OFFICE OF UNIVERSITY BUILDING OFFICIAL
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Fire Sprinkler Inspection Guide

SYSTEM INSTALLATION

- Approved shop drawings to be kept on job site.
- Sprinklers match sprinkler identification number (SIN) listed on plans. Spare sprinklers to be provided on the premises (each type), as well as a sprinkler wrench in spare sprinkler cabinet.
- Sprinklers to be free of dirt, damage, and/or paint - any sprinklers that are damaged or painted over must be replaced.
- Hangers and end of line restraints per plans: Minimum 1 hanger per pipe section; hanger spacing per NFPA 13 arm-movers no longer than 24" w/o brace; wrap around hanger at end of line or threaded rod tight against pipe: end of line restraint if required.
- Inspector's test valve at end of line where required.
- FDC shall be installed no higher than 18" – 48" unless otherwise approved.
- FDC must be visible, accessible, couplings swivel, caps in place, ID signs in place, check valve not leaking.
- Standard spacing from the wall for upright and pendent sprinkler should be 4" Max space of heads = 15', unless otherwise specified.
- Standard spacing from the ceiling for side wall sprinkler should be 4-6" unless otherwise specified.
- Pressure water gauges should be provided on each side of the water supply when an alarm check valve is installed.
- Caution signs shall be attached to all valves controlling sprinklers. Control, drain, test connection valves shall also be identified.
- All exposed sprinkler system piping shall be protected against freezing. (40°F)
- System valves and gauges shall be accessible for operation, inspection, tests, and maintenance.
- Sprinklers shall be installed under fixed obstruction over 4 ft. in width such as ducts, decks, open grate flooring, cutting tables, and overhead doors.
- Hydraulic plates (calc plates) shall identify location of design area(s), discharge densities over design area(s), required flow & residual pressure demand at base of riser, occupancy or commodity classification & max permitted storage height, hose stream demand in addition to sprinkler demand.

SYSTEM OPERATIONAL TESTS

- Prior to the underground system being connected, perform a flushing of all underground piping including all lead-ins, connections hydrants, etc. With minimum flow rates required by NFPA 13.
- Hydrostatic test: All piping and attached accessories subjected to system working pressure shall be hydrostatically tested at 200 psi and shall maintain that pressure without loss for 2 hours.
  - Test pressure read from gauge located at the low elevation point of the system or portion being tested.
  - Record Initial Pressure. Return in 2 hours; determine if there is any gauge pressure loss or visual leakage and record final pressure.
  - Modifications affecting more than 20 sprinklers will require isolation and hydrostatic testing. (20 or fewer sprinklers shall not require hydrostatic testing in excess of system working pressure)
- Main drain test: Main drain must be opened until system pressure stabilizes. This will be tested and static and residual pressures will be recorded during final acceptance.
- Waterflow test: Verify that flowing water will alert the fire department and alarm company by opening the inspectors test valve at the end of the system or the alarm valve at the system riser.
- Backflow Prevention Assembly: Forward-flow testing of backflow preventer at calculated flow rate to verify proper operation.
- Dry Pipe/Double Interlock Pre-action System 24-hour Air Test: System is tested at 40 psi not to lose more than 1.5 psi over the 24-hour period. Modifications of existing sprinklers allowed to be tested for 2-hour duration with up to 3 psi loss.
- Dry Pipe Trip Test: A working test of dry pipe valve to determine time to trip valve and deliver water to inspector's test connection (most remote point on dry pipe system). Must deliver within 60 seconds unless equipped with quick-operating device or other exceptions.
- All test results to be recorded on NFPA 13 test certificate forms – *Contractor's Material and Test Certificate for Underground Piping* and *Contractor's Material and Certificate for Aboveground Piping*.