

Micro filtering: general aspects

The presence of algae biomass causes problems that are certainly not secondary in the water treatment processes.

In fact, the algae proliferation in the water destined to human usage produced not only unpleasant tastes and smells, but, indirectly, causes the generation of toxic substances. The elimination of algae and micro organisms is therefore of fundamental importance, above all if it is considered that their cellular structure is not to be stressed or disintegrated, because in that case the process would generate toxins, substances that are difficult to remove and moreover are prone to generate compounds forerunners of halogen compounds, substances that are potentially dangerous for the human health. From that point of view the micro filtering is the ideal solution, because utilising that technique it is possible to remove the main part of the organic substance while it is still intact.

Micro filtering: how it works

Every micro filter is formed essentially by a rotating cylinder made in AISI 316 stainless steel on which are put the filtering weft elements, also made by AISI 316 stainless steel wires.

The filtering weft is supported on the cylinder by detachable chassis and possess meshes of different measures; starting from 1 centimetre , for the first screening, to the measure of few microns for the most selective cases.

Every micro filtering unit have an adjustable valve, also made in AISI 316 stainless steel, used to regulate the exit capacity of the water after the micro filtration; the water is then conveyed towards the central tube to the exit pipeline.

Inside the cylinder the micro filtered residue is conveyed towards an appropriate hopper by washing jets and then directed to the drainpipe.

In order to adjust the functioning of the micro filters to the varying concentrations of algae, has been adopted an automatic system for the regulation of the rotation speed , the system is regulated by the lost of load detected.

The weft is cleaned continuously, by means of a series of jets placed in a manifold near the upper cylinder generator.

It is possible, however, a manual regulation of the jets.

The water after the filter cleaning is then collected in a internal manifold and directed to the drainpipe.

The micro filter units can be realised from little capacity (a few litres per second) to the capacity of over 100 litres per second.