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Membrane Filtration (MBR)



The future-oriented solution for ever increasing requirements in wastewater treatment - for a maximum effluent quality

Germ-free water at low cost

The clarification process on municipal and industrial plants has been characterised by large space requirements, big structures, odour development and poor degradation and retention efficiency in case of varying loads. This results in a heavy environmental burden in the form of emissions and impairment of nature, high building costs and plant maintenance costs.

The HUBER membrane systems allow for size reduction of the structures required by up to 70 % and even increase the performance of wastewater treatment plants.

Problems with scum or sludge overflow that occur with sedimentation are no longer an issue with filtration. Even existing structures can be retrofitted and the capacity increased. Existing preliminary and secondary clarification tanks can be modified and further used as storage and stand-by tanks.

Furthermore, the effluent quality of such plants complies with all presently applicable standards and even allows direct reuse of the bacteria-free and germ-free effluent as service water (e.g. for irrigation).

Products

- [HUBER Membrane Filtration VRM®](#)
- [MENA-Water MBR sewage treatment plants](#)

Details

The HUBER membrane principle for MBR applications

The principle of membrane filtration is based upon the separation of solids suspended in a watery solution by means of a pressure difference. While the water permeates through the membrane, the solids, bacteria and even most viruses are retained on the concentrate side on the membrane surface where they are removed by relative movement. The pressure differential necessary to pass the liquid through the membrane depends on the membrane pore size and membrane quality.

HUBER uses for all membrane systems a high performance hydrophilic membrane which has very good filtration properties with a low affinity to fouling and covering layer forming material contained within the wastewater. The membrane pore size of approx. 38 nm lies within the ultrafiltration range. This allows high flow rates (up to 60 l/m²h) at a low transmembrane pressure (< 100 mbar) whilst retaining all solids, bacteria and the majority of germs. In addition to the liquid phase only ions and low-molecular dissolved substances pass through the membrane. Typical surface-related flux: up to 35 l/m²h.

The overflows required for a constant operation of the ultrafiltration membranes are achieved through a highly effective air flow on the concentrate side with only one sixth or eights of the installed membrane surface being scoured at a time. Furthermore, intermittent scouring at low throughputs minimises energy costs.

Case Studies

- [HUBER VRM® Membranes in Bavaria's Largest Municipal MBR System](#)
- [VRM® unit for Training Centre for Membrane Technology in Seelscheid](#)

Downloads

 [Brochure: HUBER Vacuum Rotation Membrane VRM® Bioreactor](#) [pdf, 732 KB]

[Further information](#)

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