

CHEROKEE METROPOLITAN DISTRICT

6250 Palmer Park Blvd. Colorado Springs, CO 80915



BACKFLOW PREVENTION and CROSS CONNECTION CONTROL REGULATION

Cherokee Metropolitan District
Cross Connection Program Regulation

(Updated: 5/5/19)

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1. **Purpose**

The purpose of this Regulation is to protect the Cherokee Metropolitan District's public water system from contaminants or pollutants that could enter the distribution system by backflow from a customer's water supply system through the service connection.

References to 'public water system' or 'District' and like verbiage throughout this Regulation, will be synonymous with the 'Cherokee Metropolitan District's public water system'.

2. **Authority**

The authority to implement this program is contained in the following statute, legislation and regulations and acts:

- (A) Article 1-114 and Article 1-114.1 of Title 25 of the Colorado Revised Statutes (CRS)
- (B) Section 39 of 5 CCR 1002-11, Colorado Primary Drinking Water Regulations
- (C) Colorado Plumbing Code

The public water system shall have the authority to survey all service connections within the distribution system to determine if the connection is a cross-connection.

The public water system shall have the authority to control all service connections within the distribution system if the connection is a cross-connection.

The public water system may control any service connections within the distribution system in lieu of a survey as long as the service connection is controlled with an air gap or reduced pressure zone backflow prevention assembly.

The public water system may collect fees for the administration of this program.

The public water system shall maintain records of cross-connection surveys and the installation, testing and repair of all backflow prevention assemblies installed for containment and containment by isolation purposes.

Except as otherwise provided herein, the public water system shall administer, implement and enforce the provisions of this Regulation.

3. **Applicability**

This Regulation applies to all commercial, industrial and multi-family residential service connections within the public water system and to any persons outside the District who are, by contract or agreement with the public water system, users of the public water system. This Regulation does not apply to single-family-residential service connections unless the public water system becomes aware of a cross connection at the single family connection.

4. Definitions

- (A) “ACTIVE DATE” means the first day that a backflow prevention assembly or backflow prevention method is used to control a cross-connection in each calendar year.
- (B) “AIR GAP” is a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel installed in accordance with standard AMSE A112.1.2.
- (C) “BACKFLOW” means the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the public water systems distribution system from any source or sources other than its intended source.
- (D) “BACKFLOW CONTAMINATION EVENT” means backflow into a public water system from an uncontrolled cross connection such that the water quality no longer meets the Colorado Primary Drinking Water Regulations or presents an immediate health and/or safety risk to the public.
- (E) “BACKFLOW PREVENTION ASSEMBLY” means any mechanical assembly installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the mechanical assembly is appropriate for the identified contaminant at the cross connection and is an in-line field-testable assembly.
- (F) “BACKFLOW PREVENTION METHOD” means any method and/or non-testable device installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the method or non-testable device is appropriate for the identified contaminant at the cross connection.
- (G) “CERTIFIED CROSS-CONNECTION CONTROL TECHNICIAN” means a person who possesses a valid Backflow Prevention Assembly Tester certification from one of the following approved organizations: American Society of Sanitary Engineering (ASSE) or the American Backflow Prevention Association (ABPA). If a certification has expired, the certification is invalid.
- (H) “CONTAINMENT” means the installation of a backflow prevention assembly or a backflow prevention method at any connection to the public water system that supplies an auxiliary water system, location, facility, or area such that backflow from a cross connection into the public water system is prevented.
- (I) “CONTAINMENT BY ISOLATION” means the installation of backflow prevention assemblies or backflow prevention methods at all cross connections identified within a customer’s water system such that backflow from a cross connection into the public water system is prevented.
- (J) “CONTROLLED” means having a properly installed, maintained, and tested or inspected backflow prevention assembly or backflow prevention method that prevents backflow through a cross connection.
- (K) “CROSS CONNECTION” means any connection that could allow any water, fluid, or gas such that the water quality could present an unacceptable health and/or safety risk to the public, to flow from any pipe, plumbing fixture, or a customer’s water system into a public water system’s distribution system or any other part of the public water system through backflow.
- (L) “DAYS” means calendar days.

- (M) “MULTI-FAMILY” means a single residential connection to the public water system’s distribution system from which two or more separate dwelling units are supplied water.
- (N) “SINGLE-FAMILY” means:
 - a. A single dwelling which is occupied by a single family and is supplied by a separate service line; or
 - b. A single dwelling comprised of multiple living units where each living unit is supplied by a separate service line.
- (O) “UNCONTROLLED” means not having a properly installed and maintained and tested or inspected backflow prevention assembly or backflow prevention method, or the backflow prevention assembly or backflow prevention method does not prevent backflow through a cross connection.
- (P) “WATER SUPPLY SYSTEM” means a water distribution system, piping, connection fittings, valves and appurtenances within a building, structure, or premises. Water supply systems are also referred to commonly as premise plumbing systems.

5. Requirements

- (A) Commercial, industrial and multi-family service connections shall be subject to a survey for cross connections. If a cross connection has been identified an appropriate backflow prevention assembly and or method shall be installed at the customer’s water service connection within 120 days of its discovery. The assembly shall be installed downstream of the water meter or as close to that location as deemed practical by the public water system. If the assembly or method cannot be installed within 120 days the public water system must take action to control or remove the cross connection, suspended service to the cross connection or receive an alternative compliance schedule from the Colorado Department of Public Health and Environment.
- (B) In no case shall it be permissible to have connections or tees between the meter and the containment backflow prevention assembly.
 - (a) In instances where a reduced pressure principle backflow preventer cannot be installed, the owner must install approved backflow prevention devices or methods at all cross-connections within the owner’s plumbing system.
- (C) Backflow prevention assemblies and methods shall be installed in a location which provides access for maintenance, testing and repair.
- (D) Reduced pressure principle backflow preventers shall not be installed in manner subject to flooding.
- (E) Provisions shall be made to provide adequate drainage from the discharge of water from reduced pressure principle backflow prevention assemblies. Such discharge shall be conveyed in a manner which does not impact waters of the state.
- (F) All assemblies and methods shall be protected to prevent freezing. Those assemblies and methods used for seasonal services may be removed in lieu of being protected from freezing. The assemblies and methods must be reinstalled and then tested by a certified cross-connection control technician upon reinstallation.
- (G) Where a backflow prevention assembly or method is installed on a water supply system using storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.

- (H) All backflow prevention assemblies shall be tested at the time of installation and on an annual schedule thereafter. Such tests must be conducted by a Certified Cross-Connection Control Technician.
- (I) The public water system shall require inspection, testing, maintenance and as needed repairs and replacement of all backflow prevention assemblies and methods, and of all required installations within the owner's plumbing system in the cases where containment assemblies and or methods cannot be installed.
- (J) All costs for design, installation, maintenance, testing, and inspection and as needed repair and replacement are to be borne by the customer.
- (K) No grandfather clauses exist except for fire sprinkler systems where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system.
- (L) For new buildings, all building plans must be submitted to the Cherokee Metropolitan District and approved prior to the issuance of water service. Building plans must show:
 - (a) Water service type, size and location
 - (b) Meter size and location
 - (c) Approved Backflow prevention assembly size, type and location. (See attachment A)
 - (d) Fire sprinkler system(s) service line, size and type of backflow prevention assembly.
 - (i) All fire sprinkling lines shall have a minimum protection of an approved double check valve assembly for containment of the system.
 - (ii) All glycol (ethylene or propylene), or antifreeze systems shall have an approved reduced pressure principle backflow preventer for containment.
 - (iii) Dry fire systems shall have an approved double check valve assembly installed upstream of the air pressure valve.
 - (iv) In cases where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system the public water system can chose to not require the backflow protection. The public water system will measure chlorine residual at location representative of the service connection once a month and perform periodic bacteriological testing at the site. If the public water system suspects water quality issues the public water system will evaluate the practicability of requiring that the fire sprinkler system be flushed periodically.
- (M) During construction, the potable water system must be protected from backflow and potential contamination. At any premises where a permanent backflow prevention device would be required, but cannot be installed immediately, a temporary backflow prevention device must be used until the permanent device is installed.

6. Inspection, Testing and Repair

- (A) Backflow prevention assemblies or methods shall be tested by a Certified Cross-Connection Control Technician upon installation and tested at least annually, thereafter. The tests shall be made at the expense of the customer.
 - (a) Any backflow prevention assemblies or methods that are non-testable, shall be inspected at least once annually by a certified cross-connection control technician. The inspections shall be made at the expense of the customer.
- (B) As necessary, backflow prevention assemblies or methods shall be repaired and retested or replaced and tested at the expense of the customer whenever the assemblies or methods are found to be defective.
- (C) Testing gauges shall be tested and calibrated for accuracy at least once annually.

7. Reporting and Recordkeeping

- (A) Copies of records of test reports, repairs and retests, or replacements shall be kept by the customer for a minimum of three (3) years.
- (B) Copies of records of test reports, repairs and retests shall be submitted to the Cherokee Metropolitan District by mail, facsimile or e-mail by the testing company or testing technician.
- (C) Information on test reports shall include, but may not be limited to,
 - (a) Assembly or method type
 - (b) Assembly or method location
 - (c) Assembly make, model and serial number
 - (d) Assembly size
 - (e) Test date; and
 - (f) Test results including all results that would justify a pass or fail outcome
 - (g) Certified cross-connection control technician certification agency
 - (h) Technician's certification number
 - (i) Technician's certification expiration date
 - (j) Test kit type and calibration date

8. Right of entry

- (A) A properly credentialed representative of the public water system shall have the right of entry to survey any and all buildings and premises for the presence of cross-connections for possible contamination risk to and for determining compliance with this section. This right of entry shall be a condition of water service in order to protect the health, safety and welfare of customers throughout the public water system's distribution system.

9. Compliance

- (A) Customers shall cooperate with the installation, inspection, testing, maintenance, and as needed repair and replacement of backflow prevention assemblies and with the survey process. For any identified uncontrolled cross-connections, the public water system shall complete one of the following actions within 120 days of its discovery:
 - (a) Control the cross connection
 - (b) Remove the cross connection
 - (c) Suspend service to the cross connection
- (B) The public water system shall give notice in writing to any owner whose plumbing system has been found to present a risk to the public waters system's distribution system through an uncontrolled cross connection. The notice and order shall state that the owner must install a backflow prevention assembly or method at each service connection to the owner's premises to contain the water service. The notice and order will give a date by which the owner must comply.
 - (a) In instances where a backflow prevention assembly or method cannot be installed, the owner must install approved backflow prevention assemblies or methods at all cross-connections within the owner's water supply system. The notice and order will give a date by which the owner must comply.

10. Violations and Penalties

- (A) Annual Test Reports received by Cherokee Metropolitan District after the required annual test date maybe assessed on the following:

An assessment of Fifty, (\$50.00) dollars, per device, maybe imposed on to the water bill, if the test report is not received within (31) days of the due date. A notice of violation will be issued and an additional One Hundred (\$100. 00) dollars assessment, per device, maybe imposed on to the water bill, if the test report is not received within (61) days of the due date. The water service maybe terminated if the test report(s) is not received within (91) days of the due date.
- (B) Assembly(s) that have failed testing will need to be repaired, replaced or retested within 10 days of notice of failure. If the assembly(s) are not repaired, replaced or retested within 10 days of notice this will be deemed a violation of Cherokee's Cross Connection Program Regulation and maybe assessed the following:

A notice of violation will be issued and an assessment of Fifty, (\$50.00) dollars, per device, maybe imposed on to the water bill if the test report is not received within (11) days of the due date. An additional One Hundred (\$100. 00) dollars assessment, per device, maybe imposed on to the water bill if the test report is not received within (31) days of the due date. The water service maybe terminated if the test report is not received within (61) days of the due date.
- (C) Any violation of the provisions of this Regulation, shall, upon conviction be punishable as provided in all applicable statues, laws, and regulations.

11. Conflict with other codes

- (A) If a dispute or conflict arises between the Colorado Plumbing Code as adopted herein, and any plumbing, mechanical, building, electrical, fire or other code adopted by the State, then the most stringent provisions of each respective code shall prevail.

12. Hydrant Meters and Backflow Device Assembly Rentals

- (A) Assemblies are to be returned by renters to Cherokee Metropolitan District (CMD) for inspection and testing every 6 months.
- (B) Assemblies are to be inspected and tested upon their return to CMD.
- (C) Renters of CMD Hydrant assemblies shall be responsible for all costs to repair or replace assemblies.
 - (a) Assemblies cannot be altered in any form. Altering of assemblies will constitute a fine of up to \$10,000.00 dollars, plus labor charges and possible civil charges filed.

13. Privately Owned Hydrant Meters

- (A) Privately owned hydrant meters used within the Cherokee Metropolitan District must have no less than a Reduced Pressure Zone (RPZ) device in line with a hydrant meter.
 - (a) An 'Air Gap' alone will not be recognized as an adequate backflow method.
- (B) The privately owned RPZ's must have a copy of the current 'Testing Certification' present on site and a copy must be supplied to CMD.
 - (a) Cherokee personnel shall be granted access to the above mentioned device for inspection at any time.
 - (b) Denied access to inspect device may be grounds for denial of use of CMD's water supply.

ATTACHMENT A

TYPE OF BACKFLOW PREVENTION REQUIRED

A State approved backflow prevention device of type specified shall be installed on each service connection to the flowing of facilities and/or other facilities as approved by the District.

This list is a guideline and should not be construed as being complete. The train for installing a containment backflow preventer is as follows. 1. Shutoff Valve 2. Pressure Regulator 3. Water Meter 4. Backflow Preventer

A/G - Air Gap

DC-Double Check Valve Assembly

PVB- Pressure Vacuum Breaker Assembly

RPZ- Reduce Pressure zone Principal Assembly

RDC- Residential Dual Check Device

Type of Facility	Type of Protection	Hazard
Auxiliary Water Systems - Connected or not	RPZ	HIGH
Barber/Beauty Shop	RPZ	HIGH
Beverage Bottling Plants	RPZ	HIGH
Car Wash	RPZ	HIGH
Cemeteries	RPZ	HIGH
Chemical Plants	RPZ	HIGH
Dairies	RPZ	HIGH
Dental Cleaners	RPZ	HIGH
Dry Cleaners	RPZ	HIGH
Film Laboratory or Processing Plant	RPZ	HIGH
Fire line System with Chemical	RPZ	HIGH
Fire Line System without Chemical	DC	LOW
Florist Shop <u>with</u> irrigation and plant growth	RPZ	HIGH
Florist Shop <u>without</u> irrigation and plant growth	RPZ	HIGH
Food Processing	RPZ	HIGH
Gas Station, pumps only	RPZ	HIGH
Garage for equipment and vehicle repair	RPZ	HIGH
Hospitals, and Clinics,	RPZ	HIGH
Medical Buildings	RPZ	HIGH
Hotels and Motels	RPZ	HIGH
Laundries with Dry Cleaning	RPZ	HIGH
Laundries without Dry Cleaning	RPZ	HIGH
Metal Plating and Processing Plant	RPZ	HIGH
Morgues or Mortuaries	RPZ	HIGH
Nursing Homes	RPZ	HIGH
Petroleum Storage Yard	RPZ	HIGH
Print Shops	RPZ	HIGH
Restaurants	RPZ	HIGH
R. V. Parks and Campgrounds	RPZ	HIGH
Sand and Gravel Pits	RPZ	HIGH
Single Family Residential	RDC	HIGH
Sprinkler or Irrigation Systems	PVB-RPZ	HIGH
Swimming Pools	RPZ	HIGH
Sewage Treatment Pumping Stations	A/G-RPZ	HIGH
Veterinary Establishments	RPZ	HIGH