



General Requirements for Installation of Backflow Prevention Assemblies at Point of Connection/Water Meter

Backflow Prevention Assemblies

- All backflow prevention assemblies and associated pipe, fittings, solder and flux must be “lead-free” as defined in the California Health and Safety Code, Section 116875.
- Assemblies must be (1) on the “Approved Backflow Prevention Assemblies” list developed by the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR) or (2) certified by a comparable organization approved by Water Quality Division.
- Any modification of an assembly—such as relocation of valves, bypass arrangements, and jumper connections, whether temporary or permanent—invalidates the assembly’s approval and is not permitted.
- Assemblies for hot water exceeding 140 °F must be designed to operate at the working temperature (FCCCHR Manual of Cross-Connection Control, Tenth Ed., section 10.1.1.2.1).

Installation

- Assemblies must be located as close as practical to the water meter or downstream side of the point of connection (POC) to the public water system but in any case within 25 feet of the POC. If any part of a service line extends over bay or ocean waters, assemblies must be installed upstream of the seawall (and within 25 feet of the POC).
- No water connections may be made between the point of connection and a backflow prevention assembly for containment.
- Assemblies must be installed in the orientation intended by the manufacturer and approved by the USC FCCCHR or comparable organization approved by Water Quality Division. An assembly that was designed and approved for horizontal installation must not be installed vertically, and vice versa.
- Required clearances:
 - Minimum clearance of 12 inches and maximum clearance of 36 inches above ground or floor.
 - Minimum clearance of 12 inches on three sides and 24 inches on the side with the test cocks.
- Assemblies must be installed so that their make and serial number are visible in a readily accessible location. These identifiers must not be painted over or otherwise made illegible.
- Assemblies may not be installed in pits or vaults in the ground.
- Assemblies may not be installed in confined spaces, as defined in Occupational Safety and Health Standard 1910.146(b).

- If an enclosure is used, the enclosure must be large enough or removable to allow for testing/servicing.
- When a reduced pressure principle assembly is installed, drainage must also be installed to prevent flooding.

Requirement for Combination Domestic/Fire Services

If the domestic service does not require a separate backflow prevention assembly, the inlet of the backflow prevention assembly on the supply line to fire sprinklers must be within 12 inches of the center of the tee off of the domestic line.

Requirements for Receiving Water Service

- All new water services that require a backflow prevention assembly or air gap at the connection to the public water system must receive an initial and final inspection by Water Quality Division. The property owner or designee must call (650) 652-3199 to schedule these inspections. The inspections are separate from those required by other San Francisco agencies.
- An initial inspection is required after a backflow prevention assembly or air gap has been installed at the connection to the public water system. A water service line and meter will not be provided until the backflow preventer has passed this inspection.
- A final inspection is required within 48 hours of receiving water service. If this inspection is not conducted, water service will be turned off and will not be restored until the inspection has been passed. In addition, the customer is liable for applicable posting fee, shutoff and turn-on charges.

Assembly Testing

- Backflow prevention assemblies must be tested upon first water turn-on, annually thereafter, and whenever they are relocated, reoriented, or repaired.
- Testers must have a valid Permit to Operate issued by the San Francisco Department of Public Health. A list of companies employing Authorized Backflow Prevention Assembly Testers is available at <https://www.sf.gov/backflow>. Testers must submit test results to the Cross-Connection Control Program within five calendar days of the test date.

Inspection of Air Gaps

After installation, air gaps must be inspected by Water Quality Division as described above under “Requirements for Receiving Water Service.” Air gaps must be inspected annually thereafter by an Authorized Backflow Prevention Assembly Tester or Authorized Cross-Connection Control Specialist.