The City of Newark Backflow Prevention Program

Cross-Connection Control and Water Quality Protection

8/8/2012

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CROSS-CONNECTION CONTROL AND WATER QUALITY PROTECTION

Backflow Protection - If, in the judgment of the Water Treatment Superintendent, the integrity of the public water system is, or can be, endangered by backflow from an actual or a potential cross-connection within the plumbing system of a water consumer, the Superintendent may order the installation of an approved backflow prevention method or device consisting of either an air-gap, double sanitary check valve assembly, vacuum breaker, reduced pressure principle backflow preventer or any combination thereof at the water service connection to the premise.

The water consumer shall install the designated device or method at the consumer's own expense, and failure, refusal or inability to install the device or method immediately shall constitute a ground for discontinuing water service to the premise until such device or method has been installed and approved by the superintendent.

The use of the approved backflow preventer at the water service connection does not in any way affect or eliminate the need for individual fixture devices or air-gaps as required by the Ohio Building Code.

All necessary permits shall be obtained from the political subdivision having jurisdiction.

Definitions

As used in Backflow Protection Section:

(A) "Air gap separation" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle. The distance shall be twice the pipe diameter but never less than one inch.

(B) "Approved" means that a backflow prevention device or method has been accepted by the Newark Division of Water and Wastewater and the Ohio Environmental Protection Agency as suitable for the proposed use.

(C) "Auxiliary water system" means any water system on or available to the premises other than the public water system and includes the water supplied by the system. These auxiliary waters may include water from another purveyor's public water system; or water from a source such as wells, cisterns, lakes, or streams; or process fluids; or used water. They may be polluted or contaminated or objectionable or constitute a water source or system over which the Division of Water and Wastewater does not have control.

(D) "Backflow" means the flow of water or other liquids, mixtures, or substances into the distribution pipes of a potable water supply from any source other than the intended source of the potable water supply.

(E) "Backflow prevention device" means any device, method, or type of construction intended to prevent backflow into a potable water system.

(F) "Consumer" means the owner or person in control of any premises supplied by or in any manner connected to a public water system.

Backflow Protection (Cont.)
(G) "Consumer's water system" means any water system, located on the consumer's premises, supplied by or in any manner connected to a public water system. A household plumbing system is considered to be a consumer's water system.

(H) "Contamination" means an impairment of the quality of the water by sewage or process fluids or waste to a degree which could create an actual hazard to the public health through poisoning or through spread of disease by exposure.

(I) "Cross-connection" means any arrangement whereby backflow can occur.

(J) "Degree of hazard" is a term derived from an evaluation of the potential risk to health and the adverse effect upon the potable water system.

(K) "Double check valve assembly" means an assembly composed of two single, independently acting, check valves including tightly closing shutoff valves located at each end of the assembly and suitable connections for testing the watertightness of each check valve.

(L) "Health hazard" means any condition, device, or practice in a water system or its operation that creates, or may create, a danger to the health and well-being of users. The word "severe" as used to qualify "health hazard" means a hazard to the health of the user that could reasonably be expected to result in significant morbidity or death.

(M) "Interchangeable connection" means an arrangement or device that will allow alternate but not simultaneous use of two sources of water.

(N) "Non-potable water" means water not safe for drinking, personal, or culinary use.
(O) "Person" means the state, any political subdivision, public or private corporation, individual, partnership, or other legal entity.

(P) "Pollution" means the presence in water of any foreign substance that tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

(Q) "Potable water" means water which is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the department of health.

(R) "Process fluids" means 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, pollution, or system hazard if introduced into the public or a potable consumer's water system. This includes, but is not limited to:

(1) Polluted or contaminated waters;

(2) Process waters;

Backflow Protection (Cont.)

(3) Used waters originating from the public water system which may have deteriorated in sanitary quality;

(4) Cooling waters;

(5) Contaminated natural waters taken from wells, lakes, cisterns, streams, or irrigation systems;

(6) Chemicals in solution or suspension;

(7) Oils, gases, acids, alkalis, and other liquid and gaseous fluids used in industrial or other processes, or for firefighting purposes.

(S) "Public water system" means any potable water system as defined in rule by Section 3745-81-01 of the Ohio Administrative Code.

(T) "Reduced pressure principle backflow prevention device" means 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. 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 valves at less than the supply pressure. The unit must include tightly closing shut-off valves located at each end of the device, and each device shall be fitted with properly located test cocks.

(U) "Service connection" means the terminal end of a service line from the public water system. If a meter is installed at the end of the service, then the service connection means the downstream end of the meter.

(V) "System hazard" means a condition posing an actual or potential threat of damage to the physical properties of the public water system or a potable consumer's water system.

(W) "Pollutional hazard" means a condition through which an aesthetically objectionable or degrading material not dangerous to health may enter the public water system or a potable consumer's water system.

(X) "Used water" means any water supplied by a water purveyor from a public water system to a consumer's water system after it has passed through the service connection and is no longer under the control of the water purveyor.

(Y) "Water purveyor" means the owner or operator of a public water system.

(Z) "Ohio E.P.A." means the Ohio State Environmental Protection Agency.

(AA) "Certified Backflow Tester" means a person Certified by the State of Ohio, Department of Health, Plumbing Unit, Backflow and Cross Connection Division.

Backflow Protection (Cont.)
(BB) "Approved Backflow Testing Device" means a backflow testing device approved by the Director.

Cross-Connections prohibited

(A) No person shall install or maintain a water service connection to any premises where actual or potential cross-connections to a public water system or a potable consumer's water system may exist unless such actual or potential cross-connections are abated or controlled to the satisfaction of the Director.

(B) No person shall install or maintain any connection whereby water from an auxiliary water system may enter a public water system or potable consumer's water system unless the auxiliary water system and the method of connection and use of such system shall have been approved by the Director and by the Ohio E.P.A. as required by Section 6109.13 of the Revised Code of Ohio.

Surveys and investigations

(A) The Director, or his authorized representative, shall have the right to enter premises served by the public water system at all reasonable times for the purpose of making surveys and investigations of water use practices within the premises.

(B) On request by the Director, or his authorized representative, the consumer shall furnish the water purveyor, or his authorized representative, information on water use practices within the consumer's premises.

(C) Section (A) of this regulation does not relieve the consumer of the responsibility for conducting, or causing to be conducted, periodic surveys of water use practices on his premises to determine whether there are actual or potential cross-connections in the consumer's water system through which contaminants or pollutants could backflow into a public water system or a potable consumer's water system.

Where protection is required

(A) An approved backflow prevention device shall be installed on each service line to a consumer's water system serving a premise where, in the judgment of the Director or the Ohio E.P.A., a real or potential health, pollutional, or system hazard to the public water system exists. In residential, single-family accounts with an irrigation system where this would result in would result in redundant protection, a specific exemption may be granted by agreement between the Director and the local plumbing authority.

Backflow Protection (Cont.)

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

a. (1) Premises having an auxiliary water system, unless such auxiliary system is accepted as an additional source by the Director and the source are approved by the Ohio E.P.A.

b. (2) Premises on which any substance is handled in such a fashion as to create an actual or potential hazard to a public water system. This shall include premises having sources or systems containing process fluids or waters originating from a public water system which are no longer under the control of the water purveyor;

c. (3) Premises having internal cross-connections that, in the judgment of the Director, are not correctable or intricate plumbing arrangements which make it impracticable to determine whether or not cross-connections exist;

d. (4) Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey;

e. (5) Premises having a repeated history of cross-connections being established or reestablished;

f. (6) Others specified by the Director or the Ohio E.P.A.

(C) An approved backflow prevention device shall be installed at any point of connection between a public water system or a potable consumer's water system and an auxiliary water system, unless such auxiliary system is accepted as an additional source by the Director and the source is approved by the Ohio E.P.A.

Type of protection required.

(A) The type of protection required under Sections (A), (B), and (C) of Rule 4 shall depend on the degree of hazard which exists as follows:

a. An approved air gap separation shall be installed where a public water system may be contaminated with substances that could cause a severe health hazard;

b. An approved air gap separation or an approved reduced pressure principle backflow prevention device shall be installed where a public water system may be contaminated with any substance that could cause a system or health hazard;

c. An approved air gap separation or an approved reduced pressure principle backflow prevention device or an approved double check valve assembly shall be installed where a public water system may be polluted with any substance that could cause a pollutional hazard.

Backflow Protection (Cont.)

(B) The type of protection required under Section (C) of Rule 4 shall be an approved air gap separation or an approved interchangeable connection.

(C) Where an auxiliary water system is used as a secondary source of water for a fire protection system, the provisions of Section (B) of Rule 5 for an approved air gap separation or an approved interchangeable connection may be waived by the Director and the Ohio E.P.A. provided:

a. (1) At premises where the auxiliary water system may be contaminated with substances that could cause a system or health hazard, a public water system or a potable consumer's water system shall be protected against backflow by installation of an approved reduced pressure principle backflow prevention device;

b. (2) At all other premises, a public water system or a potable consumer's water system shall be protected against backflow by installation of either an approved reduced pressure principle backflow prevention device or an approved double check valve assembly;

c. (3) A public water system or a potable consumer's water system shall be the primary source of water for the fire protection system;

d. (4) The fire protection system shall be normally filled with water from a public water system or a potable consumer's water system;

e. (5) The water in the fire protection system shall be used for fire protection only, with no other use of water from the fire protection system downstream from the approved backflow prevention device.

(D) Type of Backflow Protection Required-Domestic Water Services

An approved backflow prevention device of the type designated shall be installed on each domestic water service connection to the following types of facilities unless the Director determines that no real or potential health, pollutional, or system hazard to the public water system exists. This list is presented as a guideline and should not be construed as being complete.

Abbreviations used are as follows:

A.G. Air Gap Separation
R.P. Reduced Pressure Principle Backflow Preventer
D.C. Double Check Valve Backflow Preventer

Type of Facility Minimum	Type of Protection
Breweries, Distilleries, Bottling Plants	D.C.
Car Wash with Recycling System and/or Wax Eductor	R.P.
Chemical Plants	R.P.
Dairies	D.C.
Dentist Office	R.P.
Fertilizer Plants	R.P.
Film Laboratory or Processing Plant	R.P.
Food or Beverage Plant	D.C.
Hospitals, Clinics, Medical Buildings	R.P.
Laboratories	R.P.
Laundries & Dry Cleaning Plants	D.C.
Machine Tool Plants (Health or System Hazard)	R.P.
Machine Tool Plants (Pollutional Hazard)	D.C.
Metal Processing Plant (Health or System Hazard)	R.P.
Metal Processing Plant (Pollutional Hazard)	D.C.
Metal Plating Plant	R.P.
Morgues or Mortuaries	R.P.
Nursing Homes	R.P.
Packing Houses or Rendering Plants	R.P.

Type of Facility Minimum	Type of Protection
Paper Products Plant	R.P.
Petroleum Processing Plant	R.P.
Petroleum Storage Yard (Health or System Hazard)	R.P.
Petroleum Storage Yard (Pollutional Hazard)	D.C.
Pharmaceutical or Cosmetic Plant	R.P.
Piers, Docks or Waterfront Facilities	R.P.
Power Plants	R.P.
Radioactive Material Plants	R.P.
Restaurants, with Soap Eductors and/or Industrial Type Disposal	R.P.
Sand and Gravel Plants	D.C.
Schools with Laboratories Having Acid Wastes	R.P.
Sprinkling or Irrigation Systems	R.P.
Swimming Pools with Piped Fill Line	A.G. at pool
Sewage Treatment Plants	R.P.
Sewage Pumping Stations (Health or System Hazard)	R.P.
Veterinary Establishments	R.P.
Others specified by the Director	

In addition to and including those types of facilities listed above, an approved backflow prevention device of the type designated shall be installed on each domestic water service connection to any premises containing the following real or potential hazards.

	Minimum Type of Protection
Premises having an auxiliary water system not connected to public water system	R.P.
Premises having a water storage tank, reservoir, pond, or similar appurtenance	R.P.
Premises having a steam boiler, cooling system, or hot water heating system where chemical water conditions are used	R.P.
Premises having submerged inlets to equipment	R.P.
Premises having self-draining yard hydrants, fountains, hose boxes or similar devices presenting a health or system hazard (i.e., chemical storage plants, tank farms, bulk storage yards)	R.P.
Premises having self-draining yard hydrants, fountains, hose boxes or similar devices presenting a pollutional hazard (i.e., parks, play fields, cemeteries)	D.C.
Others specified by the Director	

(E) Type of Backflow Protection Required-Fire Protection Services an approved backflow prevention device of the type designated shall be installed on each fire protection service to any premises where the fire protection system contains any of the following components unless the Director determines that no real or potential health, pollutional, or system hazard to the public water system exists.

Fire System Component	Minimum Type of Protection
(1) Auxiliary Water System	See Sections B & C of Rule 4
(2) Anti-Freeze Legs	R.P.
(3) Self-Draining Fire Hydrants on premises presenting a health or system hazard (i.e., Chemical Plants, Petroleum Storage Plants, Bulk Storage Yards, Stock Yards, Sewer Plants, or similar facilities where ground seepage of toxic materials may occur	R.P.
(4) Self-Draining Fire Hydrants on premises presenting a pollutional hazard (i.e., Apartment House, Office Complex, Fabricating Plants, or similar facilities where ground seepage of pollutional but not toxic materials may occur	D.C.

Fire System Component (Cont.)	**Minimum Type of Protection**
(5) Covered Gravity or Pressure Storage Tanks filled with water from Newark Public Water System	D.C.
(6) Uncovered Storage Tanks or Reservoirs	R.P.
(7) Others specified by the Director	

Backflow prevention devices

(A) Any backflow prevention device required by Sections 3745-95-04 and 3745-95-05 of the Ohio Administrative Code and the Director shall be of model or construction approved by the Director and the Ohio E.P.A.

(B) Any backflow prevention device required shall be installed horizontally, at a location and in a manner approved by the Director and shall be installed by a Division of Water and Wastewater Certified Person and at the expense of the water consumer. The device must be installed and initial test results returned to the Division of Water and Wastewater within 30 days of the water service being turned on. The initial test shall be conducted in the presence of a Newark Division of Water and Wastewater representative unless specific authority to conduct the initial test without a Newark Division of Water and Wastewater representative present has been given. In addition, any backflow prevention device required by Paragraphs (B) and (C) of Section 3745-95-05 of the Ohio Administrative Code and Sections (B) and (C) of Rule 5 shall be installed at a location and in a manner approved by the Ohio EPA as required by section 6109.13 of the Revised Code of Ohio.

(C) It shall be the duty of the consumer, on any premises in which backflow prevention devices required by Sections 3745-95-04 and 3745-95-05 of the Ohio Administrative Code or the City of Newark Ordinances, Rules, and Regulations are installed to have thorough inspections and operational tests made of the devices at least once every 12 months and in such manner as may be required by the Director or the Ohio Environmental Protection Agency. Tests or re-tests shall be performed with an approved backflow testing device. Tests and/or repairs shall be at the expense of the water consumer and shall be performed by a Certified Person approved by the Newark Division of Water and Wastewater as qualified to install, inspect, repair, overhaul and test backflow prevention devices. Records of such inspections, tests, repairs and overhauls shall be maintained by the consumer and returned on the proper form to the Newark Division of Water and Wastewater within 10 days of the test and/or repair of the device.

(D) Backflow preventers shall be tested within 30 days of the mailing of the annual backflow preventer test notice issued by the Division of Water and Wastewater. Repairs and re-tests must be completed within 14 days of the date of the failure. Failure to complete the annual test within 30 days of the original mailing or to repair or replace a device within the 14 day period after a test failure occurs may result in the immediate termination of water service. Manifold or dual settings of the devices should be considered for premises requiring uninterrupted water service. Backflow prevention devices set in manifold shall meet the minimum flow requirements of a single device of the proper size.

Backflow Protection (Cont.)

(E) Existing backflow prevention devices approved by the Director or the Ohio E.P.A. prior to the effective date of this regulation and which are properly maintained shall, except for inspection, testing, and maintenance requirements, be excluded from the requirements of divisions (A) and (B) of Rule 6 if the Director and the Ohio E.P.A. are assured that the devices will satisfactorily protect the public water system.

(F) Falsification of test results of backflow prevention devices or low pressure cut-off devices, current and authorized State Backflow Testing Certification Number or the signature of the authorized backflow tester will result in the immediate revocation of Water certification.

Notification of such revocation will be made to the involved, the State of Ohio Health Department, and the State of Ohio Environmental Protection Agency.

Booster pumps

(A) No person shall install or maintain a water service connection to any premises where a booster pump has been installed on the service line to or within such premises, unless such booster pump is equipped with a low pressure cutoff designed to shut-off the booster pump when the pressure in the service line on the suction-side of the pump drops to ten pounds per square inch gauge or less.

(B) It shall be the duty of the water consumer to maintain the low pressure cut-off device in proper working order and to certify to the Director, annually, that the device is operable. Tests shall be at the expense of the water consumer and shall be performed by the Division of Water and Wastewater or a Certified Person approved by the Division of Water and Wastewater as qualified to inspect and test backflow prevention devices or low pressure cut-off devices.

(C) The low pressure cut-off control for fire pumps shall conform to the Ohio E.P.A. "Specification for Low Suction Pressure Cut-Off Control for Stationary Fire Pumps."

(D) The low pressure cutoff control for domestic pumps shall conform to the Ohio E.P.A. "Specification for Low Suction Cut-Off Control for Stationary Domestic Booster Pumps."

Notification, Payment of Fees for Containment and Isolation Backflow Preventers; Consequences of Failure. The Newark Division of Water and Wastewater shall issue notices to the customer or the owner, the agent or the person in charge of the premises wherein a containment or isolation backflow device is located of the need to perform an annual containment and/or isolation device backflow test. The Newark Division of Water and Wastewater may charge a fee for said notice. Failure to have the containment or isolation backflow test done or failure to provide results to the Newark Division of Water and Wastewater will result in the immediate termination of water service. The failure to pay the required fees or charge may result in the Newark Division of Water and Wastewater terminating water service.

Notification, Payment of Fees for Isolation Backflow Preventers; Consequences of Failure (Cont.)

The termination of water service for failure to pay require fees or charges shall comport with those sections of this chapter and Newark Division of Water and Wastewater Rules and Regulations regarding termination of service for non-payment of a billing statement.

The annual notification for the testing of containment and isolation backflow preventers shall be set by the Newark Division of Water and Wastewater. The Newark Division of Water and Wastewater shall issue all necessary notices.

Administrative charges and fees involved in notification of backflow preventer tests shall be determined by the Director of the Newark Division of Water and Wastewater.

The water consumer or agent, owner or person in charge of the premises is responsible for ensuring fees are paid, backflow tests are completed and that the test results are immediately provided to the appropriate department.

Proper test results for isolation backflow preventers shall be determined by the Director of Buildings and Inspections.

Isolation backflow preventers may be tested only by those persons meeting the qualifications established by the Director of the Buildings and Inspection Department.

a) The Newark Division of Water and Wastewater shall not discontinue water service for failure to provide test results or for failure to pay the fees or charges for administrative processing without giving the customer in default, whether or not the customer is a landlord, owners, or other, at least seven calendar days prior written notice thereof. Any notice required by this section shall include paragraphs (d) and (e) of this section.

b) At least seven days prior to disconnection of water service to any user(s) not responsible for providing proper containment or isolation backflow preventer test results or the payment of fees or charges, a notice of the intent to disconnect water service shall be posted or affixed upon the premises in a conspicuous location or personally served upon the user(s), owner or agent. Such notice shall include the rights and obligations as set forth in paragraph (d) and (e) of this section.

c) When the failure to provide completed backflow test results, or the failure to pay the appropriate fees or charges for administrative processing, requires the posting of a disconnection notice at the premises or personally serving the notice upon the owner, user(s) or agent at the premises, there shall be a charge, determined by the director, to the customer responsible for the testing of the backflow prevention device. The charge shall be based on the cost to the Division of Water and Wastewater of posting or personally serving a notice at the premises. The director shall periodically review the cost and adjust the charge if necessary. This charge is in addition to any other fees or charges. The Division of Water and Wastewater shall not be responsible for failure of any customer or occupant to observe, read or understand a disconnection notice, nor for the removal or

Notification, Payment of Fees for Isolation Backflow Preventers; Consequences of Failure (Cont.)

destruction of any notice posted or personally served or for any marks or damage caused by affixing or removing a disconnection notice.

d) Any such customer responsible for payment of fees or charges, or the testing of the containment or isolation backflow preventer, who causes the disconnection of water service by failure or refusal to pay the charge or by not completing the annual containment or isolation backflow preventer test, except while repairs are in progress or during emergency repairs, may be liable for compensatory damage to any tenant who is denied the benefit of water service so disconnected.

e) If a tenant pays in full the fees or charges herein required in order to avoid disconnection of water service, and the backflow device tests have been accomplished and the results forwarded to the Newark Division of Water and Wastewater, the tenant shall have the right to deduct the amount of such payment from any future payment of rent.