

MIDWEST HEALTHCARE ENGINEERING CONFERENCE

Often Overlooked, Always Required

...

**Demystifying Specific Interval Fire
System Inspection Requirements**



Agenda

	Who We Are
	Sprinkler Head Testing
	3-Year & 5-Year Testing
	Fire Alarm Compatability

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Who We Are



**Kyle Cross – Director of Support
Services**
11+ Years in Healthcare Facilities
Services



Edwin Frieden – Vice President
15+ Years in Fire Protection Industry

The Fire and Life Safety Code

- NFPA 25: Inspections, testing and maintenance for water-based fire protection systems
- NFPA 72: Fire Alarm and Signaling Code

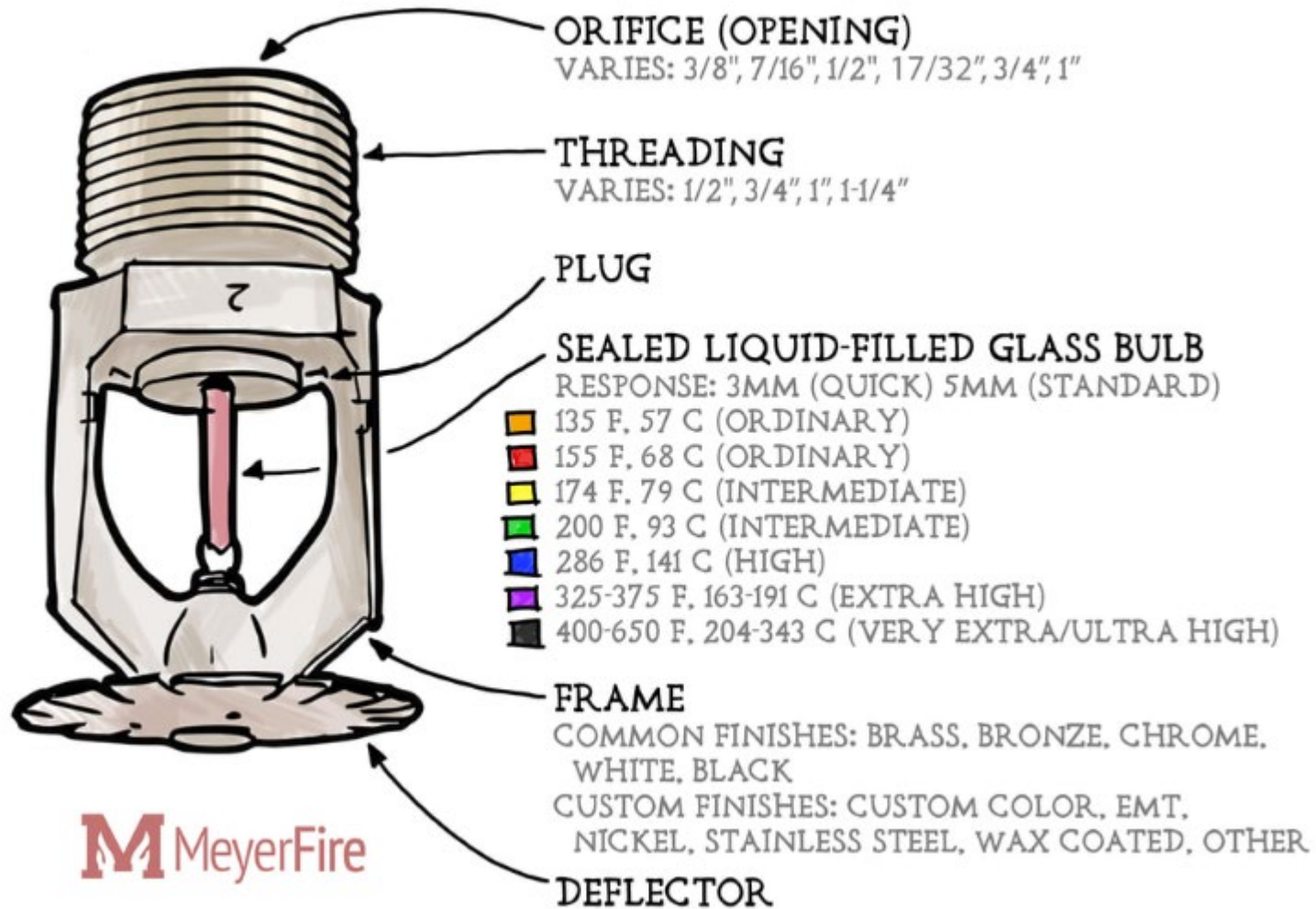


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SPRINKLER HEAD TESTING





Conventional



Upright



Pendent



Horizontal Sidewall



Vertical Sidewall



Recessed Pendent



Recessed Pendent



Concealed Horizontal Sidewall



Concealed Pendent



Sprinkler Head Nuances

Types of Sprinkler Heads

- Quick Response
 - 20y/10y
- Standard Response
 - 50y/10y
- Dry Barrel
 - 10y/10y
- Harsh Environment
 - 5y/5y



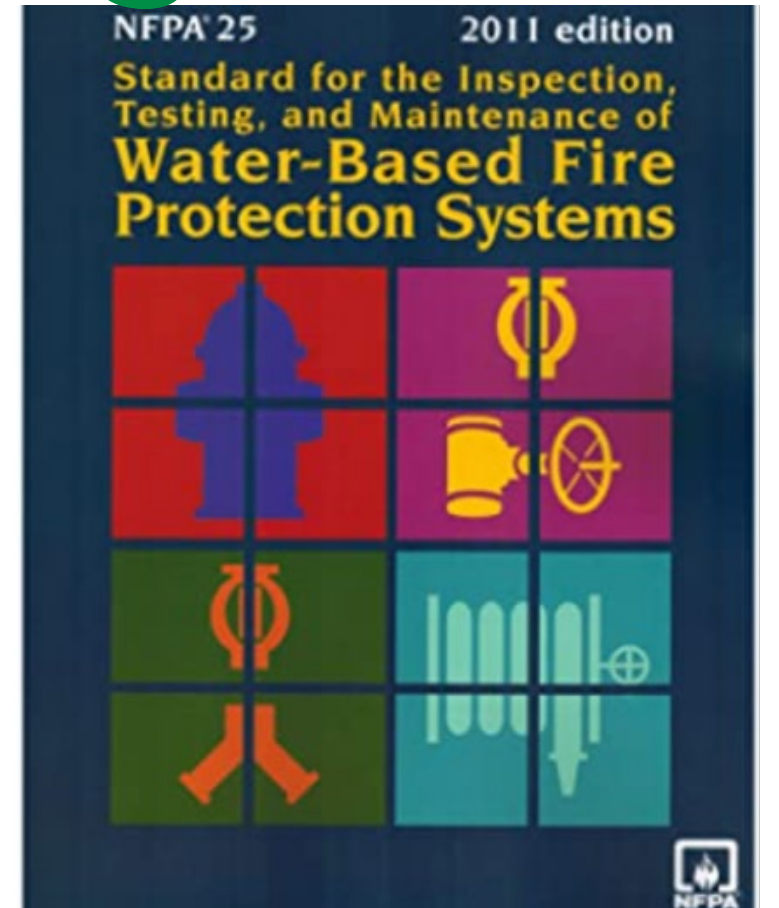
*Heads installed prior to 1920

*Heads in service for 75 years

What Is Head Testing?

Functional test to verify operation

- Activate at correct temperature
- Free of corrosion/mechanical damage
- Meet performance requirement
- Will it provide effective fire protection



How Is It Conducted?

- Select Sample Heads
 - *1% or minimum of 4
- Remove and Replace Sample Lost
 - *Randomly selected
- Send to Certified Lab
 - UL or FM
- Evaluate Functionality
- Review Results
 - Replace all heads?



Case Study

Greene County General Hospital

Sprinkler Head Inventory

- 900+/- Sprinkler Heads
- 6 Different Manufacturers
- 11 Different SIN #'s
- 8 Different Date Stamps (1973-2025)
- 73 Different “areas” in facility
- 94 Sprinkler Heads — No info

What does all that mean?

- Sprinkler Head Testing Requirements
 - 4 heads from each “type”
 - 21 samples required for testing
 - Average cost per sample (\$1,500)
 - Total Spend \$31,500



Case Study

- Building was fully sprinklered in 2011. The majority of head-testing at 20 years will take place at one time.
- In one year, an expenditure of 240% of annual alarm/sprinkler ITM budget will be required!

What if heads need to be replaced?



How Do I Manage This?

- How is this scaled for a larger facility?
- Know your inventory! KEEP IT UPDATED! **(slide 11)**
- Specify make/model/type/date installed in your facilities
- Plan for this in your 3-5 year budgets
- Partner with a vendor that helps



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3/5 YEAR INSPECTIONS



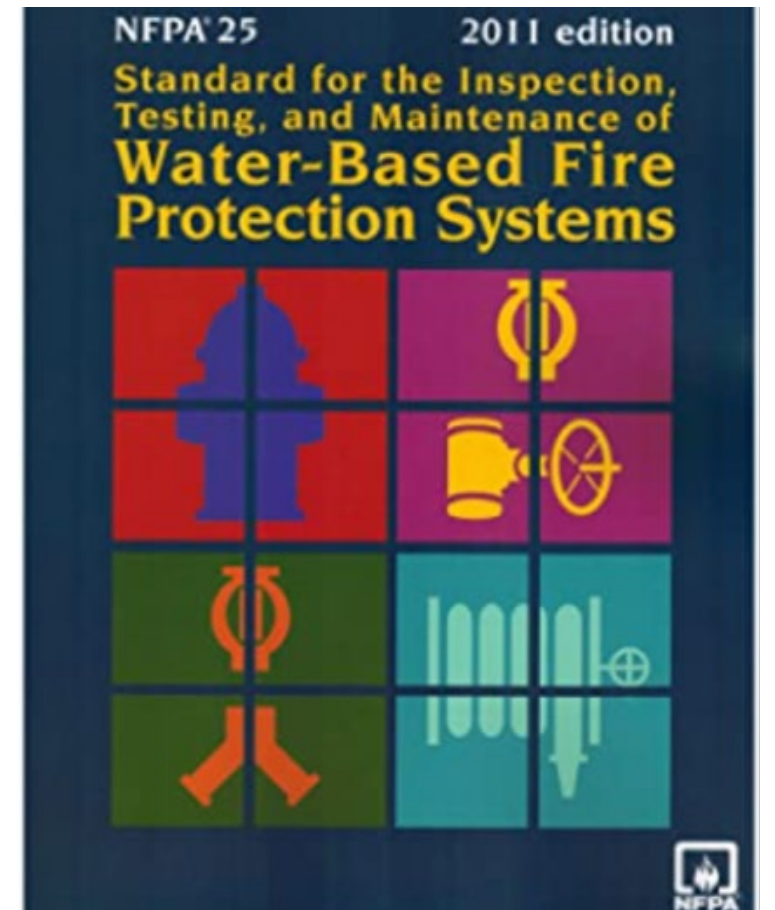
What Are 3/5 Year Inspections

3 Year Air Leak Test

- Dry & Pre-Action Sprinkler Systems
- Pipe Integrity Test, Leaking

5 Year Internal Inspection

- Wet, Dry & Pre-Action Sprinkler Systems
- Visual Inspection INSIDE the sprinkler system



Why Are 3/5 Year Inspections Required

3 Year Air Leak Test

- Verify integrity of piping system
- Fix leaks before it's too late (40psi for 2 hours, no more than 3psi lost)

5 Year Internal Inspection

- Looking for excessive corrosion
- Verify piping isn't blocked/clogged
- Replace Gauges
- Operate check valves



Case Study

Greene County General Hospital

- 2 Wet Systems
 - Completed in 2020 and August 2025
- No dry systems
- Total cost was 63% of annual alarm/sprinkler ITM budget.



How Do You Manage This?

- Know when the last inspection was completed, what were results?
- Which systems were actually inspected
 - Wet Systems – only half are required
 - Dry/Pre-Action – all systems required
- What happens if it fails?
 - Obstruction Investigation
 - Flushing Program
- What if my hospital is very large?
- Plan for in 3-5 year budgets.



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FIRE ALARM COMPATIBILITY



Fire Alarm System Components



Fire Alarm Devices



Initiating

- Smoke/Duct/Heat Detectors
- Pull Stations
- Waterflow Switches/Pressure Switches

Indicating

- Horn/Strobes
- Chimes

Proprietary vs Non-Proprietary

Proprietary

- Manufacturer Proprietary
- Distributor Proprietary

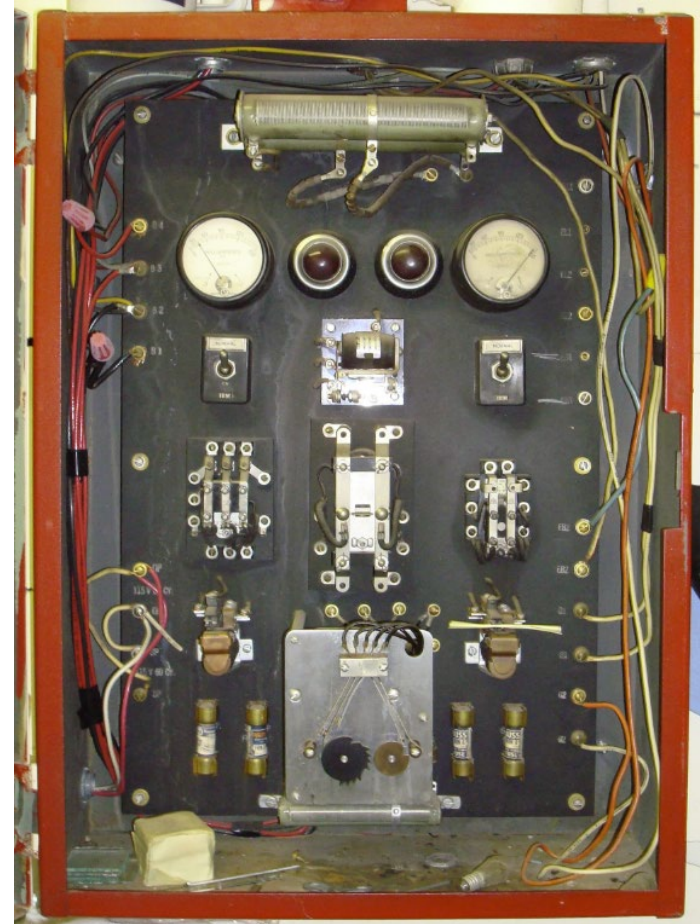
Non-Proprietary

- Good & Bad



When To Replace Fire Alarm Systems

- Component Availability
- Software Update Support
- Check Backward Compatibility
- Continuous Trouble Signals/Faulty Devices



Case Study

Greene County General Hospital

- Simplex 4100ES Fire Alarm System
- Installed 2013
- It **is** Backward Compatible
- Required To Use JCI For Programming Changes/Updates



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THANK YOU!



GIVE US A FOLLOW ON LINKEDIN!

