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SECTION 211339 - FOAM-WATER SYSTEMS

1.1 SYSTEM DESCRIPTION

- A. Engineered, fixed, [**wet-pipe**] [**dry-pipe**] [**preaction**] [**deluge**], automatically actuated, low-expansion, [**AR-**]AFFF fire-extinguishing system for flammable-liquid fires. System includes diaphragm proportioning tanks and devices.

1.2 PERFORMANCE REQUIREMENTS

- A. Minimum Working-Pressure Rating: 175 psig (1200 kPa).
- B. Minimum Design Parameters:
 - 1. Solution: [**3**] <Insert number> percent foam-water solution.
 - 2. Sprinkler Spacing: Maximum of [**100 sq. ft. (9.5 sq. m)**] <Insert area> per sprinkler, and maximum [**12-foot (3.7-m)**] <Insert dimension> spacing.
 - 3. Design Density: Minimum [**0.16 gpm/sq. ft. (0.108 L/s per sq. m)**].
 - 4. Foam Supply: Minimum [**10**] <Insert number>-minute discharge time.
 - 5. Water Supply: Minimum [**60**] <Insert number> minutes.
 - 6. Remote Area: Minimum [**5000-sq. ft. (476-sq. m)**] <Insert area> design area for closed-sprinkler systems. Open-sprinkler systems shall discharge over the entire system area.
 - 7. Sprinkler Temperature Rating: Maximum 250 to 300 deg F (121 to 149 deg C) at a roof or ceiling, and 135 to 170 deg F (57 to 77 deg C) for intermediate sprinklers.

1.3 QUALITY ASSURANCE

- A. Quality Standards: NFPA 11, 13, and 16.
- B. UL listed or FM Approved for use in fire-protection systems.

1.4 PRODUCTS

- A. Concentrate Piping Materials: [**Black steel with iron fittings**] [**Stainless steel with threaded fittings**] [**Red brass pipe with threaded fittings**].
- B. Valves: Listed for fire protection service and compatible with foam concentrate.
- C. Proportioning Tanks: Bladder type; [**horizontal design with saddle**] [**vertical design with skirt**] support[**and with seismic restraints**].
- D. Venturi-type proportioning controllers.

- E. Water-operated, ball- or deluge-type concentrate control valves.
- F. Bronze concentrate strainers with stainless-steel mesh.
- G. Pressure gages.
- H. Foam Concentrate: 3 percent [**AR-**]AFFF.
- I. Discharge Devices:
 - 1. [**Closed,**] [**Open,**] [**non-**]air-aspirating-type sprinklers.
 - 2. Spray nozzles.
- J. Monitoring devices.

1.5 INSTALLATION

- A. Piping Applications:
 - 1. AFFF-Concentrate Piping: Schedule 40 steel pipe.
 - 2. AR-AFFF-Concentrate Piping: Schedule 40 [**steel**] [**stainless-steel**] [**red brass**] pipe.
- B. Proportioning tanks filled with foam concentrate after field quality-control testing.

1.6 FIELD QUALITY CONTROL

- A. Professional engineer to inspect and certify installation.

END OF SECTION 211339