

Your fire sprinkler system passed its annual testing, **but will water flow to a fire** in an emergency?

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Water-based fire protection systems are vulnerable to internal corrosion and obstructions that can cause blockage, leaks, and damage to pipes, preventing proper flow of water to a fire. To address these issues, NFPA 25 requires an assessment of the internal condition of the piping.

Many building owners may not have a clear understanding, or even be aware of, this important requirement because sprinkler service providers and Authorities Having Jurisdiction (AHJs) are not educating them or enforcing it.

NFPA 25 Annex D – Seven Sources of Obstructions



- 1. Dry pipe systems are particularly susceptible to scale that flakes off into the pipes.
- 2. Gravel, sand, debris, and objects such as gloves and metal shavings enter pipes.
- 3. Stones, sticks, mud, etc. enter the system when water intake screens are not properly installed.
- 4. Larvae and small clams enter and attach to piping and then feed on bacteria and algae.
- 5. Hard water with high concentrations of calcium and magnesium form deposits.
- 6. Chemical and electrochemical reactions cause metal to deteriorate.
- 7. Microorganisms typically produce colonies that continue to grow and compromise throughput.

*Microbiologically Influenced Corrosion (MIC)



NFPA 25, Chapter 14: Internal Piping Condition and Obstruction Investigation

- An assessment of the internal condition of piping shall be conducted at a minimum of every five years.
- The purpose is to inspect for the presence of foreign organic or inorganic material.

4.1.1 The property owner or designated representative shall be responsible for properly maintaining a water-based fire protection system.

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Peace of mind: Knowing your fire sprinkler system is ready to protect your people, business, and assets.

Failing to conduct timely internal piping condition and obstruction investigations or take corrective measures creates risks:

- 1. Life safety Loss of life and/or personal injury
- 2. Liability Legal liability, judgments, and negative impact to reputation
- 3. Repairs Costly sprinkler system and building damage
- 4. **Compliance** Noncompliance fines, fees, and expenses that the insurance provider may not cover

Siemens Internal Piping Condition and Obstruction Investigation Service

Siemens service adheres to NFPA 25 requirements. Below are the steps our technicians use in discovering and resolving potential obstruction issues:

- **Testing** During annual sprinkler testing, if any 'triggers' listed in NFPA 25, 14.3.1 are present, a required assessment of the internal piping condition is triggered.
- **Assessment** At a minimum of every five years, an assessment of the sprinkler system is required, even if triggers were not detected during annual testing. Assessment procedures typically involve opening and examining the following four points on the system: system valve, riser, cross main, and branch line.
- **Investigation** If certain conditions are present during the assessment, then an investigation is required.
- **Mitigation** Based on the investigation findings, Siemens develops a plan that outlines recommendations for mitigation. Mitigation may include system flushing, section replacement, system redesign, or other solutions specific to the situation.
- **Prevention** Recommendations for preventing or minimizing future issues are based on the specific findings. Many issues can be avoided by implementing an effective Inspection, Testing, and Maintenance (ITM) program.

Additional 5-Year ITM requirements per NFPA 25

Inspect	Sprinklers in harsh environments	Test	Gauges
Inspect	Interior check valves	Test	Pressure reducing and relief valves
Inspect	Strainers, filters, and orifice	Test	Hose connection
Inspect	Alarm valves	Test	Hose racks
		Test	Standpipe flow / Hydrostatic

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Legal Manufacturer

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