

CHEMICAL FEED SYSTEMS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Work specified
 - 1. The furnishing and installation of the chemical feed system including metering pumps, drive motors, pump controls and all piping and appurtenances required for a complete operating installation as shown on the contract documents.
 - 2. The chemical feed system shall be as manufactured by Pulsafeeder, Inc., A Unit of IDEX Corporation.
- B. Related work specified elsewhere (not provided)
 - 1. General Equipment Requirements
 - 2. General Provisions
 - 3. Valves and Appurtenances
 - 4. PVC Pipe Hangers and Fittings
 - 5. Pipe Hangers and Supports

1.02 SUBMITTALS: Submit for approval the following:

- A. Manufacturer's literature, illustrations, specifications and engineering data including: dimensions, materials, size, weight, performance data, required net inlet pressure, flow rate, motor horsepower and speed.

1.03 QUALITY ASSURANCE

- A. All work under this specification shall be the responsibility of the Contractor.
- B. The manufacturer of the chemical feed metering pumps is responsible for meeting the requirements of this specification and related work specified elsewhere (including but not limited to section 1.01B). In addition, they shall coordinate operation of their equipment with the Contractor including but not limited to:
 - 1. Providing any and all information on the performance/characteristics of their equipment.
 - 2. Providing wiring and installation diagrams, operational and shutdown interlocks and ancillary controls.
 - 3. Providing shop drawings, parts lists, materials of construction, tolerance, coatings, and certification of compliance with generally accepted standards.

PART 2 – PRODUCTS

2.02 CHEMICAL FEED SYSTEM

A. Construction

1. Each chemical feed system shall be completely assembled, mounted, calibrated, tested, and delivered to the site on a single skid. Components to be mounted on the skid are as indicated on the drawings and shall include metering pumps, calibration columns, piping, valves, piping accessories (pulsation dampeners, back pressure valves, pressure relief valves, etc. as detailed in the drawings), and wiring integral to the skid. The chemical metering pump manufacturer shall be responsible for providing the complete skid package and shall be responsible for all equipment, valves and piping within the skid boundary.
2. Chemical feed skids shall be constructed of high density polyethylene (HDPE) sheets / grating with adequate supports for all equipment and piping. The feed system backer panel shall be constructed of 0.25-inch solid FRP plate. Backer and deck shall be supported throughout with 2-inch square FRP tubing.
3. Materials such as fiberglass, polypropylene, PVC or stainless steel will not be acceptable for skid base, deck or backer construction.
4. All PVC piping and fittings shall be schedule 80 and readily available locally. Special machined fittings/blocks that are not of standard manufacture will not be accepted.
5. Chemical feed system design shall be such that the wetted end of the pump is orientated at the open end of the framework for easy access. Systems designed with the wet-end of the pump facing the vertical wall (rear) or side of the skid will not be accepted.
6. The pulsation dampener shall be sized to allow a maximum of +/- 5% pressure oscillation. The pulsation dampener should be located 12" or closer to the pump discharge and provided with union connection.
7. Backpressure valves shall be of the in-line diaphragm design. Backpressure valve shall be set at 40 psig from the factory and provided with union connections. Once in the field the backpressure valve should be set at 10-20 psig above injection pressure.
8. On multiple pump systems, there shall be one calibration column per pump such that one pump can be calibrated while the other pumps are fully operational. Chemical feed systems employing only one calibration column per skid are not acceptable.
9. All components of the skid-mounted system (pumps, piping and controls) shall be factory pressure tested with water prior to shipment. Certification of factory testing shall be included in installation, operation and maintenance manuals.

10. The metering pumps shall use unions on the suction and discharge of the pump in order to allow removal of the pump without disturbing the suction or discharge piping.
11. 14. All piping / accessory support shall be from skid base or rear panel. Piping / accessory support from above is not acceptable.
12. The metering system shall incorporate 2" liquid filled gauges on the discharge of the pump. Each gauge shall be protected by a glycerin filled gauge protector that is capable of operation from 25" Hg to 150 psig. The discharge gauge shall be 0-200 psig. The casings of the gauge shall be stainless steel and accuracy shall be 2% or better.
13. Gauge assemblies shall incorporate a 1/2" gauge guard on the liquid side of the pressure gauge and shall be provided with union connections so that they may be removed / maintained while the feed system is fully operational.
14. All piping accessories shall be securely fastened to the frame or supported with stand-offs. The use of steel bands or strapping shall not be acceptable.

END OF SECTION