

PORTAGE WATER UTILITY CROSS-CONNECTION CONTROL (CCC) INFORMATION

Per Wisconsin DNR regulations, DNR 810.15 and Comm. 82.41, the Portage Water Utility staff will be conducting a residential cross-connection control program in accordance with the City of Portage ordinance, Chapter 78, sec. 78-36. The purpose of the cross-connection control program is to ensure the safety and quality of our drinking water.

A cross-connection is a direct or potential connection between any part of the public water supply system and a source of contamination or pollution. Potential hazards are toilets, laundry tubs, water softeners, boilers, lawn irrigation systems, inside / outside hose bibs.

A letter will be mailed to the Portage Water Utility customers to inform and confirm compliance with the CCC program. Informational literature concerning cross-connections will be provided. To be compliant, make sure the product(s) you purchase has the American Society of Sanitary Engineering (ASSE) symbol on the package or on the product itself.

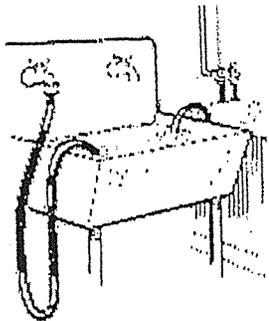
Corrective actions are the responsibility of the property owner. Properties failing to correct a non-compliant water connection will be subject to disconnection of their water service.

If you have any questions, or to schedule an appointment, please call the Portage Water Utility office at (608)742-4727, between the hours of 8:00 AM and 4:30 PM, Monday through Friday.

Residential Cross Connection Control

What is a cross connection?

A cross connection (see diagram) is a connection or potential connection between the water supply system and a contaminant source. Examples: a garden hose with one end submerged in soapy water, fertilizer, or a swimming pool; a supply line to a boiler; a toilet; or a lawn irrigation system.



Why should I be concerned?

Under certain circumstances, a cross connection can allow the *backflow* of undesirable or toxic substances into your drinking water or the municipal water supply. This unwanted reversal of normal flow in the drinking water system may occur during system maintenance or repairs when water pressure is lower than normal. Although infrequent, backflow incidents usually occur when conditions known as back siphonage exist within the water supply system.

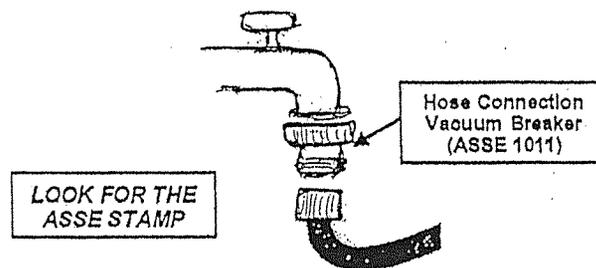
What is back siphonage?

Back siphonage is caused by negative pressure or a vacuum. It can occur during repairs resulting from a water main break or hydrant use for flushing or firefighting. Each of these events can lower system water pressure and lead to back siphonage.

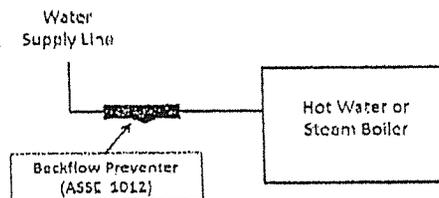
Common household hazards

The most common household cross connection is the hose connection (garden hose or utility sink). Toilets, boilers, irrigation systems, and dialysis equipment are other potential hazards in and around the home.

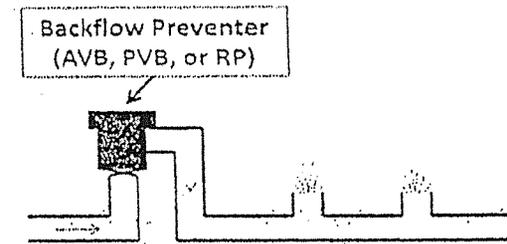
HOSE CONNECTIONS – Hoses are extensions of the water system. To ensure that no harmful materials are drawn back into a hose, a vacuum breaker should be installed on each hose connection (see below). Newer homes often have vacuum breakers incorporated into the building's plumbing; in many cases, no additional protection is required.



BOILERS – Pressure build-up due to the expansion of water in a boiler can result in low-quality water being pushed back into the water supply line or worse into your drinking water supply. A *backflow preventer* is required to eliminate this risk.



LAWN IRRIGATION SYSTEM – Irrigation systems help with watering the lawn; however, if not properly installed, lawn chemicals or other contaminants may enter your drinking water. Protection can be provided by installing an atmospheric vacuum breaker [AVB] or a reduced pressure principle backflow preventer [RP].



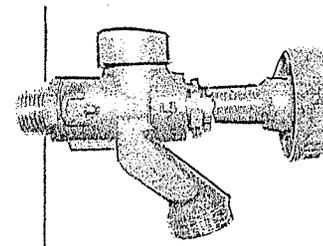
TOILETS – Toilets flush water and waste to the sewer system. The float valve (anti-siphon ballcock) inside the toilet tank must be the correct type [ASSE 1002]. In addition, the anti-siphon ballcock and fill valve must be above the water line in the tank.

Examples of backflow protection

An air gap provides the highest level of protection. However, hose connection vacuum breakers and RP assemblies can be suitable alternatives based on the degree of hazard for a given application.

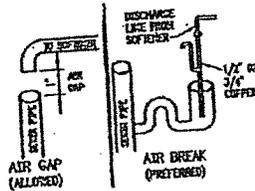
In the "typical" home, inexpensive vacuum breakers provide adequate protection for most applications. **Make sure to only use listed or approved devices; the device should have an ASSE stamp on it.**

EXAMPLE OF ANTI-SIPHON HOSE BIB



DEVICE EXPLANATIONS

Air Gap (AG) or Air Break (AB) – The end of the drain line from the softener, reverse osmosis unit or similar device must be at least 1" above the receptor to which it drains, or have an appropriate air break.



Hose Bibb Vacuum Breaker (HBVB) – ASSE 1011* - For use on indoor hose threads, such as laundry tubs.

Anti-Frost Hose Bibb Vacuum Breakers (AFHBVB) – ASSE 1011* - For use on outdoor hose bibbs exposed to freezing.

Hose Bibb Integrated Vacuum Breaker (HBIVB) – ASSE 1019 – For outside hoses. This is a complete hose bibb with a built-in vacuum breaker.

Anti-Siphon Ball Cock (ASBC) – ASSE 1002 – For toilet flush tanks.

Vented Dual Check Valve (VDCV) – ASSE 1012 – For supply line to untreated boilers with less than 15 psig of steam or a maximum water pressure of 30 psig.

Atmospheric Vacuum Breaker (AVB) – ASSE 1001 – For lawn sprinkling systems. The Critical Level of the AVB must be installed at least 6" above the highest downstream point. **NO** valves downstream.

Pressure Vacuum Breaker (PVB)** – ASSE 1020 – For lawn sprinkling systems, swimming pools, and hot tubs. The Critical Level of the PVB must be installed at least 12" above the highest downstream point. Outdoor installations only.

Spill-Resistant Vacuum Breaker (SVB)** – ASSE 1056 – For indoor swimming pools, whirlpools, or hot tubs. The Critical Level must be installed at least 6" above the highest downstream point. Indoor installation only.

Reduced Pressure Vacuum Zone Backflow Preventer (RPZ)** – ASSE 1013 – For lawn sprinkling systems, hot tubs, and swimming pools where an AVB, PVB, or SVB are not practical to use. Also for boilers with chemical treatment added.

Double Check Valve Assembly (DCV)** – ASSE 1015 – For swimming pools, lawn sprinkling systems, and fire suppression systems.

*These can be found at hardware stores. ALL others require a plumber for installation.

**These devices, except for DCVs, must be registered with the Wisconsin Department of Commerce, and all of them are subject to annual testing by a State registered tester. Copies of the test results must be sent to the PORTAGE WATER Utility within 60 days of the test.

What is Cross Connection?

A cross connection is a direct or potential arrangement of drinking water piping that is or can be connected to any water, liquid, or gas which is not intended for human consumption. State plumbing codes require approved back-flow prevention devices, assemblies, or methods to be installed at every point of potable water connection and use.

How does contamination occur?

Water normally flows in one direction, from the municipal water system through your cold or hot water plumbing to a plumbing connection. Under certain conditions, water can flow in the wrong direction. This is known as backflow.

What is Backflow?

Backflow is when the water in your pipes (the pipes that enter your home after the water meter), travels backwards. There are two situations that can cause water to flow backward: back siphonage and backpressure.

What is Back Siphonage?

Back siphonage may occur due to a loss of pressure in the municipal water system during a fire emergency, a water main break, or system repair. This creates a siphon in your plumbing which can draw water out of a sink or bucket.

What is Backpressure?

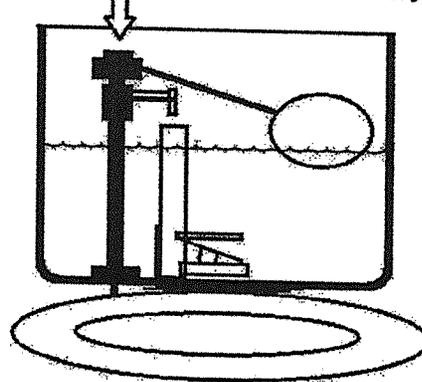
Backpressure may be created when a source of pressure, such as a boiler, creates a pressure greater than the pressure supplied from the Public Water Supply. This may cause contaminated water to be pushed into your plumbing system through an unprotected cross connection.

In the Bathroom

All toilet tanks are supplied water from the same piping that supplies the building's drinking water. It is important and required that all toilet tanks have the approved device installed to prevent backflow from the toilet into the drinking water supply.

Most toilets come from the manufacturer with the proper device already installed; however, not all do. In addition, there are unapproved products sold at retailers which do not meet the state plumbing code requirements for backflow prevention.

ASSE #1002 Approved Ball Cock Assembly

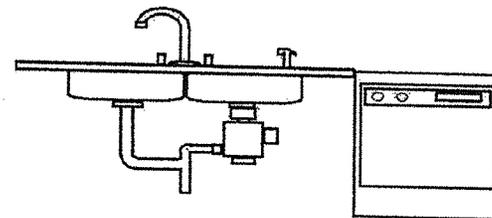


How to verify your toilet tank has the proper device installed:

- Look for the ASSE #1002 Standard symbol on device and packaging.
- Replace any unapproved devices with an ASSE #1002 approved anti siphon ball-cock assembly. Average cost for this do-it-yourself-type device available at home improvement stores is \$12 to \$22.
- Verify water level is one inch below overflow tube
- Consult with a licensed plumber.

In the Kitchen

Hoses and water treatment devices may create a potential backflow hazard if not properly isolated with backflow prevention devices or methods.



What You Need To Do:

- Keep the ends of hoses clear of all possible contaminants.
- Make sure dishwashers are installed with a proper "air gap" device.
- Verify or install hose bibb vacuum breakers on all threaded faucets around your home.
- Make sure any water treatment devices—like water softeners—have the proper "air gap" minimum of one inch from any drain.
- Verify or install an ASSE #1014 on any bath tub hand held shower connections

