

Backflow Prevention Assembly Typical Requirements  
(Domestic, Irrigation or Irrigation Combined Water Services)

City of Fort Smith Utility Department

City of Fort Smith typical requirements for installation of an approved backflow prevention assembly (Domestic, Irrigation or Irrigation Combined Water Services):

1. Plans detailing the installation of the required backflow prevention assembly in accordance with Division 8 of the City of Fort Smith's Cross-Connection Control Program must be submitted for approval. A copy of the program is available at the Utility Department website at the following address; <http://fortsmithwater.org/cross-connection/>. Final plans must address all areas necessary for the satisfactory installation of the assembly. The following specifications, where applicable, must be shown on the drawings:

- a. Reduced Pressure Zone Assembly (RPZA), size, make, model and installation orientation approved by the USC Foundation for Cross Connection Control and Hydraulic Research must be installed on the water service line after the service connection and prior to the first branch or connection of the User's system. **Note:** RPZA installed on Domestic Water Service must be Lead Free.
- b. The assembly may be located either outdoors or inside the building if specific requirements are met.

**If installed outdoors**, the assembly must be installed above ground in a heated enclosure certified to ASSE 1060, the Standard for Outdoor Enclosures for Backflow Prevention Assemblies.

The assembly enclosure must be affixed to a 4-inch thick concrete pad (4-inch and smaller assemblies, greater than 4-inch assemblies require 6-inch thick pad) of 3,000 psi mix concrete with at least (1) layer of welded wire mesh. Pad shall be pitched to drain at a slope of 1% towards drain port end of valve enclosure. Enclosure must set flush with pad surface. Pad shall extend a minimum 6-inch beyond the enclosure on all sides.

No walls shall be constructed on slabs to compensate for grade changes. Contractor must verify finished grade of surrounding landscape.

Heating and electrical wiring detail shall be similar or approved equal to "Hot Box", "Hydrocowl" or "Aqua-Shield". Electrical wiring for heating must be in conduit through the concrete pad. Underground conduit must extend beyond the edge of the pad in the direction of the power source a distance of 4 feet. A cord or rope must be tied from the end of the conduit to ground level and tied to a stake marking its location prior to backfilling. GFI protected electrical outlet must be installed above the assembly (where applicable, affixed to the back of the enclosure on a stationary wall). Heater or thermostatically controlled self-regulating heating cable for above ground enclosures must be of the type and size as recommended by the manufacturer. Heaters must be mounted above the assembly on a stationary wall.

**For irrigation water services installed outdoors**, the assembly shall be installed above ground in an insulated enclosure, certified to ASSE 1060, the standard for outdoor enclosures for backflow prevention assemblies. Commercial/Industrial lawn irrigation assemblies must be installed in a Lok Box, an insulated fiberglass flip-top style enclosure, as manufactured by Hot Box, Inc., or equivalent. Hot Box Inc.'s EZ Box, an insulated fiberglass drop-over style enclosure, is also considered an equivalent. If an equivalent assembly enclosure by another manufacturer is chosen it must be verified that the enclosure meets the ASSE 1060 Standard. Heating of the enclosure is optional if the assembly will be drained during cold months.

**If installed indoors**, the assembly must be installed in a heated area. The assembly must be accessible by door from the outside (key required to be provided) and isolated from access to the remainder of the facility, or the building owner must furnish annually an updated list of contact names and telephone numbers to be contacted in case of an emergency.

Access must be provided to the assembly on a 24 hour a day basis.

- c. The assembly must be installed in a manner that provides easy access for testing, maintaining, repairing and replacing the assembly. The lowest point of the assembly shall be at least 12-inches but not more than 30 inches above the floor or concrete pad or high water level, whichever is highest.
  - d. Clear unobstructed space for the relief vent shall be provided to prevent the vent from becoming blocked or flooded. **If installed indoors**, relief port discharge must be piped outside. A factory bolt on air gap and drainage attachment shall be provided between the relief vent and drain line. Relief vent drains to be sized for maximum discharge as recommended by the assembly manufacturer.
  - e. If not part of the approved assembly, an approved strainer shall be installed on the inlet side of the RPZA prior to the assembly isolation valve, so that all water must pass through the strainer immediately before entering the assembly.
  - f. An approved blow-off shall be installed in the water line immediately after the assembly, to allow for flushing. Assemblies 2-inch through 8-inch shall have a blow-off not less than 2 inches in diameter. Assemblies larger than 8-inches shall have a minimum 4-inch blow-off. Assemblies less than 2-inch recommended minimum diameter blow-off same as assembly or pipe size. **If installed indoors**, discharge must be piped to the outside of the building or provide other means of adequately conveying the discharge of blow-off to the outside of the structure.
3. Upon completion of installation installer must contact Utility Department for scheduling of the final inspection of the assembly to verify conformance to approved installation plans.

The installer must verify proper operation of the assembly through a test within ten (10) days of the final inspection approval date, and the User of the City's water system annually thereafter, by an Assembly Testing Technician licensed by the Arkansas Department of Health.

Test results shall be documented on the City of Fort Smith Backflow Prevention Assembly Test Report and a copy of the test report must be forwarded to the Approving Authority.

A copy of the City's current List of Certified Backflow Assembly Testing Technicians active in our service area is available at the Utility Department website at the following address; <http://fortsmithwater.org/cross-connection/>. The testers on the list have registered with the Utility Department. The list is not all inclusive.

Should you have questions concerning the City's Cross-Connection Control Program requirements, please, call Mr. John Beard at (479) 494-3913 or Ms. Melissa Arnold at (479) 494-3902 or Kyla Kelley (479) 494-3934 or send your email to [CrossConnection@FortSmithAR.gov](mailto:CrossConnection@FortSmithAR.gov).