

## About Commercial/Industrial Reverse Osmosis Systems:

### Q. How does reverse osmosis ("RO") work?

A. RO removes total dissolved solids and "minerals" or "salts" by passing water through a semi-permeable membrane that separates the pure water into one stream and the salt water into another stream. The process is called "reverse osmosis" because it requires pressure to force pure water across a membrane, leaving the impurities behind.

### Q. Why do they call it "reverse osmosis"?

A. In regular "osmosis," which is the process used by plants and trees, water flows from lower concentration of salts to higher concentrations. In "reverse osmosis," by applying pressure greater than the osmotic pressure, the flow of water is reversed: water flows from higher concentrations to much lower concentrations, producing pure water.

### Q. Why do commercial RO systems utilize high-pressure pumps?

A. High pressure, typically 150 psi to 250 psi is required to desalinate tap water; pressures up to 900 psi are required to desalinate sea water and many brackish waters. These systems come with built-in pumps that provide this pressure automatically.

### Q. If a system is rated 3000 gallons per day, does this mean that I will get 3000 gallons per day at my application?

A. These systems are rated on 25 degree F. water free of hardness minerals; actual production will be less depending on feed water chemistry and temperature. If designing parameters are on 3000 gallons per day then you will get accordingly.

### Q. Is pretreatment and feed water chemistry important with RO systems?

A. Yes! Pretreatment is the key to long, trouble-free operation of your RO system. The water must be free of iron, manganese, hydrogen sulfide, tannins, chlorine and hardness minerals such as calcium and magnesium. You should first have your water tested, and you can then contact our technical staff for help on selecting the best reverse osmosis system for your application.

### Q. Do I have to use a water softener to provide "soft" water to the RO system?

A. Not necessarily. Depending on the water chemistry, a pretreatment chemical can be injected into the feed water eliminating the need for a water softener. In many cases, it is less expensive and more effective to use various pretreatment solutions that in place of water softening, saving money on salt and eliminating salt discharges.

### Q. How much waste water does the system produce?

A. This depends on feed water analysis report and designing parameters accordingly, there are variations in recoveries. This however, varies widely with the water chemistry and application.

### Q. I don't need extremely pure water, just a little lower TDS than I have now, what can I do?

A. The best approach is to use "blending" to blend back in some of the untreated, filtered water with the pure water. Fax, e-mail or call us for more details and installation schematics.

### Q. Can I get assistance in sizing a reverse osmosis system for my application?

A. Yes. You should first have your water tested, or supply us with a complete general mineral water analysis, and then contact our technical staff for help on selecting the best reverse osmosis system for your application.