

LEACHATE TREATMENT with Reverse Osmosis

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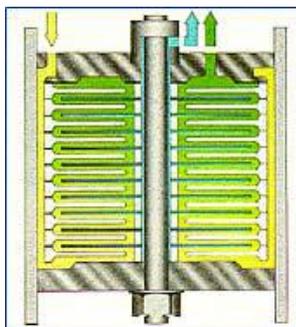
General Information

The disc tube module system is successfully in use since 1985 as a membrane filtration in sea water desalination and since 1987 for sewage and leachate purification.

In the meanwhile the experience is based on more than 1.600 reverse osmosis plants with different water qualities.

The various experiences from sea water desalination with disc tube module technique is put into treatment of leachate. The equipment of such plants has to grant especially high corrosion stability as well as it has to be flexible enough to cope with the changing quality of the raw water containing highly colloidal substances.

The DT Module



The so called "DT module" (disc-tube module) is the most advanced product in plate module technology.

This module consists of a pressure tube and hydraulic discs which are held by a center tension

rod. Octagonal membrane cushions lie between every two discs.

The membrane cushions are made of two single membranes sealed by ultrasonic welding, which are separated by a fleece tissue (spacer). Owing to this special construction, open flow channels are formed between the hydraulic discs and the membrane cushions where the raw solution concentrates.

The individual channels are joined together by openings in the discs, which are arranged in annular pattern, so that the feed water flows radial across the membrane cushions, alternately from the inside towards the outside and reversibly.

The Membrane



The membrane cushions are made of two composite membrane discs with an intermediate layer. The membranes are manufactured from modified polyamide, the material of intermediate layers is polyester. Owing to the patented welding technique the medium cannot come into contact with other materials (membrane glues, etc.)!

Beside various reverse osmosis membranes also nanofiltration and ultrafiltration membranes are available.

Plant Technique

The plants are tailor-made according to the customers demands. Four standard modular plants, which can treat leachate volumes from 0.5 m³/h to 15 m³/h, form the basis of the system. The modular system-design allows also the construction of plant for bigger water volumes.

If required, these plants can be equipped with permeate stages (2nd RO stage) to ensure, that even in the case of high pollutant concentrations the standard requirements are met.

To increase the permeate yield (= minimisation of the concentrates to be disposed of) concentrate stages with high pressure technology up to 200 bar are offered.

The units are designed in standard modular form; the individual sections are installed on a common foundation frame, made of stainless steel to ensure a long life time of the system.

The standard modular form allows ready-for-operation assembling of the plants in the factory, including complete acceptance testing. This allows quick installation and start-up of the plant at the intended site.



Test Units

For new installations we select the appropriate model, using data generated on site.

Testing is usually carried out by a low capacity mobile plant (up to 15 m³/d).

This enables us to offer customers the assurance that every single aspect of a future system meets consistently high standards.



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