

Chemical Removal Filter Engineering Specifications

Excalibur Water Systems Model EWS FD1CS1 Duplex Alternating Chemical Removal Filter Electronic Metered Initiated Service Operation

Supply one (1), only Excalibur Water Systems Model EWS FD1CS1 Duplex Alternating Chemical Removal Filter. The system shall be designed to operate under pressure from 40 psig (minimum) to 110 psig (maximum).

Mineral Tank

Supply two (2), only 9" diameter x 48" high 2.5" top opening premium quality PE liner with FRP filament winding mineral tank. Maximum operating pressure up to 150 psig with a maximum operating temperature of 120°F. Mineral tank must be NSF/ANSI Standard 44 as well as PED certified.

Collection & Distribution

Supply two (2), only 1.05" high impact FDA approved ABS bottom stack high flow distributor at bottom and upper basket at top shall be utilized to evenly collect and distribute the flow of water over the entire bed.

Control System

Supply two (2) main operating 1" control valve shall be made of Noryl™. The inlet/outlet connection needs to allow for either a quick connect bypass valve or quick connect inlet/ outlet fitting kit that utilize a union style nut that only needs to be hand tightened to mount to the control valve. The drain port consists of a 3/4" Male NPT quick disconnect elbow that can swivel 180 degrees for easy orientation. The distributor pilot for the control valve is 1.05" OD pipe. Control valve utilizes a built in internal electronic flow meter with Hall Effect sensor off of the side of the outlet port of the control valve for easy maintenance. This meter shall be accurate from 0.25 to 27 gallons per minute at +/- 5%. Control valve will have a single main piston, patented 1-piece compressible seal/ spacer stack assembly. Valve must be a top-mount design with a 12-volt electronic microprocessor controller. Control valve shall have fully adjustable regeneration cycle duration times for backwash, fast rinse and return to service. Control valves shall be made of non-corrosive materials, including all wetted parts.

Microprocessor Controller

The solid state microprocessors shall have a coin cell lithium battery for 8 hour time of day up keep. Microprocessor will have front panel displays to show current time of day, volume remaining, current flow rate, a system totalizer and days to regeneration if day over ride is programmed (availability range of 1 day to 28 days). The controller will allow for five methods to initiate regeneration; meter immediate, meter delayed, time clock delayed, or pressure differential delayed or immediate. It shall provide operating history for days since last regeneration, gallons used since last regeneration, total days in service, and total number of regenerations since it was installed which will all be stored in non-volatile memory.

Motorized Alternating Valve

Supply one (1), only 1.25" full ported motorized alternating valve to allow one unit to be in regeneration or stand-by at a time while the other unit is in service. This system shall provide a continuous supply of filtered water with the control valves indicating which unit is on-line and in stand-by operation. Its internal non-corrosive single piston & patented 1-piece compressible seal/ spacer stack assembly allow it to be hydraulically balanced. The MAV has a sight glass that allows you to view the position of the valve to know which valve is on-line and which is on stand-by without removing any covers.

Interconnect Cable

Supply one (1) only interlock wiring between controls must be pre-wired and electrically tested by the water filtering system manufacturer at the factory prior to shipment.

Turbine & Volumetric Meter

Supply two (2), only internal magnetic pulse hall effect turbine meter accuracy must be +/- 5% with a flow rate range of 0.25 – 27.0 GPM. External flow meters are not acceptable.

Power Supply

Supply two (2), only North American plug in type power transformer with electrical specifications output voltage of 12 VAC with the output current not exceeding 500 mA.

Bypass Isolation Valve

Supply two (2), only Injection molded bypass Isolation valve full 1.25" porting plastic Noryl to be connected threaded connections adapter to the control valve for proper isolation. Isolation bypass valve operating pressures 20-125 psi, temperature range 40-110 F. Bypass isolation valve to offer normal operation, bypass operation, diagnostic mode, and shut off mode.

Coconut Shell Media

Carbon media shall be a virgin granular activated carbon produced from coconut shell char through a high temperature steam activation process under stringent quality control. The media must have a mesh size of 12X30 with 5% of quantity greater of less size. The media shall be ANSI/NSF 42 certified.

Performance

The unit shall be available to remove the chloramine at flow rate of 0.75 GPM per cubic foot of media, Total organic carbon removal at 1.0 GPM per cubic foot and chlorine removal at 3.0 GPM per cubic foot of media. The peak flow rate for unit shall be 4.0 GPM per cubic foot of media.

Flow Rate

The minimum flow rate shall be 0.4 GPM (0.03 l/s) and the maximum flow rate shall be 0.75 GPM (0.05 l/s) for chloramine removal, 1.0 GPM (0.06 l/s) for total organic carbon removal and 3.0 GPM (0.19 l/s) for chlorine removal. The peak flow rate for unit shall be 4.0 GPM (0.25 l/s)

Drain Flow Rate

Water shall be discharged during the regeneration process at a flow rate of 4.2 GPM (0.26 l/s) for proper regeneration bed expansion process.

Start-Up

Successful equipment provider shall follow the manufactures printed instructions to start up the system after plumbing and electrical requirements are completed. This includes raw water testing, programming, individual start-up for each filter column, system operation, and product water testing for each column and training of personnel. Set system for medium salting/capacity levels with fixed reserve and immediate regeneration. If needed, the successful bidder shall contract an approved authorization service agent from the manufacture to assist with these procedures.

Warranty

Equipment and /or parts shall be covered by manufacturer's replacement warranty as follows:

- Fiberglass Mineral Tanks – TEN (10) YEARS
- Coconut Shell Media – TEN (10) YEARS
- Control Valves & Electronics – FIVE (5) YEARS
- All other components – ONE (1) YEAR