

In summary, as an owner of cross connections you bear the following responsibilities:

- ◆ Applying for and obtaining all necessary approvals and permits for the maintenance of cross connections and installation of backflow prevention devices, and applying annually for renewals of each permit.
- ◆ Having backflow preventers tested annually by hiring a certified backflow prevention device tester, and maintaining records of the test.
- ◆ Maintaining complete records on the premises for all devices, including as-built plans, design data sheets, and copies of Inspection and Maintenance report forms.

It is imperative that you follow the above criteria to ensure that the drinking water in your facility and the surrounding neighborhood remains safe for consumption.

CASE HISTORIES IN MASSACHUSETTS

The following are just a few examples of the many backflow incidents that have occurred throughout the Commonwealth.

Condominium Complex - Water treated with hexavalent chromium from a cooling tower backflowed into the drinking water system through an unprotected city water line. More than 600 residents relied on bottled water for three days.

Hospital - An estimated 500 - 1,000 gallons of water treated with ethylene glycol and hydrazine backflowed into the domestic water system and water mains in the street through a temporary hose connection after repairs were made to the chilled water system. Hydrants and taps on the system were flushed until the contamination was eliminated.

Car Wash - A re-circulating water system was used at the car wash and when a city water hook-up valve was left open, the car wash water entered the drinking water supply through an unprotected cross connection because the process system pressure exceeded city water pressure.

High School - Chromates were pumped into the drinking water system from a boiler. Fortunately, the custodian noted yellow-colored water in a drinking fountain. The school was closed for five days to flush and chlorinate water lines and install a backflow preventer.

Auditorium - The drinking water system in the auditorium was contaminated with chromates due to an unprotected cross connection between the re-circulated water system from an air conditioning system and the drinking water line. A total of nine cross connections were identified and protected with backflow preventers.

College Athletic Field - Eighty-three football team members and coaching staff were diagnosed with infectious hepatitis after drinking from a water fountain on the field. Water backflowed from the irrigation system into the water line when a local fire reduced water pressure.

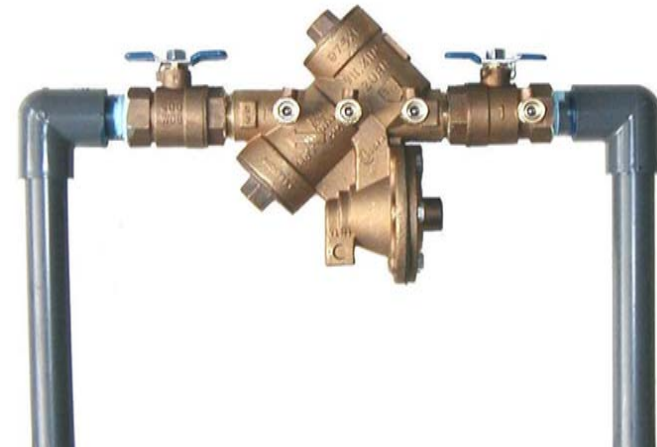
If you would like further information or have any questions, please contact the Harwich Water Department at (508) 432-0304.



ENSURING WATER QUALITY THROUGH...

CROSS CONNECTION CONTROL

A GUIDE FOR OWNERS OF CROSS CONNECTIONS



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CROSS CONNECTIONS ARE HEALTH HAZARDS

Cross connections which could contaminate drinking water distribution lines are a major concern of the Department of Environmental Protection (DEP). A “cross connection” is formed at any point where a drinking water line connects to any equipment or system containing chemicals or water of questionable quality. Cross connections can occur at:

- ◆ boilers
- ◆ air conditioning systems
- ◆ fire sprinkler systems
- ◆ irrigation systems
- ◆ laboratory equipment
- ◆ planting tanks
- ◆ chemical vats

Community drinking water distribution systems, as well as internal facility drinking water systems, are continuously jeopardized by cross connections unless appropriate valves, known as backflow prevention devices, are installed and maintained.

As an owner of one or more cross connections you have the responsibility to maintain the system so that drinking water in your facility or the surrounding neighborhood is not contaminated. Serious illness, even deaths, have been caused by “backflow” contamination-incidents that could have been prevented.

Various contaminants entering drinking water distribution systems as a result of backflow have been known to cause such hazards as: outbreaks of hepatitis A, gastroenteritis, legionnaire’s disease, chemical poisoning, and body lesions (from exposure through showering); and exploding plumbing fixtures.

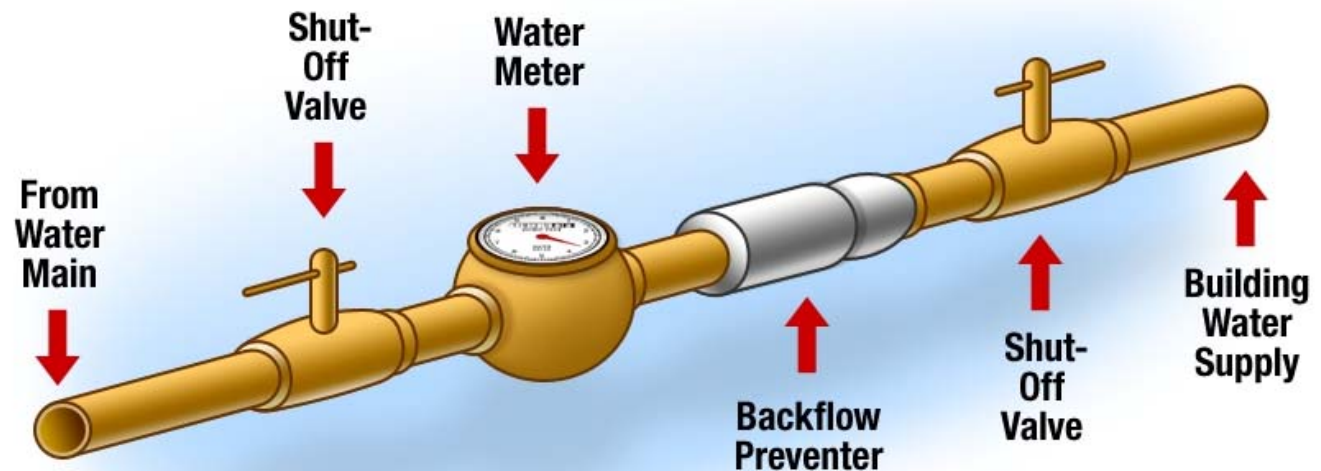
HOW BACKFLOW OCCURS

Water of questionable quality or chemicals used in a system or equipment can end up in the drinking water line as a result of “back-pressure” or “back-siphonage”.

Back-pressure occurs when the pressure in the equipment or system (A/C, boiler, etc.) is greater than the pressure in the drinking water line. Back-siphonage occurs when the pressure in the drinking water line drops (main breaks, fires, heavy demand) and contaminants are sucked out of the system into the drinking water line.

WHAT YOU MUST DO

There are laws that apply to cross connections. The Massachusetts Plumbing Code (248 CMR 2.14) and Massachusetts Drinking Water Regulations (310 CMR 22.22) both require installation of backflow preventers at all cross connections. In addition, backflow preventers at cross connections are to be inspected once a year by a certified backflow preventer inspector. Your local public water supplier is also required by DEP to inspect cross connections twice a year.



The backflow preventer ensures that the drinking water will flow in one direction only and keeps the tainted water or chemicals in the equipment or system (A/C, boiler, etc.) from entering the drinking water line.