VIRGINIA AMERICAN WATER

Typical Facilities and Recommended Backflow Preventers

Commercial and Non-Residential Customers

Example Facility	Requirement			
Buildings with Commercial, Industrial, or Institutional Occupants served through a Master Meter	RP			
Car Washes and Laundries	RP			
Chemical Plants, Dyeing Plants, And Pharmaceutical Plants	RP			
Commericial Greenhouses and Nurseries	RP			
Facilities that Blend, Store, Package, Transport, or Treat Chemicals, and their Related Vehicles	RP			
Farms where the Water is used for other than Household Purposes	RP			
Fire Sprinkler Systems and Chemical Fire Suppression Systems	RP	DC		
Food and Beverage Processing Plants	RP			
Health Clubs with Swimming Pools, Therapeutic Baths, Hot Tubs, or Saunas	RP			
Highrise Buildings (Four or More Stories) or with Building Booster Pumps	RP	DC		
Hospitals.Mortuaries, Clinics, Veterinary Establishments, Nursing homes, and Medical Buildings	RP			
Irrigation Systems and Lawn Sprinkler Systems	RP		PVB	
Laboratories, Photography, or Medical Labs	RP			
Metal Plating Industries	RP			
Multiuse Commercial, Office. Or Warehouse Facilities	RP	DC		
Paper and Paper-Product Plants and Printing Plants	RP			
Pesticide or Exterminating Companies and their Vehicles with Storage or Mixing Tanks	RP			
Petroleum or Natural-Gas Processing or Storage Plants	RP			
Piers, Docks, and Waterfront Facilities	RP	DC		
Radioactive Materials Processsing Plants or Nuclear Reactors	RP			
Residential Units served by One Connection with 2-3 Units				RDC
Restuarants, Diners, Fast Food Marts, and Cafeterias	RP	DC		
Schools or Colleges	RP	DC		
Sewage Treatment Plants, Sewage Pumping Station, or Storm Water Pumping Stations	RP			
Slaughter Houses and Poultry Processing Plants	RP			
Water Loading Facilities	RP			
Other specified by the Water Purveyor or Virginia Department of Health when reasonable cause can be shown for a Potential Backflow or Cross-Connection Hazard	RP	DC	PVB	RDC

***All backflow prevention assemblies are required to be ASSE approved**. RP: Reduced Pressure Zone Assembly, DC: Double Check Valve Assembly, PVB: Pressure Vacuum Break Assembly, RDC: Residential Dual Check*

KEY POINTS:

- Air Gaps are **required** to be inspected annually.
- Backflow Assemblies are **required** to be tested annually.
- Residential Dual Check Valves are **required** to be rebuilt or replaced every 5 years.

- Backflow Prevention requirements are **subject to change** per facility at American Waters discretion based on the degree of hazard.
- When installing any backflow preventer, it is **recommended** that an expansion tank be installed to prevent any water pressure buildup inside the premise.
- Customers may request a physical inspection to determine the type of backflow preventer required at their premise.
- In the instance that a customer will need continuous supply of water, two backflow prevention assemblies will need to be installed in parallel for testing and repair purposes.

- Facilities with Booster Pumps shall be equipped with a low suction pressure cut-off device to shut off pump when the pressure in the waterworks distribution system drops to a minimum of **20 PSI**. **In no case shall the pressure sensing device be set lower than **10 PSI** gauge, per Virginia Department of Health**
- All temporary or emergency service connections shall be protected where reasonable cause can be shown for a potential backflow or cross connection hazard.

FIRE SERVICES:

*Fire services are required to be contained by a Double Check Detector Assembly (DCDA) which are designed to protect against both back-siphonage and backpressure. The DCDA incorporates a meter by-pass to detect leaks and unauthorized water usage.

IRRIGATION SERVICES:

*Irrigation services are required to be contained by a Reduced Pressure Zone Assembly (RP) or a Pressure Vacuum Breaker Assembly (PVB) at a minimum. Both assemblies are designed to protect against High Hazards. Reduced Pressure Zone Assemblies are designed to protect against both back-siphonage and backpressure. Pressure Vacuum Breaker Assemblies are designed to protect against back-siphonage.

Examples of Potential Cross Connection Sites in Common Facilities

Example Facility	Potential Cross Connections
Restuarants, Diners, Fast Food Marts, and Cafeterias	Beverage systems using CO_2 Tanks Dishwashers Preparation Areas Steam Cooking Systems
Health and Fitness Centers	Swimming Pools, Jacuzzis, Whirlpools, and Saunas Boiler Systems
Parks, Aquariums, and Zoos	Viewing Tanks Pools and Ponds Animal Feeding Systems
Schools or Colleges	Laboratories - Chemistry, Physics, and Biology Swimming Pools
Hospitals.Mortuaries, Clinics, Veterinary Establishments, Nursing homes, and Medical Buildings	Aspirators Central Suction Units Spit Sinks Laboratories Autoclaves Pipette Washer Photo Labs - Xray Developing
Car Washes and Laundries	Detergents Pressure Washing Systems