

**17-2-4: CROSS CONNECTION CONTROL PROVISIONS:**

A. Definitions: The following definitions shall apply only to this section. For the purpose of this section, these definitions supersede definitions given elsewhere in this code.

**APPROVED BACKFLOW PREVENTION ASSEMBLY FOR CONTAINMENT:** A backflow prevention assembly listed by the University of Southern California - Foundation for Cross Connection Control and Hydraulic Research as having met the requirements of ANSI-AWWA standard C510-89, double check valve backflow prevention assemblies or ANSI-AWWA standard C511-89, reduced pressure principle backflow prevention assemblies, all as amended, for containment. The listing shall include the limitations of use based on the degree of hazard. The backflow prevention assembly must also be listed by the International Association of Plumbing and Mechanical Officials.

**APPROVED BACKFLOW PREVENTION ASSEMBLY FOR CONTAINMENT IN A FIRE PROTECTION SYSTEM:** A backflow prevention assembly to be used in a fire protection system which meets the requirements of Factory Mutual Research Corporation (FM) and Underwriters Laboratories (UL), in addition to the requirements of "approved backflow prevention assembly for containment" as defined herein.

**AUXILIARY WATER SUPPLY:** Any water supply on or available to the premises other than the approved water provider of public water such as, but not limited to, a private well, pond or river.

**CONTAINMENT:** A method of backflow prevention which requires the installation of a backflow prevention assembly at the water service entrance.

**CROSS CONNECTION:** Any connection or arrangement between a potable water supply system and any plumbing fixture or tank, receptacle, equipment or device, through which it may be possible for nonpotable, used, unclean, polluted and contaminated water or other substance to enter into any part of such potable water system under any condition.

**CUSTOMER:** The owner, operator or occupant of a building or a property or of a private water system which has a water service from a public water system.

**DEGREE OF HAZARD:** The rating of a cross connection or water service which indicates the potential to cause contamination or pollution.

**DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY:** A backflow prevention device consisting of two (2) independently acting, internally loaded check valves, four (4) properly located test plugs and two (2) isolation valves. (Backflow prevention assembly used for low hazard.)

**HIGH HAZARD CROSS CONNECTION:** A cross connection which may impair the quality of the potable water by creating an actual hazard to public health through poisoning or through contamination with sewage, industrial fluids or waste.

**ISOLATION:** A method of backflow prevention in which a backflow prevention assembly is located at the cross connection rather than at the water service entrance.

**LOW HAZARD CROSS CONNECTION:** A cross connection which may impair the quality of potable water to a degree which does not create a hazard to public health but which does adversely and unreasonably affect the aesthetic qualities of such potable water for domestic use.

**REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY:** A backflow prevention device consisting of two (2) independently acting, internally loaded check valves, a differential pressure relief valve, four (4) properly located test plugs and two (2) isolation valves. (Backflow prevention assembly used for high hazard.)

**REGISTERED BACKFLOW PREVENTION ASSEMBLY TECHNICIAN:** A person registered with the Iowa state health department or its successor agency to test or repair backflow prevention assemblies and to report on the condition of those assemblies.

**THERMAL EXPANSION:** Volumetric increase of water due to heating resulting in increased pressure in a closed system.

**WATER SERVICE:** Depending on the context, water service is the physical connection between a public water system and a customer's building, property or private water system or the act of providing potable water to a customer.

**B. Authority Having Jurisdiction:**

1. For the purposes of this section only, the authority having jurisdiction is the city council acting through such persons or agencies the city council shall designate.
2. The authority having jurisdiction shall have the right to enter any property to inspect for possible cross connection, upon consent of the customer or upon a search warrant issued by a court of appropriate jurisdiction.
3. The authority having jurisdiction may collect fees for the administration of this program. Fees shall be established by resolution of the city council.
4. The authority having jurisdiction shall maintain records of cross connection hazard surveys and of the installation, testing and repair of all backflow prevention assemblies installed in this city.

**C. New Water Services:**

1. Plans shall be submitted by the contractor to the authority having jurisdiction for review of all new water services to determine the degree of hazard before a permit is issued.
2. The authority having jurisdiction shall determine the type of backflow prevention assembly required for containment based on the degree of hazard.
3. The authority having jurisdiction shall require the installation of the appropriate backflow prevention assembly for containment before the initiation of water service.

**D. Existing Water Services:**

1. Upgrades of existing water services shall be treated as new water services for the purpose of this section.
2. The authority having jurisdiction shall publish and make available to each customer a copy of standards used to determine the degree of hazard.
3. After publication of the standards, the authority having jurisdiction shall give written notice of the provisions of this section to customers whose premises are classified as single-family residential.
4. Customers whose premises are not regulated by the IRC shall be notified that an on premises survey will be conducted by the authority having jurisdiction to determine the type and degree of any hazards to the potable water system.
5. The authority having jurisdiction shall determine the type of backflow prevention assembly required for containment based on the degree of hazard, as determined from information received from customers or gathered through on premises investigations or surveys.
6. Within the time frame specified, in writing, by the authority having jurisdiction, the customer shall install a backflow prevention assembly for isolation and containment as required by the authority having jurisdiction.
7. For existing water services, the authority having jurisdiction may inspect the premises to determine the degree of hazard. When high hazard cross connections are found, the authority having jurisdiction shall, at its sole discretion: a) develop a schedule of compliance which the customer shall follow or b) terminate the water service until a backflow prevention assembly for containment required by the authority having jurisdiction has been installed.
8. Failure of the authority having jurisdiction to notify a customer that said customer is believed to have a high hazard cross connection and that said customer shall install backflow prevention assemblies for containment in no way relieves a customer of the responsibility to comply with all requirements of this section.

**E. Customer:**

1. The customer shall be responsible for ensuring that no cross connections exist without approved backflow protection within the customer's premises starting at the point of service from the public potable water system.

2. The customer shall, at the customer's own expense, cause installation, operation, testing and maintenance of the backflow prevention assemblies required by the authority having jurisdiction.
3. The customer shall ensure the authority having jurisdiction is provided with copies of records of the installation and of all tests and repairs made to the backflow prevention assembly on the approved form within fifteen (15) calendar days after testing and/or repairs are completed.
4. If a backflow incident occurs, the customer shall immediately notify the city of Iowa City water division, the city of Iowa City backflow prevention coordinator, and/or the city of Iowa City plumbing inspector and take steps to confine the contamination or pollution.

F. Required Backflow Prevention Assemblies For Containment; Water Services:

1. A water service having one or more cross connections which the authority having jurisdiction classifies as high hazard shall have an approved air gap or an approved reduced pressure principle backflow prevention assembly.
2. Water services having no high hazard cross connections but having one or more cross connections which the authority having jurisdiction has classified as low hazard shall have an approved double check valve assembly.

G. Required Backflow Prevention Assemblies For Containment; Fire Protection Systems:

1. A reduced pressure principle backflow prevention assembly shall be installed on all new and existing fire protection systems which the authority having jurisdiction determines to have any of the following:
  - a. Direct connections from public water mains with an auxiliary water supply on the premises or available to the premises for pumper connection.
  - b. Interconnections with auxiliary water supplies, such as reservoirs, rivers, ponds, wells, mills or other industrial water systems.
  - c. Antifreezes or other additives in the fire protection system.
  - d. Combined industrial and fire protection systems supplied solely from the public water mains, with or without gravity storage or pump suction tanks.
  - e. Any other facility, connection or condition which may cause contamination.
2. All other fire protection systems shall have a double check valve assembly. The double check valve shall be required on all new systems at the time of installation and on existing systems when they are upgraded.

H. Backflow Prevention Assembly Technicians:

1. Any person who tests or repairs backflow prevention assemblies shall be registered by the Iowa state health department or its successor agency.
2. A backflow prevention assembly technician registered by the state shall include the technician's registration number on all correspondence and forms required by or associated with this section.

I. Installation Of Backflow Prevention Assemblies:

1. All backflow prevention assemblies shall be installed so that they are accessible for testing as stated in section 603.1 of 2009 UPC.
2. The required backflow prevention assemblies for containment shall be installed in horizontal plumbing immediately following the meter or as close to that location as deemed practical by the authority having jurisdiction. In any case, it shall be located upstream from any branch piping. Installation at this point does not eliminate the responsibility of the customer to protect the water supply system from contamination or pollution between the backflow prevention assembly and the water main.

3. If interruption of water service during testing and repair of backflow prevention assemblies for containment is unacceptable to the customer, two (2) backflow prevention assemblies, sized to handle the temporary water flow need during the time of test or repair, should be installed in parallel piping.
4. All newly installed shutoff valves shall conform to the requirements for either ball or resilient seat gate valves published in the current edition of the "Manual Of Cross-Connection Control" (University of Southern California), as amended. Ball valves shall be used on assemblies installed in piping two inches (2") and smaller, and resilient seat gate valves shall be used on assemblies installed in piping larger than two inches (2").

**J. Testing Of Backflow Prevention Assemblies:**

1. Backflow prevention assemblies shall be tested by a registered backflow prevention assembly technician, and the costs of tests required by this section shall be paid by the customer.
2. Backflow prevention assemblies shall be tested upon installation and shall be tested and inspected at least annually thereafter.
3. Backflow prevention assemblies which are in place but which have been out of operation for more than three (3) months shall be tested before operation resumes. Backflow prevention assemblies used in seasonal applications shall be tested before operation resumes each season.
4. Any backflow prevention assembly which fails a periodic test shall be repaired or replaced. When water service has been terminated for noncompliance, the backflow prevention assembly shall be repaired or replaced prior to the resumption of water service. Backflow prevention assemblies shall be retested by a registered backflow prevention assembly technician after repair or replacement.
5. The registered backflow prevention assembly technician shall report the assembly within fifteen (15) calendar days of the test to the customer and to the authority having jurisdiction on the form provided by the authority having jurisdiction.
6. The authority having jurisdiction may require, at its own cost, additional tests of individual backflow prevention assemblies as it shall deem necessary to verify test procedures and results.

**K. Repair Of Backflow Prevention Assemblies:**

1. All repairs to backflow prevention assemblies shall be performed by registered backflow prevention assembly technicians.
2. The registered backflow prevention assembly technician shall not change or modify the design, material or operational characteristics of a backflow prevention assembly during repair or maintenance and shall use only original manufacturer replacement parts.
3. The registered backflow prevention assembly technician shall report the repair of a backflow prevention assembly within fifteen (15) calendar days of the repair to the customer and to the authority having jurisdiction on the form provided by the authority having jurisdiction. The report shall include the list of materials or replacement parts used and shall summarize the work performed.

**L. Customer Noncompliance: Water service may be discontinued if a customer fails to comply with this section. Noncompliance includes, but is not limited to, the following:**

1. A customer's refusal to grant access to the property for the purpose of performing inspections required by this section.
2. Removal of a backflow prevention assembly which has been required by the authority having jurisdiction.
3. Bypassing a backflow prevention assembly which has been required by the authority having jurisdiction.
4. Providing inadequate backflow prevention when cross connections exist.
5. Failure to install, test and/or properly repair a backflow prevention assembly which has been required by the authority having jurisdiction.
6. Failure to comply with the requirements of this section.

7. Deliberate falsification of documentation concerning the backflow prevention assemblies or possible cross connections.

M. Backflow Testing Equipment: Backflow testing equipment shall be calibrated by the manufacturer or certified gauge calibration company every two (2) years or sooner if recommended by the manufacturer. (Ord. 09-4369, 12-1-2009, eff. 1-1-2010)