

Backflow Preventers: Installing and Servicing for Safety

By Mark Conroy

Backflow is water flowing in a piping system in the wrong direction. That is a problem, since contaminants and pollutants can enter drinking water piping and make people sick. To keep this from happening, the codes require backflow preventers to be installed. Many sprinkler fitters and fire equipment technicians are cross-trained to install and maintain these mechanical devices. Here is some background to introduce you to this field that requires a few days of classroom and hands-on training.

Most towns have a public water system. The water is used for drinking and bathing. But there are also cross-connections for building fire sprinklers, irrigation, and other uses. Since a pressure difference could allow backflow and contamination, backflow preventers are required to be installed. When installed correctly and annually tested and serviced, the safety of the local drinking water is ensured.

Installation Requirements

The 2018 International Plumbing Code (IPC) and the 2018 Uniform Plumbing Code (UPC) have requirements to install backflow preventers. These model codes are adopted as state or local plumbing codes. The codes have specific details for the type of backflow preventers that are required. Those codes also have the installation requirements for fire protection. Although NFPA 13, Standard for the Installations of Sprinkler Systems does not have a specific requirement to install backflow preventers, it does have a requirement to install a means to perform the annual forward flow test. Check locally or contact your local building and planning department to find out which codes apply in your area.

Testing and Internal Inspections

Backflow prevention assemblies are mechanical devices that get tested when they are initially installed and annually thereafter. Section 312.10 of the IPC and section 603.2 of the UPC address the inspection and testing of backflow prevention assemblies, including annual inspections and annual testing. Backflow preventers in fire sprinkler systems have tendency to fail closed because they are not exercised for long periods of time. That's why NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems requires an annual forward flow test (13.7.2.1). That also ensures there is enough water in a fire condition. Additionally, 13.7.1.3 requires them to be inspected internally every 5 years so they operate correctly, move freely, and are in good condition. During inspection, certain parts are routinely replaced and other parts are identified for replacement.

Certification and Licensing

Most states require technicians to have a license to inspect, test, and maintain this equipment. Some states require a licensed plumber with a special cross-connection certification to do the work while others states only licensed sprinkler fitters can work on the backflow preventers in fire sprinkler systems. To get the license, a certification is most often required and maybe experience. Here are examples of certification programs, but check locally for the ones that are acceptable to the local AHJ:

- **American Society of Sanitary Engineers**, nationally recognized credential. Schools nationally.
- **American Backflow Prevention Association**, nationally recognized credential.
- **New England Water Works Association** (also for states that don't have programs).

Certification is usually only a few days of classroom hands-on and training plus passing the certification examination and maybe some experience. Many of the schools offer training over the weekend so you can get a certification without missing a regular workday or a paycheck. Check it out and work toward career advancement.

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