

PART V

SERVICE BACKFLOW PREVENTION/CROSS CONNECTIONS

5.1 CROSS CONNECTIONS STRICTLY PROHIBITED:

- 5.1.1 No person shall cause a direct physical connection to be made between the Kent County Water Authority water supply and any other water supply for any purpose, including but not limited to any commercial process, private domestic well supply, sanitary system, private fire protection system or supply or boiler feed or any other connection deemed unsuitable by the Kent County Water Authority Executive Director/Chief Engineer.
- 5.1.2 No plumbing fixtures, devices, or construction shall be installed which may provide or facilitate a cross connection between the Kent County Water Authority supply and a drainage system, soil or waste pipe, so as to permit or make possible the backflow of sewage or waste into the supply system. Draw-off pipes for draining sprinkler systems shall not be connected into a drainage system or a submerged pit.
- 5.1.3 If the Authority water supply is delivered to a tank that is also supplied with water from any other source, the tank shall be open to atmospheric pressure and the Kent County Water Authority water supplied in an air gap configuration above the maximum level in the tank. The tank shall be equipped with an overflow pipe of ample size to ensure a fixed maximum water level. There shall be at least a 6-inch air gap between the invert of the pipe supplying Kent County Water Authority water and the maximum level of fluid in the tank.
- 5.1.4 In the event that the Kent County Water Authority water supply is delivered to a tank in which there are chemicals, dyestuffs or other materials used in processing, the pipe supplying Kent County Water Authority water shall not be submerged. There shall be ample air gap clearance between the invert of the Kent County Water Authority supply pipe and the top of the tank to prevent back siphonage into the Kent County Water Authority supply.

5.2 REQUIREMENTS FOR BACKFLOW PREVENTION:

- 5.2.1 Containment backflow configuration shall be required on all service connections. All commercial, governmental and industrial services shall be equipped with reduced pressure zone backflow preventer of a testable type immediately downstream of the water meter. Prior to installation and service activation, the

Kent County Water Authority shall determine style and type. Detailed guidance is contained in the Kent County Water Authority Cross Connection Control Prevention Program appended to these regulations.

- 5.2.2 High and moderate hazards to the system are to be protected through the installation of a reduced pressure zone type of backflow device assembly. High and moderate hazard uses include, but not limited to the following: metal plating process, hospital, nursing home, clinic, hotel, mortuary, laboratory, film processing, car washing, chemical process or storage, food processing, restaurant, irrigation systems, hair salon, sewage treatment, chemical fire protection, or any building or property with the ability for changes in occupancy that would fall under the high and moderate hazard profile.
- 5.2.3 Low hazards are to be protected by the installation of a testable double or dual check valve backflow device assembly. Low hazard operations include, but not limited to single-family residential structures and standalone fire systems that do not use antifreeze or chemical.
- 5.2.4 In all cases, backflow prevention shall be installed and be operational prior to connection to the Kent County Water Authority's system. Commercial connections shall be equipped with a reduced pressure zone style backflow preventer in a configuration that affords compliance with state law requirements pertaining to containment backflow that isolates the public water system directly after the meter and prior to the first tap to any appliance, pump or use connection or appurtenances. Valves shall be located on both sides of the backflow preventer with drain or test plug on the valve located between the meter and backflow device.
- 5.2.5 It is required that applicant's professional engineer review all piping within any proposed development building or industrial facility and identify additional locations where isolation backflow preventers will be needed to protect the water within the private infrastructure from potential contamination. The Kent County Water Authority only enforces regulatory requirements pertaining to the installation of containment backflow device.
- 5.2.6 All single-family residential units must be equipped with residential dual check backflow device on the effluent side of the meter and non-removable vacuum breakers on all outside hose bibs prior to and meter installation and service connection activation. Hose bib vacuum breaker style shall be non-removable self-draining types.
- 5.2.7 All commercial or residential lawn sprinkler systems must be provided with an appropriate reduced pressure zone backflow device or vacuum breaker assembly prior to where the private plumbing/system connects to water supply. It shall be in a location that is always free draining or fitted with adequate provisions for pumping and cannot be submerged.

- 5.2.8 All permanently connected fire services with isolation type testable type containment backflow device. Systems that include private hydrants or antifreeze in the fire system shall be fitted with reduced pressure backflow preventers of a testable type i.e. RPZ. Backflow prevention may be incorporated into the meter system piping. The device shall be placed in a location that is protected from damage by frost.
- 5.2.9 Installations that require additional backflow prevention are outlined in the Kent County Water Authority Cross Connection Control Prevention Program and should be referred to for further information and requirements.
- 5.2.10 Installation of a backflow device assembly will prevent release of on-site pressure to the utility water mains. It is mandatory that a thermal expansion device be properly installed pursuant to all government plumbing codes to relieve any excessive increase in on site pressure due to hot water heating systems or other activities systems.
- 5.2.11 Backflow prevention devices shall be installed above ground, heated and lighted. Where the building point-of entry is located more than two hundred (200) feet from the curb stop, the backflow prevention device shall be installed in an accessible location in the building at the point of entry before the first tap, and any appliance or pumping unit.

Installation of backflow prevention devices in below ground pits shall be avoided whenever possible. If necessary the backflow prevention device shall be mounted in an above grade heated enclosure that is free draining under all conditions. The design must also be reviewed and approved by the code official.

- 5.2.12 For existing man size pits or vaults the owner of the facility must employ the OSHA Confined Space Entry Requirements and shall have the OSHA Safety Rules and required safety equipment available whenever anyone must enter. In all cases, the backflow prevention device assembly site shall be easily accessible for testing and/or repair. Federal Occupational Safety & Health Administration (OSHA) rules, regulations and statutes are incorporated by reference and made a part herein.