

LOSS CONTROL TOPIC

SPRINKLER SYSTEMS

Fire suppression sprinkler systems have been in operation in the United States since 1872 and are still the most effective way to extinguish fires in enclosed spaces. There are two basic types, wet or dry. Dry systems are used primarily in unheated spaces and rely on air pressure to keep the water supply contained. Wet sprinkler systems are fully charged with water. Both systems are activated when heat from a fire causes the individual sprinkler heads to open.



Sprinkler head

Aside from the obvious effect that water has on a fire, sprinkler systems also suppress smoke by flushing large smoke particles from the air.

The effectiveness of sprinkler systems can be compromised by:

- Improperly installed systems
- Failure to properly maintain and test systems
- Extension of systems beyond their capacity to deliver adequate water to a fire
- Inadequate water pressure from the local municipality

Installation/Modification

This should be accomplished by a licensed fire protection systems contractor following guidelines set forth in National Fire Protection Association (NFPA) reference guide, section 13. The contractor should be certified to install fire

suppression sprinkler systems by your state fire marshal. Look for membership in a national association such as *Fire Protection Contractors* or *The American Fire Sprinkler Association*. The system should be designed by a qualified engineer and any modifications approved by same. A frequent cause of inadequate sprinkler system performance occurs when an existing system is extended due to new construction without taking into account the resulting depletion of water pressure caused by the new higher demand. An historical log is available for recording any changes.

Inspection/Maintenance

In order to insure that a fire suppression sprinkler system will properly perform its function, you should have a regular inspection and maintenance program in place. The Federal and state requirements for the inspection, maintenance and testing of water based fire protection systems can be found in the National Fire Protection Association (NFPA) reference guide, section 25.

Monthly and quarterly inspections can be performed by your own facilities personnel with an annual detailed inspection performed by a qualified contractor.

Monthly Inspections

- Are all valves in the normal/open position?



A sprinkler system pump and valves

- Are they properly sealed – no leaks?
- Are valves marked for location serviced?
- Are they locked or properly supervised?
- Are all gauges showing pressure maintained?

- Is the fire pump free of leaks?

Quarterly Inspections (In addition to the above)

- Is the system name plate secure and visible?
- Are all alarm devices undamaged?
- Are the fire department connections visible and accessible?

Outside fire department connections



- Are the caps secured and gaskets in good order?
- Are the ID tags in place?
- Are sprinkler heads visible and at least 18 inches above any objects?

Annual Inspections, performed by licensed contractor (In addition to the above)

- Visually inspect all sprinkler heads, pipes, hangers and fittings
- Check for extra supply of sprinkler heads for all temperature needs
- Test main drain

- Test water alarm
- Test all valves
- Do a flow test on the fire pump
- Test and calibrate gauges (every five years)
- Inspect check valves (every five years)

An Inspection Log is available for recording the above inspections.

Source Materials

National Fire Protection Association, www.NFPA.org

Fire Protection Contractors, www.fireprotectioncontractors.net

American Fire Sprinkler Association www.firesprinkler.org

These guidelines are intended to offer general suggestions for follow up and discussion and should not be considered a substitution for professional advice. You are strongly urged to seek the services of a professional fire protection contractor and engineer in these areas.

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