

Clarification on Backflow Prevention Assembly Approval, Selection and Installation

It has come to our attention that contractors are not always familiar with our selection and installation requirements of Approved Backflow Prevention Assemblies. "Approved Backflow Prevention Assembly" means approval from the University of Southern California's Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCC&HR). All Manufacturers of backflow prevention assemblies attain approval from several sources: ASSE, IAPMO, CSA, etc. While each approving agency requires certain specifics, the USC-FCCC&HR requires additional testing of assemblies before they grant approval. This evaluation process begins in the foundation laboratory and continues in a field setting for twelve (12) months. Additionally, CPW has required USC-FCCC&HR approval since 1989.

Contractors, Developers and Engineering/Architectural firms should inquire on approval ratings prior to specifying a particular manufacturer's product for installation in CPW's distribution system. Although many Manufacturers advertise their backflow prevention assemblies are approved for a vertical orientation (through ASSE or IAPMO), unless the assembly has been approved by the USC Foundation for a vertical orientation, **CPW will not approve the selection or installation of that assembly**. Please call our office to verify the approval rating of a particular assembly prior to installing it. As an example, one manufacturer has USC approval for only two (2) models of a DCVA while another manufacturer has USC approval for seven (7) separate models. Additionally, not all sizes of a particular model are approved for a vertical orientation. You are encouraged to verify with the vendor and/or manufacturer whether a potential assembly has full USC approval.

CPW does not recognize or approve DOUBLE CHECK DETECTOR ASSEMBLIES (DCDA). The DCDA was designed as a means to monitor small volumes of water being drawn through a fire sprinkler system for purposes other than fire fighting. A DCDA has a by-pass meter and a by-pass Double Check Valve Assembly (DCVA). Additionally, the DCDA number one check valve is loaded higher than a DCVA, thereby increasing the overall head loss through the assembly. From an overall cost evaluation, the DCDA costs on an average \$400.00 **more** than a DCVA. Since it has a by-pass meter and by-pass backflow preventer, the annual testing and maintenance costs are doubled. The customer, not the contractor, pays these extra, unnecessary fees when a DCDA is used.

The premise of this assembly is to record consumption through the by-pass water meter. However, since the by-pass DCVA has an inlet and outlet shutoff valve, one could close either of these two (2) valves and consumption would not be "detected" or recorded. CPW has used a Fire-Rated, Dual-Purpose water meter since 1985 and all fire sprinkler systems are metered. CPW's water meter has a low-flow by-pass water meter incorporated into the design and this meter registers low flows and acts as a "Detector Check."

Our Water Rules and Regulations (A Legal Ordinance) and our Cross-Connection Control Program Manual on Backflow Prevention specifies only cement lined ductile iron pipe, copper pipe or bronze pipe to be used between our water meter and the inlet side of any backflow

prevention assembly. These documents also explain that black steel or galvanized steel pipe are not acceptable between our water meter and any backflow prevention assembly. We are frequently asked why galvanized steel is not allowed. It is common knowledge that galvanized steel pipe tuberculoses (inside pipe wall calcification) very quickly. It is also common knowledge that this tuberculation breaks off and can very easily damage the soft elastomer disc or the soft bronze seat of a backflow prevention assembly. This potential damage causes unnecessary repairs or replacement of the assemblies, a cost our **CUSTOMER** would incur. Additionally, as the "Administrative Authority" for water quality and system integrity, CPW requires the installation, annual testing and maintenance of all backflow prevention assemblies. As such, we feel it is imperative to use only that pipe which poses the least potential for damage to the assembly and its ability to prevent backflow.

Backflow Prevention Assembly Manufacturers typically ship their product as a **"COMPLETE ASSEMBLY."** A complete assembly consists of an inlet shutoff valve with the number one Test Cock on the up-stream side of the valve, an outlet shutoff valve and the backflow prevention "device" with three (3) Test Cocks. The complete assembly has approvals from one or more agencies. It is important to understand that if any part or portion is removed, i.e., Test Cocks, shutoff valves, etc, the USC Foundation approval rating is invalid. For example, if the number one shutoff valve is removed, for any reason, even if replaced with another manufacturer's valve, the approval rating is invalid. This is not a rule or policy of CPW, this is a standard set by the USC Foundation. Contractors are encouraged to install the assembly as it was shipped, and not to change or alter the design characteristics or any appurtenance of the backflow prevention assembly.

The following is a recent listing of USC Foundation DCVA's for a vertical orientation. We receive updates frequently from the foundation. Please call our office to verify the approval rating of a DCVA before purchasing or installing.

Ames CIV 4, 6, 8, 10"	Ames 2000B 1/2 thru 2"
Conbraco DC 2.5, 3, 4, 6" (4-S Series)	
Febco 805YB 3/4"	Febco 850 1/2 thru 8"
Febco 850U 1/2 thru 2" (Vert up only)	
Febco 870V 2.5, 3, 4, 6, 8, 10"	
Watts 709 4, 6, 8, 10"	
Watts 007 2.5, 3"	Watts 007M1QT 1,2"
Watts 007M2QT 3/4, 1 1/4, 1.5"	
Watts 007M3QT 3/4"	
Watts 775QT 1/2 thru 1.5"	
Wilkins 350 4, 6"	Wilkins 350G 4, 6"
Wilkins 950G 4, 6"	Wilkins 950 4, 6, 8"
Wilkins 950XL 3/4"	