

Water Softeners Overview and Sizing Information

About Water Softeners

Hard Water contains dissolved minerals in the form of Calcium (Ca), Magnesium (Mg), and Iron (Fe). Removal of these minerals is accomplished by softening the water through an ion exchange process. As the water flows through the mineral tank, the dissolved minerals become attached to the resin, creating soft water. Over a period of time the resin will become exhausted, and the softener will regenerate using a brine solution produced from the salt in the brine tank.



Advantages to Using Water Softeners

- Prevents Hard Water Scale
- Provides Excellent Scale Prevention Pretreatment for Reverse Osmosis Systems
- Prevents Staining on Bathroom & Kitchen Fixtures as well as Dishes, Dishwasher, Washing Machine & Clothes
- Significantly Reduces Soap and Cleaning Product Consumption
- Reduces Water Heating Costs
- Prolongs Life of RO Membranes, Water Heaters, Icemakers, Dishwashers, Coffeemakers & Plumbing Fixtures

Sizing and Selection Information

Step 1: Calculate Total Hardness as GPG

Usually chemical analyses report calcium (Ca) and magnesium (Mg) in terms of parts per million (ppm) as calcium carbonate (CaCO₃). However, in some cases, the analysis is reported in terms of the elements themselves. If this is the case, proceed as follows:

Calcium (as Ca) _____ × 2.50 = _____ ppm Ca as CaCO₃. (A)

Magnesium (as Mg) _____ × 4.10 = _____ ppm Mg as CaCO₃. (B)

A _____ + B _____ = _____ Total Hardness PPM as CaCO₃

Total Hardness PPM as CaCO₃ _____ ÷ 17.1 = _____ GPG as CaCO₃.

Step 2: Calculate Cubic Feet of Resin Required

_____ Gallons per Day × _____ Total Hardness (GPG) = _____ Grains per Day

_____ Grains per Day ÷ 30,000 = _____ Cubic Feet of Resin Required

Select the appropriate softener based on the volume of resin.
When between sizes, it is recommended to select the next size up.

Note: The above calculations are based on daily regeneration and maximum resin capacity. Regeneration based on 15 lbs. of salt per cubic foot of resin.

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