

# SECTION 21 13 13

## WET-PIPE FIRE SPRINKLER SYSTEMS

### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. This scope of work is a **new fire suppression system for a new construction project** / a **modification to an existing fire suppression system within an existing building**. Scope of work includes:
1. Wet pipe fire sprinkler system(s)
  2. Dry pipe fire sprinkler system(s)
  3. Pre-Action fire sprinkler system(s)
  4. Deluge fire sprinkler system(s)
- B. Provide all labor, services, material and related items necessary to complete the fire protection work indicated on drawings and described in the specifications herein and in accordance with applicable codes listed below.

#### 1.2 RELATED WORK

- A. Applicable provisions of Division 0 and 1, including Firestopping and Painting.
- B. Section 21 30 13, Electric-Driven Fire Pumps
- C. Section 21 30 16, Diesel-Driven Fire Pumps
- D. Section 28 31 00, Fire Detection and Alarm

#### 1.3 DESIGN CRITERIA

- A. Applicable Codes, Standards, and Publications:
1. The building code as indicated in architectural plans and specifications.
  2. NFPA 13 – 2010 / 2013 / 2016 / 2019 / 2022 Edition
  3. NFPA 13R – 2010 / 2013 / 2016 / 2019 / 2022 Edition
  4. NFPA 14 – 2010 / 2013 / 2016 / 2019 / 2022 Edition
  5. NFPA 20 – 2010 / 2013 / 2016 / 2019 / 2022 Edition
  6. FM Global Data Sheets
  7. Owner Design and Installation Standards
  8. Underwriters Laboratories, Inc. (UL) Fire Protection Equipment Directory
  9. Factory Mutual Engineering Corporation (FM) Approval Guide
- B. Design Criteria:
1. Provide hydraulic calculations in accordance with NFPA 13.
  2. The minimum hydraulic safety factor required for calculations shall be **5 psi** / **10 psi** / **10%** below the available water supply curve.

**Commented [JM1]:** Editor's Notes:

-- GREEN and BLUE highlights are an either-or selection. Do not keep both.  
-- YELLOW highlights are additional options. Delete if not applicable.

**Commented [JM2]:** Editor's Note: Design criteria is the single most-important duty of the Professional Engineer in a fire sprinkler system specification. Careful attention and responsibility must be paid to the criteria. If criteria is to be listed in the specification, every type of space *must* be listed to clearly communicate the intent for all areas of a building. Provide no ambiguity to the intent of the hazard classification.

3. Design area reductions for quick response sprinklers shall be permitted where allowed in NFPA 13 / are not allowed.
4. Hazard classifications shall be as follows: / Refer to drawings for design criteria for this project.

Area	Hazard Classification
Break Rooms, Classrooms, Conference Rooms, Corridors, Lobby, Office, Restaurant Seating, Restroom Areas	Light Hazard
Electrical, Mechanical, Server Areas	Ordinary Hazard Group 1
Mercantile, Parking Miscellaneous Storage (12-ft or less) Areas	Ordinary Hazard Group 2
[any other areas not listed]	[hazard classification in NFPA 13 / insurance]

C. Water Supply Information

1. Base the water supply on the following flow test information:

Location:

Static Pressure:

Residual Pressure:

Flow at Residual Pressure:

Elevation of Static/Residual Hydrant:

Date and Time of Test:

2. Base the water supply on the following latest fire pump test information:

3. Refer to drawings for provided water supply information.

D. Zones

1. Refer to drawings for sprinkler system zoning.

E. Seismic Protection

1. Seismic protection is not required / required for the fire sprinkler system. Building Seismic Design Category is A / B / C / D / E / as indicated in structural drawings and specifications.

## 1.4 SUBMITTALS

A. Working Drawings

1. Submit detailed plans which includes all items listed NFPA 13 for working drawings. Drawings which do not include all items listed in NFPA 13 will be rejected.
2. Working drawings shall be signed by a NICET Level III or Level IV / signed by a NICET Level IV or stamped by a Registered Professional Engineer who is licensed in the field of Fire Protection.
3. Working drawings shall be electronically prepared.
4. Scale shall be scaled at 1/8-inch minimum (1:100).
5. Submit drawings in PDF form, in accordance with Division 1 specifications.
6. Partial submittals will not be accepted.

- B. Qualifications
  - 1. Provide a copy of the installing contractor's license.
  - 2. Provide a letter demonstrating related commercial fire sprinkler work completed over the past five years.
  - 3. Provide a copy of the NICET certification unless drawings are stamped by a Registered Professional Engineer licenced in the field of Fire Protection.
- C. Manufacturer's Data Sheets
  - 1. Provide product data for all material and equipment proposed for the system.
  - 2. Where multiple items are shown on a data sheet, clearly identify which types, sizes, or models are proposed.
- D. Hydraulic Calculations
  - 1. Provide hydraulic calculations in tabular form as described in NFPA 13.
- E. Seismic Calculations
  - 1. Provide seismic calculations for bracing sizing in accordance with NFPA 13.
- F. General Storage Information Sign
  - 1. Provide a complete General Information Sign including all items listed in NFPA 13 under Chapter "Systems Acceptance."
- G. Closeout Documents:
  - 1. A copy of the as-built drawings.
  - 2. Material and Testing Certificates, as indicated in NFPA 13.
  - 3. Operations and Maintenance Manuals including procedures for system startup, operation, shutdown, and routine maintenance and testing. Provide emergency contact and maintenance contact information.

## 1.5 QUALITY ASSURANCE

- A. Reliability
  - 1. Installer shall possess a valid state license for the state in which the work is to be performed.
  - 2. The installer shall have been actively and successfully engaged in the installation of commercial fire sprinkler work for the past five years.
- B. Material and Equipment
  - 1. All equipment and devices shall be of a make and type listed by UL or approved by FM for the purpose for which it will be used.
  - 2. All materials and equipment shall be free from defect.
  - 3. All materials and equipment shall be new unless indicated otherwise on the drawings.