

What is Cross-Connection and why is a Backflow Preventer necessary?

Cross-Connection Terms and Definitions

- **Cross-Connection:** Means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains, or may contain, contaminated water, sewage or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of **backflow**. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices through which, or because of which, **backflow** could occur are considered to be cross-connections.
- **Backflow:** The flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source. Backsiphonage is one type of backflow.
- **Backpressure:** Backflow that occurs when the pressure in an unprotected downstream piping system exceeds the pressure in the supply line.
- **Backsiphonage:** Resulting from negative pressures in the distributing pipes of a potable water supply.
- **Backflow Preventer:** Backflow Preventers are mechanical plumbing devices installed in a plumbing system to prevent water from flowing backward in the system. A properly installed, tested and maintained backflow preventer at the service entrance to a building or property can reliably prevent the backflow of water of an unknown quality from flowing back into the community water system.

Is It Really Important To Prevent Backflow?

The Tennessee Department of Health and Environment under section 68-13-701 through 68-13-719, requires all public water systems in the state to operate an on-going program to protect the public water supply from contamination and possible cross-connections. The most effective method for the water utility to meet this requirement is to require customers to install a backflow preventer on the main supply line to their property or facility, thus protecting the community water system from any cross connections that may be present inside a customer's plumbing system. All water users benefit from an active, on-going

cross-connection control program that includes the installation of backflow preventers where required by state regulations and local codes.

Where Can Cross-Connections Occur?

Cross-Connections can occur at many points throughout a distribution system and a community's plumbing infrastructure. Cross-Connections can be identified by looking for physical interconnections (or arrangements) between a customer's plumbing and the water system. Some specific examples of backflow incidents that can occur are:

- Lawn chemicals backflowing (backsiphoning) through a garden hose into indoor plumbing and potentially into the distribution system.
- Backsiphonage of "blue water" from a toilet into a building's water supply.
- Carbonated water from a restaurant's soda dispenser entering a water system due to back pressure.
- Backsiphonage of chemicals from industrial buildings into distribution system mains.
- Backflow of boiler corrosion control chemicals into an office building's water supply.

Why Does the Customer Have to Pay for and install The Backflow Preventer?

The backflow preventer is installed to protect the public water supply against possible hazards in the customer's plumbing system. The actual or potential cross connection belongs to the property owner and not to regulatory officials or the water utility. Once the water goes beyond the meter, in many cases the water quality is altered. The water utility does not want the water back, nor do the water customers want to purchase used water. If a backflow preventer is required to keep the water safe, then the person who purchased, installed and maintained the cross-connection (actual or potential) should purchase, install and maintain the backflow preventer.

Backflow Prevention Assembly Testing and Maintenance

The owner(s) of any premises on which, or on account of which, a backflow prevention device is installed, shall be responsible for having the device(s) tested by a Qualified Backflow Assembly Tester. A backflow prevention device shall be tested after installation, relocation or repair, and annually thereafter, unless more frequent testing is required by applicable state or local regulations. No device shall be placed in service unless it is functioning as required and a unit shall be serviced, overhauled, or replaced whenever it is defective.

Back-Flow Device Requirements for All Irrigation / Garden meters and New Commercial Business:

Tennessee American Water, in accordance with the Tennessee Department of Health and Environment under section 68-13-701 through 68-13-719 and The City of Chattanooga Plumbing Code, requires a **Reduced Pressure Principle Assembly (RP)** backflow prevention device be installed on all **Commercial Businesses and all Commercial and Residential Irrigation systems.**

After the **RP** device is installed, an **initial test** must be performed by a state certified Backflow tester. Enclosed is a Backflow Prevention Device information form, please complete this form and return it along with the completed test results to the office of Cross-Connection at Tennessee American Water, P.O. Box 6338, Chattanooga, Tn 37401. A yearly test will then be required to ensure the **RP** device is working properly. This device is required to ensure the safety and quality of our water.

If you would like to learn more about backflow preventers, or if you need help to determine proper installation or how to maintain a backflow preventer assembly, please call Tennessee American Water at Kitty Banks @ 423-755-7605, or Steve Betty @ 423-755-7601.