



# BIOFILTRATION

## Waste Water



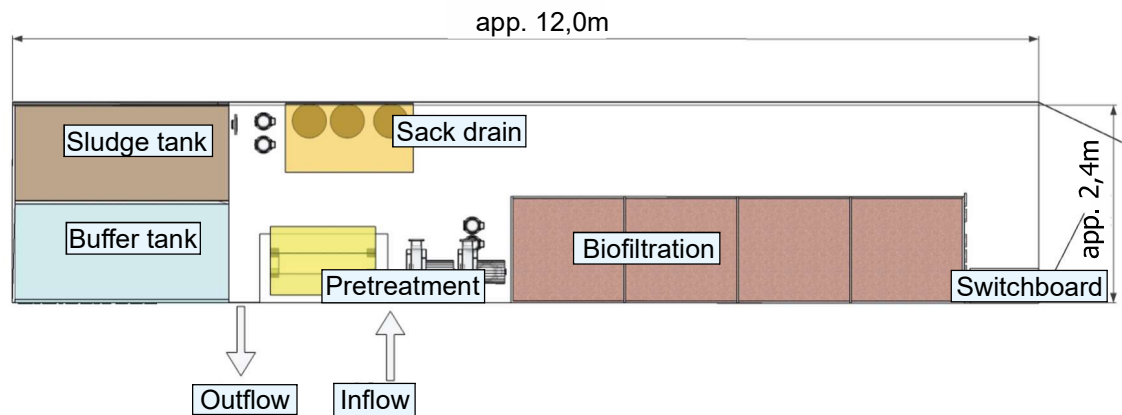
# The Waste Water Biofiltration

Where conventional purification systems fail, bio-filtration comes to the fore. When there is a lack of space and a constricted area, when the sewage situation is complicated or when an existing plant is under reconstruction, bio-filtration is the ideal and most economic procedure for the primary as well as the secondary purification of water.

Deeper knowledge of the biological mechanisms, the use of fine filtering media and the supply of additional oxygen have enabled the scope of the process to be enlarged while safeguarding all its advantages.

Upflow bio-filtration (co-current flow of air and water) systems permit a better use of filter mass without air embolisms and are therefore the most common used Biofilters in domestic and industrial wastewater treatment. The constant feed will be arranged by special filter nozzels which are integrated into the filter nozzle plate. The nozzels disperse the wastewater to the biofiltration media. The treated water leaves the reactor over an outlet trough to the recipient. One or more process air blowers supply the necessary air which will be blown into the reactor through a ventilation system.

The operation of the Biofilter is fully automated.



In this type of reactor, biomass is fixed on a suited granular support media. Both functions are simultaneously achieved:

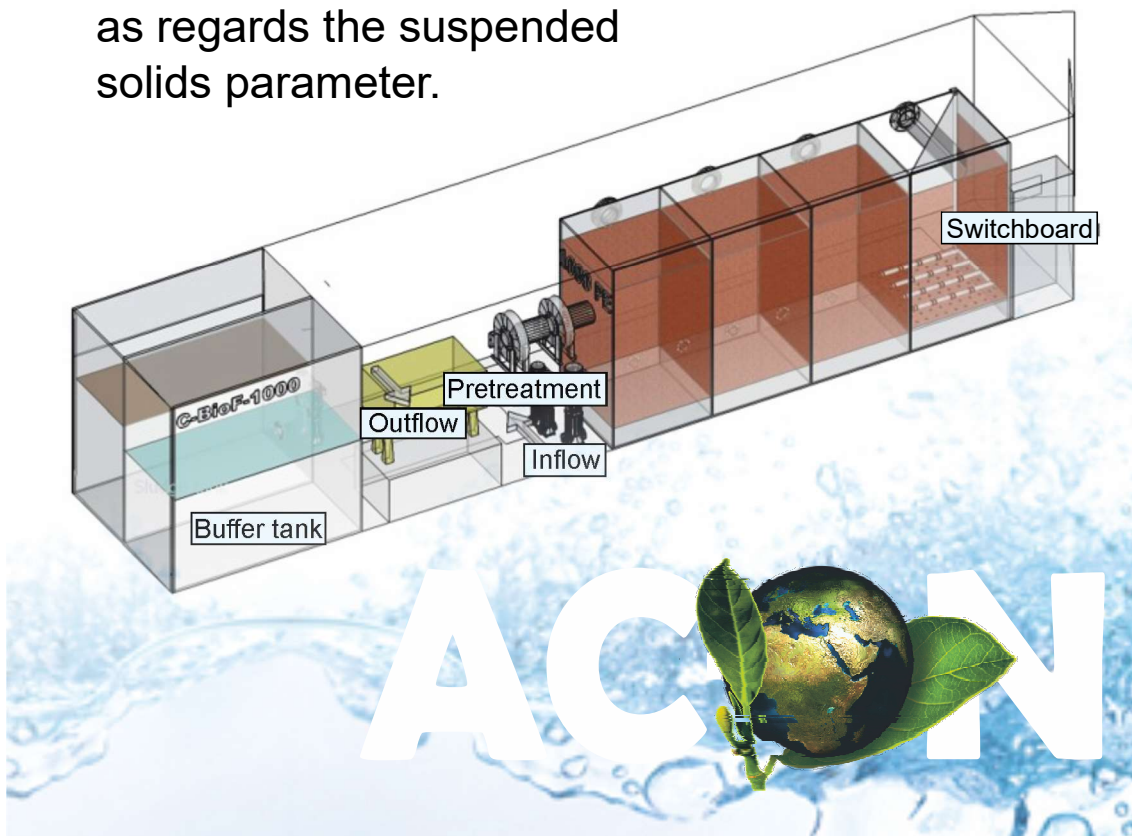
**PHYSICAL:** suspended solids retention.

**BIOLOGICAL:** organic matter degradation by specialised organisms.

The filter clogs gradually, due to growth of biomass and the penetration of suspended solids. Regular washing runs are required at intervals that will vary depending on the applied loads. Normally the washing runs range from 24 to 36 hours. The cleaning of the filters consists mainly of combinations of water and/or air flush phases.

## Advantages over other activated sludge systems:

- simple separation of biozooenoses possible
- higher concentration of biomass therefore smaller reaction space and shorter process reaction times
- no final clarification stage necessary
- increased reduction of difficult degradable compounds due to preferential settlement of special microorganisms
- high biological activity also on low waste water temperatures
- compact, room saving installation because of modular concept
- very high quality effluent, especially as regards the suspended solids parameter.





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