

DENVER WATER'S BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL PROGRAM GUIDE

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Cross-Connection Control Office

303-628-5969

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Terms

Anniversary Test Month

The month of the year a containment device is due for testing.

Backflow

Normally, water flows from Denver Water's distribution system into a customer's property. Backflow is the reverse direction – water flowing from the customer's property into the distribution system.

Pressure differences within the distribution system can cause this phenomenon. For example, if a fire truck draws water from a hydrant at a fast rate, the surrounding properties in the area might experience a decrease in water pressure, which could cause the water from those properties to siphon back into the system toward the hydrant.

Containment Devices

Also known as backflow prevention assemblies, these devices are installed where the water service enters a property. They prevent the flow of water from the customer's property back into the distribution system, which could possibly contaminate the public drinking water supply with any water-borne hazards associated with the property.

Cross-Connection

A point in a drinking water distribution system where the potable water may come into contact with chemical, biological, or radiological contaminants that may be hazardous to humans. Fire sprinkler systems which contain propylene glycol are one example. More information can be found in Denver Water's [Preventing Cross Connections brochure](#).

Backflow Prevention Requirements

Overview

In adherence to Colorado's regulations¹ and Denver Water's Operating Rules², the Backflow Prevention and Cross-Connection Control program protects the public water system from cross-connection contamination by requiring customers to:

- **Install containment devices** on water services feeding specific types of properties, such as commercial buildings and multi-residential units.
- **Test containment devices** after initial installation and annually thereafter to make sure they are functioning properly.
- **Submit completed test reports** to Denver Water's [Cross-Connection Control office](#).

Affected customers are notified by postal mail of required device installation and testing. It is the customer's responsibility to hire a qualified professional to install and test a device. Unless otherwise specified, customers should always install a **Reduced Pressure Zone (RPZ)** device³.

Affected Properties

Commercial Properties: All commercial properties are required to have backflow prevention devices installed and tested annually.

Residential Properties: Residential properties have been excluded from any annual testing requirement but may still need backflow prevention devices based on plumbing code. More information can be found by contacting the city inspector's office.

Although not required by the state, Denver Water encourages homeowners with irrigation systems to test their systems annually to make sure that dirt, bacteria, or chemicals from the lawn cannot enter into the homeowner's drinking water.

Multifamily Residences: Multifamily Residences (or "commercial-residential" properties as they are sometimes called) are required to have backflow prevention based on their degree of hazard – in this case, the level at which a multifamily residence contains hazards that are equal to that of a commercial property. For example, a multi-unit property with a fire line or a boiler (that uses chemicals like glycol)

¹ Refer to Article 12 of the Colorado Department of Public Health and Environment's Colorado Primary Drinking Water Regulations.

² Search Denver Water's website for "Operating Rules": <http://www.denverwater.org>. Chapter 11 particularly applies.

³ These devices will expel water from time to time and will require proper drainage according to applicable plumbing code.

would have to have a backflow prevention device installed and tested. A single story duplex with a furnace and a water heater would not have to have a backflow prevention device.

Containment Device Installation and Testing

Denver Water cannot provide installation and testing costs. Prices vary between individual companies which provide this service; therefore, be sure to get several quotes to help you choose. Prices will also be influenced by the size of your water service and the complexity of the installation.

Installers and testers can be found in a phone book or online phone directory by looking under "**Backflow Prevention Products & Services**" or "**Plumbing Services**". Only a licensed plumber may install a backflow prevention device and only a certified backflow prevention device tester technician may test a device. Some plumbers are testers.

Testing of devices is required annually – once every 12 months. Customers are notified of devices due for testing one month ahead of time. For example, if a device is due for testing in July, the customer will receive a notification letter in June.

Testing a device earlier than the customer's anniversary test month, will reset the customer's anniversary month to the earlier month. For example, if a device is due for testing in July and the device is tested three months early in April, then the device's new anniversary test month will be April of each year.

Testing a device later than the anniversary test month will not change the device's anniversary month. For example, if a device is due to be test in September and isn't tested until October, then the device's anniversary test month will remain September of each year.

Containment Device Requirements

Orientation: Devices must be installed in the given orientation that they were tested for as allowed by the University of Southern California's Foundation for Cross-Connection Control and Hydraulic Research (USC FCCC&HR).

USC FCCC&HR Approved: Denver Water only allows devices approved by the USC FCCC&HR. Denver Water does not provide a list of approved devices. However, each manufacturer should be able to tell you which of their devices are USC FCCC&HR approved and for what orientation.

Utility, City, and State Standards: Installation of devices must meet all applicable requirements of:

- Denver Water’s Engineering Standards⁴
- Local plumbing and building codes
- Article 12 of the Colorado Department of Health and Environment’s Colorado Primary Drinking Water Regulations.

Test Report Forms

A test report template in either Word or PDF format is available on Denver Water’s website: www.denverwater.org. The full name of the report template is **Backflow Prevention Device Test & Maintenance Report**. It can be found on the Backflow Program page under the Water Quality section.

While our form is preferred, some device testers have their own version of the form. For data entry efficiency, Denver Water asks that four particular pieces of information be located on the top right corner of every form:

- Device Serial Number
- Test Date/Time
- Tester Certification
- Device Test Result (Pass, Fail)

Test Report Submission

Test reports must be sent to the Denver Water’s [Cross-Connection Control office](#). Generally, this may be done by fax, email, or postal mail. This office will only accept complete and legible forms.

DO NOT send a report to this office without a meter number. If you are a tester and need a meter number, please call our office at 303-628-5969.

"Passed" test reports must be sent to Denver Water’s Cross-Connection Control office within 10 days.

"Failed" tests must be verbally reported to the Cross-Connection Control office within 24 hours and the written reports must be sent within 3 days. Failed containment devices must be repaired or replaced and then retested. Depending on the hazard Denver Water may require repairs/ replacement be done immediately to prevent contamination.

Non-compliance will result in discontinuation of water service to the property.

⁴ Search Denver Water’s website for “Engineering Standards”: <http://www.denverwater.org>. Section 6-11(4) of the standards particularly applies.

Waivers, Extensions, and Test Month Modifications

Please contact the [Cross-Connection Control office](#) for any of the following reasons:

- **Request a waiver** when the property does not fall into one of the affected property categories.
- **Request an extension** when more time is needed to test a device. Send a postal letter to the Cross-Connection Control office with the following:
 - Reason and length of time for the extension
 - Meter number
 - Property address
 - Contact name
 - Contact phone number
- **Request a test month modification** when the month a device is due for testing needs to be permanently moved to a different month of the year. Some customers with multiple devices make this request in order to group all their testing to only one month out of the year.

Be aware: Since containment devices are required to be tested annually (every 12 months), a device may need to be tested twice in the first year the test month is modified. For example, if the current month is April, the device is due to be tested in July, and the requested change is to October, then the device will have to be tested in July to fulfill its original annual testing requirement and then again in October to establish the new testing cycle.

Cross-Connection Control Office

To contact Denver Water’s Cross-Connection Control office, use one of these methods:

Phone	303-628-5969
FAX	303-794-8325
Email	CrossConnectionControl@denverwater.org Place the words Backflow Concerns in the subject line of your email.
Mailing Address	Attn: Cross-Connection Control 6100 W. Quincy Ave. Denver, CO 80235

Surveys

To verify the accuracy of reported information or assess the need for containment devices, staff from the Cross-Connection Control office might conduct property surveys. Affected customers will be contacted in these situations to arrange for a time for our staff to access the property.

Resources

If you would like more information please choose one of the following:

Brochures: If you would like a generic brochure on backflow devices and testing requirements please contact the Cross-Connection Control office.

Presentations: If you are an organization that would like a backflow presentation, please call the Cross-Connection Control office to schedule a presentation at your facility.

Taps & Meter Book: If you are a contractor who requires a complete list of tap and meter requirements, please drop by the Water Sales office at Denver Water's main building and ask for a copy of the "Taps & Meter" book. Water Sales is located 1600 W 12th Ave. Denver, CO 80204.