

City of Henderson Fire Safety Engineering Informational Bulletin

Issue 091

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February 17, 2009

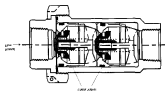
RESIDENTIAL BACKFLOW PREVENTION IN ACCORDANCE WITH NAC AND 2006 UPC

Utility Services Regulatory Programs is required to enforce the cross-connection and backflow requirements detailed in NAC 445A.67215 and NAC 445A.6724 (see **Attachment A**). All backflow devices or assemblies installed in a potable water supply system must be installed, tested, and maintained as required by the 2006 edition of the Uniform Plumbing Code Sections 603.1, 603.3.4, 603.4.16, and 603.4.16.5 (see **Attachment B**).

These devices or assemblies must be approved by the COH Utility Services Department (267-2650). These regulations shall apply to both commercial and residential customers.



Residential fire sprinkler systems which require the installation of a backflow prevention device or assembly shall be designed with the backflow at curbside of the home so that it can be easily accessed for annual maintenance and testing purposes. Installation of any backflow device or assembly inside a home shall require prior approval from the



fire official. Code required access and clearance shall also be provided for necessary testing, maintenance, and repair.

The Fire Safety Division strongly recommends that all residential fire sprinkler systems (in homes less than 10,000 sq.ft.) be designed using the multi-purpose design criteria (i.e. - looped piping configuration with a toilet connection at the master bathroom). This eliminates the need for these backflow prevention devices or assemblies.



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Uniform Plumbing Code 2006

Chapter 6 – Water Supply and Distribution

603.1 Approval of Devices or Assemblies.

Before any device or assembly is installed for the prevention of backflow, it shall have first been approved by the Authority Having Jurisdiction. Devices or assemblies shall be tested for conformity with recognized standards or other standards acceptable to the Authority Having Jurisdiction that are consistent with the intent of this code.

All devices or assemblies installed in a potable water supply system for protection against backflow shall be maintained in good working condition by the person or persons having control of such devices or assemblies. Such devices or assemblies shall be tested at the time of installation, repair, or relocation and at least on an annual schedule thereafter, or more often when required by the Authority Having Jurisdiction. If found to be defective or inoperative, the device or assembly shall be repaired or replaced. No device or assembly shall be removed from use or relocated or other device or assembly substituted, without the approval of the Authority Having Jurisdiction. Testing shall be performed by a certified backflow assembly tester.

603.3.4

Access and clearance shall be provided for the required testing, maintenance, and repair. Access and clearance shall require a minimum of one (1) foot (305 mm) between the lowest portions of the assembly and grade, floor, or platform. Installations elevated more than five (5) feet (1524 mm) above the floor or grade shall be provided with a permanent platform capable of supporting a tester or maintenance person.

603.4.16 Protection from Fire Systems.

603.4.16.1

Except as provided under Sections 603.4.16.2 and 603.4.16.3, potable water supplies to fire protection systems that are normally under pressure, including but not limited to standpipes and automatic sprinkler systems, except in one- or two-family residential sprinkler systems, piped in materials approved for potable water distribution systems shall be protected from back-pressure and back-siphonage by one of the following testable devices:

1. Double check valve assembly
2. Double check detector assembly
3. Reduced pressure backflow preventer
4. Reduced pressure detector assembly

Potable water supplies to fire protection systems that are not normally under pressure shall be protected from backflow and shall meet the requirements of the appropriate standards referenced in Table 14-1.

603.4.16.5

Residential Sprinkler Systems. When residential sprinkler systems are installed using the potable water system, they shall be installed in accordance with the standards listed in Table 14-1.

NAC MAKES NO DISTINCTION FROM PRIVATE OR COMMERCIAL

NAC 445A.67215 Cross-connections and backflow: Service connection to fire sprinkler system.

1. A supplier of water shall ensure that:

- (a) An appropriate assembly for the prevention of backflow is installed at each service connection between the public water system and a fire sprinkler system; and
- (b) The assembly is:
 - (1) Tested upon installation; and
 - (2) Maintained and tested, and the results of those tests logged, annually.

The testing required by this subsection must be conducted by a certified backflow prevention assembly tester.

2. An assembly for the prevention of backflow installed on a service connection between a public water system and a fire sprinkler system must:

- (a) Be of such a type and installed in such a manner that the assembly:
 - (1) Protects the public water system; and
 - (2) Does not interfere with the capability of the fire sprinkler system, as engineered, to protect the safety of persons in the public or private facility in which the fire sprinkler system is located; and
- (b) Prevent any pollution or contamination of drinking water, by any nonpotable water contained in the fire sprinkler system, which may be caused by any backpressure or backsiphonage that may occur during normal or abnormal operation of the fire sprinkler system or the public water system.

3. The supplier of water shall determine the type of assembly required on a particular service connection between the public water system and a fire sprinkler system based upon the degree of risk posed by the fire sprinkler system to the supply of potable water, considering the chemical and biological contents of the fire sprinkler system, the materials used to construct the fire sprinkler system and the possibility that backflow will occur.

4. Any reduced pressure principle assembly or reduced pressure detector assembly used on a service connection between a public water system and a fire sprinkler system must not have any holes drilled in the check valve clappers.

(Added to NAC by Bd. of Health, eff. 2-20-97)

NAC 445A.6724 Cross-connections and backflow: Installation of double check valve assembly.

Except as otherwise authorized by the health authority, if a double check valve assembly is installed on a service connection:

5. The double check valve assembly may be installed indoors if:

- (a) The installation complies with subsections 1 to 4, inclusive; and
- (b) The double check valve assembly has a clearance of:
 - (1) At least 12 inches on top;
 - (2) At least 24 inches on the side with test cocks; and
 - (3) At least 12 inches on the other sides.