

## VIII. FIRE PROTECTION SYSTEMS

### SYSTEM DESCRIPTIONS

#### Fire Service

##### *System Description*

An underground fire line will supply the sprinkler system in the Florida Polytechnic University Engineering Building.

##### *Design Criteria*

The design of the underground fire lines shall comply with NFPA 24.

Current water supply flow test data will be obtained from the City Water Department in order to determine the capacity of the water mains.

##### *Equipment and Material*

Piping for all underground lines will be cement lined ductile iron or, where approved by the Owner and local Authority Having Jurisdiction, Polyvinyl Chloride (PVC).

#### Wet Pipe Sprinkler System

##### *System Description*

The building will be protected throughout with hydraulically calculated sprinkler systems, which except for special protection needs, will be wet pipe systems. All areas of the building will be protected per NFPA 13, loading docks, stair towers, exterior canopies, and mechanical rooms.

##### *Design Criteria*

The sprinkler system for the building will be designed and installed in accordance with NFPA 13.

All systems will be hydraulically calculated with a computer calculation program using the Hazen-Williams method.

If there are no special Client standards or Client insurance carrier recommendations, the following sprinkler design densities shall apply:

Sprinkler Design Densities			
Hazard-Areas Designated as	Density-Minimum Sprinkler Flow	Remote Area	Hose Stream Allowance
Light Hazard	0.10 gpm per sq ft	1500 sq ft	100 gpm
Ordinary Hazard Group 1	0.15 gpm per sq ft	1500 sq ft	250 gpm
Ordinary Hazard Group 2, where stockpiles of combustibles do not exceed 12 ft.	0.20 gpm per sq ft	1500 sq ft	250 gpm
Extra Hazard Group 1, where the quantity and combustibility of contents is very high and the probability of rapidly developing fires with high rates of heat release are expected	0.30 gpm per sq ft	2500 sq ft	500 gpm
Extra Hazard Group 2, with moderate to substantial amounts of flammable or combustible liquids or where shielding of combustibles is extensive	0.40 gpm per sq ft	2500 sq ft	500 gpm

The pipe sizing for the systems will be as required to satisfy the hydraulic demand.

#### *Equipment and Material*

Piping 2" and smaller in size will be Schedule 40 black steel with threaded joints.

Piping larger than 2" will be Schedule 10 black steel with welded fittings or roll groove couplings or Schedule 40 black steel with welded fittings, threaded joints, or cut groove couplings.

All sprinklers in Light Hazard areas will be quick-response type.

The type of sprinkler installed in a particular area will be selected by the Engineer and the Project Architect. Generally, concealed sprinklers will be installed in areas of high visibility and quality of finishes. Recessed sprinklers will be installed in other areas having suspended ceilings. Pendant or upright sprinklers will be installed in areas without ceilings. Sidewall sprinklers will be provided only when other types cannot be utilized.

Areas subject to temperatures below 40°F will be protected by dry barrel sprinklers.

*Distribution*

The sprinkler system will be provided throughout the building in accordance with NFPA 13 and, when required by the Owner, with insurance carrier recommendations.

**END OF BOD**