

Water System Cross Connection Control
City of Glens Falls
Water & Sewer Department

Why worry about plumbing Cross-Connections?

Cross-connections constitute a serious public health hazard. There are numerous, well documented cases across the country where cross connections have been responsible for contamination of drinking water or have resulted in the spread of disease. The problem is a dynamic one, because piping systems are continually being installed, altered, or extended.

What are Cross-Connections?

Cross connections are permanent or temporary physical connections created by users between potable drinking water and anything which can pollute or contaminate the water supply.

Examples:

Attaching a fertilizer sprayer to a garden hose or even placing your hose in a soap bucket for car washing can create a cross connection and possible health hazards unless there is a backflow prevention device. This can be as simple as an in-line vacuum breaker, available for a few dollars at local hardware stores, or, for plumbed – in irrigation systems, a Reduced Pressure Zone Backflow Preventer (RPZ).

What is Potable Water?

Potable water is water that is safe for human consumption, free from harmful or objectionable materials; water that meets State and Federal Drinking Water Standards.

What is a Non-potable Fluid?

Any water, other liquid, gas, or other substance that is not safe for human consumption or is not a part of the public potable water supply.

Examples:

- *Fertilizer*
- *Wastewater*
- *Boiler water treatment chemicals*
- *Industrial chemicals*

What is Backflow?

Backflow is unwanted reversal of flow of non-potable water or other substances through a cross connection into the piping of a public water system or consumer's potable water system. This reversal of flow or "backflow" may allow contaminated water to flow backward, drawing contaminants into the water supply. There are two types of backflow - backpressure backflow and back siphonage backflow.

What is Back Siphonage?

Back siphonage is caused by vacuum (negative pressure) in the supply piping. Some common causes of back siphonage are:

- *High velocities in pipe lines.*
- *Water line repair or break that is lower than a service point.*
- *Lowered main pressure due to high water withdrawal rate, such as fire fighting or water main flushing.*

All potable water systems must be protected against back siphonage and backflow with approved backflow assemblies. There are numerous types of assemblies available to provide this type of protection. The state law governs the selection and minimum installation standards of assemblies. The proper backflow assembly must be chosen for the intended use.

What is Backpressure Backflow?

Backpressure backflow is the reverse from normal flow direction within a piping system that is the result of the "downstream pressure" being higher than the supply pressure.

Examples:

- *Pressurized water systems, including fire booster pumps, water pressure booster pumps, or even soda fountains using pressurized gas can cause back pressure.*
- *Private well connections to the public water supply can also cause back pressure back flow. City Code prohibits direct piped connections between private water supplies and the City water system.*
- *Boilers that operate at a higher pressure than the water supply system can cause back pressure flow.*

What Can Cause Backflow?

Backflow can be caused when an unforeseen change in water pressure allows the water to flow backwards within the water supply piping system from a contaminated source to a drinking water supply. A drop in pressure could be caused by a variety of things, including water main breaks or fire fighting.

What does Glens Falls Water Department do to prevent backflow of contaminants?

Glens Falls has a Cross Connection Control Ordinance (177-1.1 Cross Connection Control) that requires installation of specific backflow protection assemblies to be installed. These devices must be tested annually according to currently adopted uniform plumbing code and NYSDOH Regulations (10 NYCRR Section 5-1.31 - Cross-Connection Control). Glens Falls is also starting a program of plumbing inspections to protect our water supply.

What are Backflow Prevention Devices?

Backflow prevention devices are means and methods used to prevent backflow of potentially contaminated water into public or private water systems. Devices include:

- *Air Gaps (AG)*
- *Reduced Pressure zone backflow preventers (RPZ)*
- *Dual or Double Check Valve assemblies (DCV)*
- *Faucet mounted, fixture mounted or hose mounted vacuum breakers (VB)*

Who Can Test Backflow Prevention Devices?

Backflow assemblies must be tested at the time of installation and annually after installation. Backflow devices must also be tested after they are repaired or relocated. Testing in New York must be done by NYSDOH certified backflow testers.

How do we select the right backflow device?

The Degree of Hazard determines the type of backflow preventer to be installed:

- 1. Class 1 - Minor/Low Degree of Hazard
 - a. The contaminant would only slightly degrade the aesthetic quality of the water, i.e., taste, odor, or color.
 - b. A health hazard would not exist.
 - c. The contaminant would not disrupt service of piped water.
- 2. Class II - Moderate/Medium Degree of Hazard
 - a. The contaminant would significantly degrade the aesthetic quality of the water or impair the usefulness of the water.
 - b. A health hazard would not exist.
 - c. The contaminant would not seriously disrupt service of piped water for drinking or domestic use.
- 3. Class III - Severe/High Hazards
 - a. The contaminant would be toxic, poisonous, noxious, or unhealthy.
 - b. A health hazard would exist. If the contaminant were consumed by humans, it could result in illness or death.
 - c. The contaminant would disrupt service of piped water for drinking or domestic use.

Please be aware that no existing City of Glens Falls water customer is required to install a backflow device unless specifically notified to do so by the City of Glens Falls Water & Sewer Department or Code Enforcement Officer. If you are contacted by any other source stating you are being required to install a backflow device please contact the Water & Sewer Department at the phone number listed below.

Facility Classification	Degree of Hazard
• Air Conditioning Plants	Class III/High
• Apartment Houses	Class I-to-II/Low-to-Moderate
• Arts and Crafts Facilities	Class I-to-II/Low-to-Moderate
• Child Care Facilities	Class III/High
• Dental Clinics	Class III/High
• Dining Facilities	Class III/High
• Elementary Schools	Class I/Low
• Fueling Stations	Class III/High
• Gymnasiums	Class I-to-III/Low-to-High
• Hazardous Waste Storage	Class III/High
• Heating/Boiler Plants	Class III/High
• High Schools Class	I-to-III/Low-to-High
• Housing, single family	Class I/Low (w/o irrigation system present)
• Housing, w/irrigation	Class III/High
• Insecticide Herbicide Shops	Class III/High
• Intermediate Schools	Class I-to-III/Low-to-High
• Laundries/Dry Cleaning Plants	Class II-to-III/Moderate-to-High
• Medical Clinics	Class III/High

Facility Classification	Degree of Hazard
• Museums	Class I-to-III/Low-to-High
• Offices	Class I/Low
• Optometry Clinics	Class III/High
• Photography Laboratories	Class I-to-III/Low-to-High
• Religious Activity Facilities	Class I-to-III/Low-to-High
• Resource Recovery Plants	Class III/High
• Restaurants w/beverage bars	Class II-to-III/Moderate-to-High
• Stables	Class III/High
• Swimming Pools	Class III/High
• Trade Shops	Class I-to-III/Low-to-High
• Veterinary Clinic/Kennels	Class III/High
• Vehicle Maintenance Shops	Class II-to-III/Moderate-to-High
• Vehicle Washing Facilities	Class II-to-III/Moderate-to-High
• Warehouses	Class I/Low
• Wastewater Pumping Stations	Class III/High
• Wastewater Treatment Plants	Class III/High
• Water Booster Pumping Stations	Class I-to-III/Low-to-High
• Water Treatment Plants	Class III/High

Or as determined by the Water Superintendent

Who Should I Contact for More Information?

If you have any questions concerning backflow installations, certified testers, or approved backflow prevention device please contact the Water & Sewer Department at 518-761-3850.

If you have any questions concerning backflow installations, certified testers, or approved backflow prevention assemblies please contact the Glens Falls Water Department or the NYS Department of Health. Certified testers are listed by County on the NYSDOH web page, www.health.ny.gov/environmental/water/drinking/cross/backflow_testers/index.htm .