

## Cross Connection and Non-Residential Buildings

Everyday, millions of Americans visit non-residential buildings – retail stores, offices, restaurants, warehouses, and medical buildings. When we do, we all want to be sure that the water we drink is safe. Water comes into contact with hundreds of dangerous chemicals and substances everyday. As a business owner and a building owner, you want to be sure that your customers receive good water. To guarantee good water, federal, state, and local governments have enacted laws and regulations to ensure that our water is of the highest quality. One method used to ensure the safety of our water supply is through the implementation of a Cross Connection Control program. The City of Coeur d'Alene has developed such a program to safeguard the city's water distribution system.

In a water distribution system, there are points called cross-connections, which are actual or potential physical connections between our public water supply and a source of contamination or pollution that could enter the public drinking water system. Cross connections can be created when using some appliances or plumbing fixtures.

A simple accident or oversight can lead to serious consequences. The change of water pressure can result in dangerous materials being drawn back into the water supply, thus allowing material to travel through the system to other water users who may be consuming the water and, therefore, be exposed to dangerous contaminants or pollutants. A cross-connection can pose a serious threat to your building's water supply and the public's water supply. During incidents of backflow these chemical and biological contaminants have caused serious illness and even death.

Backflow can occur due to either backsiphonage or backpressure. These may sound like the same thing, but they're not.

**Backsiphonage** is caused by negative pressure in the piping system, which may be due to:

- A water line repair or break that is lower than a water service point.
- A lower water main pressure due to a high water usage rate such as in fire fighting or water main flushing.
- Reduced water supply pressure on the suction side of a water booster pump.

**Backpressure** occurs when the water supply piping is connected to a piping system or plumbing fixture which exceeds the operating pressure of the water supply piping, for example, with:

- Booster pumps.
- Water supply line connections to a boiler or other heating systems where thermal expansion is possible.
- Connecting to a water system that operates at a higher pressure.

### How can you protect your non-residential building?

There are products designed to counteract backsiphoning and backpressure. They are called backflow prevention assemblies.

The first step in the process is to conduct a survey of the building to identify potential cross connections and understand how contaminated water can flow back from appliances and plumbing fixtures as a result of the lack of a backflow assembly to isolate them. These connections are made to outside lawn irrigation systems, air conditioning cooling towers, a water supply line to a boiler, x-ray developers, soda carbonators, and janitor sinks, just to name a few.

Isolation backflow assemblies are installed at the point-of-use to protect the potable water inside of the building from potential contaminants and pollutants. Containment backflow assemblies will protect the city's water supply. The isolation backflow assembly will protect the water supply within the building.

### You may ask, "Are both 'containment' and 'isolation' assemblies necessary in a building?" The answer is "yes."

With all of the varied activities that can take place in a commercial building, cross connection awareness is absolutely essential to prevent backflow problems. A properly maintained building will have a backflow assembly installed on both the domestic water service line (protecting the city's water) and a proper backflow assembly installed at each internal cross connection (protecting water inside the building).

A backflow assembly is a mechanical device that requires annual testing and periodic maintenance. Neglecting annual testing is neglecting public safety.

The information in this brochure is to help provide information to building owners and tenants about protecting our drinking water. Physically examining all areas of a building with complete awareness of the risks can prevent a costly and dangerous backflow incident. The safety of tenants and customers must be a priority of a building or a business owner.

For more information regarding the City of Coeur d'Alene Cross Connection Control Program or for a survey of your building please call Greg Schremp at 208-676-7408 or Gary Nolan at 208-769-2220 ext 818.

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