connection to the premises.
8. **Commercial, Industrial, Multifamily, and Institutional Facilities:** All commercial, industrial, multifamily and institutional facilities shall have an RPZ device installed on the domestic service connection to the premises. This shall be in addition to any protective device that may be required on a fire protection line at the facility.
9. **Location of Protective Devices.** All protective devices on domestic service lines shall be installed immediately after the meter in accordance with all the provisions of this regulation. If a bypass is installed around the meter, it must be metered and protected with a protective device of the same type as the main metered

service line. Devices required on fire lines shall be located as near to the service connection as practical and as approved by the Superintendent.

#### Section IV Responsibility

1. **Consumer Responsibility.** 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 regulation. 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 or maintenance of or interfering with, any protective service by any consumer or any other person.
2. **Conflicts.** Whenever two or more conditions exist on any premises for the correction of which different protective devices are required in this regulation, the consumer shall be required only to install the protective device which, in the opinion of the Superintendent, affords the maximum protection to the City Water Supply.

#### Section V: Application, Inspection, Records, Cost

1. As per the requirements of Part 5-1.31 of the New York State Sanitary Code, an application for a protective device must be submitted to and approved by the Superintendent. Once installed, the Water Supply shall conduct the initial test on the device to ensure it is working properly.
2. The consumer on whose premises any protective device is installed shall have each such device inspected annually. If successive inspections disclose repeated failures in the operation of any device, the Superintendent 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. Records of such test, repairs and overhauls shall be kept and a copy of such records forwarded to the Superintendent on an annual basis. The Superintendent shall have the duty of determining that the inspections required herein are performed properly. If following demand, therefore, 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 inspect the device and the consumer shall pay the cost thereof.

#### Section VI: Non-Compliance, Service to be Discontinued, Notice, Service

1. No water service connection shall be installed on the premises of any consumer unless the City Water Supply is protected as required by this Regulation.
2. Delivery of water to the premises of any consumer may be discontinued by the Superintendent if any protective device required by this Regulation has not been installed, tested and maintained, or is defective, or has been removed and bypassed.
3. Delivery of water shall be discontinued immediately and without notice to the consumer if the Superintendent or the County Health Officer determined that:
  - a. The City Water Supply is being contaminated or is in immediate danger of contamination;

- b. A protective device required by this Regulation has not been installed, or is defective, or has been removed or bypassed; and
- c. The consumer can not be immediately located

Delivery of water shall not be resumed until any protective device required by this regulation 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 and the County Health Officer.

4. Except as provided in subsection (3), delivery of water shall not be discontinued until written notice thereof has been given to the consumer. The notice shall state:
  - a. The conditions or defects which must be corrected;
  - b. The manner in which the stated conditions or defects are to be corrected; and
  - c. The date on or after which delivery of water will be discontinued, and which shall not be less than fifteen days (15) nor more than ninety (90) days following delivery of mailing notice. The Superintendent may grant the consumer an extension of an additional period not to exceed ninety (90) days if he/she determines the consumer has exercised due diligence but has been unable to comply with the notice within the time originally allowed.

The notice shall be given by delivering the same 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, service 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.

Once discontinued, delivery of water shall not be resumed until any protective device required by this Regulation and approved by the Superintendent 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 and the County Health Officer.

5. For the purpose of making any inspections or discharging the duties imposed by this Regulation, the Superintendent and County Health Officer 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 water from the City Water Supply, shall be considered as having stated his consent to the entry upon his premises of the Superintendent and the County Health Officer for the purposes stated herein.

#### Section VII: Presently Installed Devices

All presently installed prevention devices which do not meet the requirements of this section but were approved devices for the purposes described herein at the time of installation and which have been properly maintained, shall except for the inspection and

maintenance requirements under Section V be excluded from the requirements of these rules so long as the Superintendent is assured that they will satisfactorily protect the City's Water Supply. Whenever the existing device is moved from its present location or requires more than minimum maintenance, the unit shall be replaced by a backflow prevention device meeting the requirements of this Regulation.