

SECTION 21 13 13 WET-PIPE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes wet-pipe sprinkler system, system design, installation, and certification.

1.2 REFERENCES

- A. General: Comply with appropriate standards.
 1. American Welding Society: AWS.
 2. Underwriter Laboratories, Inc.: U.L.
 3. Factory Mutual Standards: FM.

1.3 SCHEDULES

- A. System Hazard Areas: Per NFPA 13.

1.4 SUBMITTALS

- A. Submit data on all materials including manufacturers' installation instructions.
- B. Shop Drawings: Indicate complete layout of all system components, including: coordinated sprinkler locations, detailed pipe layout, hangers and supports, components, accessories and system controls.
- C. Samples: Submit two of each style of sprinkler specified.
- D. Design Data: Submit signed and sealed design calculations.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- F. Operation and Maintenance Data: Submit components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.

1.5 WARRANTY

- A. Provide one-year minimum.

1.6 EXTRA MATERIALS

- A. Furnish extra sprinklers of each sprinkler type per NFPA 13.
- B. Furnish suitable wrenches for each sprinkler type.



- C. Furnish metal storage cabinet in location designated by LAWA representative.

PART 2 - PRODUCTS

2.1 SPRINKLERS

- A. Manufacturers:

1. **Viking.**
2. **Reliable.**
3. **Tyco Simplex Grinnell.**

- B. Suspended Ceiling Type:

1. Type: Standard or Extended Coverage, Recessed or Concealed pendant type with matching adjustable escutcheon plate.
2. Construction: All brass frame with metal Belleville spring seal, Teflon coated, brass or chrome finish.
3. Escutcheon Plate Finish: Chrome plated.
4. Fusible Link: Glass bulb type, temperature rated for specific area hazard.

- C. Exposed Area Type:

1. Type: Standard or Extended Coverage upright type, with guard.
2. Factory applied corrosion-resistant coating.
3. Fusible Link: Glass bulb type, temperature rated for specific area hazard.

- D. Side wall Type:

1. Type: Standard or Extended Coverage, Semi-recessed or Recessed horizontal side wall type with matching adjustable escutcheon plate and guard.
2. Construction: All brass frame with metal Belleville spring seal, Teflon coated, brass or chrome finish.
3. Escutcheon Plate Finish: Brass. Chrome plated. Enamel, color as selected.
4. Fusible Link: Glass bulb type temperature rated for specific area hazard.

- E. Guards: Finish to match sprinkler finish.

2.2 ABOVE GROUND PIPING

- A. Pipe shall be Standard Weight, Schedule 40 Black-Steel Pipe: ASTM A53 / A53M, Type E, Grade B, ERW pipe or ASTM A106, Grade B, seamless steel pipe. Pipe ends may be factory or field formed to match joining method.

1. Threaded Fittings:

- a. Malleable-Iron Fittings: ASTM B16.3, Class 300.



- b. Flanges and Flanged Fittings: ASME B16.5, Class 300, unless Class 600 is indicated.
2. Grooved-End Fittings: ASTM A47 malleable Iron or ASTM A536 Ductile Iron, with dimensions matching steel pipe and ends factory grooved according to AWWA C606.

2.3 BURIED PIPING

- A. Ductile Iron Pipe, Class 350, AWWA C151, grooved ends.
 1. Steel Fittings: ASME B16.5, steel flanges and fittings.
 2. Ductile Iron Joints: ANSI/AWWA C-606.
 3. Ductile Iron Coupling Housings: ASTM A536, Grade 65-45-12.
 4. Install piping with double-layer half over-lap 10 mil polyethylene tape.

2.4 PIPING SPECIALTIES

- A. Wet Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber faced clapper to automatically actuate water motor alarm or electric alarm, with pressure retard chamber and variable pressure trim; test and drain valve; strainer and gages.
- B. Water Motor Alarm: Hydraulically operated impeller type alarm with aluminum alloy red enameled gong and motor housing, nylon bearings, and inlet strainer.
- C. Electric Alarm: Electrically operated red enameled gong with pressure alarm switch.
- D. Water Flow Switch: Vane or paddle type switch with u-bolt mounting, horizontal or vertical, with adjustable alarm delay 0-120 second range.
- E. Fire Department Connections:
 1. Type: Flush mounted wall type with chrome plated finish or free standing type with ductile iron pedestal with red enamel finish.
 2. Outlets: Two-way with fire department thread size. Threaded dust-cap and chain of matching material and finish.
 3. Drain: 3/4 inch min. automatic drip.
 4. Label: "Sprinkler - Fire Department Connection"

2.5 ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. Controls: Supervisory switches, Water Level Supervisory Switches, Tank Temperature Supervisory Switches, Room Temperature Supervisory Switches.
- B. Disconnect Switch: Factory mount in control panel and/or on equipment.



PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install buried shut-off valves in valve box, furnish post indicator as required.
- B. Install and/or indicate location of approved double check valve assembly at sprinkler system water source connection and Fire Department Connection.
- C. Install outside alarm-gong on building wall.
- D. Place pipe runs to minimize obstruction to other work.
- E. Install piping in concealed spaces above finished ceilings.
- F. Locate sprinklers in coordination with architectural reflected ceiling plan.
- G. Install and connect to existing fire pump system as required.
- H. Install guards on sprinklers as required.
- I. Hydrostatically test entire system.
- J. Under the direction of L.A.F.D. Inspector of Record and LAWA.

3.2 INTERFACE WITH OTHER PRODUCTS

- A. Verify signal devices are installed and connected to fire alarm system.

3.3 LABELLING AND SIGNS

- A. Provide as required per NFPA.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

- A. Apply masking tape or paper cover to protect concealed sprinklers, cover plates, and sprinkler escutcheons not receiving field paint finish. Remove after painting. Replace painted sprinklers with new.

3.5 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Prepare test and inspection reports.
- C. Wet Sprinkler System will be considered defective if it does not pass tests and inspections.



3.6 CLEANING

- A. Flush entire piping system of foreign matter.
- B. Remove and replace sprinklers with paint other than factory finish.

3.7 TRAINING

- A. Engage a factory-authorized service representative to train LAWA Maintenance personnel to adjust, operate, and maintain Wet-Pipe Sprinkler System.
- B. Provide minimum of 12 hours (3 shifts total) of classroom and hands on training to LAWA Maintenance personnel.

END OF SECTION 21 13 13