

Safe drinking water is an expectation for all of our residents when they turn on the faucet.

The State of Indiana has implemented the following laws pertaining to backflow to ensure our residents continue to receive safe drinking water from their tap.

- Indiana Administrative Code 8-10 governs cross connections on public water supply systems. Some requirements of the rule include:
- No customer shall cause or allow the construction or maintenance of a cross connection.
- Facilities designated as cross connection hazards must install an RPBA or air gap. These facilities include, but are not limited to: aircraft and automotive manufacturing plants, beverage bottling plants, including dairies and breweries, car washes, chemical, biological, and radiological laboratories, including those in schools, hospitals, clinics, and other medical facilities, metal and plastic manufacturing, fabricating, cleaning, plating, and processing facilities, fertilizer, film, rubber, pesticide, petroleum, and pharmaceutical manufacturers, oil manufacturing plants, commercial laundries, restricted or classified facilities, and other customers designated as cross connection hazards by the Indiana Department of Environmental Management.
- All backflow prevention devices must be testable from the floor or ground level, without the use of a ladder or similar apparatus, and may not be subject to flooding, freezing, or excessive heat.
- All backflow prevention devices must be tested upon installation and no less than one year thereafter. All devices shall have an inspection tag placed on them upon testing, calibration, or repair.
- All backflow inspectors must submit test reports to the public water supply within 30 days of performing the test.

HAZARDOUS WASTE: Improper disposal of commercial hazardous waste may result in human health problems, contamination of the water supply, and other issues.

Do: Dispose of trash in the garbage instead of a drain, e.g. paper towels, "flushable" wipes and rags.

Do: Assess current needs, utilize the smallest amount of materials needed.

Do: Read the label and dispose of accordingly.

Do: Utilize all of the product for its intended use.

Do: Label containers containing hazardous waste with "Hazardous Waste."

Do: Safely store hazardous wastes and materials in leak-proof containers.

Do not: Dispose of materials into the storm sewer or septic system, e.g. fertilizers, pesticides, and cleaning agents.

Do not: Burn or bury any leftover materials.

Do not: Mix materials together.

For more information regarding hazardous materials call the Monroe County Solid Waste Management District at (812) 349-2848 located at 3400 South Walnut Street, Bloomington, Indiana 47401



City of Bloomington Utilities
600 E Miller Drive
Bloomington, IN 47401
(812) 339-1444
www.bloomington.in.gov

COMMERCIAL BACKFLOW



PROTECTING THE Quality and Safety of our Community Water Supply



City of Bloomington Utilities

600 E Miller Drive
Bloomington, IN 47401

(812) 339-1444

www.bloomington.in.gov/utilities

What is Backflow?

Backflow means the flow of water or contaminants into the public water supply distribution system from a source other than the public water supply.

What Causes Backflow?

There are two types and causes of backflow, backsiphonage and backpressure, which are explained below.



Backsiphonage:

Backflow caused by a negative or subatmospheric pressure within a water system.



Backpressure:

Backflow caused by a pump, elevated tank, boiler or other means that could create pressure within the system greater than the supply pressure.

Degree of Hazard

5 Hazard Protections Scale

The degree of hazard (a scale of 1-5, 5 being the highest) depends on the type of substance which may flow into the potable water supply at the point of a cross connection.

A **pollutant** is a foreign substance, that if permitted to get into the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably effect such water for domestic use.

A **contaminant** is a substance that will impair the quality of the water to a degree that it creates a serious health hazard to the public leading to poisoning or the spread of disease.

Extreme hazards include sewage, surface water, and radioactive materials because of the epidemic possibilities and dangers associated with them.

Overview of Backflow Prevention Methods

To ensure the safety of our community water system, backflow assemblies are required for applications that have the potential of contaminating the drinking water supply and are chosen based on the degree of hazard at each location.



Air Gap Separation

This method is typically used in commercial applications where reservoirs and storage tanks are required. It protects against both contaminants and pollutants. An air gap means there is a physical break between the city's water supply and the facility's process, therefore providing the utmost protection. This is the only acceptable means of protecting against lethal hazards.



Reduced Pressure Backflow Assembly (RPBAs)

These are required in commercial settings where hazardous material could enter potable water. They protect against both contaminants and pollutants. Examples of application include: cellar drains, hospitals, chemical plants, and irrigation systems that distribute fertilizers.



Double Check Valve Assembly (DCVAs)

These are used in low to medium hazard situations. They are used to protect against pollutants. Examples of application include apartment complexes, fire lines, fire sprinkler systems, and food processing steam kettles.

Most double check valves on fire lines must be installed with a detector check meter called a Double Detector Check Assembly (DCDA). Radio read touch pads must be mounted outside of the building in accordance with City of Bloomington Utilities Standard Detail #34.



Pressure Vacuum Breaker Assembly (PVBA)

PVBAs are primarily used in residential applications with irrigation systems, but can be effective on other non-potable services where a health hazard could exist if a backsiphonage situation were to occur. They protect against contaminants and pollutants. They protect against backsiphonage but should not be installed where backpressure can occur. Common applications include irrigation, such as lawn sprinkling systems, both with and without chemical dispensers.



KEY



Commercial Application



Residential Application



Backsiphonage Protection



Backpressure Protection



Degree of Hazard
(a scale of 1-5, 5 being the highest)

Universal Installation Requirements for Backflow Methods

Pre-installation:

- All devices and plumbing plans shall be approved by CBU prior to installation.
- Variance of any installation must have prior written approval from CBU.

During Installation:

- All devices must be installed in accordance with "327 IAC 8-10-7 Construction and installation requirements for air gaps or other devices."
- Thoroughly flush service line prior to installation of assembly.
- Assembly must maintain sufficient clearance from any wall.
- Assembly must be protected from freezing and flooding.
- Assembly must have adequate clearance for operation of valves.

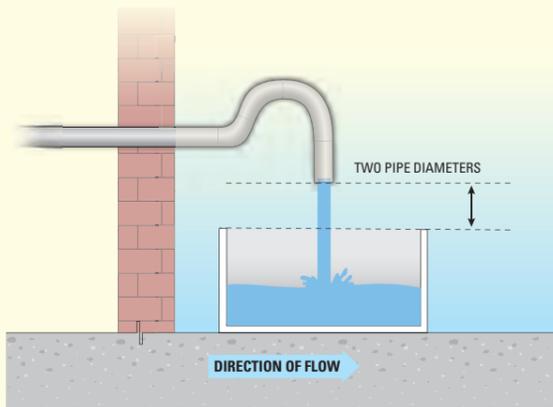
- Assemblies in any enclosures shall have adequate drainage.
- Full tops on enclosures must be removable for testing and maintenance.

Test Reports:

- Test reports must be signed by a Certified Backflow Tester and be uploaded via www.archonsafe.com or using the ArchonSafe App available on the Apple App Store or Google Play Store.
- Backflow device inspectors may register to upload results at www.archonsafe.com/register

INSTALLATION GUIDELINES FOR EACH BACKFLOW METHOD

Air Gap Separation

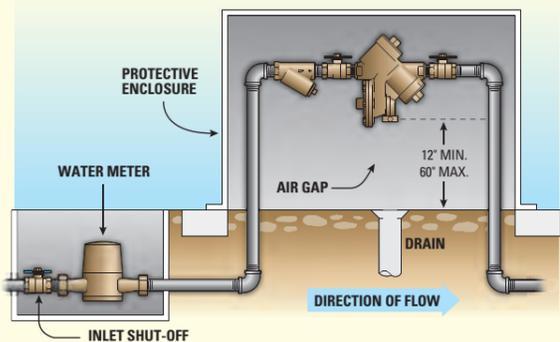


- An air gap shall be twice the diameter of the effective opening of the supply pipe. In no case shall the gap be less than 1 inch.

Common applications:

- Water truck tanks
- Reservoirs-Surface water
- Clothes washers
- Dishwashers
- Refrigerators

Reduced Pressure Backflow Assembly (RPBA)



- The RPBA cannot be installed below ground.
- Install valve at least 12 inches above surrounding flood level.
- Install no higher than 5 feet (60 inches) from floor to centerline of assembly.
- Clearances from walls will vary due to the size of the assembly.
- Test Cocks (4 required).
- Resilient Seated Shutoff Valves (2 required).
- Adequate gravity drainage system required with approved air gap.
- Testing is required at installation, annually, and at point of repair.

Common applications:

- Industrial and commercial domestic water service.
- Mostly used in industrial settings.
- Recommended for all commercial facilities and multi-family homes.

Double Check Valve Assembly (DCVA)

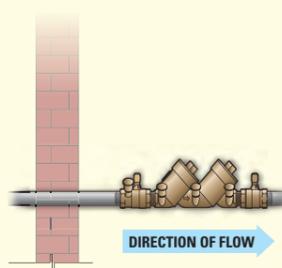


Indoor Installation

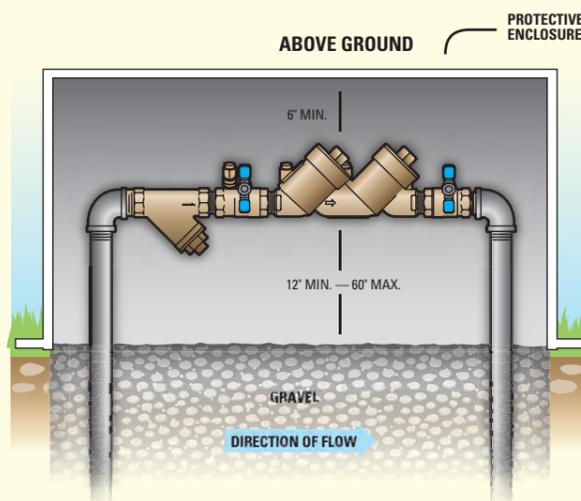
VERTICAL INSTALLATION



HORIZONTAL INSTALLATION



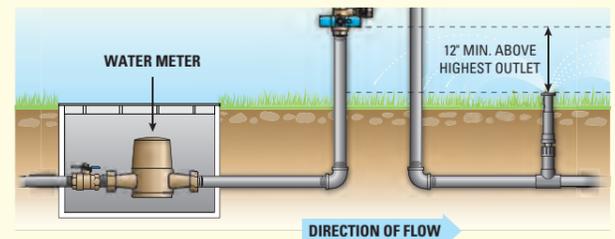
Outdoor Installation



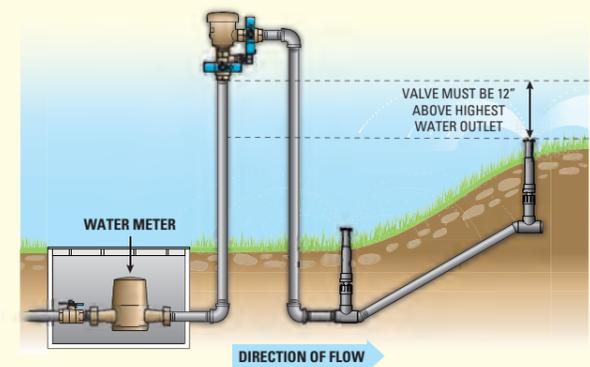
- DCVAs must be installed at a location that allows access to the device for maintenance and testing from floor level, without use of ladder or other similar temporary apparatus. They can not be subject to flooding, excessive heat, or freezing.
- Testing is required at installation, annually, and at point of repair.
- Most double check valves on fire lines must be installed with a detector check meter called a Double Detector Check Assembly (DCDA). Radio read touch pads must be mounted outside of the building in accordance with City of Bloomington Utilities Standard Detail #34.

Common applications: Firelines, apartment complexes, and some lawn irrigation systems.

Pressure Vacuum Breaker Assembly (PVBA)



Clearance Guidelines



- Must be installed in a vertical position to provide proper operation of the air inlet valve.
- Must be installed at least 12 inches above all downstream piping and outlets.
- Testing is required at installation, annually, and at point of repair.

Common applications: Lawn irrigation systems.

KEY



Hazard Protection Scale
A scale of 1 - 5, 5 being the highest



Illustrations and some photos provided by Wilkins.
www.zurn.com



Commercial Application



Residential Application



Backsiphonage Protection



Backpressure Protection