

Requirements for Backflow Prevention Assembly Installations (*Condensed*)

Responsibility: The City of Sioux Falls shall be responsible, as required by state law, for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. Properly installed, tested, and maintained assemblies, commensurate to the hazards within a given facility, is the best way to ensure the public drinking water system is protected. Assemblies must be installed by the requirements within this document and remain readily accessible for testing and repair. This will help to ensure a safe work environment for backflow assembly testers and maintenance personnel.

Policy: Service of water to any premises shall be discontinued by the water purveyor if a backflow prevention assembly required by the Authority Having Jurisdiction is not installed, tested, and maintained correctly, or if it is found that a backflow prevention assembly has been removed, modified, bypassed, or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

1. All assemblies shall be installed a **minimum of 12 inches above the floor** from the lowest point of the assembly, and **less than 60 inches above the floor** from the highest point of the assembly.
2. Discharge from relief valves must be readily detectable to maintenance personnel either visually or by means alarms, flow indicator lights, etc.
3. An air gap must be maintained between the RP relief valve opening and any discharge piping. The air gap must be at least twice the dimension of the effective opening of the relief valve, but in no case less than 1.0 inch.
4. Manufacturer's air gap fittings may be utilized provided that they maintain a proper air gap and do not enclose or cover the relief valve.
5. Discharge piping from relief valves shall be terminated a minimum of 1 inch above any floor drain or other receiving receptacle.
6. **A minimum of 12 inches of clear space** shall be maintained **above the assembly** to allow for servicing check valves and for operation of shutoff valves. More distance will be required for larger assemblies.
7. **A minimum of 30 inches of clear space** shall be maintained **between the front side of the assembly and the nearest wall OR OBSTRUCTION.** More distance will be required for larger assemblies. (This 30 inches of clear space is also a requirement of the Meter Crew.)

8. **At least 12 inches clearance** shall be maintained **from the test cocks** of the assembly **to the nearest wall or obstruction.**
9. **Containment backflow assemblies** must be installed **immediately following the water meter** and before any branch piping. If a **PRV** is required, it must be installed **after the water meter and containment backflow preventer.**
10. Assemblies **must NOT be installed directly above** or where their operation, testing, and maintenance may result in damage to **the water meter.**
11. Multiple assemblies installed in a manifold or parallel manner shall not be installed one directly over another. Assemblies must be side by side or at a 45-degree angle and comply with all of the requirements in this section.
12. Shutoff valves on a backflow assembly from the factory are an integral part of the assembly and factor into the assemblies' approval. **These shutoffs DO NOT replace,** and should not be designed or installed to be used as, the shutoff for the service line to make repairs or for maintenance. **An approved, separate shutoff** valve must be used in conjunction with the assembly.
13. **All assemblies must be installed horizontally** unless they are specifically approved for vertical installation by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
<http://fccchr.usc.edu//list.html>
 - a. *(ASSE or manufacturer's approval is not sufficient.)*
14. Assemblies shall not be installed in areas containing corrosive, toxic, or poisonous fumes, gases, or confined spaces which could render the assembly inoperable or pose a safety hazard to personnel.
15. Due to considerations for confined space safety and gravity drainage, **backflow prevention assemblies shall not be installed in pits** without written permission from the Authority Having Jurisdiction.
16. **Waterlines** must be thoroughly **flushed with the appropriate flow velocity before installing the assembly.** Most test failures on new installation are the result of debris fouling one of the check valves or the relief valve.
17. The initial assembly test results and certification of correct installation must be submitted to the water supplier.

*The full-length version of these requirements can be found in the current version of the City of Sioux Falls Cross-Connection Control Handbook, available at:

www.siouxfalls.org/public-works/water-division/cross-connection-control