



DETAILED EQUIPMENT SPECIFICATION - DUF WATER SOFTENERS

1. Furnish and install a NECO Industrial Water Model DUF-_____ single high-temperature water softener to provide a zero soft water effluent as determined by an ASTM standard soap test method, when operated in accordance with operating instructions. Each unit shall be designed to provide _____ grains per tank maximum capacity of hardness reduction between regenerations at a maximum salt dosage of _____ lbs. salt. Each unit shall be capable of a continuous flow rate of _____ GPM with a pressure drop of no greater than 15 psi.
2. The softener vessel(s) shall be designed for a working pressure of 150 psi and a temperature of 150° F. A minimum freeboard volume of 50% shall be provided to assure adequate bed expansion during backwash. Vessel(s) shall be manufactured of natural vinylester. The vessel(s) shall be supported by a molded polypropylene structural base. Each vessel(s) shall have the dimensions of _____ diameter x _____ height plus the height of the base.
3. The backwash distributor and soft water collector shall be of the single-element design. The slotted-screen element shall be positioned at the bottom center of the resin tank and attached to a riser pipe leading to the control valve assembly. All internal distributor piping shall be constructed of stainless steel.
4. The softener shall be provided with _____ cubic feet of high-capacity, non-phenolic resin per vessel(s) having a minimum exchange of capacity of 30,000 grains per cubic foot when regenerated with 15 lbs. of salt per cubic foot. The media shall be solid, of the proper particle size (not more than 4% through 40 mesh U.S. standard screen, wet screening) and shall contain no plates, shells, agglomerates or other shapes which might interfere with the normal function of the water softener.
5. The combination salt storage and brine measuring tank with cover shall be sized to hold _____ lbs. of salt and have the dimensions of _____ diameter x _____ tall. The tank shall be of rotationally molded rigid polyethylene. The brine tank shall be equipped with an elevated salt plate for the collection of brine and shall have a chamber to house a brine valve assembly. The brine valve assembly shall include an automatic air eliminator and safety float shut-off valve. It shall open automatically, to educt brine, close to prevent the entrance of air after the brine has been drawn, and permit refill of the tank with the correct amount of water. Brine dosage shall be controlled by the softener control valve through an adjustment on the clock timer. The system shall be designed to allow proper refilling regardless of the salt level in the tank.
6. The control valve shall have 3/4 inch inlet and outlet connections and be constructed of lead-free brass. It shall be of the mechanically actuated, four position type to accomplish the regeneration steps of backwash, brine draw / slow rinse, fast rinse and brine tank refill. The valve shall contain a fixed orifice eductor nozzle and self-adjusting backwash flow control. For simplex systems, the control valve shall allow for the bypass of hard water to service during the regeneration cycle.
7. The control system shall have an integral timer for adjustable duration of the various steps in the regeneration cycle and shall allow for the manual initiation of the regeneration cycle. Each softener control valve shall be equipped with a 12-day electrical timeclock controller that can be adjusted to automatically initiate regeneration at any hour of the day and any day of the week.

8. A complete hardness test kit shall be furnished (ASTM soap test method).
9. The water softening equipment shall be warranted against failure due to faulty materials, and workmanship for a period of one (1) year. In addition, pressure vessel(s) shall be warranted for a period of five (5) years.