

USask Master Specification Directions: The master specifications are intended to be incorporated into the Consultant's final, project specific specification package. The project specific specifications are expected to include any and all sections or portions of sections (Part 1, Part 2, Part 3) that are required to create a fully executable project specification. USask Master Specs only provide information that USask **requires** be a part of the final specification package. Components or sections not included in the Master USask Specifications may still be required for a complete, well-designed project. **It is the consultant's responsibility to ensure all specifications match USask requirements. Any deviations or revisions to any section included in the master specifications requires written consent from the USask Engineering department. The consultant is liable for any omissions, errors, or incorrect equipment or components supplied to site.**

The Master Specifications shall be used in conjunction with USask's Design Guidelines. Any conflicts shall be brought to the attention of USask Engineering staff for clarification.

Part 1 General

1.1 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Installer: company or person specializing in fire protection installations and approved by manufacturer, with at least one documented project of similar scope and complexity.

Part 2 Products

2.1 ENGINEERING DESIGN CRITERIA

- .1 Design system in accordance with NFPA 13, using following parameters:
 - .1 Hazard:
 - .1 To suit occupancy as indicated.
 - .2 Pipe size and layout:
 - .1 Hydraulic design. **Note that schedule 10 pipe will not be accepted.**
 - .2 Sprinkler head layout: to 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 NFPA 13.
 - .4 Zoning:
 - .1 System zoning as indicated.

2.2 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with Division 01 – General Requirements.
- .2 Grooved couplings and fittings made from minimum 90% recycled metal.

2.3 PIPE, FITTINGS AND VALVES

- .1 Pipe:

- .1 Ferrous: to NFPA 13, minimum schedule 40. Seamless or ERW to ASTM A-53 Grade B.
- .2 Copper tube: not acceptable.
- .3 Plastic Piping: not acceptable.
- .2 Fittings and joints to NFPA 13:
 - .1 Ferrous: screwed, welded, flanged or roll grooved.
 - .1 Grooved joints designed with two ductile iron housing segments, pressure responsive gasket, and zinc-electroplated steel bolts and nuts. Cast with offsetting angle-pattern bolt pads for rigidity and visual pad-to-pad offset contact.
 - .2 Copper tube: not acceptable.
 - .3 Plastic piping: not acceptable.
- .3 Auxiliary valves:
 - .1 ULC listed for fire protection service.
 - .2 Up to NPS 2: bronze, screwed ends, grooved, OS&Y gate.
 - .3 NPS 2 1/2 and over: cast or ductile iron, flanged or roll grooved ends, indicating butterfly valve.
 - .4 Swing or spring-actuated check valves.
 - .5 Ball drip.
 - .6 Tamper devices wired back to fire alarm panel.
- .4 Pipe hangers:
 - .1 ULC listed for fire protection services.

2.4 FIRE DEPARTMENT CONNECTION

- .1 Provide connections approximately 1.5 m above finish grade, location as indicated.
- .2 To NFPA 13 and ULC S543 listed, Siamese type.
- .3 Polished chrome plated, equal to Wilson & Cousins 1E28, two-way type with 2.5 inch National Standard female hose threads with plug, chain, and identifying fire department connection escutcheon plate. Plate shall be imprinted with "SPRINKLER".
- .4 Thread specifications: compatible with local fire department.
- .5 Install a 90-degree elbow with drain connection at the low-point near each fire department connection to allow for system drainage to prevent freezing.

2.5 COMPRESSED AIR SUPPLY

- .1 Automatic Air Compressor.
- .2 ULC listed.
- .3 Capacity:
 - .1 To restore normal air pressure in system within 30 minutes.
 - .2 To provide air pressure of 140 kPa in excess of calculated trip pressure of dry pipe valve.

- .4 Piping: ferrous, NPS 3/4 screwed joints and fittings, to NFPA 13.

2.6 SPARE PARTS CABINET

- .1 Provide metal cabinet with extra sprinkler heads and sprinkler head wrench adjacent to each alarm valve. Number and types of extra sprinkler heads as specified in NFPA 13.

Part 3 Execution

3.1 FIELD PAINTING

- .1 Where required, clean, pretreat, prime, and paint new systems including valves, piping, conduit, hangers, supports, miscellaneous metalwork, and accessories.
 - .1 Apply coatings to clean, dry surfaces, using clean brushes.
 - .2 Clean surfaces to remove dust, dirt, rust, and loose mill scale.
 - .3 Immediately after cleaning, provide metal surfaces with 1 coat of pretreatment primer applied to minimum dry film thickness of 0.3 mil, and one coat of zinc chromate primer applied to minimum dry film thickness of 1.0 mil.
- .2 Shield sprinkler heads with protective covering while painting is in progress.
- .3 Upon completion of painting, remove protective covering from sprinkler heads.
- .4 Remove sprinkler heads which have been painted and replace with new sprinkler heads.
- .5 Provide primed surfaces with following:
 - .1 Piping in Finished Areas:
 - .1 Provide primed surfaces with 2 coats of paint to match adjacent surfaces.
 - .2 Provide valves and operating accessories with 1 coat of red alkyd gloss enamel applied to minimum dry film thickness of 1.0 mil.
 - .2 Piping in Unfinished Areas:
 - .1 Provide primed surfaces with one coat of red alkyd gloss enamel applied to minimum dry film thickness of 1.0 mil.
 - .3 Coordinate painting requirements with architectural painting specifications.

END OF SECTION