

SECTION 213100 – FIRE PROTECTION PIPING

PART 1 - GENERAL

1.1 REFERENCES

- A. NFPA 13R - Installation of Sprinkler Systems in Residential Occupancies Up To and Including Four Stories in Height

1.2 SUBMITTALS

- A. Shop Drawings: Indicate pipe materials used, joining methods, supports, and floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections.
 - 1. Shop Drawings shall be fully coordinated with other disciplines for proper clearances.
- B. Product Data: Provide manufacturers catalogue information. Indicate valve data and ratings.
- C. Shop drawings shall indicate hanger locations, pipe lengths and other fabrication and installation details and requirements.

1.3 OPERATION AND MAINTENANCE DATA

- A. Maintenance Instructions: Include installation instructions, spare parts lists, procedures, and treatment programs.

1.4 QUALITY ASSURANCE

- A. Sprinkler Systems: Perform work to NFPA 13R.
- B. Valves: Bear UL and FM label or marking. Provide manufacturer's name and pressure rating marked on valve body.
- C. Maintain one copy of contract document on site.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store valves in shipping containers, with labeling in place.
- B. Provide temporary protective coating on cast iron and steel valves.

- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

PART 2 - PRODUCTS

2.1 SPRINKLER PIPING

- A. CPVC Pipe: All piping shall be new for piping 2" or smaller: ASTM D1784, Type IV, Grade I chlorinated polyvinyl chloride (CPVC). Pipe shall be UL Listed for wet pipe systems, working pressure 175 psi. Pipe shall be manufactured in the United States.
 - 1. CPVC Fittings: ASTM D1784, Type IV, Grade I chlorinated polyvinyl chloride (CPVC). Pipe shall be UL Listed for wet pipe systems, working pressure 175 psi. Fittings shall be manufactured in the United States.

2.2 OS&Y VALVES

- A. Subject to compliance with requirements, manufacturers offering similar products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Milwaukee Valve Company
 - 2. Pratt Valve Company
 - 3. Mueller
- B. Class 125 SWP, flanged end, cast iron body, bronze trim, OS & Y valve. Provide with tamper switch.

2.3 CHECK VALVES

- A. Rated class 250 SWP, ductile iron, stainless steel seat, stainless steel spring, replaceable EPDM facing.

2.4 TEST AND DRAIN VALVES

- A. Subject to compliance with requirements, manufacturers offering similar products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. G/L Innovations Model: Sure-test
 - 2. AGF Manufacturing, INC. Model: 1000
- B. Bronze construction, positive shut-off, ½" orifice, UL listed FM approved.

2.5 TAMPER SWITCHES

- A. Subject to compliance with requirements, manufacturers offering similar products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Central
 - 2. GEM
 - 3. Potter

PART 3 - EXECUTION

3.1 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and foreign material, from inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

- A. Install piping in accordance with NFPA 13R for sprinkler systems.
- B. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
- C. Install piping to conserve building space, and not interfere with use of space and other work.
- D. Group piping whenever practical at common elevations.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- F. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- G. Prepare pipe, fittings, supports, and accessories for finish painting.
- H. Do not penetrate building structural members unless indicated.
- I. Provide sleeves when penetrating walls. Seal pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required.
- J. Install valves with stems upright or horizontal, not inverted. Remove protective coatings after installation.
- K. Provide OS & Y valves for shut-off or isolating service.

- L. Provide drain valves at main shut-off valves, low points of piping and apparatus.

3.3 EXCAVATION AND BACKFILL

- A. All trenches shall be dug to a line and the bottom cleaned and shaped to provide support of the pipe through its entire length.
- B. Bracing shall be provided as necessary to maintain excavations.
- C. As soon as underground work has been completely installed and tested, all excavations shall be backfilled with clean earth (free from bricks, rocks, cinders or any foreign matter) to grade.

END OF SECTION 213100