

**SECTION 15112
BACKFLOW PREVENTERS**

PART 1 GENERAL

1.01 DESCRIPTION

This section includes materials, installation, and testing of reduced-pressure backflow prevention devices and check valve and double check valve assemblies.

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

State of California Department of Health Services Division of Drinking Water and Environmental Management, Approved Backflow Prevention Assemblies for Service Isolation

AWWA C510 - Double Check Valve Backflow-Prevention

Assembly AWWA C511 - Reduced-Pressure Principle Backflow-Prevention Assembly

AWWA M14 - Recommended Practice for Backflow Prevention and Cross-Connection Control

AWWA Publication Cross-Connection and Backflow Prevention

1.03 RELATED WORK SPECIFIED ELSEWHERE

Agencies of Jurisdiction Rules and regulations regarding “Cross Connection Control and Backflow Prevention”

Standard Drawings

Standard Specifications 02223, 03000, 09900, 15000, 15041, 15044, 15056, 15057, 15061, 15064 and 15100.

1.04 SERVICE APPLICATION

- A. Reduced-pressure backflow prevention assemblies shall be provided on all commercial and industrial water services. Depending on degree of hazard, a double check valve assembly may be required in place of a reduced-pressure backflow assembly.
- B. Reduced-pressure backflow prevention assemblies shall be provided on irrigation services where served by potable water.
- C. Reduced-pressure backflow prevention assemblies shall be provided on potable water services where recycled water, well water or any other water supply is served to the same property.

- D. Double check valve assemblies shall be provided at all points of connections to District sources at construction sites.
- E. Reduced-pressure detector assemblies shall be provided on all fire services. Backflow prevention on fire services shall be as required by the Water District of jurisdiction.
- F. The District shall be the final authority as to the location, installation, and type of backflow prevention device required.

1.05 GENERAL DESIGN CONSIDERATIONS

- A. The design and construction of backflow prevention assemblies shall meet the requirements called for in this specification except that any modifications specifically shown on the Approved Plans shall take precedence over these general standards.
- B. The nominal size of the backflow prevention device shall be equal to or greater than the size of the purchased meter. For example, a 25mm (1") meter shall have a 25mm (1") or larger backflow device.
- C. The assembly shall include same size valves located on either side of the backflow prevention assemblies. Four test cocks shall be appropriately located on the assembly for testing and certification.
- D. The nominal size of reduced-pressure principle detector assemblies shall be as shown on the Approved Plans or as directed by the Fire Department of jurisdiction.
- E. Enclosures and concrete slabs shall be provided only as shown on the Approved Plans or as required by the agency of jurisdiction.

1.06 DELIVERY, STORAGE AND HANDLING

Backflow prevention assemblies shall be delivered and stored in accordance with AWWA C210, AWWA C213, and AWWA C550. The port openings shall be covered with plastic, cardboard, or wood while in transit and during storage in the field. These covers shall remain in place until the backflow assembly is ready to be installed. Backflow assemblies shall not be stored in contact with bare ground. Backflow assemblies shall not be stacked.

1.07 RECYCLED WATER IDENTIFICATION

Backflow prevention assemblies and enclosures, if required, for recycled water shall be identified with purple-colored coating, identification labels, or signs in accordance with Section 15151.

1.08 WARNING/IDENTIFICATION TAPE

Warning/Identification tape shall be installed for backflow prevention assemblies in accordance with Section 15000.

PART 2 MATERIALS

2.01 BACKFLOW PREVENTION ASSEMBLIES

Backflow prevention assemblies shall be among those listed on the list of "Approved Backflow Prevention Assemblies for Service Isolation" as issued by the State of California Department of Health Services, Division of Drinking Water and Environmental Management.

2.02 CONCRETE

Concrete used for slabs and anchor or thrust blocks shall be in accordance with Section 03000.

2.03 WARNING/IDENTIFICATION TAPE

Warning/Identification Tape shall be in accordance with Section 15000 and the Approved Materials List.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Installation shall comply with the latest edition of the Uniform Plumbing Code, applicable local agency and District requirements.
- B. Backflow prevention assemblies shall be installed in accordance with the Standard Drawings.
- C. Water service and fire service shut-off valves will be secured closed during installation until an approved backflow prevention device is installed and tested in compliance with this specification.
- D. When static pressure exceeds 1.03MPa (150psi), when recommended by the backflow device manufacturer, or when required by the District Engineer, a pressure-reducing valve shall be installed as shown on the Standard Drawings.

3.02 WARNING/IDENTIFICATION TAPE

Warning/Identification tape shall be installed in accordance with Section 15000 and the Standard Drawings.

3.03 CONCRETE

Concrete thrust or anchor blocks and slabs shall be installed in accordance with Section 03000 and the Standard Drawings. Refer to Section 03000 for the minimum concrete curing time required.

3.04 ENCLOSURES

Enclosures shall be installed where shown on the Approved Plans or as directed by the Agency of jurisdiction in accordance with the Standard Drawings.

3.05 DISINFECTION

Disinfection and flushing shall be performed in accordance with Section 15041, as part of the process of disinfecting the main pipeline. The backflow assemblies shall be operated during the disinfection period to completely disinfect all internal parts.

3.06 HYDROSTATIC TESTING

Backflow assemblies shall not be hydrostatically tested as part of or in conjunction with the pipeline to which they are connected.

3.07 TESTING

Backflow assemblies shall be tested and certified by a District-approved backflow tester after installation inspection by District is complete.

Required maintenance of the backflow prevention device and appurtenances and annual testing of the device shall be the owner's responsibility.

END OF SECTION 15112