

## Cross Connection Controls Requirements

According to the Virginia Health Department Waterworks Regulations (12VAC5-590-610), an approved backflow prevention device or backflow elimination method shall be installed at the end of each service connection to the consumer's water system serving, but not necessarily limited to the following types of facilities:

- Hospitals, mortuaries, clinics, veterinary establishments, nursing homes, and medical buildings;
- Laboratories;
- Piers, docks, and waterfront facilities;
- Sewage treatment plants, sewage pumping stations, or storm water pumping stations;
- Food and beverage processing plants;
- Chemical plants, dyeing plants, and pharmaceutical plants;
- Metal plating industries;
- Petroleum or natural-gas processing or storage plants;
- Radioactive materials processing plants or nuclear reactors;
- Car washes and laundries;
- Buildings with commercial, industrial, or institutional occupants served through a master meter;
- Water loading facilities;
- Slaughter houses and poultry processing plants;
- Farms where the water is used for other than household purposes;
- Commercial greenhouses and nurseries;
- Health clubs with swimming pools, therapeutic baths, hot tubs, or saunas;
- Paper and paper-product plants and printing plants;
- Pesticide or exterminating companies and their vehicles with storage or mixing tanks;
- Facilities that blend, store, package, transport, or treat chemicals, and their related vehicles;
- Schools or colleges with laboratory facilities;
- Highrise buildings (four or more stories);
- Multiuse commercial, office or warehouse facilities; and
- Others specified by the owner or the department when reasonable cause can be shown for a potential backflow or cross-connection hazard.

*The backflow prevention assembly or backflow elimination method or backflow elimination device used shall depend on the degree of hazard that exists or may exist.*

<b>Determination of Degree of Hazard</b>	
<b>Cross-connections that meet or may meet the following conditions shall be rated at the corresponding degree of hazard.</b>	
<b>High Hazard</b>	<b>Low Hazard</b>
The containment would be toxic, poisonous, noxious, unhealthy, or of unknown quality. A health hazard would exist.	The containment would only degrade the quality of the water aesthetically or impair the usefulness of the water. A health hazard would not exist.
The containment would disrupt the service of piped water for human consumption.	The containment would not disrupt service of piped water for human consumption.
Backflow would be by either backpressure or backsiphonage.	Backflow would occur by backsiphonage.
Examples: Lawn Irrigation, Fire Sprinkler Systems with Chemical Additives or Antifreeze, Sewage, Used Water, Nonpotable Water, Auxiliary Water Systems, and Mixtures of Water and Other Liquids, Gases, or Other Chemicals.	Examples: Food Residuals, Coffee Machines, Non-carbonated Beverages Dispensers, and Residential Fire Sprinkler Systems Constructed of Materials Designed for Potable Water Flow.

## Our Cross Connection Control Program Requires “Containment”

“Containment” is defined as a backflow preventer that is installed in a consumer's water system, that is intended to contain the water within the premises to prevent any polluted or contaminated water from backflowing, through back-siphonage or backpressure, into the public water system.

Backflow prevention devices or backflow prevention assemblies with openings, outlets, or vents that are designed to operate or open during backflow prevention will not be permitted:

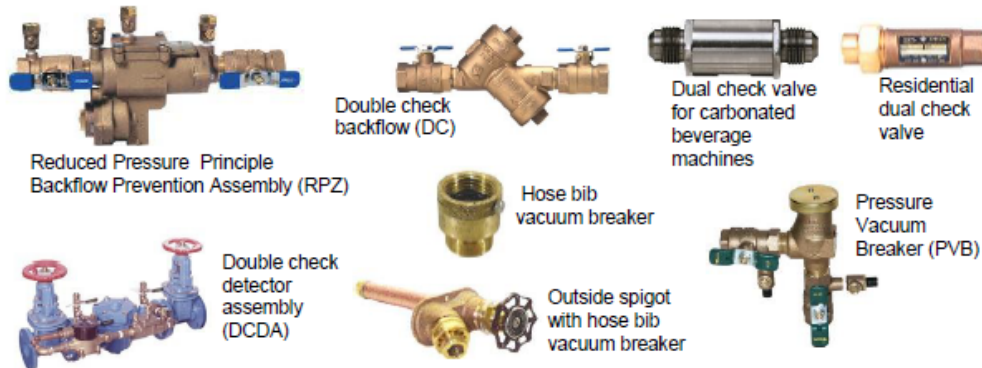
1. In areas subject to flooding or in pits.
2. In areas with atmospheric conditions that represent a contamination threat to the potable water supply.
3. In such a manner as to be able to be bypassed.

All backflow prevention assemblies are required to be tested annually by a DPOR identified Backflow Prevention Device Worker, certified by a Commonwealth of Virginia tradesman certification program.

Premises having booster pumps or fire pumps connected to the waterworks are required to have control devices to prevent a reduction of pump suction line pressure to less than **20 PSI**.

All temporary or emergency service connections shall be protected where reasonable cause can be shown for a potential backflow or cross-connection hazard. This includes hydrant meters and direct hydrant connections.

### Examples of Various Backflow Preventers Available



### Example of Containment at Non-Residential and Commercial Facilities

