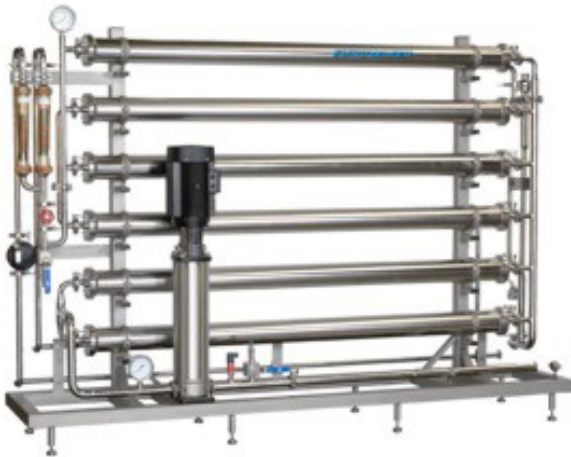


Reverse Osmosis filters

Envo-RO



Reverse osmosis (RO) is used to separate substances dissolved in water, primarily salts but also organic compounds. Examples of application areas include feed water, rinsing water in surface treatment processes, final purification after UF, flue gas condensate, drinking water and leach water. In many cases ultra-filtration is required as pre-filtration before an RO system with the spiral-wound membrane element.

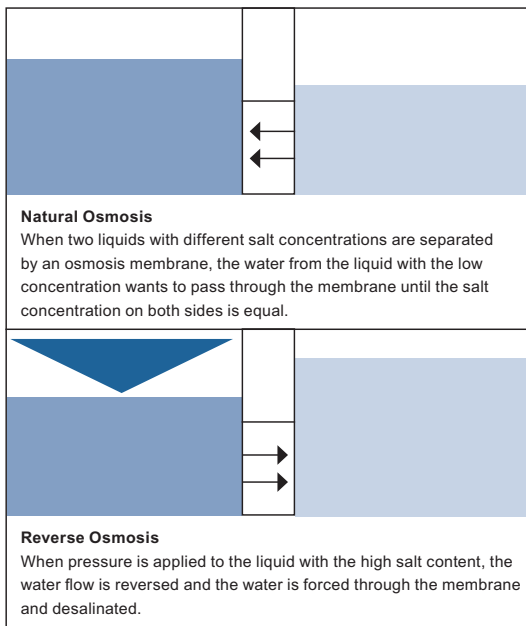
The RO membrane can take the form of either a plate membrane or a tube membrane, which does not impose the same high requirements on pre-filtration and may be more cost-effective for some applications. Vilokan works with most membrane modules and selects the module type and pre-treatment based on the application and the customer's wishes.

General information about the function.

Reverse osmosis is a pressure-driven process where the contaminated water is pumped at high speed and relatively high pressure parallel to the membrane surface. The contaminants are kept back by the membrane and concentrated in a process tank, or led continuously to an outlet. The membrane separates up to 99% of dissolved salts and up to 90% of COD. Reverse osmosis places high demands on pre-treatment of the water.

Particle-free water with a low content of insoluble salts is usually required for problem-free operation. The RO membrane is usually made from polyamide, which places some restrictions regarding pH and resistance to chemicals. The most common type of RO membrane is a spiral-wound membrane element. A large, densely packed membrane surface in a relatively small volume.

One or more elements are placed in a pressure vessel where the contaminated water is circulated over the membrane surface. The pressure can vary from 6-60 bar depending on membrane type, salt content and the desired degree of concentration.



Examples of applications



Examples of application fields:

- Final polishing in water purification etc.
- Polishing fresh water
- Purification of flue gas condensate
- Feed water
- Polishing after ultra-filtration
- ...and many others