



THE SAFE WATER AUTHORITY®

State of Michigan Cross Connection Control Requirements

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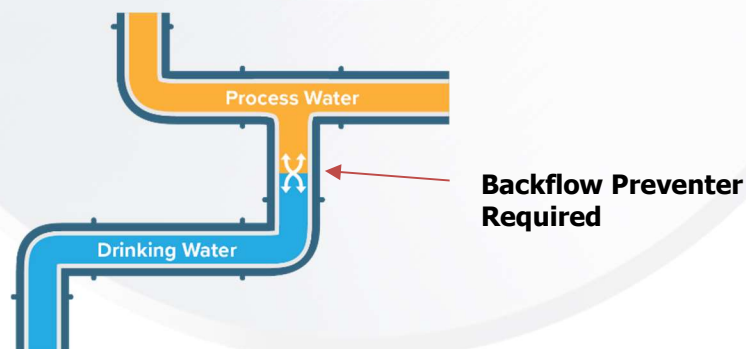
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1. Background/History of Cross Connection Rules

- State of Michigan Public Act (PA) 399, Part 14 (Michigan Safe Drinking Water Act) was codified in 1979 and has been updated several times since, most recently in 2015.
- P.A. 399, Part 14 (included in next section) requires all type 1 water systems to establish a comprehensive program to eliminate all unprotected cross connections that could potentially compromise the public water supply.
- To comply with Part 14, all water utilities are required to have a written cross connection control plan and to implement the plan. The plan must establish a time frame for certain activities. The following items are examples of what is required:
 - Annual inspection of all High Hazard water customers. Typical high hazard customers would include, but not be limited to, manufacturing plants, mortuaries, car washes, dry cleaners, and certain medical facilities.
 - A defined inspection frequency for all Low Hazard non-residential water customers (typically once every five years). Typical low hazard customers would include, but not be limited to, retail shops, office buildings/space, restaurants, and churches.
 - A defined inspection frequency for all residential water customers (typically every five to ten years).
 - Enforcement actions for non-compliant water customers via local ordinance. This typically includes water termination or a fine/fee schedule.
 - Testing requirements for all backflow prevention assemblies.



2. Public Act 399, Part 14

R 325.11401 Definitions. Rule 1401. As used in this part: (a) "Backflow" means water of questionable quality, wastes, or other contaminants entering a potable water supply system due to a reversal of flow. (b) "Unprotected cross connection" means a cross connection between a potable and non-potable system where inadequate methods are provided to prevent backflow.

History: 1979 AC; 2015 AACS.

R 325.11402 Compliance with regulations and local codes. Rule 1402. A connection with a public water supply system shall comply with existing laws, ordinances, codes, and rules including: (a) All sections of the Michigan plumbing code or the Michigan residential code pertaining to backflow and cross connection control. The codes allow for existing plumbing systems to stay as currently installed, providing they were installed properly according to the code in effect at the time of installation and they do not currently present a safety hazard. (b) Local ordinances or rules providing acceptable protection against cross connections.

History: 1979 AC; 2009 AACS; 2015 AACS.

R 325.11403 Cross-connections prohibited. Rule 1403. (1) A temporary or permanent unprotected cross connection between a public water supply system and any source, piping, or system that may contain non-potable water or other substances is prohibited. (2) Subrule (1) of this rule applies to all customer types, such as, industrial, commercial, institutional, governmental, and single and multi-unit residential. (3) Piping configurations creating the potential for water from a public distribution system to flow through a private water main or customer site piping and back into the public system are prohibited. Areas of private water main served by two or more service connections, where flow through the private system can re-enter the public system shall have cross connection control protection installed at each connection point to the public system.

History: 1979 AC; 2015 AACS.

R 325.11404 Local cross connection control programs. Rule 1404. (1) A type 1 public water supply shall develop a comprehensive control program for the elimination and prevention of all cross connections. The plan for the program shall be submitted to the department for review and approval. Supplies may use the best practices manual for cross connection control prepared by the department, office of drinking water and municipal assistance, listed in R 325.10113 when developing a cross connection control program. When the plan is approved, the water supply shall implement the program for removal of all existing cross connections and prevention of all future cross connections. (2) At a minimum, the program shall include all of the following: (a) A complete description of the method of administering the program, including the designation of inspection and enforcement agency or agencies. The local authority for implementation of the program shall be indicated, preferably by ordinance. (b) A time schedule for

inspection and reinspection of all water supply customers' premises for possible cross connections. The periodic reinspection shall be to ascertain if safe air gaps or required backflow preventers are in place. (c) A description of the methods and backflow preventers, as approved by the department, used to protect the public water supply. (d) A time schedule for the testing of all testable backflow preventers. The schedule contained in the program shall require testing at least once every 3 years. Backflow preventers installed on lawn irrigation systems with no chemical treatment may be tested once every 5 years if specified within the approved local cross connection control program. (e) A description of the time allowed for a customer to complete necessary corrections. (f) A description of the record keeping methods. (3) Upon receiving written notice from the department, a public water supply shall provide an updated program within 6 months. (4) A water supply shall report annually to the department on the status of the cross connection control program on a form provided by the department. History: 1979 AC; 1998 AACS; 2009 AACS; 2015 AACS.

R 325.11405 Backflow preventers; tester qualifications and corrections. Rule 1405. (1) Backflow preventers shall meet the applicable ASSE or CSA standards. (2) Beginning January 1, 2018, test results of backflow preventers are valid only if testing was performed by individuals holding an active ASSE 5110 certification. (3) The total time allowed for completion of the necessary corrections shall be contingent upon the degree of hazard involved and include the time required to obtain and install equipment. If the cross connection has not been removed or properly protected, after a reasonable period of time, the water supply shall shut off the water supply to the premises or physically separate the public water supply system from the onsite piping system in a manner that the 2 systems cannot again be connected by any unauthorized person.

History: 1979 AC; 1998 AACS; 2009 AACS; 2015 AACS.

R 325.11406 Piping identification. Rule 1406. When a secondary water source is used in addition to a public water supply system, exposed public water and secondary water piping shall be identified by distinguishing colors or tags and so maintained that each pipe may be traced readily in its entirety. If piping is so installed that it is impossible to trace it in its entirety, it will be necessary to protect the public water supply at the service connection in a manner acceptable to the department.

History: 1979 AC; 1998 AACS.

R 325.11407 Private water storage tanks. Rule 1407. A private water storage tank supplied from a public water supply system shall be deemed a secondary water supply unless it is designed and approved for potable water usage.

History: 1979 AC.

APPENDIX B: Sample Educational Brochure



protecting the safety of your home's drinking water

From the Hazards of
Cross-Connections
and Backflow

MICHIGAN

What is a Cross Connection?

A cross-connection is an actual or potential connection between the safe drinking water

Backsiphonage
May occur due to a loss of pressure in the municipal water system during a fire fighting emergency, a water main break or system repair. This creates a siphon in your plumbing system which can draw water out of a sink or bucket and back into your water or the public water system.

Backpressure
May be created when a source of pressure (such as a boiler) creates a pressure greater than the pressure supplied from the public water system. This may cause contaminated water to be pushed into your plumbing system through an unprotected cross-connection.

Water normally flows in one direction. However, under certain conditions, water can actually flow backwards; this is known as Backflow. There are two situations that can cause water to flow backward: backsiphonage and backpressure.

(potable) supply and a source of contamination or pollution. State plumbing codes require approved backflow prevention methods to be installed at every point of potable water connection and use. Cross-Connections must be properly protected or eliminated.

How does contamination occur?

When you turn on your faucet, you expect the water to be as safe as when it left the treatment plant. However, certain hydraulic conditions left unprotected within your plumbing system may allow hazardous substances to contaminate your own drinking water or even the public water supply.



Insights to protect your drinking water



Do...

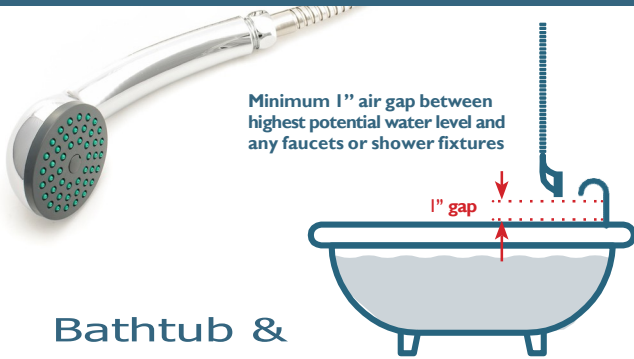
- Ensure that lawn irrigation systems have proper backflow protection. Backflow Prevention Assemblies must be tested at appropriate intervals by a certified tester, as required by your local water provider and plumbing codes.
- Verify and install a simple hose bibb vacuum breaker on all threaded faucets around your home.
- Make sure water treatment devices such as water softeners have the proper "air gap", which is a minimum of one inch above any drain.

Don't...

- Submerge hoses in buckets, pools, tubs, sinks or ponds.
- Use spray attachments without a backflow prevention device.
- Connect waste pipes from water softeners or other treatment systems directly to the sewer or submerged drain pipe. Always be sure there is a one-inch "air gap" separation.



AVOIDING BACKFLOW THROUGHOUT THE HOME

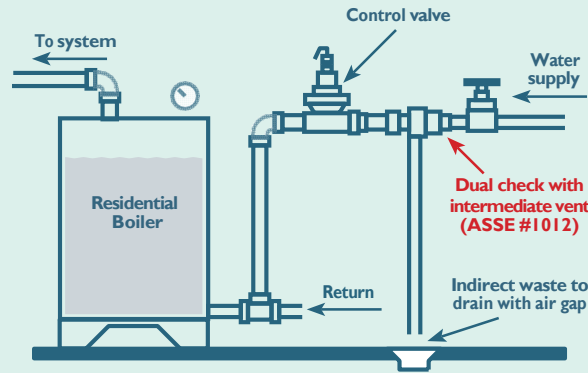


Bathtub & Shower Fixtures

A hand-held shower fixture is compliant if:

- When shower head is hanging freely, it is at least 1" above top of the flood level rim of the bathtub
- Complies with ASSE#1014
- Has the ASME code A112.18.1 stamped on the handle

Boilers



Boilers with chemical additives require an ASSE #1013 – Reduced Pressure Principle Backflow Prevention Assembly.

DID YOU KNOW?

Your water can become contaminated if connections to your plumbing system are not properly protected! The purpose of the local Cross-Connection Control Program is to ensure that everyone in the community has safe, clean drinking water.

public Health & Safety...

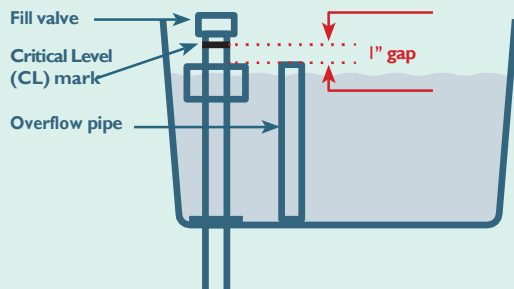
To avoid contamination, backflow preventers are required by state plumbing codes wherever there is an actual or potential hazard for a cross-connection. The Michigan Department of Environmental Quality (MDEQ) requires all public water suppliers to maintain an on-going Cross-Connection Control Program involving public education, onsite inspections, and if required, corrective actions by building and home owners.

For more detailed information about cross-connection control and backflow prevention in Michigan, please visit www.hydrocorpinc.com/residential

Toilet Tanks

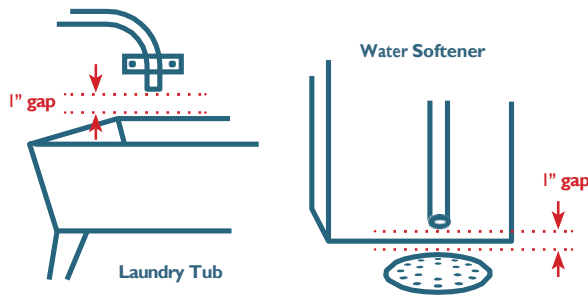
There are many unapproved toilet tank fill valve products sold at common retailers which do not meet the state plumbing code requirements for backflow prevention.

- Look for the ASSE #1002 Standard symbol on the device and packaging.
- Replace any unapproved devices with an ASSE #1002 approved anti-siphon fill valve device. Average cost is typically \$12 to \$22 at home improvement stores.
- Verify overflow tube is one inch below critical level (CL) marking on the fill valve.



Elsewhere in the Home

Always maintain an air gap of at least 1 inch between the end of drain hoses and the highest potential water level.



Home Exterior

Verify all outside faucets are protected with a hose bibb vacuum breaker of the ASSE-certified types shown below.



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