



Cross Connection Control Program Frequently Asked Questions

QUESTION: What is a cross-connection?

ANSWER: A cross-connection is any temporary or permanent connection between a public water system or consumer's potable (i.e., drinking) water system and any source or system containing non-potable water or other substances. An example is the piping between a public water system or consumer's potable water system and an auxiliary water system, cooling system, or irrigation system.

QUESTION: What is backflow?

ANSWER: Backflow is the 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... backpressure backflow and back-siphonage.

QUESTION: What is backpressure backflow?

ANSWER: Backpressure backflow is 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. Backpressure 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 the amount of water being supplied, such as during water line flushing, firefighting, or breaks in water mains.

QUESTION: What is back-siphonage?

ANSWER: 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 there is a stoppage of water supply due to nearby firefighting, a break in a water main, etc.

QUESTION: Why do water suppliers need to control cross-connections and protect their public water systems against backflow?

ANSWER: Backflow into a public water system can pollute or contaminate the water in that system (i.e., backflow into a public water system can make the water in that system unusable or unsafe to drink), and each water supplier has a responsibility to provide water that is usable and safe to drink under all foreseeable circumstances. Furthermore, consumers generally have absolute faith that water delivered to them through a public water system is always safe to drink. For these reasons, each water supplier must take reasonable precautions to protect its public water system against backflow.

QUESTION: What should water suppliers do to control cross-connections and protect their public water systems against backflow?

ANSWER: Water suppliers usually do not have the authority or capability to repeatedly inspect every consumer's premises for cross-connections and backflow protection. Alternatively, each water supplier should ensure that a proper backflow preventer is installed and maintained at the water service connection to each system or premises that poses a significant hazard to the public water system. Generally, this would include the water service connection to each dedicated fire protection system or irrigation piping system and the water service connection to each of the following types of premises:

1. premises with an auxiliary or reclaimed water system;
2. industrial, medical, laboratory, marine or other facilities where objectionable substances are handled in a way that could cause pollution or contamination of the public water system;
3. premises exempt from the State Plumbing Code and premises where an internal backflow preventer required under the State Plumbing Code is not properly installed or maintained;
4. classified or restricted facilities;
5. tall buildings.

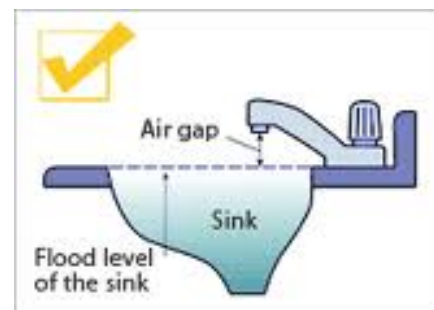
Water suppliers should also ensure that a proper backflow preventer is installed and maintained at all water loading stations owned or operated by the water supplier.

QUESTION: What is a backflow preventer?

ANSWER: A backflow preventer is a means or mechanism to prevent backflow. The basic means of preventing backflow is an air gap, which either eliminates a cross-connection or provides a barrier to backflow. The basic mechanism for preventing backflow is a mechanical backflow preventer, which provides a physical barrier to backflow. The principal types of mechanical backflow preventer are the reduced-pressure principle assembly and the double check valve assembly. A secondary type of mechanical backflow preventer is the residential dual check valve.

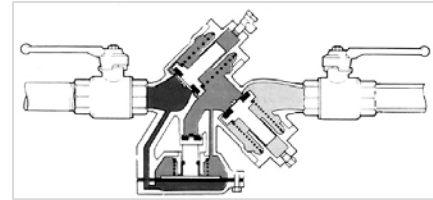
QUESTION: What is an air gap?

ANSWER: An air gap is a vertical, physical separation between the end of a water supply outlet and the flood-level rim of a receiving vessel. This separation must be at least twice the diameter of the water supply outlet and never less than one inch. An air gap is considered the maximum protection available against backpressure backflow or back-siphonage but is not always practical and can easily be bypassed.



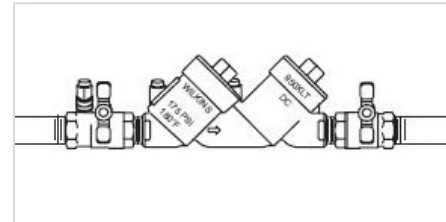
QUESTION: What is a reduced principle assembly (RP)?

ANSWER: An RP is a mechanical backflow preventer that consists of two independently acting, spring-loaded check valves with a hydraulically operating, mechanically independent, spring-loaded pressure differential relief valve between the check valves and below the first check valve. It includes shutoff valves at each end of the assembly and is equipped with test cocks. An RP is effective against backpressure backflow and back-siphonage and may be used to isolate health or non-health hazards.



QUESTION: What is a double check valve assembly (DC)?

ANSWER: A DC is a mechanical backflow preventer that consists of two independently acting, spring-loaded check valves. It includes shutoff valves at each end of the assembly and is equipped with test cocks. A DC is effective against backpressure backflow and back-siphonage but should be used to isolate only non-health hazards.



QUESTION: What is a residential dual check valve (RDC)?

ANSWER: A RDC is similar to a DC in that it is a mechanical backflow preventer consisting of two independently acting, spring-loaded check valves. However, it usually does not include shutoff valves, may or may not be equipped with test cocks or ports, and is generally less reliable than a DC. A RDC is effective against backpressure backflow and back-siphonage but should be used to isolate only non-health hazards and is intended for use only in water service connections to single-family homes.

QUESTION: Why do backflow preventers have to be tested periodically?

ANSWER: 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 bypassed. 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 with properly calibrated gauge equipment.

Village of Alsip
Water Department
4500 W 123rd St
Alsip, IL 60803
708 385 6902 ext. 324



QUESTION: We've been here all these years and never had to do anything about backflow before. Why do I have to do this now?

ANSWER: As state and federal regulations protecting drinking water grow more stringent, it is imperative that water systems keep up. Because the end-users, which are the customers, can individually impact the drinking water system, they must be a part of the solution in preventing backflow.

QUESTION: My water system was in place before this regulation - why isn't my system "grandfathered in" on regulatory requirements?

ANSWER: Because backflow can lead to serious public-health issues, "grandfathering" older homes and businesses into the system is not an option. The regulations are not in place to put a burden on residents but to ensure that Alsip's drinking water is safe for everyone.