

SUPPLEMENTAL SPECIFICATION FOR BACKFLOW PREVENTION

- 100 GENERAL** Backflow prevention shall be installed on all new commercial, irrigation, and multi-family services. The MDWID Backflow Prevention Inspector shall approve the type of backflow prevention assembly prior to installation. Backflow requirements for existing services will be determined by degree of hazard and will be evaluated on a case by case basis. Any requests for a variance shall be submitted in writing to the MDWID Backflow Prevention inspector for evaluation. No modification to this specification or variance shall be approved except by the MDWID District Engineer.
- 101 Description of Work.** The work under this section shall consist of furnishing all labor, materials and equipment required for the installation of backflow prevention in accordance with the requirements of these specifications and the MDWID Backflow Prevention Control Ordinance, Ordinance No. 1993-01.
- 102 Workmanship.** All personnel of the contractor or his/her subcontractors shall be skilled and knowledgeable with regard to the installation procedures for backflow prevention assemblies.
- 103 Submittals.** Where backflow prevention is required, the water meter will not be installed until the MDWID Backflow Prevention Inspector has approved the backflow prevention assembly installation. Backflow prevention assemblies are required to be tested upon installation, repair, and annually. Testing shall be done by a “Certified Backflow Prevention Assembly Tester” recognized by MDWID. A list of approved testers is available on request. Test reports shall be submitted to the MDWID. A list of approved testers is available on request. Test reports shall be submitted to the MDWID Backflow Prevention Inspector within three days after the test and no later than five working days following the water meter installation. Failure to comply with testing requirements will result in water service being discontinued until testing requirements are met.
- 200 PRODUCTS**
- 201 Materials.** Only backflow prevention assemblies that have been issued an approval by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR) or another nationally recognized laboratory with equal testing criteria will be authorized by MDWID.
- 300 EXECUTION**
- 301 General.** Backflow prevention shall be installed on fire sprinkler systems that contain chemical additives, or have the potential to be supplied from an auxiliary water source. Before installing a backflow prevention assembly on a fire system, consult with the fire authority for additional requirements.

The installation of a backflow prevention assembly, pressure-reducing, or check valve may create a closed system. Consult local plumbing codes for pressure relief valve and thermal expansion requirements.

BACKFLOW PREVENTION

A permit is required prior to the installation of any backflow prevention assembly. Permits may be obtained from the MDWID Backflow Prevention Inspector.

302 Installation.

- (A) **General.** Backflow prevention assemblies shall be installed in accordance with the manufacturer's recommendations, the adopted International Plumbing Code (IPC) current edition as adopted by the Pima County Development Services Department, and MDWID Specifications and Details. Where a conflict exists, the more stringent standard shall apply.

Backflow prevention assemblies shall be installed as close as possible to the water meter and on private property (right-of-way is not considered private property) unless otherwise approved.

There shall be no unprotected connections between the water meter and the backflow prevention assembly. Additional connections between the water meter and the backflow prevention assembly shall require additional backflow prevention assemblies.

Backflow prevention assemblies shall be installed with IPC approved metal piping, except that type "M" copper shall not be allowed.

Before installing a backflow assembly on any fire system, consult with the local fire authority for additional requirements.

All piping and appurtenances of backflow prevention assembly installations shall remain visible until approved by the MDWID Backflow Prevention Inspector.

The installation of protective cages is optional. If protective cages are installed, they shall allow for clearance and accessibility. Protective cages shall comply with the backflow prevention assembly manufacturers drainage requirements.

Backflow prevention assemblies should be protected from the elements in accordance with the manufacturer's recommendations. Protection shall not hinder the operation of air inlets and water dump outlets.

The installation of a backflow assembly may create a closed system. Consult the local plumbing code for pressure relief valve and thermal expansion requirements.

- (B) **Air Gap (AG).** AG is defined as the distance between the discharge pipe and the top of the flood rim of the receiving vessel. The AG shall be twice the diameter of the effective opening of the discharge pipe and in no case less than 1 inch (1"), see MDWID Standard Detail MW-1800.

All piping to an AG shall be exposed. Tanks or vessels where the piping of the AG is not visible shall not be accepted. There shall be no provisions for extending the length of the discharge pipe.

- (C) **Reduced Pressure Assembly (RPA).** The RPA shall be installed outside, above ground, and as close as practical to the water meter unless otherwise approved. If inside installation is approved, the UPC and manufacturer's drainage requirements must be met.

The RPA shall not be installed below ground or in a vault, see MDWID Standard Detail MW-1800.

- (D) **Pressure Vacuum Breaker (PVB).** The PVB shall be installed 12 inches (12") above the highest downstream outlet, but no more than 36 inches (36") above ground, see MDWID Standard Detail MW-1800.

The PVB shall only be allowed on irrigation services.

There shall be no means of inducing backpressure to the PVB.

No chemical injection shall be allowed with the use of the PVB.

If the above criteria cannot be met, an RPA must be installed.

- (E) **Mobile Units.** The MDWID Backflow Prevention Inspector shall approve backflow prevention for mobile units (water trucks, kline tanks, etc.) prior to authorization for use.

If a reduced pressure assembly is used as backflow prevention for mobile units, the contractor shall provide MDWID a copy of the certified test report for the assembly prior to authorization for use.

See MDWID Standard Detail MW-1800 for installation and assembly details.

- (F) **Double Check Valve Assembly (DCVA).** The DCVA shall be allowed on low hazard installations only as determined by the MDWID Backflow Prevention Inspector.

The DCVA shall not be installed below ground or in a vault, see MDWID Standard Detail MW-1800.

- (G) **Spill Resistant Vacuum Breaker (SVB).** The SVB shall follow the same installation requirements as the PVB.