A Guide to Water-Based Fire Protection System Requirements

Communication is the key to understanding and managing fire and life safety systems.

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YOU'VE BEEN PUSHED, PULLED and prodded from every direction regarding the fire protection and life safety systems in your facility, and everyone seems to have a hand out or is reaching into your budget. So, what's really required? And who can you trust to do it right?

First and foremost, you should be talking to your local fire department and your insurance broker or underwriter since these are the people you'll be depending on when you have a fire or loss.

As to what's required, the answer depends on the types of fire protection systems you have within the facility, which may include fire sprinklers, fire alarms, fire extinguishers, kitchen hood systems, fire pumps and more in some cases. There are multiple National Fire Protection Association (NFPA) standards that dictate requirements for inspections and testing, depending upon the system. But all water-based systems (fire sprinklers, fire pumps, etc.) are governed by the NFPA 25 standard. This a reasonably easy document to read and understand.

NFPA 25 details the owner's responsibilities in Chapter 4, establishing a few minimum requirements as follows:

- The **responsibility** for maintaining water-based fire protection systems shall be that of the **property owner or a designated representative** (tenant or a management company) through a lease or agreement.
- The property owner is responsible to maintain a minimum of **40 degrees F** in areas where water-filled piping is installed to protect it from freezing.
- The property owner must provide **accessibility** to all system components for inspection and testing.
- The property owner must **correct deficiencies or impairments** found during inspections.
- The property owner may not make **changes in the building use**, products stored or the storage methods (such as adding pallet racks or changing to plastic pallets) without an evaluation of the fire sprinkler system to ensure it is capable of protecting the new use or materials. *It should be noted this evaluation is not a part of the normal system inspection and testing required by NFPA 25.*
- **Maintain records** of all inspections, testing and maintenance performed and who performed them.
- Provide **signage** on control valves identifying the area served by the system and indicating the location of auxiliary drains, low point drains and any antifreeze systems or heat trace tape installed. This sign is a retrofit requirement for all sprinkler systems.

Perhaps the biggest headache for many retailers comes in the form of frozen pipes in areas where dry pipe systems are installed for freeze protection, such as vestibules, canopies or loading docks. Dry pipe systems require additional maintenance, especially just prior to and during periods of cold weather when low point drains or drum drip drains should be drained of any accumulation of condensed water. This one small measure can save thousands of dollars in system repairs and damaged products and is very easy to do.

The inspections themselves are relatively basic and depend on the equipment installed. Fire sprinklers and the associated pipe, fittings, hangers and earthquake braces are required to be visually inspected from floor level once a year. In many states, the inspector is required to be licensed or certified in some way and is looking for obvious problems, such as visible leakage, corrosion, physical damage, loading or painting of the sprinklers.

Additional sprinkler system testing includes running water from the main drain and inspector's test connections to verify the water supply is normal and water flow alarms and valve tamper switches are properly reporting to your central station alarm service provider.

Fire pump systems, fire hydrants and similar systems are also required to be inspected and tested on an annual basis and require the inspector to discharge some water during the test.

A word of caution: Make sure to get a second opinion when the cost of recommended repairs seems excessive or when the same inspector finds a new list of problems with each passing year. Remember, communication is the key to understanding and managing all of your mechanical systems – including fire and life safety systems.

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