

# Moving bed adsorption for effluent polishing

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## PRINCIPLE

MBA is a hybrid combination of moving sand bed filtration and a counter-current adsorption process. Simultaneous removal of suspended particles and dissolved pollutants, including priority substances (e.g. EDC's and metals), is made possible in one, continuous treatment step. The adsorption is usually done by powdered activated carbon, but also combinations with other adsorbents can be used.

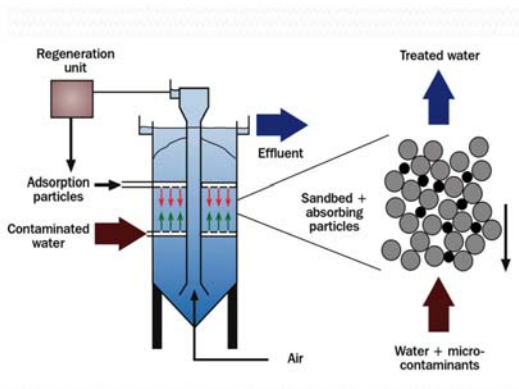


Figure 1: principle of MBA

## INNOVATIVE ASPECTS

- Suspended particles and dissolved organics are removed in one single step.
- Fast adsorption by small particles (minutes).
- High removal efficiency, because of the counter current principle.
- Investment costs are comparable or lower than for conventional moving bed filters.
- Regeneration of the loaded carbon is an option.

## ADVANTAGES

- Low investment costs; low operational costs (depends on carbon usage).
- Small footprint
- Robust (physical processes)
- Handling of large streams (10 m<sup>3</sup>/h and upward); very suitable for effluent polishing
- Removal of organics between approx. 50 and 98% (meeting WFD standards)
- Option for simultaneous removal of metals and nutrients



Figure 2: pilot Horstermeer