# 211000 Water-Based Fire Suppression Systems

**Sections Included In This Standard:**



## 1.1 GENERAL REQUIREMENTS

1. Concealed sprinklers are not permitted without specific approval from the UF Division of Environmental Health & Safety (EH&S).

2. EH&S discourages the use of non-water-based fire suppression/extinguishing systems. See section 212000.

3. All residential occupancies shall be provided with automatic fire sprinkler protection regardless of currently adopted code requirements.

4. See section 212000 regarding non-water-based fire suppression/extinguishing systems.

5. See Section 331000 for requirements relating to fire hydrants.

6. All drains for water based fire protection systems shall be piped to Sanitary drains only, not Storm.

## 1.2 FIRE PROTECTION PIPING

A. SPRINKLER PIPING

1. Wet screwed sprinkler piping shall be schedule 40 black pipe or as approved by NFPA and code. Schedule 10 shall be minimum allowable thickness for 2½" or larger black steel pipe with roll grooves. Schedule 10 pipe shall be manufactured in the United States.

2. Dry pipe sprinkler piping 2" and larger shall be Seamless schedule 40 galvanized with galvanized fittings.

3. Sprinkler drop nipples over 4 feet in length attached to an unsupported single armover shall require lateral support.

4. Stipulate dielectric unions where dissimilar metals meet.

## 1.3 DRY PIPE SPRINKLER SYSTEMS

A. Dry pipe sprinkler systems shall have drainage valve(s) installed at all low points of the system and piped to a safe discharge location on the exterior of the building.
   a. Location of the drainage valve(s) shall be clearly marked on the as-built drawings.

B. All New Dry sprinkler systems shall be pressurized with a Nitrogen system versus a compressed air system. Nitrogen shall be minimum 98% pure.

C. For system volumes larger than 100 gallons nitrogen shall be supplied by a nitrogen generator.

a. Generators shall be located in Mechanical rooms only

b. Acceptable Manufacturers: South-Tek Systems, Potter, Engineered Corrosion Solutions, General Air Products

D. Dry systems with volumes less than or equal to 100 gallons can be supplied with high-pressure nitrogen cylinders with pressure regulator or a nitrogen generator.

a. If cylinders are the system of choice they must meet the following criteria.

i. Two cylinders minimum on the system. One as Primary and one as back up.

1. Unless required, the University does not want an automatic switch over system.

ii. Cylinders shall be located on the at grade floor or on a floor that has an elevator landing only.

iii. Based on NFPA's allowable pressure loss from the air pressure leakage test (for an old or existing system), nitrogen cylinders shall be sized to provide a reliable supply for at least 4 months of expected maintenance use.

iv. Where installed in a closed space consider the ventilation conditions such that an oxygen deficient atmosphere is not created.

v. High Pressure cylinders shall be supplied by the Contracted supplier of specialty gasses to the University at the time of the project.

## 1.4 PRE-ACTION SYSTEMS

A. Pre-action sprinkler systems shall only be used where required or warranted for specific spaces or facilities and stipulated in the Facilities Program, Owner's Project Requirements, or similar planning document.

B. If used, provide UL-listed, packaged systems consisting of deluge valve, pressure-operated release valve, release control panel, and all required specialties and trim.

C. Detection: Consult with user; smoke detection is normally preferred. Smoke detectors must be UL-listed for use with the pre-action control panel and are not a part of the fire alarm system. These detectors must be shown on the Fire Protection drawings.

D. System Type: Unless otherwise indicated, provide double-interlocked, supervised, electric-operated pre-action systems.

E. FACP Integration: Report TROUBLE to FACP on low air pressure. Report ALARM to FACP on deluge valve trip (water flowing).

## 1.5 CONNECTIONS

A. Siamese (Fire Department) Connections: Siamese connections shall be installed in an easily accessible position.

B. Standpipe Connections: Standpipe connections shall have 2½" hose valves for use by the Fire Department only. Existing user type connections may remain.

C. Fire Pump Test Hydrants: See 213000.

~~D.~~ Connection Signage: All fire department connections shall be marked with an unobstructed sign mounted 4' to 6' high on buildings directly above the fire department connection. The sign shall have the lettering "FDC" on it. This lettering shall be a minimum of 6" tall and be white letters on a red background. The sign shall be high intensity prismatic reflective aluminum. ~~be the same as the standard sign used by the City of Gainesville (see Drawing 15300-A).~~

E. Fire Department Connections shall be protected with locking "Knox" caps. Caps will be provided and installed by UF Environmental Health & Safety (EH&S) Fire Equipment Services, with the cost billed to the project.

## 1.6 PRESSURE TESTING

All fire water systems shall be tested for two hours at 200 psi according to NFPA 13. Pressure test shall be inspected and approved by UF EH&S and Facilities Services Fire Safety Shop. All testing shall be performed to ASTM Standards.

END OF SECTION