

MOVING BED BIOREACTOR TECHNOLOGY (MBBR)

DESCRIPTION

The moving bed technology is based on biomass growth in plastic supports (carriers) moving inside the biological reactor by the agitation generated by aeration systems (aerobic reactors) or by mechanical stirring systems (in anoxic or anaerobic reactors). The carriers are made of recycled plastic material with density close to 1 gr/cm³; this allows them to move easily in the reactor even with filling percentages of 70%.

The biofilm formed on the carriers is more effective than the biological flocs that makes the moving bed reactors be smaller in volume than the active sludge reactors. The same growth of the biofilm onto the carriers makes the inner layers enter anaerobiosis and makes some of that BIOFILL drop. This suppose that the necessary biofilm is automatically generated by the load.

The solids or sludge loosed from the carriers are removed from the system by purging, not requiring any recirculation. As the extraction of the sludge from the reactor is automatic the operation of the plant is easier.



The MBBR technology has the following advantages:

- ✚ Smaller size of the biological reactor.
- ✚ Very flexible process, as allows changes of the filling in the reactor.
- ✚ Recirculation of biomass to the reactor is not required, this means that the biomass does not depend on the final separation of the sludge, thus avoiding the usual problems related to sludge sedimentation in conventional processes of active sludge (filamentous bulking, etc.)
- ✚ Operation and control of this type of processes are simple, since no knowledge of the biology of the process is required; it is only necessary to keep the equipment working mechanically, as the system maintains the biomass in the reactor until it is detached from the support.

Additional Benefits:

- ✚ **Easy to transport** by its container structure.
- ✚ **Minimum civil works:** only small ditches and foundations.
- ✚ **Easy and quick** assembly, all its elements are inside the containerised structure.
- ✚ **Easy commissioning:** preassembled plant.
- ✚ **Easy operation:** reliable technologies and easy operation.
- ✚ **Centralized operation:** Electric control cabinet in the container structure.
- ✚ **Robust maintenance:** High quality equipment.
- ✚ **Mobile:** possibility of relocating the packaged plant

CAPACITY/VOLUME

FLOW (m³ / h)	NUMBER OF CONTAINERS
40	1 de 20 ft HC
75	1 de 20 ft HC
135	1 de 40 ft HC
180	1 de 40 ft HC
360	2 de 40 ft HC
720	4 de 40 ft HC

