

## SOFTENERS FOR PRETREATMENT OF WATER

### ECOSS STAINLESS STEEL EVAPORATIVE CONDENSER

Water treatment is extremely important, along with other factors, to maintain the integrity and performance of evaporative condensers. The equipment manual recommends to perform periodic water analyses to control critical analytical parameters. Bulletin BT-004 describes the importance of monitoring the parameters. In addition, it is recommended to hire companies specializing in chemical treatment services.

Water quality can vary greatly from region to region, so local monitoring is required in each individual process. In some cases, it will be necessary to carry out a pretreatment in water: clarification and/or softening. Within these processes, the removal of suspended solids (clarification) and the removal of total hardness (calcium and magnesium) dissolved in the make-up water will be carried out. The removal of total hardness is carried out through an equipment called a softener, which contains an ion exchange resin that retains the  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions from water replacing them with  $\text{Na}^+$ .

#### **Purpose and functionality of softeners**

In case of waters with high hardness, that is, with high concentrations of calcium and magnesium ions ( $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ), it is recommended to use softeners. A softening process consists of the exchange of these ions for sodium ions by means of cationic resins. Softening is necessary to prevent excess water hardness from generating scale on heat exchange metallurgy, directly affecting the performance of the equipment, as well as facilitating the formation of pitting corrosion (see bulletin BT-006).

In most scenarios it can be recommended to install softeners in the system, because high concentration of total hardness in the water of the equipment is one of the main causes of scale formation and with the removal of these components benefits are obtained to improve the chemical treatment and provide greater durability to the evaporative condenser, this device is shown in Figure 1.

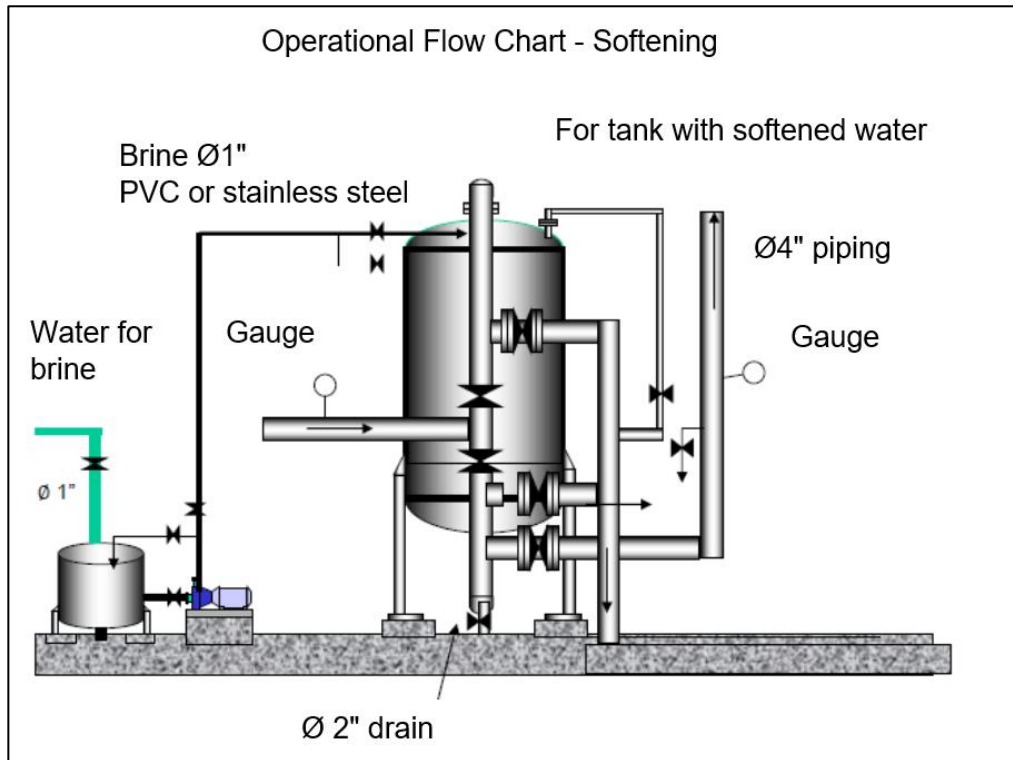


Figure 1 - Softener

**Advantages**

- Reduces the tendency of mineral scale formation;
- Improves quality of water to be used;
- Improves the results of chemical treatment;
- Improves the overall condition of the equipment;
- Ion exchange resins have long service life;
- Spray nozzles remain clean longer;

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**Important!**

For evaluation and acquisition of a softener, a specialist company in the field should be consulted.

It is the responsibility of the customer to carry out the maintenance plan, adapting its operation and performing the chemical treatment of the water, to use a quality water.

For more information, refer to our technical department.