

The following standard specification is intended to be edited according to the specifics of the project. Brackets [] and areas shaded in gray [e.g. format] indicate requirements that are optional depending upon the type of system being provided or per instructions associated with the [] and project requirements. Consult with University's Representative and campus stakeholders.

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SECTION 33 12 13.13 WATER SUPPLY BACKFLOW PREVENTION ASSEMBLIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Backflow preventer assemblies.

1.2 RELATED SECTIONS

- A. Section 01 33 23 Shop Drawings, Product Data and Samples
- B. Section 01 43 00 Quality Assurance
- C. Section 09 90 00 Painting and Coating
- D. Section 33 12 16 Water Distribution Valves

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM) A536 – Standard Specification for Ductile Iron Castings
- B. American Water Works Association (AWWA) C511 – Standard for Reduced Pressure Principle Backflow Prevention Assembly
- C. University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR) list
- D. Title 17, Division 1, State Department Of Health Services, Chapter 5. Sanitation (Environmental), Group 4, Drinking Water Supplies, Article 1, General
- E. California State Health and Safety Code

1.4 SUBMITTALS

- A. See Section 01 33 23 Shop Drawings, Product Data and Samples for submittal procedures.
- B. Product Data: Provide data acknowledging that products meet requirements of standards referenced.
- C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
 - 1. Project Record Documents,
 - 2. Record location of backflow prevention assemblies.
 - 3. Provide a copy of test results for each backflow prevention assembly.

PART 2 - PRODUCTS

2.1 BACKFLOW PREVENTERS

- A. Reduced pressure type backflow preventers shall be used for domestic water service and double check devices shall be used for fire service, matching service size.

- B. Reduced pressure backflow preventers and double check devices shall be of the following materials:
 - 1. Main valve body: Ductile Iron ASTM A536, Grade 4
 - 2. Access Covers: Ductile Iron ASTM A536, Grade 4
 - 3. Internals: Stainless Steel, 300 Series and NORYL™, or equal
 - 4. Fasteners and Springs: Stainless Steel, 300 Series
 - 5. Seal Rings: EPDM
 - 6. O-rings: Buna Nitrile
- C. Reduced pressure backflow prevention devices 2.5 inches and larger shall be Febco 825YD, Watts 909 series, Wilkins 375A, or equal.
- D. Reduced pressure backflow prevention devices 2 inches and smaller shall be Febco 825Y series, Watts 909 or 009 series, Wilkins 975XL series, or equal.
- E. Double check assemblies 2.5 inches and larger shall be Febco 805YD, Watts 709, Wilkins 350A OSY, or equal.
- F. Double check assemblies 2 inches and smaller shall be Watts 007, Wilkins 950XL, or equal.
- G. Check valve seats shall have field replaceable seat rings.

2.2 ACCESSORIES

- A. All pipes, valves, pipe or plumbing fittings, fixtures, solder, or flux intended to convey or dispense water for human consumption shall be lead free.
- B. Devices used on fire services must have OS&Y valves with tamper switches and shall not have a detector meter.
- C. Supervisory switch for OS&Y valve shall be rated NEMA 4X and capable of being mounted in any position [KLN1][AAS2] indoor or outdoor, Potter OSYSU-2 Series or equal.
- D. An insulated, lockable, UV resistant blanket type cover shall be provided for all reduced pressure principle devices and double check devices (fiberglass jacketing is not acceptable). The cover shall be a manufactured product with Velcro or equal bottom, top, and one end minimum. Brass grommets shall be required every 12 inches in the Velcro areas.

Note to specifier: coordinate painting with Section 09 90 00. If Section 09 90 00 is not provided, sufficient information shall be provided under this paragraph to fully instruct the Contractor on the requirements for painting ferrous materials, including preparatory work and proper conditions for conducting the work. Confirm the fire department requirements prior to final publication of the specifications.

- E. All devices that are ferrous metal and above grade piping shall be epoxy coated. All devices and piping shall be painted Hunter Green Semi-Gloss (ICI Devoe DC5517 or equal) Fire Department connections shall be painted Semi-Gloss White (ICI Devoe Devflex-659, Semi Gloss 4206). Coating or equal shall conform to Section 09 90 00, Painting and Coating.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Backflow preventers shall be installed in accordance with the manufacturer's instructions and University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR). Have on hand all installation manuals, brochures, and procedures for the equipment and materials concerned.
- B. Installation shall also conform to the requirements of Section 33 12 16 Water Distribution Valves.

PROJECT TITLE
CONTRACT TITLE
UNIVERSITY OF CALIFORNIA, DAVIS
CITY, CALIFORNIA

PROJECT NO: 000000
GRANT NO: 000000

3.2 TESTING

- A. Backflow prevention devices shall meet the factory, laboratory and field test provisions of AWWA C511.
- B. Perform field inspection and testing in accordance with Section 01 43 00 Quality Assurance. Testers must be certified by AWWA and must provide a valid copy of a Backflow Prevention Assembly General Tester Certificate to the University's Representative.
- C. Backflow preventers shall be tested immediately after they are installed, relocated or repaired. Backflow preventers shall not be placed in service unless they are functioning as required and have been approved by the University's Representative.

END OF SECTION 33 12 13.13