

Significant Building Code Changes Affecting South Carolina

The International Code Council (ICC) made significant modifications and additions to the Plumbing Code in 2000. Additionally, Governor David Beasley signed into law in June 1997, a bill requiring every town, city and municipality in South Carolina to adopt the International Building Code. One of the several portions is the **INTERNATIONAL PLUMBING CODE**.

The 1997 and 2000 Editions make a **MAJOR** change in the requirements of an acceptable Backflow Prevention Assembly for residential lawn sprinkler irrigation. Previously, any assembly from a dual check valve to an Air-Gap was recognized by the Plumbing Code. However, since the early 1970's, CPW has required, as a minimum, **A TESTABLE DCVA FOR LAWN SPRINKLER IRRIGATION SYSTEMS**.

The 1997 and 2000 Editions now require either a Reduced Pressure Principle Assembly (RP), a Pressure Vacuum Breaker (PVB), or an Atmospheric Vacuum Breaker (AVB). Since the AVB cannot be tested and is not suitable for containment protection, CPW will not recognize this device for containment protection. Therefore, the only alternatives in CPW's service area are the **RP** or the **PVB** for **RESIDENTIAL OR COMMERCIAL IRRIGATION SYSTEMS**.

Beginning January 1st, 1998, all **NEW LAWN IRRIGATION SYSTEMS** were required to install and maintain an approved RP or PVB. A similar assembly to the PVB is a Spill-Proof Vacuum Breaker (SVB). **DO NOT USE THE SVB IN LIEU OF THE PVB**.

When making the decision as to which assembly is best suited for a particular application, consider the following information:

1. Both assemblies must be installed above ground.
2. Both assemblies are suitable for a health hazard.
3. The RP causes a pressure loss of about 12 PSI.
4. The PVB causes a pressure loss of about 4 PSI.
5. The RP weighs more than twice as much and is normally more expensive than the PVB.
6. The PVB **MAY NOT** be used for any application that is subjected to **BACKPRESSURE**.
7. The PVB **MUST BE INSTALLED 12" ABOVE THE HIGHEST DOWNSTREAM PIPING**.
8. The RP requires five (5) separate test procedures to bring it into compliance.
9. The PVB requires two (2) separate test procedures to bring it into compliance.

With these facts in mind, the decision on which valve best suits most customer's irrigation needs is somewhat conclusive. Under most circumstances, the PVB is probably better suited than the RP. Please remember that a PVB cannot be used with any system using a booster pump, or that is a direct cross-connection. The PVB is approved **ONLY** for indirect back-siphonage under continuous or non-continuous use. PVBs may not be used when the irrigation system utilizes an aspirator to introduce fertilizer, herbicides, pesticides, or other chemicals into the irrigation system. CPW will make the final decision as to which type of cross-connections can be protected with a PVB. For that matter, the PVB should be used only for residential irrigation systems since they are not usually subjected to backpressure.

Questions are bound to be asked concerning the disposition of hundreds of DCVAs on existing lawn irrigation systems. The best solution to those questions is to simply "Grandfather" all existing DCVAs on irrigation systems. As long as the DCVA can be repaired and maintained **(including removal from service and "on the**

hill repairs”), it can remain in place as the containment Backflow Prevention Assembly. When the DCVA can no longer be repaired and maintained, or if the customer authorizes its replacement, an approved PVB or RP will be required to replace the DCVA. Lawn sprinkler irrigation services also supplying a dock or marina will be required to install and maintain an approved RP.

Lawn Sprinkler Irrigation **METERS** which supply above-ground hose-bibbs only, and are not tied in to an in-ground irrigation sprinkler system or soaker hoses, **DO NOT HAVE TO INSTALL A PVB OR RP**. However, the customer is required to sign an "Affidavit" attesting that no in-ground system will be used. Additionally, they must conform to the International Plumbing Code and install Hose-Bibb Vacuum Breakers on every hose-bibb. **THIS HAS BEEN A PLUMBING CODE REQUIREMENT FOR ALL HOSE-BIBBS, YARD HYDRANTS, SILLCOCKS, AND OTHER OPENINGS WITH A HOSE CONNECTION SINCE 1963.**

ICC International Plumbing Code 2000 Edition (Jan. 00)

Significant Modifications/Additions to the International Plumbing Code Which Impacts Backflow Prevention and Cross-Connection Control Practices and Applications for All Practitioners

102.2	Existing Installations	605.1	Water Compatibility
108.7	Unsafe Plumbing	607.3	Thermal Expansion
405.1	Water Supply Protection	608.1	Protection of Potable Water-Supply/General
414.1	Water Connections	608.2	Plumbing Fixtures
422.3	Protection	608.3	Devices, Appurtenances
423.1	Specialty Plumbing Fixtures	608.3.1	Special Equipment
504.5	Relief valve	608.6	Cross-Connection Control
504.7	Relief Valve Waste	608.6.1	PrivateWaterSupplies (Wells)
601.2	Solar Energy Utilization	608.13	List of Assemblies-Containment and Isolation
604.9	Water Hammer	608.15.4.2	Hose Connections

608.16.5 Connections To Lawn Irrigation Systems

"THE POTABLE WATER SUPPLY TO LAWN IRRIGATIONS SYSTEMS SHALL BE PROTECTED AGAINST BACKFLOW BY AN ATMOSPHERIC-TYPE VACUUM BREAKER, A PRESSURE-TYPE VACUUM BREAKER OR A REDUCED-PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY. A VALVE SHALL NOT BE INSTALLED DOWNSTREAM FROM AN ATMOSPHERIC-TYPE VACUUM BREAKER. WHERE CHEMICALS ARE INTRODUCED INTO THE SYSTEM, THE POTABLE WATER SUPPLY SHALL BE PROTECTED AGAINST BACKFLOW BY A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY."