

**Sullivan's Island  
Water Distribution System**



**Steps For Gaining Sullivan's Island Approval  
Of A New Service Backflow Prevention Assembly**

**Initial Installation**

1. Consumer makes application, and pays for a water service.
2. Sullivan's Island provides customer with a Sullivan's Island Backflow Information Sheet and Questionnaire.
3. Customer an/or plumber completes Sullivan's Island Backflow Information Sheet and Questionnaire and returns it to Sullivan's Island Town Hall 1610 Middle Street.
4. Sullivan's Island determines if Backflow prevention assembly is required and notifies customer in writing the type of Backflow device required.
5. If a Backflow device is required, use Sullivan's Island's approved List of Approved Backflow Prevention Assemblies to make appropriate selection from the attached list.
6. Have a licensed plumbing contractor install an approved Backflow device to meet all Sullivan's Island requirements. Installation must be completed prior to water service being activated
7. Installer notifies a Sullivan's Island Water/Sewer Department associate of the installation of a backflow preventer and schedules an inspection at (843) 883-3198. Installer shall make notification within two (2) working days and shall include the make, model, size and serial number of the backflow device installed.
8. Sullivan's Island will turn on the water service only if the backflow assembly meet all requirements, if the assembly does not meet requirements, corrections must be made prior to Sullivan's Island activating the water service.

**Backflow Preventer Test:**

1. Test backflow preventer, using a tester from Sullivan's Island's List of Certified Backflow Testers/Installers. A copy of the test results must be sent to Sullivan's Island Town Hall or faxed to 843-883-3662 within two (2) days after testing.
2. Have a licensed plumbing contractor make any necessary repairs or corrections to backflow preventer to meet all Sullivan's Island requirements.

3. Approved backflow tester must return completed original test report to Sullivan's Island Town Hall within (7) seven days of testing in order to conform to all Sullivan's Island requirements. If the device passed test, this will place the service in compliance for a period of one (1) year.

## **1. Backflow Prevention Assemblies Selection Requirements**

### **1.1 Double Check Valve Assemblies and Reduced Pressure Principle Assemblies**

Backflow prevention assemblies selection and insulation must meet requirements set by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC FCCD&HR), SC Department of Health and Environmental Control (SCDHEC), all local plumbing laws and regulations, and Sullivan's Island specifications.

- 1.1.1 Backflow prevention assemblies must be selected from Sullivan's Island List of Approved Backflow Prevention Assemblies.
- 1.1.2 Only two (2) types of backflow prevention assemblies are allowed. These are:
  - a. Double check valve assembly.
  - b. Reduced pressure principle assembly.
- 1.1.3 All backflow prevention assemblies two (2) inches and smaller must be equipped with full flow characteristic ball valves as shown in detail beveled; "Typical 2" and smaller Double Check Valve Assembly Only and Backflow Preventer Below Ground Installation."
- 1.1.4 All backflow prevention assemblies larger than two (2) inches must be equipped with full flow characteristic resilient wedge gate valves, one before and one after the assembly.
  - a. "Typical Larger than 2" (inches) Double Check Valve Assembly only, Backflow Preventer Above Ground Installation"
  - b. "Typical Reduced Pressure Principle Assembly (All Sizes) Backflow Preventer Above Ground Installation"
  - c. "Typical Reduced Pressure Principle Assembly (All Sizes) Backflow Preventer Above Ground Installation with Enclosure."
- 1.1.5 All backflow Prevention assemblies must have four (4) test cocks. The number one (#1) test cock is located on the number on (#1) shut-off valve.

1.1.6 Sullivan's Island recommends backflow prevention assemblies have epoxy-coated interior with smooth bore valve seats to prevent corrosion build-up.

1.1.7 **Approved Backflow Prevention Assemblies**

An approved backflow prevention assembly includes four (4) test cocks, two (2) independently operated, spring loaded check valves, and two (2) shut-off valves, one each on the inlet and the outlet sides. The backflow prevention assemblies indicated on the tables shown have been tested, evaluated and approved by USC-FCCC & HR in the approval test(s) invalidates the USC-FCCC & HR. Plumbing Contractor should ensure that only complete USC FCCC & HR approved backflow prevention assemblies are purchased for installation.

## **II. Backflow Prevention Assemblies Installation Requirements**

Not all commercial services will be required to install a backflow preventer. It is recommended, however, that whenever possible the plumbing contractor leave approximately two (2) feet of copper or ductile iron pipe exposed from the wall or floor, twelve (12") inches to thirty-six (36") inches in height, prior to any water connections. This will provide an area to install a backflow preventer should the customers water use change, and Sullivan's Island requires a backflow preventer in the future.

### **2.1 Double Check Valve Assemblies and Reduced Pressure Principle Assemblies**

Sullivan's Island strongly recommends that all backflow prevention assemblies be installed inside the building, such as in a mechanical or equipment room. Inside installation eliminates exposure to the elements and reduces the possibility of vandalism or freezing. The backflow installation shall meet all Sullivan's Island minimum and maximum clearance requirements and shall be accessible for testing and repair. Sullivan's Island reserves the right to make exceptions to installation requirements when Sullivan's Island determines there are unavoidable piping constraints and/or limited usable space. All exceptions must be obtained in writing from Sullivan's Island prior to work being performed.

2.1.1 Backflow prevention assembly installation must be on the private property side of the water meter and prior to the first service connection.

2.1.2 Backflow prevention assemblies must be readily accessible for inline maintenance and testing.

- 2.1.3 Backflow prevention assemblies must be installed according to manufactures instructions.
- 2.1.4 Backflow prevention assemblies must be installed in the horizontal position only.
- 2.1.5 Sullivan' s Island strongly recommends above ground installation of backflow prevention assemblies be protected from freezing without obstructing the test cocks or relief valve vent opening.
- 2.1.6 Only copper pipe, bronze pipe, or ductile pipe is acceptable for backflow prevention assemblies piping installation.
- 2.1.7 Backflow prevention assemblies must be rigid and stable to provide maximum longevity and safety during testing and inspection. Appropriate thrust restraint measures, mechanical supports, and concrete slab dimensions are to be determined by the owner/installer to provide rigid and stable support. Sullivan's Island reserves the right to require appropriate support and restraint measures as needed on a case-by-case basis.
- 2.1.8 A minimum of two (2') feet of copper, bronze pipe, or ductile iron pipe must be extended on inlet and outlet sides of backflow prevention assemblies for rigid stability.
- 2.1.9 Connections to any of the four (4) test cocks will not be permitted. Connections include, but are not limited to: hose bibs, wire, gauges, or any other fittings.
- 2.1.10 All resilient wedge gate valves must be physically attached to the backflow prevention assembly for operation at the assembly. Not on an outside wall or appurrtence.

## **2.2 Two (2") Inch and Smaller Double Check Valve Assemblies Installation**

- 2.2.1 Installation may be above or below ground. Below ground installations shall have an appropriate backflow preventer box.

2.2.2 Below ground installation must meet all requirements in, "Typical 2" and Smaller Double Check Valve Assembly Only, Backflow Preventer Below Ground Installation.

- a. Traffic grade backflow preventer box is required in any area subject to vehicular traffic.

### **2.3 Larger Than Two (2") Inch Double Check Valve Assemblies Installation**

2.3.1 Installation must be above ground, and meet all requirements as shown on "Typical Larger Than 2" Double Check Valve Assembly Only, Backflow Preventer Above Ground Installation.

### **2.4 Reduced Pressure Principle Assemblies Installation**

2.4.1 Installation must be above ground, and meet all requirements as shown on, "Typical Reduced Pressure Principle Assembly (All Sizes), Backflow Preventer Above Ground Installation" and "Typical Reduced Pressure Principle Assembly (All Sizes), Backflow Preventer Above Ground Installation With Enclosure".

- a. Relief valve vent shall never become submerged.
- b. Relief valve drain must meet approved air gap requirements. The air gap and funnel is only required for installations inside a building where water exiting the relief valve vent needs to be channeled to atmosphere or to a floor drain. This piping must be, at least, equal to the relief valve vent opening. Air gap requirement is equal to two (2) times the supply pipe diameter or one (1") inch, whichever is greater.
- c. If above-ground enclosure is used, two (2) drain holes equal in size to the relief valve vent opening shall be made at the base of the enclosure to ensure adequate drainage.
- d. A minimum of twelve (12") inches and maximum of thirty-six (36") inches of clearance between the relief valve vent and the finished grade under the relief valve vent is required on all reduced pressure principle backflow assemblies.

### **2.5 Fire Service Installation**

2.5.1 Sullivan's Island requires an approved backflow prevention assembly on all fire protection systems.

2.5.2 Installation must be in accordance with American Water Works Association (AWWA) Manual M14, Chapter 6; Backflow Prevention and Fire Prevention, USC-FCCC & HR, and Sullivan's Island specifications.

The manufacturer as capable of withstanding elevated temperatures must certify 2.5.3 High temperature assemblies.

2.5.4 All Class Four (4), Five (5) and Six (6) fire sprinkler services, and those that use foaming substances, antifreeze solutions, or anticorrosive additive or other substances determined by Sullivan's Island to be a health-hazard shall have a reduced pressure principle backflow assembly.

2.5.5 No connections will be installed before the backflow prevention device such as: in lines, gauges, jockey-pumps, booster pumps, or any other appurtenance:

**1. UNMETERD SERVICES (FIRE MAINS)**-no connections between Sullivan's Island's connection at the water main and a fire service backflow preventer.

**2. METERED SERVICES**-no connections between Sullivan's Island's water and an irrigation backflow preventer.

**3. IRRIGATION METER**-no connections between Sullivan's Island's water meter and an irrigation backflow preventer. The only connection allowed between Sullivan's Island connection at the water main and the fire service backflow preventer. The domestic service line must always be prior to the fire service backflow preventer. All other connections must be downstream of any backflow preventer.

2.5.6 The resilient wedge gate valves must have an outside stem and yoke (OS & Y) or an approved indicating valve, as required by National Fire Protection Association (NFPA).

## **2.6 Irrigation Meters**

2.6.1 Sullivan's Island requires an approved and testable backflow prevention assembly, in accordance with section **1.1** of this policy, on all High and Low hazard residential lawn irrigation systems.

2.6.2 All approved devices will be tested in accordance with section 3.1 of this policy.

### **III. TESTING**

#### **3.1 Following Installation**

A certified tester must test Backflow prevention assemblies immediately after installation and a minimum of once each subsequent year. Sullivan's Island reserves the right to require more frequent testing depending upon the degree of hazard.

#### **3.2 Certified Tester**

Backflow prevention assemblies protecting the Sullivan's Island distribution shall be tested only by those certified testers whose names appear on Sullivan's Island List of Certified Testers.

#### **3.3 Test Results**

A copy of the test results must be sent to Sullivan's Island Town Hall or faxed to 843-883-3662 within two (2) days after testing.

#### **3.4 Sullivan's Island Backflow Testing**

Sullivan's Island personnel will conduct random follow-up testing of backflow prevention assemblies to insure proper operation. The customer will be given advance notification of testing.

#### **3.5 Backflow Repairs**

All Backflow preventers must be tested after any repair is made to the assembly. The test results must be received by Sullivan's Island within two (2) days after testing.

### **IV Requirements for Existing Services**

#### **4.1 Installed Backflow Assemblies Found to be in Non-Compliance**

All presently installed backflow preventers which do not meet the requirements of this section, but were approved or accepted at the time of original installation and which have been properly maintained, shall be excluded from the requirements of these rules so long as Sullivan's Island is assured the back flow preventer will adequately protect its water system. Whenever an existing assembly malfunctions, or fails to pass the annual, periodic, or random test, and it becomes necessary to replace the entire assembly, it must be replaced and installed in a manner consistent with the Sullivan's Island requirements. Routine internal check valve/relief valve repairs will not require the assembly to be re-piped or brought above ground. Whenever the existing assembly is moved from the present location, or when Sullivan's Island finds

that the assembly for whatever reason no longer ensures adequate protection for the degree of hazard present, the unit shall be replaced by a backflow prevention assembly meeting current Sullivan's Island Cross-Control requirements.

**4.2 Change-out (Retro-fit)**

All plumbers and contractors must notify Sullivan's Island Waste Water Department whenever they change-out a backflow preventer. This notification must be made within two (2) working days and shall include make, model, size and serial number. Sullivan's Island will make our inspection within two (2) days.

**4.3 Compliance on Existing Water Service**

A backflow prevention assembly required by Sullivan's Island on any existing water service must be installed within thirty (30) days of date from written notification. Failure to comply may result in the water service being disconnected. High hazards may require a more timely installation.

**4.4 Compliance on Existing Backflow Prevention Assemblies**

Existing backflow assemblies are required to be tested annually as outlined under Test Requirements, and if repairs or replacements are necessary, Brought To Current Installation Standards.

**V. Other Requirements**

**5.1 By-Pass Piping**

By-Pass piping is not permitted unless it is equipped with an approved backflow prevention assembly. In some instances it may be desirable or necessary to install two (2) approved backflow preventers in order not to interrupt water service.

**5.2 Vertical Installation**

Sullivan's Island does not allow vertical installation of backflow prevention assemblies. However, USC-FCCC & HR is currently reviewing the installation of backflow assemblies in the vertical position but has not approved any assemblies at this time. Sullivan' s Island will review any findings and may modify this requirement at a later date.

**5.3 Backflow Assembly Removal**

No plumber, contractor, tester or any other individual shall remove, or straight pipe backflow preventers

**5.4 Sullivan's Island's List of Certified Backflow Testers**

Sullivan's Island has the right to remove any certified tester from its approved List of Certified Testers found falsifying record, making unauthorized repairs to a backflow assembly, failing to demonstrate proper test procedures, or demonstrating a lack of knowledge in testing a backflow prevention assembly. Any certified tester failing to comply with Sullivan's Island Cross-Connection Control Program rules, policies, or standards will also be removed from the list of certified testers. A certified tester will be suspended from testing backflow prevention assemblies when the accuracy of the tester gauge being used is found to be out of tolerance as indicated by that particular gauge manufacturer's specifications, the tester will be allowed to continue backflow preventer tests. The manufacturer's Approved Calibration Technician's results must be forwarded, in writing, to Sullivan's Island.

**5.5 Certified Backflow Preventer Assembly Tester's Responsibility**

The licensed plumbing contractor/tester will be responsible for repairing or overhauling backflow prevention assemblies and making reports of such repairs to the consumer and responsible authorities on forms approved by Sullivan's Island. the plumbing contractor/tester shall include in the test report a list of all materials and replacement parts used. the tester shall be equipped with and be competent to use all the necessary tools, gauges, and other equipment necessary to properly test, repair, and maintain backflow prevention assemblies. It will be the tester's responsibilities to replace with only manufacturer's approved parts. It will be the tester's responsibility not to change the design, material, or operational characteristics of an assembly during repair or maintenance without prior approval of Sullivan's Island. **IT IS THE TESTERS RESPONSIBILITY TO PROVIDE SULLIVAN'S ISLAND WITH THE ORIGINAL TEST REPORT WITHIN SEVEN (2) CALENDAR DAYS OF TESTING, AND TO PROVIDE A COPY OF THE REPORT TO THE OWNER.**