

## Backflow Prevention FAQ

### **What is a cross-connection?**

A cross connection is any physical or potential connection between a potable water supply and any potential hazardous material. This connection can be created when plumbing is incorrectly installed or even by simply attaching a hose to a faucet. Cross connections are not easy to discover, but can pose a serious threat to water quality. Federal and State regulations provide that no such connection is permissible without the installation of an approved backflow prevention assembly in accordance to the degree of hazard of the substance involved.

### **What is potable water?**

Potable water is water which is safe for human consumption, free from harmful microbiological or chemical substances as described by federal and State drinking water regulations.

### **What is backflow?**

Backflow is an undesirable reversal of flow of non-potable water or other substances through a cross-connection and into the piping of a public water system or consumer's potable water system. There are two types of backflow—back pressure and back-siphonage.

### **What is back pressure backflow?**

Back pressure backflow is backflow caused by a downstream pressure that is greater than the upstream or supply pressure in a public water system or consumer's potable water system. Back pressure can result from an increase in downstream pressure, a reduction in the potable water supply pressure, or a combination of both. Increases in downstream pressure can be created by pumps, temperature increases in boilers, etc. Reductions in potable water supply pressure occur whenever the amount of water being used exceeds that amount of water being supplied, such as during hydrant flushing, fire fighting, or water main breaks.

### **What is back-siphonage?**

Back-siphonage is backflow caused by a negative pressure (i.e., a vacuum or partial vacuum) in a public water system or consumer's potable water system. The effect is similar to drinking water through a straw. Back-siphonage can occur when the water supply is stopped due to nearby fire fighting, a break in a water main, or other hydraulic conditions.

### **Why do water suppliers need to control cross connections and protect their public water systems against backflow?**

Backflow into a public water system can pollute or contaminate the potable water in that system making it unusable or unsafe to drink. Each water supplier has a responsibility to provide water that is usable and safe to drink and take reasonable precautions to protect its system against backflow.

### **How can backflow be prevented?**

The best method of preventing backflow is an air gap which either eliminates a cross-connection or provides a barrier to backflow. If an [air gap](#) is not practical, a mechanical backflow preventer, which provides a physical barrier to backflow, is the next best approved method. The principal types of mechanical backflow preventers are the

reduced-pressure principle assembly



, the double check valve assembly



, and the pressure vacuum breaker assembly



### **What is meant by “degree of hazard”?**

This is an evaluation based on the potential hazards that a cross-connection represents to the potable water supply should a backflow incident occur. The hazards of a backflow incident can vary from a low health hazard or aesthetic concern such as taste and odor to a high health hazard of a toxic chemical getting into the water supply causing serious illness.

Due to the many variables in system operation and types of chemicals, water supplier need to determine which type of backflow protection is required based on a hazard inspection.

### **What should I do to protect myself?**

All homes have the potential to contain cross connections. Be aware of situations where your home water supply does or could contact non-potable liquids. If the cross connecting cannot be avoided, be sure to use the proper plumbing device to prevent any liquid from backflowing into the potable water system. For example, a hose bibb (outside faucet) vacuum breaker is a simple, inexpensive plumbing device you can attach to the faucet before attaching the hose. These devices can be purchased at most home improvement stores. Other situations require a special backflow prevention device that will isolate potable water from potential contamination.

To protect the quality of tap water in your home follow these guidelines:

- ◆ Never allow hoses to be submerged in sinks, pools, chemical mixing tanks, etc.

- ◆ Be sure your toilet flush valves have an anti-siphon device.
- ◆ Make sure any plumbing work done in your home is by a licensed plumber certified in cross connection control.

### **How do I know if I need a backflow prevention assembly?**

Industries throughout our service area are regularly inspected for potential cross connections so that the proper steps are taken to protect the water supply. In addition, if you are a customer of the District's retail area, our cross connection control professionals can help identify potential hazards and recommend what type of backflow prevention device may be required by either sending you an information sheet and/or visit your property to perform a site survey to determine backflow requirements. Information about backflow prevention can be obtained by calling 801-641-0111 #1 and asking for the Compliance Inspector or emailing [pmmwmanager@hotmail.com](mailto:pmmwmanager@hotmail.com)

### **What areas of my home need protection from backflow?**

- ◆ Lawn irrigation systems – including secondary water systems.
- ◆ Garden hoses – A garden hose with all the uses and attachments that you can connect to a hose makes it a number one source for cross-connection to your potable water supply.
- ◆ An older home that has retained a private well but has also been connected to the municipal system, with only a valve separating the two water sources.

### **What are examples of areas of my business that need protection from a backflow?**

- ◆ Landscape irrigation systems – including secondary water systems
- ◆ Boilers.
- ◆ Fire Service Protection.
- ◆ Film Processors.
- ◆ Post Mix Soda Machines – If carbonization enters into a copper tube plumbing system it reacts with copper and causes copper poison.
- ◆ Slop sink.
- ◆ Water tank or chemical storage.
- ◆ Laboratory or medical clinics.

### **Why do backflow preventers have to be tested at least once annually?**

Mechanical backflow preventers have internal seals, springs, and moving parts that are subject to fouling, wear, or fatigue. Also, mechanical backflow preventers and air gaps can be by-passed. Therefore, all backflow preventers have to be tested periodically to ensure that they are functioning properly. A visual check of air gaps is sufficient, but mechanical backflow preventers have to be tested by a State certified backflow specialist, with properly calibrated gauge equipment. To obtain a list of State certified testers either call us or click on the State of Utah page of backflow testers.

[http://www.drinkingwater.utah.gov/documents/compliance/backflow\\_technicians\\_comme\\_r\\_avail.pdf](http://www.drinkingwater.utah.gov/documents/compliance/backflow_technicians_comme_r_avail.pdf)

### **What is an Air Gap?**

An air gap is a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An approved air gap shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel and in no case should be less than 1 inch.

