PROCESS

SEMICONDUCTOR
SOLAR
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CHEMICAL
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MINING
AEROSPACE AND TRANSPORT

HAGER+ELSÄSSER

BIOFIT®.H

Biological pre-treatment of highly polluted wastewater from industrial processes

BIOFIT®.H – biological pre-treatment especially for the paper industry

Proven and powerful for maximum loads.

BIOFIT®.H is a well-proven, robust moving bed process for the biological pre-treatment of highly contaminated wastewater, especially from the paper industry, if anaerobic treatment is not an option. This process is also recommended for other sources of highly polluted wastewater such as those produced in the petrochemical and food industries.

BIOFIT®.H is ideally used before activated sludge treatment. BIOFIT®.H can handle pollution levels up to 100 kilograms chemical oxygen demand (COD) per cubic metre per day.
The carrier system used ensures that far more bio-active sludge is present than is normal, resulting in a faster degradation rate compared to other available technologies. BIOFIT®.H can be fitted into more or less any existing vessel, regardless of its shape, to provide a highly efficient wastewater treatment plant upgrade.

Benefits

BIOFIT®.H operates successfully in a wide range of vessel shapes. This means that fitting a new vessel onto a space-limited site or retrofitting into existing vessels is usually possible without any problems.

BIOFIT®.H quickly reaches its full capacity, since the build-up of the biofilm structure during commissioning is very quick.

A BIOFIT®.H system requires no additional mixing device. The integrated AEROFIT®.V aeration system performs this task perfectly well, thus reducing the investment cost.

Thanks to the open geometry of the carrier and a specific adaptation of the Airlift system, BIOFIT®.H operation is remarkably tolerant to incrustation with precipitated calcium carbonate.

The open surface geometry of the carriers guarantees that optimum flow through will always be achieved. This means that clogging of the system is avoided.

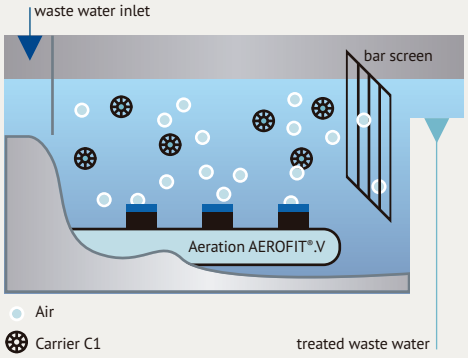
Since the biomass is attached to the carriers, BIOFIT®.H has proven to be very tolerant of changes in volume and loading. This ensures stability of plant operation even under changing load conditions.

The effects of widely fluctuating inlet conditions are also cushioned by the possibility of recycling sludge from the downstream activated sludge process. Since the most of the easily degradable wastewater constituents have already been treated in the highly stressed BIOFIT®.H stage, the subsequent activated sludge system can be run at a particularly low sludge index, which ensures reliable operation of the secondary clarifier.

BIOFIT®.H can be implemented in several stages without subsequent activated sludge system. In this case, a FLOTOPAC flotation system is given the task of sludge separation.

Process components

BIOFIT®.H systems incorporate a number of individual products, all developed by H+E, that mesh with each other perfectly to provide a highly-efficient system as a whole.



The carriers provide the **biofilm supporting structure** for the organisms that actually degrade the pollutants. They have to be designed not to clog, and also to remain mechanically sound in the long-term, so that the biomass settles on them and grows safely. The C1 carrier from H+E meets these particular requirements perfectly.

A powerful **aeration system** can contribute significantly to efficient heavy-duty operation and must run without any major maintenance for years on end. In this, the AEROFIT®.V system from H+E has been proven to fully fulfil these requirements.

An **airlift system** is used at regular intervals to free the carriers from debris and clogging and keep the biofilm on the carriers operating at peak performance. H+E uses its own components, developed in-house for this purpose, to ensure gentle and efficient cleaning of the carriers.

Lastly, a well-proven **restraint grid system** secures the carriers within the treatment vessel, thereby ensuring that the biofilm stays in the vessel. This restraint system is designed so that it will not clog during long-term operation.

C1 carrier that will be the basis for the biofilm

Further available process technologies

FLOCOMAT®.T

If separation of solids is required before BIOFIT®.H, the FLOCOMAT®.T flocculation reactor from H+E is the ideal choice, as it will combine three functions into one unit, providing much higher process efficiency.

AEROFIT®.V

Developed by H+E specifically for use in moving bed reactors the AEROFIT®.V medium-bubble aeration system is the specific choice for the heavy duty operation of processes like BIOFIT®.H.

BIOFIT®.F

Following BIOFIT®.H a biological waste water treatment stage can also be offered by H+E: BIOFIT®.C, BIOFIT®.F or BIOFIT®.M can be considered"

Contact