WATER SOFTENING EQUIPMENT

General

Water softeners are to be used only in conjunction with boiler or deionized water installations unless otherwise instructed by the University Project Coordinator.

Design Requirements

The system should be automatic, including backwash and flush. The regeneration sequence should be in this order: backwash, brine, slow rinse, and fast down-flow flush. Backwash and flush flows should be controlled by an automatic flow control requiring no field adjustment.

Capacity of the system should be based on the following City water conditions:

- Raw water at 150 to 250 ppm total hardness $CaCO_3$.
- Softened water to 10 grains per gallon total hardness at $CaCO_3$ and free of color, oil, turbidity.

At time of project design verify these conditions with City of Ann Arbor Water Department through the University Project Coordinator.

Softener (resin) tanks should have 50 percent or more freeboard, 150 psi working pressure and 225 psi test pressure. Tanks should be stamped with the ASME label and have an ASME safety relief valve. Tanks should have a manhole. The main operating valve on each softener should be an automatic multiport diaphragm-type, slow opening and closing, and free of water hammer. Gauges and sample cocks should be furnished on the inlet and outlet of each tank.

Brine tank shall be fiberglass.

Controls should have adjustable duration of the various steps in regeneration and should provide complete manual operation. Regeneration should be initiated by automatic reset water meter. The twin water softener should be equipped with a single water meter or hardness monitor in the common outlet header.

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