February 22, 2005

NOTICE OF APPROVED BACKFLOW PREVENTIVE DEVICES FOR SOUTH CAROLINA

Enclosed is the revised list of approved backflow prevention devices and a list of backflow equipment representatives.

The following should be considered before selecting a particular device:

1. All local plumbing laws and regulations must be adhered to.

2. Manufacturer's installation instructions shall be strictly adhered to.

3. Reduced pressure principle assemblies shall be installed so that the relief port will never become submerged. This prohibits installation in a pit that cannot be drained by gravity to the surface of the ground. Also, RPPA are not acceptable for the vertical orientation unless approved by the University of Southern California's Foundation for Cross Connection Control & Hydraulic Research.

4. The operating performance of these devices varies among manufacturers; therefore, it is suggested that local water authorities be contacted to assist in selecting a device which is best suited for that particular system.

5. The South Carolina Department of Health and Environmental Control reserves the right to add or to remove from the approved list any reduced pressure principle assembly, pressure vacuum breaker, or double check valve assembly.

6. It is a requirement that backflow prevention devices be tested immediately after installation and at least once a year thereafter. If a serious defect is discovered at the time of the first (immediate inspection after installation) inspection or after any subsequent inspections, it is requested that the Department of Health and Environmental Control be notified so prompt action can be taken to review the approved status of the device.

7. By-pass piping is not permitted unless the by-pass piping is equipped with an approved backflow prevention assembly similar to the main line device. In many instances it will be desirable, or necessary to install two approved backflow prevention devices in order that water service will not be interrupted during the testing or repair of the device.

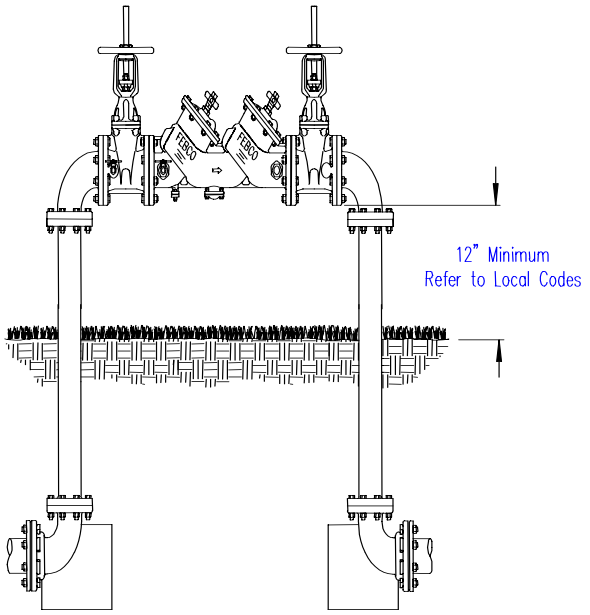
8. Some manufacturers market, as non-standard equipment, devices capable of withstanding elevated temperatures. The high temperature devices should be ordered from the manufacturer to include documentation certifying their ability to withstand high temperatures.

9. Any reduced pressure principle assembly, pressure vacuum breaker, or double check valve assembly on this list of approved devices must be equipped with either resilient seated ball valves or resilient wedged gate valves. Butterfly valves are acceptable on backflow devices as long they are approved by the University of Southern California's Foundation for Cross Connection Control & Hydraulic Research.

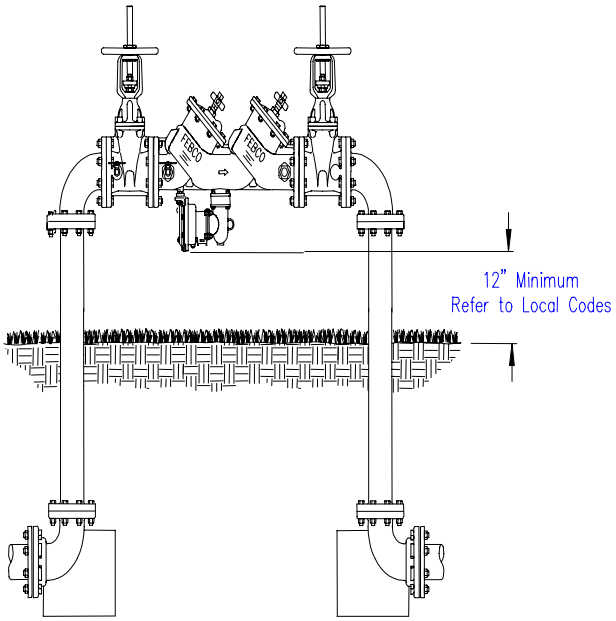
10. If a manufacturer markets a prefabricate "manifold" series it will be approved as long as both of the devices in the manifold are from the approved list.

11. If a manufacturer markets a double detector check valve assembly or a reduced pressure principle detector assembly it will be approved as long as both devices are from the approved list.

All devices on this approval list must be equipped with resilient seated ball valves or resilient wedged gate valves. Butterfly valves are acceptable on backflow devices as long as they are approved by (USCFCCC&HR).



Double Check Assembly
Outdoor Installation –OS&Y Gates



Reduced Pressure Assembly
Outdoor Installation –OS&Y Gates

LIST OF APPROVED BACKFLOW PREVENTION DEVICES

DOUBLE CHECK VALVE ASSEMBLIES

DCVA's are approved for use when protecting the potable water system from backflow when a low degree of hazard is involved. A low degree of hazard is one which may cause an actual or potential threat to the physical properties of the water system or the potability of the public or consumer's potable water system. However, a low degree of hazard would not constitute a health or system hazard. The maximum degree or intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable.

COMPANY	MODEL	SIZE
Ames	2000B	½", ¾", 1", 1¼", 1½", 2"
	2000 (Epoxy)	4", 6", 8", 10"
	2000SS	¾", 1", 1¼", 1½", 2", 2½" 3", 4", 6", 8", 10"
	2000SE	2½", 6", 8"
	2001SS	3", 4", 6", 8"
	2001SSN	3", 4", 6", 8"
	2001SSZ	3", 4", 6", 8"
	Colt200A	2½, 3", 4", 6", 8", 10"
	Colt200N	2½, 3", 4", 6", 8", 10"
	Maxim200A	2½, 3", 4", 6", 8"
	Maxim200N	2½, 3", 4", 6", 8"
Beeco-Hersey	#2	3", 4", 6", 8", 10"
	FDC	¾", 1", 1½", 2"
	HDC	¾", 1", 1½", 2"
Buckner	24100 thru 24104	¾", 1", 1¼", 1½", 2"
Cla-Val	D2	¾", 1", 1¼", 1½"
	D4	2", 2½, 3", 4", 6", 8", 10""
	DC6LB	¾", 1", 1½", 2"
	DC6LW	¾", 1", 1½", 2"
	DC7LW	2½, 3", 4", 6", 8", 10"
	DC7LY	2½, 3", 4", 6", 8", 10"
	DC8LW	2½, 3", 4", 6", 8", 10"
	DC8LY	4", 6", 8"
	DC8NW	2½, 3", 4", 6", 8", 10"
	DC8NY	2½, 3", 4", 6", 8"
	DC8VW	2½, 3", 4", 6"
	DC8VY	2½, 3", 4", 6"

DOUBLE CHECK VALVE ASSEMBLIES CONTINUED

COMPANY	MODEL	SIZE
Conbraco	40-100 Series	½", ¾", 1", 1¼", 1½", 2" 2½, 3", 4", 6", 8", 10"
	40-104 A2T thru 40-108 A2T	¾", 1", 1¼", 1½", 2"
	4S-100 Series	2½, 3", 4", 6"
Febco	805	¾", 1", 1½", 2", 3", 4",
	805Y	¾", 1",1½",2", 2½, 3", 4", 6", 8", 10"
	805YB & YR	¾", 1"
	805YD	2½, 3", 4", 6", 8", 10"
	850	¾", 1", 1½", 2", 2½, 3", 4", 6", 8"
	870	2½, 3", 4", 6", 8", 10"
	870V	2½, 3", 4", 6", 8", 10"
	830	4", 6", 8"
	830H	4", 6"
Flomatic	DCV	¾", 1", 1½", 2", 2½, 3", 4", 6"
	DCVE	¾", 1", 1½", 2"
Watts	709QT	¾", 1", 1½", 2",2½, 3",4", 6", 8", 10"
	709	2½, 3", 4", 6", 8", 10"
	007	½", ¾", 1", 1¼", 1½", 2", 3"
	007M1&M2QT	¾", 1", 1¼", 1½", 2"
	007M3QT	¾"
	770	4", 6", 8"
	772	4", 6", 8", 10"
	774	¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"
	774X	2½, 6", 8"
	775QT	½", ¾", 1", 1¼", 1½", 2"
	775	3", 4", 6", 8"
	N775	3", 4", 6", 8"
	757A	2½, 3", 4", 6", 8", 10"
	757N	2½, 3", 4", 6", 8", 10"
	767A	2½, 3", 4", 6", 8"
Wilkins	350	2½, 3", 4", 6", 8", 10"
	450	2½, 3", 4", 6", 8", 10"
	550	¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"

DOUBLE CHECK VALVE ASSEMBLIES CONTINUED

COMPANY	MODEL	SIZE
Wilkins	950	¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"
	950XLT	¾", 1", 1¼", 1½", 2"
	950XL	¾", 1", 1¼", 1½", 2"
	950XLU	¾", 1", 1½", 2"

The following devices are Double DETECTOR Check Valve Assemblies and Reduced Pressure Principle DETECTOR Assemblies. These devices are made up from approved DCVA's and RPPA's which are approved elsewhere on this list. Therefore, they are approved devices. These devices are mainly designed for FIRE LINE use. If a Double Detector Check Valve Assembly or Reduced Pressure Principle Detector Assembly is prescribed for a given facility on your system, it should be done with an understanding of this purpose, as well as the fact that its meter will have to be read periodically in order to be of any value. Don't forget that when the annual testing is done, both of these devices are required to be tested.

DOUBLE DETECTOR CHECK VALVE ASSEMBLIES ARE:

AMES - 3000SS, 3000SE, (3001SS & 3001SSN & 3001SSZ 3"-8"), (Colt300A 2½"-10"), (Colt300N 2½"-10"), (Maxim300 2½"-8"), (Maxim300N 2½"-8")
BEECO-HERSEY - DDCII
CLAVAL - DD7LY, DD8LY, DD8NY
CONBRACO - 40-600, 40-60A, 40-60C, 40-60E, 40-60G
FEBCO - 806YD, 856, 876, 876V, (831 4"-8"), (831H 4"-6")
WATTS - 007DCDA, 709DCDA, 770DCDA, 772DCDA, 774DCDA, and 774XDCDA, (775DCDA & N775DCDA 2½"-10")
WILKINS - 950DA, (350DA 2½"-10"), (450DA 4"-6")

REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLIES ARE:

AMES- 5000SS, (5001SS & 5001SSN & 5001SSZ 3"-6"), (Colt500A 2½"-10"), (Colt500N 2½"-10"), (Maxim500A 2½"-8"), (Maxim500N 2½"-8")
BEECO-HERSEY- 6CMDA
CLAVAL- RD7LY
CONBRACO- 40-700, 40-70A, 40-70C, 40-70E, 40-70G
FEBCO- 826YD
WATTS- 009RPDA, 909RPDA, 990RPDA, 992RPDA, (957RPDA 2½"-10"), (957NRPDA 2½"-10")
WILKINS- 975DA, (375DA 4"-6"), (475DA 4"-6")

SCDHEC

LIST OF APPROVED BACKFLOW PREVENTION DEVICES

REDUCED PRESSURE PRINCIPLE ASSEMBLIES

Approved for use to protect the potable water system from backflow when there is an actual or potential health hazard. The terms "health hazard" shall mean an actual or potential threat of contamination or pollution of a physical or toxic nature to the public potable water system or the consumer's potable water system to such a degree of intensity that there would be a danger to health.

COMPANY	MODEL	SIZE
Ames	4000B	½", ¾", 1", 1¼", 1½", 2"
	4000-RP	4", 6", 8", 10"
	4000SS	¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"
	4001SS	3", 4", 6"
	4001SSN	3", 4", 6"
	4001SSZ	3", 4", 6"
	Colt400	2½, 3", 4", 6", 8", 10"
	Colt400N	2½, 3", 4", 6", 8", 10"
	Maxim400	2½, 3", 4", 6", 8"
	Maxim400N	2½, 3", 4", 6", 8"
Beeco-Hersey	6CM	2½, 3", 4", 6", 8", 10"
	6CM-Bronze	2½, 3", 4", 6", 8"
	FRP-II	¾", 1", 1¼", 1½", 2"
Buckner	24000 thru 24004	¾", 1", 1¼", 1½", 2"
Cla-Val	RP-2	¾", 1", 1¼", 1½"
	RP-4	2", 2½, 3", 4", 6", 8", 10"
	RP-4V	4"
	RP6LW	¾", 1", 1¼", 1½", 2"
	RP6VW	¾", 1", 1½", 2"
	RP7LW	2½, 3", 4", 6", 8", 10"
	RP7LY	2½, 3", 4", 6", 8", 10"
	RP8LW	2½, 3", 4", 6", 8", 10"
	RP8LY	2½, 3", 4", 6", 8"
	RP8NW	2½, 3", 4", 6", 8", 10"
	RP8NY	2½, 3", 4", 6", 8"
	RP8VW	2½, 3", 4", 6", 8", 10"
	RP8VY	2½, 3", 4", 6"
Conbraco	40-200 Series	¼", ⅜", ½", ¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"
	Stainless {40-204-A2S	¾
	Steel {40-205-A2S	1"

REDUCED PRESSURE PRINCIPLE ASSEMBLIES CONTINUED**:**

COMPANY	MODEL	SIZE
Febco	825	2½, 3", 4", 6", 8", 10"
	825D	2½, 3", 4", 6", 8", 10"
	825Y	¾", 1", 1¼", 1½", 2", 2½
	825YD	2½, 3", 4", 6", 10"
	825YA	¾", 1", 1½", 2"
	825YR	¾", 1", 1½", 2"
	835B	¾", 1", 1½", 2"
	860	¾", 1", 1½", 2", 2½, 3", 4", 6", 8"
	880	2½, 3", 4", 6", 8", 10"
	880-V	2½, 3", 4", 6", 8", 10"
Flomatic	RPZ	¾", 1", 1½", 2", 2½, 3"
	RPZII&RPZ-IIE	½", ¾"
	RPZE	¾", 1", 1½", 2"
Watts	909	2½, 3", 4", 6", 8", 10"
	909QT	¾", 1", 1¼", 1½", 2"
	009	2½, 3", 4", 6"
	009QT	¼", ⅜", ½", ¾", 1", 1¼", 1½", 2"
	009M1&M2QT	¾", 1", 1¼", 1½", 2"
	009M3QT	¾"
	990	4", 6", 8"
	992	4", 6", 8", 10"
	994	¾", 1", 1½", 2", 2½, 3", 4", 6", 8", 10"
	995	¾", 1", 1¼", 1½"
	957	2½, 3", 4", 6", 8", 10"
	957N	2½, 3", 4", 6", 8", 10"
	967	2½, 3", 4", 6", 8"
Wilkins	375	2½, 3", 4", 6"
	475	2½, 3", 4", 6"
	475G, V, & VG	2½, 3", 4", 6"
	575	¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"
	975	¾", 1", 1¼", 1½", 2", 2½, 3", 4", 6", 8", 10"
	975A	¾", 1", 1¼", 1½", 2"
	975MS	2½, 3", 4", 6", 8", 10"
	975XL	¼", ⅜", ½", ¾", 1", 1¼", 1½", 2"
	975XLMS	¾", 1", 1¼", 1½", 2"
	975XLU	¾", 1", 1½", 2"

SCDHEC

LIST OF APPROVED BACKFLOW PREVENTION DEVICES

PRESSURE VACUUM BREAKERS

PVB's are approved for use when protecting the potable water system from backsiphonage only when a health hazard or non-health hazard is involved. The term "health hazard" shall mean an actual or potential threat of contamination or pollution of a physical or toxic nature to the potable water system or the consumer's potable water system to such a degree of intensity that there would be a danger to health. It is very important to understand that the PVB is **not** designed for backpressure. Also, the PVB must be installed 12" above any downstream plumbing.

COMPANY	MODEL	SIZE
Ames	A200	½", ¾", 1", 2"
Buckner	24199 thru 24204	½", ¾", 1", 1¼", 1½", 2"
	24199/25 thru 24204/25	½", ¾", 1", 1¼", 1½", 2"
Conbraco	40-503-02 thru 40-508-02	½", ¾", 1", 1¼", 1½", 2"
Febco	765	½", ¾", 1", 1¼", 1½", 2"
	745	¾", 1"
Flomatic	PVB	¾", 1"
Rain Bird	PVB-075-R thru 200-R	¾", 1", 1¼", 1½", 2"
Watts	800QT	¾", 1", 1¼", 1½", 2"
	800MQT	½", ¾"
	800CMQT	½", ¾"
	800M2QT	½", ¾", 1", 1¼", 1½", 2"
	800M3QT	½", ¾"
	800M4FR	½", ¾", 1", 1¼", 1½", 2"
	800M4QT	½", ¾", 1", 1¼", 1½", 2"
Wilkins	720A	½", ¾", 1", 1¼", 1½", 2"
	420	½", ¾", 1"

BACKFLOW EQUIPMENT REPRESENTATIVES

Conbraco
Mr. Larry Castleberry
Pro Marketing, Inc
110 Corporate Dr / Suite L
Spartanburg SC 29303
864-578-4334

Febco
Mr. M. C. Sorrell or Mr. Bob Buddo
SPC Marketing
P.O. Box 675
Monroe, NC 28111
704-283-8554

IMSCO
Mr. Rick Wade or Mr. Donnie Johnson
3540 Rutherford Rd
Taylors SC 29687
864-268-2891
800-476-2212

Watts & Ames
Mr. Joel Golmont
Smith & Stevenson
P. O. Box 240009
Charlotte, NC 28224
800-225-9895

BAVCO
Mr. Jim Purzycki or Mr. Pat Ahearn
20435 South Susana Rd
Long Beach, CA 90810
Pat Ahearn #: 704-282-4102
Jim Purzycki #: 800-458-3492

Wilkins
Mr. Craig Birchfield
Quality Marketing
3500-L Woodpark Blvd
Charlotte, NC 28206
704-599-9407

Cla-Val
Mr. Will Hodges
Cla-Val Company
265 W. Highway 54 / Suite 110PMB
Durham, NC 27713
919-489-6721

Flomatic
Mr. John Amon or Mr. Jim Mullins
Preferred Sources
930 Culp Road
Pineville NC 28134
704-504-3111

If you should have any questions concerning this list or need any assistance concerning backflow prevention or cross connection control, please call or write:

Mr. John Watkins (803) 898-3567
Cross Connection Control Program Coordinator
Bureau of Water
SCDHEC
2600 Bull Street
Columbia, SC 29201

Cross Connection and Backflow FAQ

QUESTION: What is a Cross Connection?

ANSWER: A cross connection is any temporary or permanent connection between a public water system or consumer's potable "drinking" water and any source or system containing non-potable water or other substances. Example: Piping between a public potable water system and an auxiliary water system (such as a well, cooling system, or irrigation system).

QUESTION: What is a Backflow Preventer?

ANSWER: A Backflow Preventer is a device installed between a potable water supply and any non-potable source or system. The approved methods of backflow prevention for our area are the Reduced-Pressure Principle Assembly "RPPA" (testable device) for high hazard applications. The Double Check Assembly "DCVA" (testable device) or the Residential Dual Check "RDC" (non-testable device) are for low hazard applications.

QUESTION: What is Backflow?

ANSWER: Backflow is the undersireable reversal of flow of non-potable water or other substances through a cross connection and into the customer's potable water or the public water system.

There are two types of backflow (1) Backpressure (2) Backsiphonage

1. Backpressure is caused by a downstream pressure that is greater than the upstream supply pressure in a public water system or a reduction in the potable water supply pressure and/or a combination of both. Increases in downstream pressure can be created by pumps, temperature increases in boilers, etc.

2. Backsiphonage is caused by a negative pressure (ie, a vacuum or partial vacuum) in a public water system. Backsiphonage can occur when there is a stoppage of water supply due to nearby fire fighting, or a break in the water main, etc.

QUESTION: Why do backflow preventers have to be tested or replaced periodically?

ANSWER: The South Carolina Department of Health and Environmental Control (SCDHEC) enacted The State Primary Drinking Water Regulations which require periodic testing of testable devices and replacement of non-testable devices. Mechanical backflow preventers have internal seals, seats, springs, and other moving parts that are subject to wear and failure. The only way to ensure that the device is operating properly is to have a SCDHEC certified backflow inspector test the device.

For more information you can go to the SCDHEC website : WWW.SCDHEC.ORG