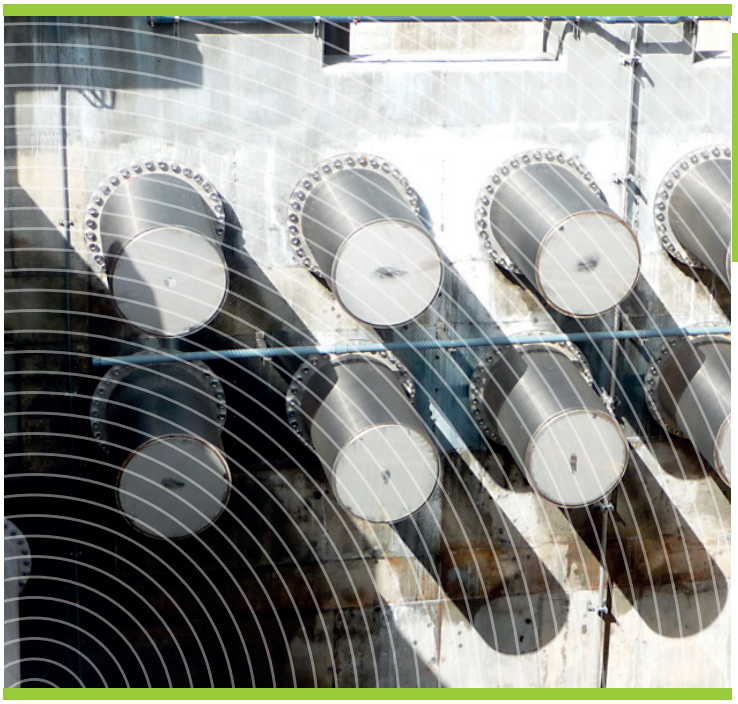
Meteor™-MBBR

biological purification of wastewater by moving bed cultures

urban wastewater



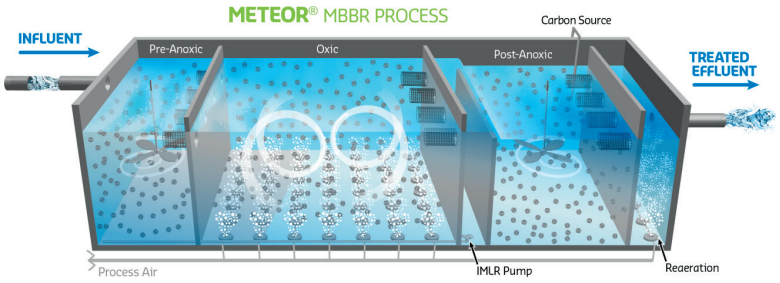
complete treatment of wastewater with a very compact footprint

- **flexibility of use**
  compact, modular, with simplified operation
- **environment**
  treated effluent discharge maintains ecological purity

innovation

specialization of biological reactors for the advanced treatment of pollutants in a modular system of fixed cultures

Meteor™-MBBR (Moving Bed Biofilm Reactor), is a biological process with fixed fluidized cultures that keep the microorganisms in the reactors dedicated to a specific processing step, thus promoting the development of the purifying biomass. We thereby distinguish pre-denitrification from the elimination of carbon, nitrification and post-denitrification.



key figure

up to **50%**

less surface area used compared to traditional activated sludge processes

suez

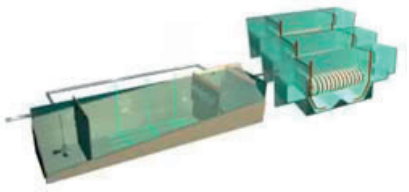
Meteor™-MBBR technology . . .

Meteor™–MBBR, staged after standard pretreatment equipment supplemented by fine screening and / or a primary settling tank, is a 100% biological reactor composed of one or several tanks with immersed mobile media on which fixed biomass (micro-organisms) develops. The tanks are designed and configured according to the characteristics of the water to be treated and the treatment objectives. It can be designed with specific, dedicated areas for pre-denitrification, carbon treatment, nitrification, post-denitrification, etc.

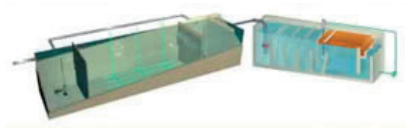
The biofilm media specific to this application were designed so as to offer an optimal growth area for the biomass. They are maintained in suspension by fluidization (injected air system and / or mechanical agitation according to the treatment areas) and trapped by screens of metal wire, flat or tubular.

From the reactor to the separation unit: during the treatment, the surplus biomass detaches from the supports and is removed from the biological reactor. It is then trapped in the separation unit which, as its name indicates, separates the biomass from the treated water. This separation tank is located downstream from the biological reactor and is composed of either a high-speed flotation system (Greendaf™*) or a mechanical filtration system (Compakblue™*) as a function of the particular concentrations of TSS (Total Suspended Solids) leaving the reactor. Sludge recirculation is not necessary with this process. Note: the separator can provide a phosphate abatement rate on the order of 95%. The separation can be assisted by the presence of coagulant and flocculant products.

Meteor™-MBBR + Compakblue™



Meteor™-MBBR + Greendaf™



* for further information about Greendaf™ and Compakblue™ products, please consult the Innovation sheets for these technologies available at: www.degremont.com/innovations-guide

. . . what it can do for you

flexible use

- works continuously and does not require washing materials
- modular and upgradable equipment that can adapt to all plant sizes and to all treatment objectives (pre-denitrification, treatment of carbon, nitrification, post-denitrification)
- allows for substantial load variations, so its use is perfectly suited to tourist areas
- adaptable for the treatment of low-temperature effluents

performance and environment

- superior compact size (of the biological unit and the separator)
- allows for targeted and therefore optimized treatment of nutrients (nitrogen, carbon)
- includes reactors that reproduce natural purification
- meets the strictest discharge standards

among our references

Moorhead, Minnesota, USA
capacity: 23,000 m^3/d

Moundsville, WV, USA
capacity: 7,000 m^3/d

Anderson, SC, USA
capacity: 5,000 m^3/d

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