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ENERGY - WATER - SEWAGE TREATMENT TECHNOLOGY

Datasheet

MBBR

Moving Bed Bio Reactor

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Description

MBBR technology manufactured by Ptech GmbH, uses thousands of polyethylene biofilm carriers that operate in mixed motion in a wastewater treatment tank aerated by a blower under PLC control.

Each biofilm-carrier acts as a carrier bed to support the growth and reproduction of heterotrophic and autotrophic bacteria in the wastewater. This high-density bacterial population provides a high level of biodegradation within the system while also ensuring process reliability and ease of use.

It is a fact that MBBR is quite efficient during process selection while keeping operating and maintenance costs in mind. It is selected in a variety of industrial applications and has certain advantages.

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Compact,

MBBR is an excellent option for space-constrained facilities due to the fact that it typically takes up much less space than other systems. An MBBR aeration tank can effectively treat the same amount of water as a larger tank used for a more traditional process. This advantage is particularly evident thanks to the maximum surface area that the media provides for biofilm growth.

Less Maintenance,

MBBR is also known as a process with low maintenance requirements. Maintenance tasks that an operator must perform on other processes such as backwashing are generally unnecessary for MBBR. This system is largely self-maintaining, so users can rely on it to operate effectively without the need for tiresome and ongoing maintenance.

Simple,

Another practical advantage of MBBR is that it is a relatively simple process. The MBBR process allows for operational capabilities that minimize the role of the operator. It is important for plant operators to be trained on the process by Ptech GmbH personnel so that they can ensure that everything is working properly at a molecular level.

Flexible,

MBBR can adapt to changing loads and changes in its content as required, as the microorganisms on the biocarrier respond to sudden changes. MBBR's allow systems to resist shock loading or sudden increases in pH levels.

Efficient,

One of the most important advantages of MBBR is its impressive level of efficiency. An MBBR system can operate in agility compared to alternative methods of water treatment.

MBBR Operation and Maintenance

The MBBR process, which operates in a dynamic cycle, does not require backwashing or return sludge flows. Due to coarse bubble aeration in the aeration zone, the operation of the wastewater treatment tank is a low-cost one. Continuous mixing with aeration eliminates clogging and keeps the bio-carriers in constant motion within the reactor.

The maintenance of the MBBR system must be carried out as specified in the operation and maintenance manual. MBBR requires qualified personnel for the routine monitoring of blower and pump operations. The MBBR technology has a self-maintenance mechanism for the biofilm level.

Comparison of MBBR and MBR

Membrane bioreactor is based on a combination of traditional activated sludge and biofilm environments. The comparison between MBR and MBBR can be made using key criterias that follow:

- The initial investment cost of MBR is higher than that of MBBR.
- The influent COD value is higher in MBR technology compared to the MBBR process.
- The MBBR system does not require chemicals to operate like the MBR system.
- Operating the MBR process is more difficult compared to the MBBR process.
- The MBR process requires a circulation pump and compressor, which are not needed in MBBR.
- Both systems require a blower.
- In case of a power outage, the maximum waiting time for MBR is 24 hours, while for MBBR it can last up to 10 hours, after which bacteria form a bio-cake.
- MBR is better than MBBR in the removal of complex or toxic substances.
- The quality of treated water from MBR is superior, but MBBR is only suitable for garden irrigation purposes.

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