



San Francisco's General Requirements for Installation of Backflow Prevention Assemblies at Point of Connection/Water Meter

Backflow Prevention Assemblies

- Effective January 1, 2010, backflow prevention assemblies and associated pipe, fittings, solder and flux that are installed on systems providing water for human consumption must be “lead-free” as defined in the California Health and Safety Code, Section 116875. This requirement does not apply to fire service, irrigation, or industrial systems.
- All assemblies must be on the “Approved Backflow Prevention Assemblies” list developed by the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR).¹ Any modification of an assembly—such as relocation of valves, bypass arrangements, and jumper connections, whether temporary or permanent—invalidates the foundation’s approval and is not permitted. Likewise, an assembly that has been installed in an orientation for which it was not designed or approved is also not permitted.
- Assemblies must have a maximum working pressure of 175 pounds per square inch (psi).
- 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

- All backflow prevention assemblies must be located as close as possible/practical to the water meter or point of connection (POC) but in no case more than 25 feet from 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).
- Assemblies must be installed in the orientation intended by the manufacturer and approved by the USC FCCCHR. An assembly that was designed and approved for horizontal installation must not be installed vertically, and vice versa.
- Required clearances:
 - Minimum 12 inches above ground or floor.
 - Minimum 12 inches from each side.
 - If an assembly is installed 5 feet or more above the finished floor/ground, a platform approved by CALOSHA (California Occupational Safety and Health Administration) must be used for testing/servicing by testers or contractors. The platform may be permanent or portable.

¹ In accordance with the California Plumbing Code, section 603.1, Water Quality Division, as the authority having jurisdiction, has determined that all assemblies installed in San Francisco must be approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

- The backflow prevention assembly must be installed so that its 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.
- If an enclosure is used, the enclosure must be large enough or removable to allow for testing/servicing.
- No water connections may be made between the POC and a backflow prevention assembly.
- When a reduced pressure principle assembly is installed, a drain funnel must also be installed to prevent flooding.

Additional Considerations for Combination Domestic/Fire Services

- Combination domestic/fire services are considered domestic (potable water) first and (non-potable) fire service second. Therefore, 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.
- If the domestic service does not require a separate backflow prevention assembly, the supply line to fire sprinklers must tee off the domestic service such that the distance from the center of the domestic tee to the inlet of the backflow prevention assembly does not exceed 12 inches.

Requirements for Receiving Water Service

- WQD must confirm installation of the required backflow prevention assembly(ies) before CDD will install the service line.
- For non-fire service, after installing the service line, City Distribution Division (CDD) flushes the service line to the point of connection and installs the water meter.
- For fire service, contractors must contact CDD to arrange for flushing of the service line. After the service line has been flushed, contractors must call the Cross-Connection Control Program at (650) 652-3199 to arrange for installation of the red-top water meter.

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. The tester must submit the test reports to the Cross-Connection Control Program within five calendar days of the test date.

Temporary Connections at Job Sites

A hose bibb may be attached to the No. 4 test cock downstream of the No. 1 and No. 2 check valves for temporary water use. The hose bibb must be fitted with an atmospheric vacuum breaker. No other connections off assembly test cocks are acceptable.