



Rules of
Department of Natural Resources
Division 60—Safe Drinking Water Commission
Chapter 11—Backflow Prevention

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**Title 10—DEPARTMENT OF
NATURAL RESOURCES**
Division 60—Safe Drinking Water
Commission
Chapter 11—Backflow Prevention

10 CSR 60-11.010 Prevention of Backflow

PURPOSE: This rule establishes requirements for protection of public water systems from introduction of contaminants by backflow.

(1) Applicability, Exemptions and Compliance Dates.

(A) Applicability. This rule applies to all community water systems.

(B) Exemptions.

1. This rule does not apply to customer facilities used solely for residential purposes unless a cross-connection is specifically identified or the rule indicates otherwise.

2. The department may issue an exemption from the requirements of paragraphs (3)(A)1. and (3)(B)1. of this rule if the customer can demonstrate to the department, the local governmental authority (if one exists) and the supplier of water that the activities taking place at the customer's facility and the materials used in connection with these activities or stored on the premises cannot endanger the health of customers or degrade the water quality of the public water system should backflow occur, or that any potential risk posed by these materials or activities is isolated from the public water system. Those customers granted an exemption in accordance with this paragraph shall report to the supplier of water any proposed change in process, plumbing or materials used or stored at the exempted facility at least fourteen (14) days prior to making the change.

3. Any exemption granted under paragraph (1)(B)2. of this rule shall be void if the supplier of water, local governmental authority (if one exists) or the department determines that the customer facility has become an actual or potential backflow hazard, or if the customer fails to provide notice at least fourteen (14) days prior to making any change in process, plumbing or materials used or stored at the facility.

(2) Cross-Connections. No customer shall cause or allow the construction or maintenance of an unprotected cross-connection.

(3) Backflow Control by Containment.

(A) Class I Backflow Hazards.

1. A Class I backflow hazard presents an actual or potential health hazard to customers of the public water system should backflow occur. The customer or the customer's autho-

rized representative shall construct a department-approved air-gap separation or install a reduced pressure principle backflow prevention assembly on the customer service line, in accordance with section (4) of this rule, when—

A. The supplier of water or local governmental agency (if one exists) requires protection from an actual or potential Class I backflow hazard at any facility;

B. Modification is made to the customer water system at an existing facility which is designated an actual or potential backflow hazard in paragraph (3)(A)2. of this rule. If an addition or modification requiring a separate customer service line is made to an existing facility, the new service line as well as the existing customer service line shall be equipped with department-approved backflow prevention assemblies;

C. A new customer service line connection is made to a facility listed in paragraph (3)(A)2. of this rule; or

D. A backflow incident occurs which introduces a contaminant into the public or customer water system which may create a health hazard.

2. Following is a list, not all inclusive, of actual or potential Class I backflow hazards:

A. Aircraft and missile manufacturing plants;

B. Automotive plants including, but not limited to, those plants which manufacture motorcycles, automobiles, trucks, recreational vehicles and construction and agricultural equipment;

C. Potable water dispensing stations which are served by a public water system;

D. Beverage bottling plants including, but not limited to, dairies, soft drink bottlers, and breweries;

E. Canneries, packing houses and reduction plants;

F. Car washes;

G. Chemical, biological and radiological laboratories including, but not limited to, those in high schools, trade schools, colleges, universities and research institutions;

H. Hospitals, clinics, medical buildings, autopsy facilities, morgues, mortuaries, veterinary facilities, dental clinics, and other medical facilities;

I. Metal or plastic manufacturing, fabrication, cleaning, plating or processing facilities;

J. Plants manufacturing paper and paper products;

K. Plants manufacturing, refining, compounding or processing fertilizer, film, herbicides, natural or synthetic rubber, pesticides, petroleum or petroleum products,

pharmaceuticals, radiological materials or any chemical which would be a contaminant to the public water system;

L. Commercial facilities that use herbicides, pesticides, fertilizers or any chemical which would be a contaminant to the public water system;

M. Plants processing, blending or refining animal, vegetable or mineral oils;

N. Commercial laundries and dye works;

O. Sewage, storm water and industrial waste treatment plants and pumping stations;

P. Waterfront facilities including piers, docks, marinas and shipyards;

Q. Industrial facilities which recycle water;

R. Restricted or classified facilities or other facilities closed to the supplier of water or the department;

S. Fire sprinkler systems using any chemical additives;

T. Auxiliary water systems, including but not limited to alternative water sources;

U. Irrigation systems with facilities for injection of pesticides, herbicides or other chemicals or with provisions for creating back pressure. The backflow assembly may be installed between the customer service line and the irrigation system;

V. Portable tanks for transporting water taken from a public water system;

W. Facilities which have pumped or repressurized cooling or heating systems that are served by a public water system; and

X. Facilities which contain any boiler system and are served by a public water system. The backflow assembly may be installed on the water service line to the boiler.

(B) Class II Backflow Hazards.

1. A Class II backflow hazard threatens to degrade the water quality of the public water system should backflow occur. The customer or the customer's authorized representative shall install, as minimum protection for Class II backflow hazards, a department-approved double check valve assembly on the customer service line in accordance with section (5) of this rule when—

A. The supplier of water or local governmental agency (if one exists) requires protection from an actual or potential Class II backflow hazard at any facility;

B. Modification is made to the customer water system at an existing facility which is designated an actual or potential backflow hazard in paragraph (3)(B)2. If an addition or modification requiring a separate customer service line is made to an existing facility, the new service line, as well as the existing customer service line, shall be



equipped with department-approved backflow prevention assemblies;

C. A new customer service line connection is made to a new facility listed in paragraph (3)(B)2.; or

D. A backflow incident occurs in any situation described in paragraph (3)(B)2. or subsection (3)(C).

2. Following is a list, not all inclusive, of actual or potential Class II backflow hazards:

A. Tanks to store water from the public water system for fire fighting only, unless the tanks meet the requirements of the department for construction to maintain bacteriological quality of the water;

B. Fire sprinkler systems not using chemical additives. This only applies to new fire sprinkler systems or fire sprinkler systems scheduled for modifications;

C. Irrigation systems without facilities for injection of pesticides, herbicides or other chemicals. The backflow assembly may be installed between the customer service line and the irrigation system; and

D. Cross-connections that could permit introduction of contaminants into the public or customer water system and create a nuisance, be aesthetically objectionable or cause minor damage to the public water system or its appurtenances.

(C) Customer facilities not designated a backflow hazard by subsection (3)(A) or (B) may be designated a Class I or Class II backflow hazard by written notification from the supplier of water or the department to the customer. The notice shall specify the nature of the customer activity which necessitates designation of the facility as a backflow hazard, the type of backflow protection required and the date by which the customer shall install or construct this assembly on the customer service line to the facility.

(4) Department-Approved Backflow Prevention Assemblies.

(A) Only those models of double check valve assemblies and reduced pressure principle backflow prevention assemblies which are approved by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California (USC) or the American Society of Sanitary Engineering (ASSE).

(B) The discharge pipe of an approved air-gap shall terminate a minimum of two (2) pipe diameters of the discharge pipe above the flood level rim of the receiving vessel; in no case shall the distance be less than one inch (1").

(5) Standards of Construction and Installation.

(A) Reduced pressure principle backflow prevention assemblies shall be installed with no plug or additional piping affixed to the pressure differential relief valve port (except for specifically-designed funnel apparatus available from the manufacturer) and with the pressure differential relief valve port a minimum of twelve inches (12") above floor level. Additionally, the assembly shall be installed at a location where any leakage from the pressure differential relief valve port will be noticed, that allows easy access to the assembly for maintenance and testing, and that will not subject the assembly to flooding, excessive heat or freezing.

(B) All double check valve assemblies shall be installed at a location that allows easy access to the assembly for maintenance and testing and that will not subject the assembly to excessive heat or freezing.

(C) Backflow prevention assemblies shall be installed on the customer water system as close as possible to the point of service connection and prior to any other connection or branch line. If it is not possible to install the backflow prevention assembly as described, then installation shall be at the approval of the department.

(D) No bypass piping shall be allowed around a backflow prevention assembly unless the bypass is equipped with the same degree of backflow prevention protection.

(6) Backflow Prevention Assembly Testing and Inspection.

(A) All backflow prevention assemblies shall be inspected and tested by testers certified in accordance with the requirements and procedures in 10 CSR 60-11.030.

(B) Air-gaps shall be inspected each year by a date which is no later than thirty (30) days past the anniversary date established by the supplier of water to ensure that they continue to meet the requirements of subsection (4)(A).

(C) Reduced pressure principle backflow prevention assemblies shall be tested by a certified backflow prevention assembly tester each year by a date which is no later than thirty (30) days past the anniversary date established by the supplier of water to ensure that—

1. The pressure differential relief valve operates to maintain the zone between the two (2) check valves at least two pounds per square inch (2.0 psi) less than the supply pressure;

2. The #2 check valve is leak tight against reverse flow under all pressure differentials; and

3. The static pressure drop across the #1 check valve is at least three pounds per

square inch (3.0 psi) greater than the pressure differential between the supply pressure and the pressure in the zone required to open the pressure differential relief valve.

(D) Double check valve assemblies shall be tested each year by a certified backflow prevention assembly tester by a date which is no later than thirty (30) days past the anniversary date established by the supplier of water to ensure that both the #1 and #2 check valves maintain at least one pound per square inch (1.0 psi) differential in the direction of flow and are leak tight against reverse flow under all pressure differentials.

(E) All certified backflow prevention assembly testers shall report to the appropriate governmental authority (if one exists), the supplier of water, the customer, and, if requested, the department the results of inspections or tests conducted in compliance with this section (6). Reports of tests shall contain the signature of the certified backflow prevention assembly tester attesting to the compliance (or noncompliance) of the assembly with established operational requirements. Routine reports shall be submitted within thirty (30) days after making the inspection or test. Falsification of testing or inspection information shall be grounds for removing the tester from the list of testers authorized to operate in Missouri.

(7) Customer Responsibilities.

(A) The customer shall furnish, install and maintain in working order at all times any backflow prevention assembly required by this rule.

(B) To ensure that each backflow prevention assembly required by this rule is in working order, the customer shall have each assembly inspected and tested by a certified backflow prevention assembly tester at the time of construction or installation and at the frequency specified in section (6).

(C) The customer shall permit access to the premises by the certified backflow prevention assembly tester, supplier of water and department representatives, at reasonable times and upon presentation of identification, for inspection of the customer water system or testing of backflow prevention assemblies installed in accordance with this rule.

(8) Responsibilities of the Supplier of Water.

(A) Because backflow may cause a health hazard through transmission of contaminants via the public water system, the supplier of water shall remove the water meter or otherwise sever the public water system from the customer service line serving a facility when the supplier of water—

1. Has knowledge that the customer is



causing or maintaining an unprotected cross-connection;

2. Has knowledge that the customer is failing or refusing to proceed without delay to correct any violation of the provisions of this rule after having been notified to do so;

3. Is so ordered by the appropriate local governmental authority (if one exists); or

4. Is so ordered by the department because of violation of any provision of this rule by the customer.

(B) The supplier of water shall retain records of the reports of inspections, tests and repairs on backflow prevention assemblies for a period of five (5) years.

(C) The supplier of water may develop, for use within his/her service area, written procedures to implement the provisions of this rule. In developing the procedures, the supplier of water will be permitted to take into account existing backflow prevention programs and incorporate ordinances, regulations or requirements of appropriate local governmental authorities. However, the written procedures shall be no less stringent than the provisions of this rule. The department will prepare and make available on request the appropriate forms needed to assist the supplier of water in implementing the provisions of this rule. The supplier of water may submit the procedures to the department for approval.

(D) The supplier of water shall record the date of the initial inspection or test of backflow prevention assemblies required under subsections (3)(A) and (3)(B) and shall require that an annual inspection or test report be submitted by a certified backflow prevention assembly tester. The supplier of water shall establish an annual anniversary date for these inspection or test reports. If these reports are not received by the supplier of water on or before sixty (60) days following this anniversary date, the supplier of water promptly shall notify the customer, the local governmental agency (if one exists) and the department.

(E) The supplier of water shall notify the department within forty-eight (48) hours whenever a cross-connection problem has occurred which resulted in contamination of the public water system.

AUTHORITY: section 640.100, RSMo 2016. Original rule filed May 4, 1979, effective Sept. 14, 1979. Rescinded and readopted: Filed July 11, 1986, effective Jan. 1, 1987. Amended: Filed Dec. 4, 1990, effective July 8, 1991. Amended: Filed Jan. 2, 1997, effective Dec. 29, 1997. Amended: Filed June 13, 2018, effective Feb. 28, 2019.*

**Original authority: 640.100, RSMo 1939, amended 1978,*

1981, 1982, 1988, 1989, 1992, 1993, 1995, 1996, 1998, 1999, 2002, 2006, 2012, 2014.

10 CSR 60-11.030 Backflow Prevention Assembly Tester Certification

PURPOSE: This rule establishes certification and recertification requirements for backflow prevention assembly tester training programs.

(1) Applicability. This rule applies to all persons seeking certification or recertification as backflow prevention assembly testers. A certified backflow prevention assembly tester shall inspect, test and report on backflow prevention assemblies in accordance with applicable requirements in 10 CSR 60-11.010.

(2) Certification Requirements.

(A) Any person seeking to be a certified backflow prevention assembly tester shall—

1. Satisfactorily complete written and performance (hands on) examinations (including questions specific to Missouri backflow prevention rules) provided by the American Backflow Prevention Association (ABPA) Tester Certification Program or the American Society of Sanitary Engineering (ASSE); and

2. Ensure that ABPA or ASSE notifies the department that the tester has passed the examinations. The department shall not be held liable for any failure of ABPA or ASSE to notify the department that a person has passed the written and performance examinations.

(B) Certification shall be valid for three (3) years. Certification may be renewed in accordance with section (4) of this rule.

(C) Submittal of false information shall be grounds for denying or revoking certification.

(3) Examination Schedule. The department shall, in consultation with training providers, prepare an annual schedule of dates and locations of backflow prevention assembly tester examinations. The department shall make this schedule available to backflow prevention assembly tester training providers and to any interested person upon request. (Training providers may offer additional examinations, at their discretion.)

(4) Recertification Requirements.

(A) Any certified tester seeking to be recertified shall—

1. Satisfactorily complete ABPA's or ASSE's recertification requirements, including examination questions on Missouri backflow prevention rules; and

2. Ensure that ABPA or ASSE notifies the department that the tester has satisfactori-

ly completed the requirements. The department shall not be held liable for any failure of ABPA or ASSE to notify the department that a tester has satisfactorily completed the recertification requirements.

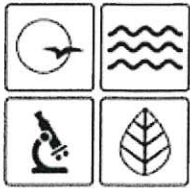
(B) Recertification shall be valid for three (3) years.

(C) Submittal of false information shall be grounds for denying or revoking recertification.

(5) Reciprocity. Any backflow prevention assembly tester listed with ABPA or ASSE may be certified by the department upon notification from ABPA or ASSE that the tester has satisfactorily completed an examination on Missouri backflow prevention rules.

AUTHORITY: section 640.100, RSMo 2016. Original rule filed Jan. 2, 1997, effective Dec. 29, 1997. Amended: Filed June 13, 2018, effective Feb. 28, 2019.*

**Original authority: 640.100, RSMo 1939, amended 1978, 1981, 1982, 1988, 1989, 1992, 1993, 1995, 1996, 1998, 1999, 2002, 2006, 2012, 2014.*



Missouri Department of Natural Resources

BASICS OF BACKFLOW PREVENTION, MO REGULATION 10 CSR 60-11.010

Water Protection Program fact sheet
Division of Environmental Quality Director: Ed Galbraith

04/2015
PUB0393

Backflow Prevention

In 1997, the Missouri Department of Natural Resources revised a drinking water regulation entitled “Backflow Prevention.” This revised regulation places certain responsibilities on water suppliers to ensure that customer facilities identified as actual or potential backflow hazards provide the necessary protection to prevent contaminants from entering the public water system.

What is Backflow?

Backflow is defined as the unwanted reversal of flow in a water distribution system. Due to changes in the hydraulic pressure in a water distribution system or a piping system inside a customer’s premises, backflow occurs on a regular basis.

The polluting substance, usually a liquid, tends to enter the potable water supply if the net force acting upon the liquid acts in the direction of the water supply. Therefore, two factors are essential for backflow to occur. First, the normal direction of flow in the distribution system must be interrupted. Second, there must be a link or connection between the potable system and the source of contamination.

Backflow only becomes a serious problem when there are cross connections within the water distributions system.

Public Health Significance of Cross Connections

A cross connection is a physical link between a source of pollution or contamination with a potable water supply.

Public health specialists have long been aware of the threat to public health posed by cross connections. Education is the most important factor in cross connection control.

Various court decisions have held water suppliers responsible for the delivery of safe water to consumers. But the safety of our drinking water supply can be jeopardized at any location, at any time because of the frequency of plumbing defects and cross connections. Due to frequent changes in piping systems, an effective cross connection control program, including continued surveillance of the public water system, is necessary to prevent backflow incidents.

Components of an Effective Cross Connection Control Program

The first step in preventing backflow incidents is enacting local rules that grant the water supplier the authority to enforce the cross connection control program. For the water supplier to comply with the state backflow prevention regulation, the local rules should include the following provisions:

- A requirement for annual testing of assemblies and inspection of air-gaps.
- Authority to enter customer premises for purposes of inspection.
- Authority to terminate water service for failure to comply.

Another responsibility of the water supplier is to notify customers, where backflow hazards exist, that they must comply with the local rule. Once these customers have been notified, the supplier must maintain records of inspections, exemptions, or installation of assemblies.

A local program may not be less stringent than state regulations. Local plumbing codes may require additional backflow prevention devices.

Methods of Backflow Prevention

The department's Public Drinking Water Branch maintains a list of backflow prevention assemblies approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California, www.usc.edu/dept/fccchr/list.html. The following methods of backflow prevention meet the requirements of the state backflow prevention rule.

Air-gap: An air-gap is the most positive method of backflow protection. It is a physical separation between the water supply and the customer's internal piping system. The distance for an air-gap must be at least two times the diameter of the pipe. For example, a two-inch separation is required for a one-inch water supply pipe.

Reduced Pressure Principle Assembly: A reduced pressure principle assembly is the highest level of mechanical backflow protection. It has a hydraulically operated relief port located between two spring loaded check valves. A drop in pressure from the supply or an increase in back pressure from the customer's facility will cause the check valves to close and the relief port to open, creating an air-gap within the assembly. If either check valve becomes fouled by debris, the relief port will also open. The drawback to using a reduced pressure principle assembly is that it will lower the pressure available to the customer's premises.

Double Check Valve Assembly: The double check valve assembly is designed for low hazard protection only. The double check valve assembly has two spring valves that act independently to provide protection from back pressure and back-siphonage. The drawback to double check valve assemblies is that both check valves are susceptible to fouling by debris in the water system, which hinders their function and allows backflow to occur.

Testing/Inspection Requirements

The function of all backflow prevention devices must be reviewed annually. Air-gaps may be inspected by the water supplier. A state-certified backflow prevention assembly tester must perform the specific testing procedures required to verify the proper function of reduced pressure principle assemblies and double check valve assemblies.

The Public Drinking Water Branch maintains a list of certified backflow prevention assembly testers.

For Additional Assistance

Please contact your local [regional office](#) for more information.

Public Drinking Water Branch 573-751-5331

Northeast Region Office 660-385-8000

Southwest Region Office 417-891-4300

Southeast Region Office 573-840-9750

Kansas City Region Office 816-251-0700

St. Louis Region Office 314-416-2960

Nothing in this document may be used to implement any enforcement action or levy any penalty unless promulgated by rule under chapter 536 or authorized by statute.

For more information

Missouri Department of Natural Resources

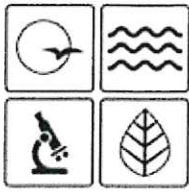
Water Protection Program - Public Drinking Water Branch

P.O. Box 176

Jefferson City, MO 65102-0176

800-361-4827 or 573-751-5331

573-526-1146 fax
<http://dnr.mo.gov/env/wpp/>



Missouri Department of Natural Resources

BACKFLOW PREVENTION - FREQUENTLY ASKED QUESTIONS

Water Protection Program fact sheet
Division of Environmental Quality Director: Ed Galbraith

11/2014
PUB2158

What is backflow?

Backflow is the undesirable reversal of flow in a potable water distribution system through a cross-connection. A cross-connection is an actual or potential link connecting a source of pollution or contamination with a potable water supply. Backflow may allow liquids, gases, non-potable water, and other substances, from any source, to enter a public water system.

How does backflow occur?

Backflow may occur due to backpressure or backsiphonage. Backpressure backflow is caused by a downstream pressure that is greater than the upstream or supply pressure in a public water system. Backsiphonage backflow is caused by a reduction in system pressure, which causes a sub-atmospheric pressure to exist in the water system. Backflow through a cross-connection can contaminate the potable water in a building, on a block, or throughout an entire water system.

What is backflow prevention?

Backflow prevention protects public water systems from contamination or damage through cross-connections located in customer facilities. Backflow prevention is typically achieved by placing a backflow prevention assembly between the customer and the public water system. This is called containment backflow prevention.

What is a backflow prevention assembly?

A backflow prevention assembly is a means or mechanism to prevent backflow. Missouri recognizes three types of backflow prevention assemblies: air gaps, reduced pressure principle assemblies, and double check valve assemblies. An air gap is the most basic and positive method and it is a physical separation between the water supply and the customer's internal piping system. A reduced pressure principle assembly is the highest level of mechanical backflow protection. A double check valve is designed for low hazard protection only.

Does my water system require backflow prevention?

Missouri's backflow prevention regulation (10 CSR 60-11.010) applies to all community water systems. These are water systems that serve at least 15 connections or at least 25 people on a year-round basis. Missouri has more than 1,400 community water systems. They serve more than 4.9 million people, almost 90 percent of the state population.

Must my home or business have backflow prevention?

Many businesses must have backflow prevention. Common examples are manufacturing and processing plants, medical facilities, laboratories (including school chemistry and biology labs), processing plants, and buildings that have boilers, fire sprinkler systems, and irrigation systems.

Solely residential facilities can be exempt from the rule unless a specific cross-connection is identified. A few examples of residential cross-connections that need to have a backflow prevention assembly include lawn sprinkler systems, personal swimming pools, and fire sprinkler systems. Call your local water supplier to confirm whether or not backflow prevention is required at your home or business.

What kind of backflow prevention assembly is required?

The type of assembly you need depends on the type of hazard present. Generally, where you have a backflow hazard that may threaten public health you must have an air gap or a reduced pressure principle assembly. Where there is a lesser hazard that may damage the water system or degrade the aesthetic quality of the water, a double check valve assembly is required. A list of the different types of actual or potential hazards (not all inclusive) is included in the backflow regulation, which is available from the Public Drinking Water Branch or on-line at: <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c60-11.pdf>.

Only approved backflow prevention assemblies may be used. If you can find the manufacturer and model number on your assembly you can check with your water supplier to find out if it is an approved assembly. Modifications to an assembly invalidate the approval. If your assembly looks like it has been altered, get in touch with your water supplier or a certified backflow prevention assembly tester to see if it is an approved assembly.

Water suppliers may have more strict or specific requirements than the state rule. Contact your local water supplier to make sure you have the appropriate backflow prevention assembly to meet local requirements.

Must I have my backflow prevention assembly tested?

Yes. To ensure the device is functioning properly, a certified backflow tester must test all backflow prevention devices annually. For new facilities, the assembly must be tested when installed. If the tester finds the assembly is not working, you must arrange to have it repaired and tested again. It is your responsibility to pay for the test and repairs. The tester is required to provide a copy of the test report to you and the water supplier.

How can I contact a certified backflow assembly tester?

To obtain a list of certified backflow testers in your area, check the list on the Missouri Department of Natural Resources' website at <http://dnr.mo.gov/env/wpp/backflow/testers.htm>. You can also call your local water supplier or the Missouri Department of Natural Resources.

Does the backflow prevention assembly protect my entire facility?

No. The required backflow prevention assembly provides containment and it protects the public water system from hazards in your facility. Cross-connections in your own plumbing may allow contaminants to backflow from hazardous processes to drinking water taps in your building.

Backflow prevention applied within a facility to protect drinking water plumbing from process plumbing is called isolation. Isolation backflow prevention is not covered by department rules, but may be required by local plumbing codes. Check with your local code enforcement agencies to see what standards apply to your facility.

What right does the supplier of water have to turn off water to a customer not annually testing their backflow prevention device?

The supplier of water shall disconnect the public water system from the customer service line serving the facility when the supplier of water has knowledge the customer is failing or refusing to proceed without delay to correct any violations of the rule after being notified to do so. The local governmental authority or the department may also order this because of violation to this rule by the customer.

What are the components of an effective cross-connection control program?

The first step in preventing backflow incidents is enacting local rules that grant the water supplier the authority to enforce the cross-connection control program. For the water supplier to comply with the state backflow prevention regulations the local rules should include the following provisions:

- A requirement for annual testing of assemblies and inspection of air gaps
- Authority to enter customer premises for purposes of inspection
- Authority to terminate water service for failure to comply
- To notify customers where backflow hazards exist that they must comply with the local rule

Once these customers have been notified, the supplier must maintain records of inspections, exemptions, or installation of assemblies. A local program may not be less stringent than state regulations. Local plumbing codes may require additional backflow prevention devices.

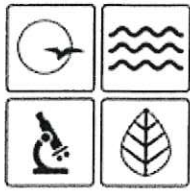
For additional assistance

Please contact your local regional office for more information.

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For more information

Missouri Department of Natural Resources
Water Protection Program - Public Drinking Water Branch
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Solely residential facilities can be exempt from the rule unless a specific cross-connection is identified. A few examples of residential cross-connections that need to have a backflow prevention assembly include lawn sprinkler systems, personal swimming pools, and fire sprinkler systems. Call your local water supplier to confirm whether or not backflow prevention is required at your home or business.

What kind of backflow prevention assembly is required?

The type of assembly you need depends on the type of hazard present. Generally, where you have a backflow hazard that may threaten public health you must have an air gap or a reduced pressure principle assembly. Where there is a lesser hazard that may damage the water system or degrade the aesthetic quality of the water, a double check valve assembly is required. A list of the different types of actual or potential hazards (not all inclusive) is included in the backflow regulation, which is available from the Public Drinking Water Branch or on-line at: <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c60-11.pdf>.

Only approved backflow prevention assemblies may be used. If you can find the manufacturer and model number on your assembly you can check with your water supplier to find out if it is an approved assembly. Modifications to an assembly invalidate the approval. If your assembly looks like it has been altered, get in touch with your water supplier or a certified backflow prevention assembly tester to see if it is an approved assembly.

Water suppliers may have more strict or specific requirements than the state rule. Contact your local water supplier to make sure you have the appropriate backflow prevention assembly to meet local requirements.

Must I have my backflow prevention assembly tested?

Yes. To ensure the device is functioning properly, a certified backflow tester must test all backflow prevention devices annually. For new facilities, the assembly must be tested when installed. If the tester finds the assembly is not working, you must arrange to have it repaired and tested again. It is your responsibility to pay for the test and repairs. The tester is required to provide a copy of the test report to you and the water supplier.

How can I contact a certified backflow assembly tester?

To obtain a list of certified backflow testers in your area, check the list on the Missouri Department of Natural Resources' website at <http://dnr.mo.gov/env/wpp/backflow/testers.htm>. You can also call your local water supplier or the Missouri Department of Natural Resources.

Does the backflow prevention assembly protect my entire facility?

No. The required backflow prevention assembly provides containment and it protects the public water system from hazards in your facility. Cross-connections in your own plumbing may allow contaminants to backflow from hazardous processes to drinking water taps in your building.

Backflow prevention applied within a facility to protect drinking water plumbing from process plumbing is called isolation. Isolation backflow prevention is not covered by department rules, but may be required by local plumbing codes. Check with your local code enforcement agencies to see what standards apply to your facility.

What right does the supplier of water have to turn off water to a customer not annually testing their backflow prevention device?

The supplier of water shall disconnect the public water system from the customer service line serving the facility when the supplier of water has knowledge the customer is failing or refusing to proceed without delay to correct any violations of the rule after being notified to do so. The local governmental authority or the department may also order this because of violation to this rule by the customer.

What are the components of an effective cross-connection control program?

The first step in preventing backflow incidents is enacting local rules that grant the water supplier the authority to enforce the cross-connection control program. For the water supplier to comply with the state backflow prevention regulations the local rules should include the following provisions:

- A requirement for annual testing of assemblies and inspection of air gaps
- Authority to enter customer premises for purposes of inspection
- Authority to terminate water service for failure to comply
- To notify customers where backflow hazards exist that they must comply with the local rule

Once these customers have been notified, the supplier must maintain records of inspections, exemptions, or installation of assemblies. A local program may not be less stringent than state regulations. Local plumbing codes may require additional backflow prevention devices.

For additional assistance

Please contact your local regional office for more information.

Nothing in this document may be used to implement any enforcement action or levy any penalty unless promulgated by rule under chapter 536 or authorized by statute.

For more information

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800-361-4827 or 573-751-5331
573-526-1146 fax
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