

SECTION 15300
FIRE PROTECTION

PART 1 GENERAL

1.1 DESCRIPTION

- A. Protect all areas with sprinklers.
- B. The existing wet pipe sprinkler system consists of an 8" cross-main that runs the length of the building on level 1 from the south end of the main terminal near A Concourse, to the end of C-Concourse. Numerous zones connected to the cross-main. The cross-main is connected to the fire water supply system at three points. There are also three fire department connection points.
- C. Copies of drawings of existing sprinkler systems may be obtained from ANC Engineering.
- D. All new and remodeled systems shall be designed in accordance with NFPA 13, and shall be approved by ANC, the insurance carrier for the State of Alaska, and the Fire Marshal prior to installation.
- E. Provide coverage according to the following occupancy requirements:
 - 1. Terminal passenger handling areas shall be classified as Ordinary Hazard Group 1 Occupancy as required by NFPA 415 and minimum flow rate at most and second most hydraulically remote Class I manual-wet standpipes shall be 500 gpm with a residual pressure of 100 psig.
 - 2. Baggage handling areas elevator shall be classified as Ordinary Hazard Group 1 occupancy.
 - 3. Office areas on level three separated from the passenger handling areas by 1-hour separation walls shall be classified as Light Hazard.
 - 4. All Airline Operations areas on Level 1 shall be classified as Ordinary hazard Group 1 Occupancy.
 - 5. The Liquid storage room as Ordinary Hazard Group 2 occupancy.

1.2 SUBMITTALS

- A. Submit shop drawings that have been approved by the Tenant's Engineer, Insurance carrier, and the Fire Marshal. The drawings shall be approved by ANC prior to installation.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS

- A. Wet Pipe Sprinkler Systems:
 - 1. Any steel piping system currently recognized by NFPA 13 may be used, if listed for the intended service by UL or F.M.

2. Whenever piping other than steel schedule 40 is utilized, submit a statement that the piping complies with NFPA 13 standards and that the piping strength is adequate for the application and piping corrosion resistance ratio shall be equal or greater than schedule 40 pipe. Provide supporting calculations and documentation.
 3. Extra lightweight pipe is not allowed.
 4. One-inch diameter nominal drop nipples exceeding 36 inches in length shall be schedule 40 pipe, no exception allowed.
- B. Dry Pipe Sprinkler Systems:
1. Pipe shall be galvanized schedule 40 steel pipe. No exceptions.
- C. Preaction Systems
1. Pipe shall be galvanized schedule 40 steel pipe. No exceptions.
- D. Standpipe Manual-Wet Systems
1. Pipe shall be as allowable for wet pipe sprinkler systems that are rated for minimum of 175 psig.

2.2 FITTINGS

- A. Grooved Fittings, Couplings, and Mechanical Tees:
1. Grooved Fittings: Victaulic, Gruvlok, Sprink, cast iron, ductile iron or equal. Fabricated or segmented fittings are not acceptable. Couplings and mechanical tees shall be standard painted Victaulic, Gruvlok, or equal.
 2. Slip-Fit fittings and couplings utilized for joining branch piping to new main piping shall be "Victaulic" or "Gruvlok" brand as required.
 3. Listed PressFit fit for pipe sizes two inch and smaller.
- B. Threaded Pipe Fittings:
1. Threaded pipefittings: Cast iron 125 pound ANSI B16.4 or ductile iron 300 pound ANSI B16.3.
- C. Pipe Flanges:
1. Pipe flanges: Cast Iron Class 125 pound ANSI B16.5.
- D. Welded Pipe Fittings for Wet Pipe Sprinkler Only:
1. Welded pipefittings: Limited to Weld-o-lets, Thread-o-lets, Gruv-0-lets and Welded Flanges in accordance with NFPA 13 limitations.
- E. Other means of joining pipe are not permitted.

2.3 SPRINKLER HEADS

- A. Provide sprinklers as required by NFPA 13 standards and in compliance with the UBC Chapter 9. Sprinkler heads using O-ring water seals are not allowed. Sprinklers on the wet pipe system shall be quick response types. Sprinkler finish and style to be coordinated with architectural requirements with default as follows:

1. In all areas with surface mounted light fixtures attached to finished suspended ceilings, provide standard spray pendant sprinklers, and escutcheons to position the sprinkler deflector below the light fixture. Sprinklers and escutcheons to be chrome finish.
2. In all areas with recessed lighting flush to the suspended ceiling finish or pendant mounted not obstructing sprinkler flow, provide recessed standard spray pendant sprinklers. Sprinklers and escutcheons to be chrome finish.
3. Sprinklers in areas with exposed structure shall be bronze finish, standard spray, upright or pendant type.
4. Dry pendant and sidewall sprinklers protecting outside overhangs shall be bronze finish.
5. Dry pendant sprinklers protecting entry vestibules and other finished areas susceptible to freezing temperatures shall be recessed chrome finish. Dry head sprinklers protecting unheated areas and piped from wet pipe systems shall have an "A" Length dimension of not less than 18 inches.
6. Sprinklers of correct temperature rating shall be installed according to NFPA 13.
7. Provide sprinkler wrench for each type of sprinkler.
8. Provide additional sprinklers, as requested by the Fire Marshall, at no additional cost to the Owner.

2.4 PIPING HANGERS, SUPPORTS AND PENETRATIONS

- A. Pipe hangers, supports and sway bracing: Conform to NFPA 13 standards including seismic supports on shop drawings and details of all supports used. Calculations used to develop items used and locations installed shall be provided.
- B. Retraining straps shall be used on all beam and flange type clamps.
- C. Powder-driven fasteners shall not be used.

2.5 INSPECTORS TEST CONNECTIONS

- A. Pipe and fittings exposed outside building: Brass or Chrome plate; provide setscrew escutcheon of matching material.

PART 3 EXECUTION

3.1 PIPING INSTALLATION

- A. Install piping to conserve building space and route piping around roof hatches and attic access panels.
- B. Install low point drain stations in accordance with NFPA 13 and NFPA 14 standards. Identify the location of drain and test stations with signs on access panels, ceiling panels, or walls adjacent to the station, visible from the floor. Discharge test pipes and system main drain to outside. Coordinate discharge point with Contracting Agency.
- C. Provide seismic protection for the piping system in accordance with NFPA 13 standards. Provide clearance at all structural penetrations.
- D. Piping shall be concealed in all areas with finished ceilings. Coordinate with the other trades to take timely advantage of available space above ceilings, below raised floor, in pipe and duct spaces and elsewhere.

3.2 INSPECTORS TEST PIPING

- A. Discharge inspectors test piping to approved floor drains in non-public areas, or outside building, but not on main walkways or over architectural surfaces easily stained or difficult to clean. Do not terminate discharge more than 48 inches above grade. Discharge main test and drain piping used for service line flow testing outside and terminate with a minimum 2-1/2 inch hose connection.
- B. Provide visual indicator for proof of flow in accessible warm location for dry pipe and wet pipe risers and zones.

3.3 FLUSHING AND TESTING

- A. Provide a letter of certification stating that testing and flushing has been performed in accordance with the applicable codes and standards. Itemize codes and standards complied with. Testing and flushing certification required.

3.4 DRY HEADS

- A. Provide dry pendant heads in areas potentially subject to freezing including, but not limited to; ceilings of entry vestibules, freezers and cold storage, overhangs requiring fire protection, rooms with combustion air openings.
- B. Provide dry side walls for all exterior overhangs not protected by dry pipe system or dry pendant heads on air-side of building where potential for storage or parked vehicles exist.

3.5 PAINTING

- A. Exposed piping in public areas shall be painted.
- B. Refer to Architectural requirements. Protect sprinkler heads from paint.

3.6 SPRINKLER HEAD INSTALLATION

- A. Install guards on sprinklers subject to physical damage or abuse.

END OF SECTION