

SECTION 23 25 19

WATER SOFTENER

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Water Softener

1.2 SUBMITTALS

A. Submittals shall include:

1. Product Data: Full product description including all accessories and control settings.
2. Drawings: Submit general arrangement drawings; including dimensions, weights and ratings, wiring diagrams, and all other shop related drawings.
3. Include materials of construction of major pressure vessel parts and fittings.
4. Controls Cutsheet: Submit complete set of cutsheets for trims and controls.
5. Rigging instruction: Submit detailed instructions on manufacturers recommended lifting and unloading procedures.
6. Warranty: Submit standard form equipment warranty.

B. Closeout Submittals:

1. Operation and Maintenance Data: Submit manufacturer's descriptive literature, operating instructions, cleaning procedures, recommended spare parts list, and maintenance and repair information.

2. Manufacturer's Installation Instructions: Submit assembly, support details, connection requirements, and include start-up instructions.

1.3 QUALITY ASSURANCE

- A. The packaged water softener must receive factory tests to check the construction and operation of the unit.
- B. Allow witnessing of factory inspections and tests at manufacturer's test facility.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Cover all openings, leave drain valves in open position,
- B. Off load water softener in accordance with rigging instructions.

1.5 WARRANTY

- A. The Pentair Fleck 2900, control valve is warranted for 2 years against defects in material and workmanship.
- B. The mineral tanks have a limited 5-year warranty
- C. The brine tanks have a limited 5-year warranty.

PART 2 – PRODUCTS

2.1 WATER SOFTENER

- A. Type: The unit shall consist of one sodium softening system to provide a supply of soft water at a rate of gpm. The system to be capable of treating a peak flow rate

of [] gpm at a maximum pressure drop of 15 psi. The system to be capable of treating a minimum flow of [] gpm.

B. Performance: The water softening system, in compliance with the equipment specifications, shall be an automatic softening system per the performance and design criteria as detailed in this specification.

1. The water softening system shall have a maximum rated capacity of [] grains between regenerations using 15 lbs NaCl/cuft of resin.

C. Construction:

1. Provide two mineral tanks. Each tank shall be [] inches in diameter and [] inches height. Each tank shall have a []-inch top opening. All tanks shall be designed for a maximum working pressure of 150 psi and hydrostatically tested at 50% in excess of working pressure.
2. Each softener tank shall be constructed of corrosion resistant polyethylene inner shell with a fiberglass wound reinforced exterior shell. A molded polypropylene structural base shall support the tanks.

D. Internals: Each softener shall be provided with all internals necessary for distributing and collecting water flows in a uniform manner. The underdrain system shall consist of a central hub and laterals.

E. Ion Exchange resins: Each vessel will contain []-cubic feet of high capacity industrial grade virgin 8% crosslinked styrene and divinylbenzene polymer Gel Cation Exchange Resin. It shall be furnished in the Sodium regenerated form, ready for use after installation, backwash and rinse.

F. Main control valves: The Pentair Fleck 2900, brass control valve shall have 2-inch NPT inlet and outlet connections. It shall have fully adjustable 5-cycle controls to accomplish the following regeneration steps:

1. Upflow backwash, Downflow brining, Slow rinse, Rapid rinse, Timed brine tank refill.
2. An integral brine injector shall be provided in the valve capable of maintaining a proper brine concentration to the resin at varying operating pressures. Brine tank refill flow control and backwash flow control will be provided.

G. Brine System: The brine system shall consist of a single brine measuring/salt storage tank constructed of rotationally molded polyethylene and include a cover. The dimensions of the brine tank will be [] inches round x [] inches high. The brine system will be of the dry salt design capable of holding approximately [] lbs. of

salt. The brine tank to be equipped with a polyethylene brine well, and commercial air check.

- H. Controls: Regeneration shall be initiated automatically. Regeneration steps and return to service shall be accomplished automatically. The system is controlled by a Pentair Fleck 3200 NT meter-based programmable demand control. When the specified meter reading has been reached, the control shall initiate regeneration of the exhausted softener. The control shall maintain one softener in service and the second softener in regeneration.

END OF SECTION