Anti-freeze sprinkler systems

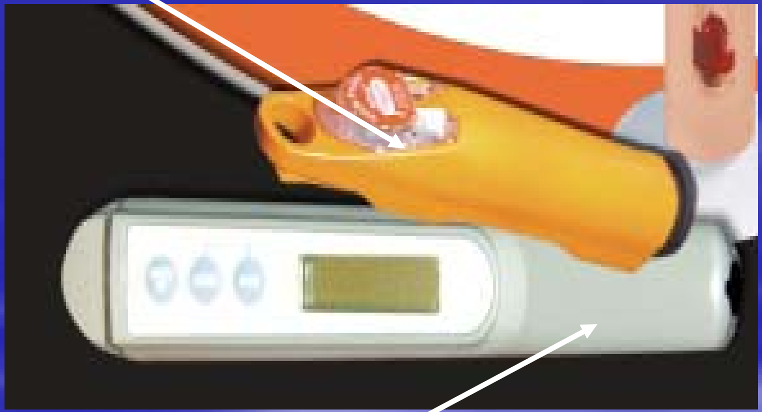
- The anti-freeze system must be protected to -20 degrees F by an approved solution.

- The installer must provide the testing equipment and associated charts needed to perform the test.

- The installer must know how to conduct the test and use the equipment.

Antifreeze
Testing equipment

Refractometer



Hydrometer

Digital Refractometer

Common failures

- Testing apparatus **not** at site.
- Conversion charts **not** at site.
- Installer **not aware** of how to conduct test.
- **Incorrect** mixture of antifreeze and water. (Incorrect freeze point)

Sprinkler Air Test (65)

- A test/inspection of the dry automatic sprinkler system at 40 P.S.I. air pressure for 24 hours.

Sprinkler Final (66)

- A inspection of the sprinkler system, including testing of all flow switches, tamper switches, and other connections to equipment that are required to be monitored.
- Ceiling systems must be **complete** and not breeched in any manner that is not approved.

- The connection to the central monitoring system must be **on line** and **in-service** to be approved.

- This inspection cannot be performed until the **all** of the applicable sprinkler inspections/tests have been approved.

- If there is a standpipe system associated with the automatic sprinkler system it must pass the standpipe flow test/inspection **prior** to approval of the sprinkler final.

Testing equipment

- Gauges used in performing acceptance tests on fire suppression systems witnessed by the Fire Marshal's Office must meet the following criteria:
  - The gauge shall be appropriate for the type of test; i.e., air gauge for an air pressure test, a water gauge for a hydrostatic test.
  - Air gauges shall have increment markings of two pounds or less. Water gauges must have increment marking of ten pounds or less.

Testing Equipment

- The gauge shall be capable of registering pressures above the minimum pressure required during the test. (0 PSI to 300 PSI)
- Gauges must be marked as accepted by UL and/or FM testing laboratories.

Standpipe system inspection/tests available

- Standpipe hydro (67)
- Standpipe flow (68)

Standpipe Hydro (67)

- A test/inspection of all standpipe system components, including hangers and other appurtenances.
- The hydrostatic test is done at 200 P.S.I. or 50 pounds over static pressure, which ever is greater, for a two (2) hour period.

Standpipe Flow (68)

- A test/inspection to assure that a sufficient quantity of water flow is available at the most hydraulically remote point of a standpipe system to meet the design requirements.

Standpipe Flow (68)

- Must be able to flow 250 GPM at the top most and remote standpipe hose connection.

Test Equipment

- The gauge shall be appropriate for the type of test i.e., air gauge for an air pressure test, a water gauge for a hydrostatic test.
- Air gauges shall have increment markings of two pounds or less. Water gauges must have increment marking of ten pounds or less.

Test Equipment

- The gauge shall be capable of registering pressures above the minimum pressure required during the test. (0 PSI to 300 PSI)
- The pressure registered during the actual test shall be at least the minimum required for the test and less than the maximum of the gauge register.

Testing Equipment

- The pitot tube and gauge must be capable of providing accurate readings to determine actual flow conditions.
- Gauges must be marked as accepted by UL and/or FM testing laboratories.

Hood System Test (70)

- A test/inspection of the hood fire suppression system, including the “dumping” of the extinguishment agent, or test medium, to assure proper operation, flow, fan, and if applicable alarm operation.

Common failure reasons

- **Not** installed per approved plan.
- Cooking line **not in compliance** with approved plan.
- **Improper** fan operation.
- **Failure** of fuel supply to shut down properly.
- **Incorrect** temperature for fusible links.
- **Failure** of actuator.

Stocking Inspection (148)

- An inspection to assure that fire protection systems and other fire prevention code/fire protection related items, affecting a building or space, are in place and at a state of completion to allow the storage or installation of interior furnishings, such as office furniture, goods for sale, or similar items to enable an occupant to stock or install such furnishings, goods, or similar materials.

- Approval of this inspection will result in a **recommendation** to the Building Official to permit stocking operations.

- Responsibility for final approval and issuance of the stocking permit lies with the Building Official.

- Training of personnel or start of business operations cannot start until an **approved preoccupancy inspection** (149) has been conducted.

Preoccupancy Inspection (149)

- An inspection to assure that a building or space is meets all applicable codes and ordinances for occupancy by persons for permanent occupancy and operation.

Question and answer time

- Thanks for coming to the seminar.
- Please complete the feedback sheet and leave it for us to review.