



BACKFLOW AND CROSS CONNECTION

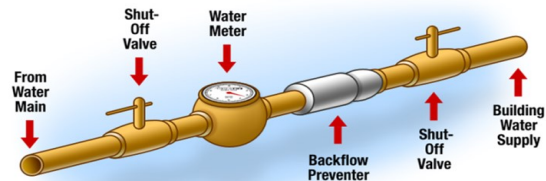


Our mission is CLEAR!

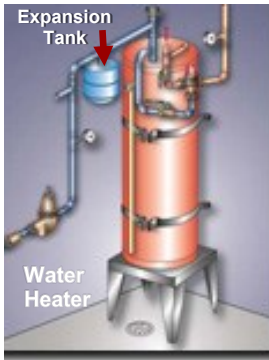
Reasons we need backflow prevention and cross connection control:

Most water systems have good sources of water and sophisticated treatment plants to convert impure water to meet drinking water standards, and the City of Salisbury has exceeded those standards. However, there are instances within water systems where the drinking water supply can become contaminated due to backflow or cross connection.

The City and State have backflow and cross connection regulations to further protect the public drinking water supply from the possibility of contamination. Also, in 1988 Salisbury-Rowan Utilities began installing meters with backflow prevention check valves for new customers connecting to the water system to help isolate contaminants and protect against potential pollutants.



When check valves are added, homeowners and businesses should have internal plumbing inspected and consider installing a pressure relief thermal expansion tank to absorb internal pressure caused by hot water heaters and other devices.



SRU also reviews new business and construction projects to insure compliance when additional backflow and cross connection prevention is required.



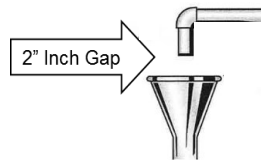
Customers are responsible for preventing contamination to the public water supply as well as their own internal water systems; therefore, the following information is important to both residential and business customers.

How does backflow occur?

Backflow is when water travels backwards through the distribution system under certain pressure conditions.

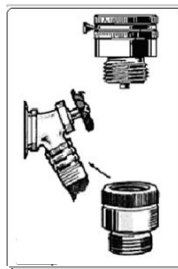


If a hose is submerged in a bucket of garden chemicals or connected to a lawn sprayer, and the water is left turned on then a drop in water pressure occurs (such as when there is a water main break or if a fire hydrant is opened), the chemicals in the bucket can actually flow backwards through the hose into the drinking water.



Prevention

Always leave at least a 2-inch air space between a hose opening and any container of non-drinkable water. Installing a hose-bib vacuum breaker like the one shown here will also reduce the possibility of backflow; however, it is recommended that hoses never be left submerged in any type of substance, even if a backflow device is present.



What is a cross connection?

A cross connection is a point in a plumbing system where the drinkable (or potable) water supply is connected to a non-potable/contaminated source. The contaminants can enter the safe drinking water system through uncontrolled cross connections when backflow occurs due to backsiphonage or backpressure.

Backsiphonage

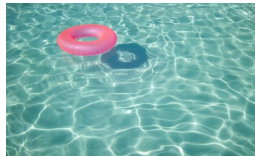
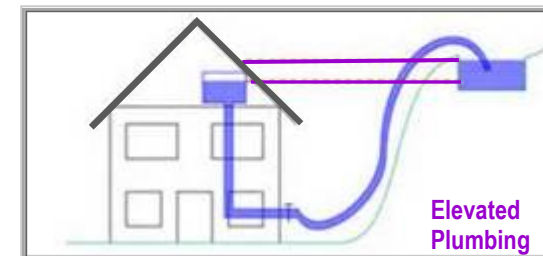
Backsiphonage is caused by a negative pressure in the supply line to a facility or plumbing fixture. This



may occur during waterline breaks and/or repairs, when the water supply is shut off, fire hydrants are opened/tested, etc.

Backpressure

Backpressure occurs when the drinking water supply is connected to another system operated at a higher pressure or has the ability to create pressure. These are caused typically by booster pumps, pressure vessels and elevated plumbing. The illustration below shows how backpressure can occur in a home if there is elevated plumbing present such as from either a pool near the home or even from another home at an elevated level.



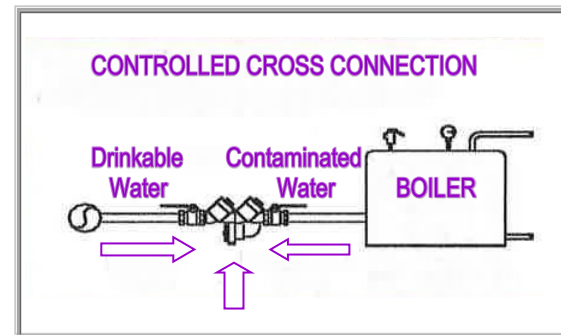
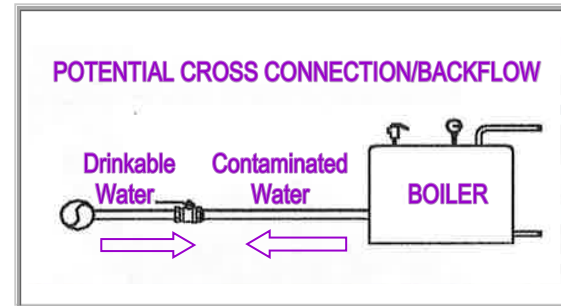
Where cross connection occurs

Some common cross connections can be found in existing plumbing and water systems including:

- Wash basins and service sinks
- Irrigation sprinkler systems
- Auxiliary water supplies
- Laboratory and aspirator equipment
- Photo developing equipment
- Processing tanks
- Boilers
- Water recirculating systems.
- Swimming pools
- Solar heat systems
- Fire sprinkler systems

Prevention and Control

These diagrams show uncontrolled and controlled cross connection/backflow examples.

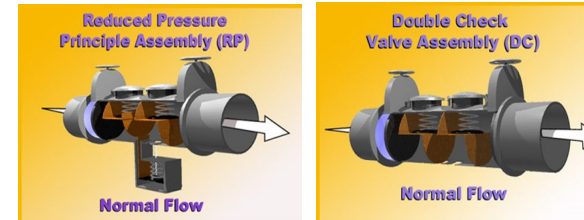


Regulations

Residences with irrigation systems, high-risk businesses and industries must comply with specific state and local regulations, inspections and recordkeeping requirements.

Through the permitting process, SRU works closely with new businesses and new construction projects to help customers become compliant with regulations, testing and recordkeeping requirements.

Installation can depend on several factors and the type of the backflow device required such as these.



Location can also be a factor as well as the type of enclosure required. Below are some examples of various enclosures.



Testing requirements are handled by SRU-approved, certified third-party providers. Contact us for a list of those in your area.

**Contact Mike Lee,
Backflow Prevention Coordinator
for more information
704-216-2705**

**Salisbury-Rowan Utilities
Maintenance Department**

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