

## **Backflow Prevention and Fire Protection**

In most cases, the potable water supply will need to be protected by some type of backflow prevention device when a fire protection system is connected to it. This protection of the potable water supply is achieved through proper backflow prevention. The type and style of backflow protection that would be necessary for a given fire protection system varies with the specifics of the fire protection system, the water supply, and the local conditions and requirements, including the local water authority. Often, the use of alarm check valves, single check valves, and detector check valves are considered acceptable backflow devices, when in reality, they are not an approved means of backflow prevention. The responsible authority may consider many variations of backflow prevention. For instance, more stringent backflow prevention in the form of a reduced pressure type backflow preventer may be considered when an antifreeze or foam water sprinkler system is present.

There are six classifications for backflow prevention or cross connection control of fire protection systems as defined by the American Water Works Association (AWWA). These classifications are based on the water source and arrangement of supplies. Each classification or scenario offers a different type of backflow prevention, whether it is a single check valve, a double check valve with a detector check or a reduced pressure backflow assembly. Additional consideration to backflow prevention and arrangement must be given when the use of a jockey pump or fire pump is part of the fire protection system.

In determining proper backflow prevention, a careful and thorough review of all conditions including water source and arrangement, the complete fire protection system (including the use of foam, combination water and chemical hood suppression system, antifreeze systems, etc.), as well as consulting with the responsible authority are all necessary before a determination can be made on the proper backflow prevention for a given fire protection system.

For additional information on backflow prevention as it relates to fire protection please see:

Recommended Practice for Backflow Prevention and Cross-Connection Control Second Edition.  
Document: AWWA M14 - Section 6.3, 01-01-90 as the document referenced in this article.