CIMICO

Innovative solutions for biological wastewater treatment.

CIMICO mobed®mbbr eeff

Technical sheet

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(Energy efficient MBBR)

Description

Conventional MBBR has multiple benefits:

- 01 High treatment capacity.
- 02 Robustness to peak loads.
- 03 Simple operation.
- 04 Minimum footprint.

However, the MBBR is identified with very high energy consumption. To address this, CIMICO has developed a new version of the MBBR: MBBR EEFF, an energy efficient MBBR based on different innovations.

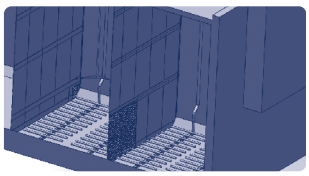
Innovations

We propose to decouple the mixing of the moving bed from the aeration necessary for the bacteria, through adequate and controlled agitation systems.

In addition, we propose a moving bed of higher density to facilitate mixing, reducing the cost of blower and mixer operation.

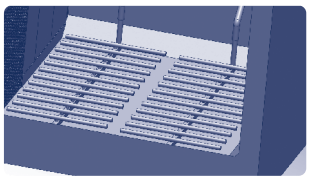
To minimize air consumption, we have developed an adapted, more robust aeration system with fine bubbles to ensure proper mixing and maintenance.

Finally, we control the complete system, biological, air and mixing, with our own advanced controls.



Decoupling of mixing & aeration

High density (HD) MOBED®



Adapted aeration system

Advanced automatic control

Case studies

• 01 Riumar WWTP

The first example of the success of this approach is the Riumar WWTP, near Barcelona.

Here we have installed a part of the proposed innovations: the decoupling of the mixing and aeration controlled by our own control system.

The result is a dissolved oxygen rate varying between 1 and 3 mg/l, significantly lower than a conventional MBBR, with a consumption of about 1.2 kWh/m^3 of treated wastewater.

• 02 Getaria WWTP

We are building the first complete version at the Getaria WWTP in northern Spain.

As seen in the graphics above, this intervention counts with the decoupling of mixing and aereation, using agitation and a fine bubble reinforced and adapted air system.

The moving bed will have a higher density, placed only in chamber 1, and the whole system will be controlled by CIMICO's digital solutions, which are connected to the WWTP's PLC.