

Part 1 General

1.1 RELATED SECTIONS

- .1 21 13 13 Wet Pipe Sprinkler Systems

1.2 REFERENCES

- .1 American National Standards Institute/National Fire Protection Association (ANSI/NFPA)
 - .1 ANSI/NFPA13-2002, Standard for the Installation of Sprinkler Systems.
 - .2 ANSI/NFPA 25-2002, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .3 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC S543-M1984, Internal Lug Quick Connect Coupling for Fire Hose.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
 - .1 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures and in accordance with ANSI/NFPA 13.
 - .1 Shop drawings: submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
- .3 Samples:
 - .1 Submit samples of following:
 - .1 Each type of sprinkler head.
 - .2 Signs and valve tags.
- .4 Closeout Submittals:
 - .1 Provide maintenance data for incorporation into manual specified in Section 01 78 10 - Closeout Submittals.
 - .2 Provide detailed hydraulic calculations including: summary sheet, Contractor's Material and Test Certificate for aboveground piping, as well as other deliverables for incorporation into manual specified in Section 01 78 10 - Closeout Submittals, in accordance with ANSI/NFPA 13.

1.4 ENGINEERING DESIGN CRITERIA

- .1 Design system in accordance with ANSI/NFPA 13, using following parameters:

- .1 Hazard:
 - .1 To suit occupancy as indicated.
- .2 Pipe size and layout:
 - .1 Hydraulic design.
 - .2 Sprinkler head layout: to ANSI/NFPA 13 or as directed by authority having jurisdiction.
- .3 Water supply:
 - .1 Conduct flow and pressure test of water supply in vicinity of project to obtain criteria for bases of design in accordance with ANSI/NFPA 13.
- .4 Zoning:
 - .1 System zoning as indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store and handle in accordance with Section 01 61 00 - Product Requirements.
 - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

1.6 MAINTENANCE

- .1 Extra Materials:
 - .1 Provide maintenance materials in accordance with Section 01 78 10 - Closeout Submittals.
 - .2 Provide spare sprinklers and tools as required by ANSI/NFPA 13.

Part 2 Products

PIPE, FITTINGS AND VALVES

- .1 Pipe:
 - .1 Ferrous: to ANSI/NFPA 13.
 - .2 Copper tube: to ANSI/NFPA 13.
- .2 Fittings and joints to ANSI/NFPA 13:
 - .1 Ferrous: screwed, welded, flanged or roll grooved.
 - .2 Copper tube: screwed, soldered, or brazed.
- .3 Auxiliary valves:
 - .1 ULC listed for fire protection service.
 - .2 Up to NPS 2: bronze, screwed ends, OS & Y gate.
 - .3 NPS 2 1/2 and over: cast iron, flanged or roll grooved ends, indicating butterfly valve.
 - .4 Swing check valves.
 - .5 Ball drip.

- .6 Tamper devices wired back to fire alarm panel.
- .4 Pipe hangers:
 - .1 ULC listed for fire protection services.

2.2 SPRINKLER HEADS

- .1 General: to ANSI/NFPA 13 and ULC listed for fire services.
- .2 Sprinkler Head Type:
 - .1 Type A: upright bronze.
 - .2 Type B: pendant chrome link and lever type.
 - .3 Type C: pendant chrome glass bulb type.
 - .4 Type D: recessed polished satin chrome glass bulb fusible link type with ring and cup.
 - .5 Type E: flush polished satin chrome link and lever type.
 - .6 Type F: side wall polished satin chrome link and lever type.
- .3 Provide nominal 1.2 cm orifice sprinkler heads.
 - .1 Release element of each head to be of intermediate temperature rating or higher as suitable for specific application.
 - .2 Provide polished chromium-plated finish on copper alloy ceiling plates, and chromium-plated pendent sprinklers below suspended ceilings.
 - .3 Provide corrosion-resistant sprinkler heads and sprinkler head guards in accordance with NFPA 13.
 - .4 Provide sprinkler heads as indicated.
 - .5 Deflector: not more than 75 mm below suspended ceilings.
 - .6 Ceiling plates: not more than 25 mm deep.
- .4 Ceiling cups: not permitted.

2.3 AUXILIARY SUPERVISORY SWITCHES

- .1 General: to ANSI/NFPA 13 and ULC listed for fire service.
- .2 Valves:
 - .1 Mechanically attached to valve body, with normally open and normally closed contacts and supervisory capability.
- .3 Flow switch type:
 - .1 With normally open and normally closed contacts and supervisory capability.
- .4 Pressure alarm switch:
 - .1 With normally open and normally closed contacts and supervisory capability.

2.4 WATER GONG

- .1 To ANSI/NFPA 13 and ULC listed for fire service. Location as indicated.

2.5 DRY PIPE VALVE

- .1 ULC listed.
- .2 Cast iron, flanged type, sized to suit water main.
- .3 Components:
 - .1 Accelerator.
 - .2 Air maintenance device with low pressure alarm.
 - .3 Alarm pressure switch with supervisory capability.
 - .4 Pressure gauges.
 - .5 Drain valve.
 - .6 Test valve with associated piping.
 - .7 Shut off valve - OS & Y with tamper-proof device wired back to fire alarm panel.

2.6 PRE-ACTION ALARM VALVE

- .1 ULC listed.
- .2 Cast iron, flanged type, sized to suit water main.
- .3 Components:
 - .1 Accelerator.
 - .2 Air maintenance device with low-pressure alarm.
 - .3 Alarm pressure switch with supervisory capability.
 - .4 Test valve and associated piping.
 - .5 Drain valve.
 - .6 Electrical tripping device.
 - .7 Shut off valve - OS & Y with tamper-proof device wired back to fire alarm panel.

2.7 COMPRESSED AIR SUPPLY

- .1 Automatic Air Compressor.
- .2 ULC listed.
- .3 Capacity:
 - .1 To restore normal air pressure in system within 30 minutes or 60 minutes for low differential systems.
 - .2 To provide air pressure in accordance with instruction sheet furnished with dry pipe valve.
- .4 Piping: ferrous, NPS 3/4 screwed joints and fittings, to ANSI/NFPA 13.

2.8 PRESSURE GAUGES

- .1 ULC listed and to Section 23 05 21 - Thermometers and Pressure Gauges - Piping Systems.

- .2 Maximum limit of not less than twice normal working pressure at point where installed.

2.9 RELIEF VALVE

- .1 ULC listed.

2.10 SPARE PARTS CABINET

- .1 For storage of maintenance materials, spare sprinkler heads and special tools.
- .2 Construct to sprinkler head manufacturers standard.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 INSTALLATION

- .1 Install, inspect and test to acceptance in accordance with ANSI/NFPA 13 and NFPA 25.
- .2 Testing to be witnessed by authority having jurisdiction.
- .3 Install spare parts cabinet as indicated.
- .4 Pressure gauges:
 - .1 Location:
 - .1 On water side and air side of dry pipe valve.
 - .2 At air receiver.
 - .3 In each independent pipe from air supply to dry pipe valve.
 - .4 At exhausters and accelerators.
 - .2 Install to permit removal.
 - .3 Locate so as not subjected to freezing.
- .5 Valve identification:
 - .1 Identify drain valve, by-pass valves and main shut-off valve and all auxiliary valves.

3.3 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services:
 - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.

- .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
- .3 Schedule site visits, to review Work, as directed in PART 1 - QUALITY ASSURANCE.

3.4 CLEANING

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION