DeltAcque

TANNING INDUSTRY
WASTEWATER TREATMENT PLANTS

TANNING INDUSTRY

Biological wastewater treatment plants

Tanning industry represents one of the industrial sectors with higher environmental impact.

Deltacque deals with any type of issue, providing concrete and effective solutions for the treatment of waste water and for the recovery of both process water and the main chemicals used in the tannery such as chromium and sulphides.

For the treatment of general waters, Deltacque adopts the biological process with activated sludge, a consolidated technology that has further perfected through the construction of over 200 plants all over the world.

PRELIMINARY SCREENING

Applied as pretreatment, is necessary for the removal from the effluent of the undissolved solids, from the raw to the small ones that can cause malfunction to the equipment and pipelines in the subsequent phases. The screening phase can be manual or automatic, that means autocleaning. The technology today gives solutions for every need and kind of installation.

BIOLOGICAL OXIDATION

This phase constitutes the heart of the treatment plant with activated sludge. It is important for the removal of COD, BOD and other polluting compounds, and fulfills its function through a balance between organic substances, microorganisms and oxygen.

The necessary air quantity (oxygen request) to guarantee the required performances is given by an air distribution system on the bottom of the tank and a set of blowers, controlled in automatic mode to increase or decrease the power on the basis of the inlet organic charge.

BIOLOGICAL SEDIMENTATION

In this phase takes place the physical separation of the activated sludge linked to the suspended solids, from the clarified water. This separation increases with the addition of small doses of flocculant and coagulant products through a direct in-piping dosage. The obtained sludge represents the alive matter (activated sludge) that is helpful for the whole process. For this reason, it is recycled in the biological oxidation (≃ 60-70%), while the exceeding part is sent to the treatment of the sludge for its dehydration.

ISO 9001:2015
CERTIQUALITY
CERTIFIED QUALITY MANAGEMENT SYSTEM

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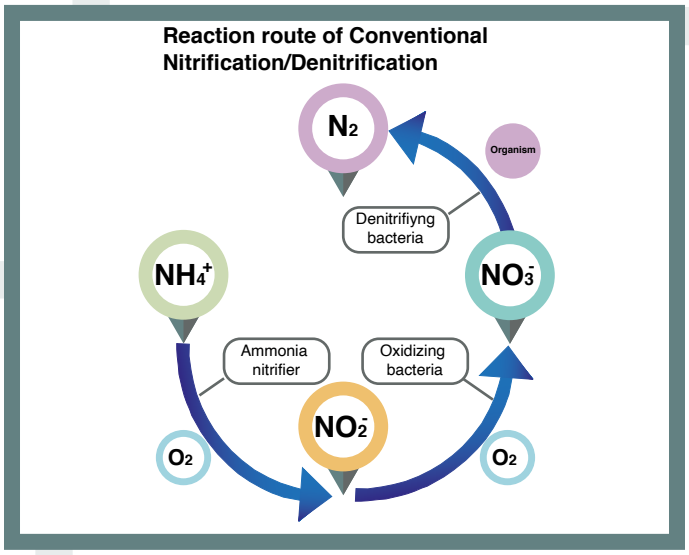
DENITRIFICATION



Together with the nitrification process (taking place during the biological oxidation) it allows the removal of nitrogen compounds. In detail, the denitrification section is necessary to reduce nitrates developed during the oxidation process, where organic and inorganic ammonia NH4+ is converted in nitrites NO2- and nitrates NO3-. In this phase, due to an anaerobic environment, specific microorganisms use the oxygen contained in the nitrates for a further abatement of the organic substances: the nitrogen contained in nitrates is then emitted as gaseous nitrogen.

TERTIARY TREATMENTS

On the basis of the Customer's needs, more treatment phases can be requested, with the aim to remove the pollutants more resistant up to the achievement of elevated treatment performances, suitable for the reuse in production of the treated wastewater as process water. Many are the tertiary treatments proposed by Deltacque, including membrane biological reactor (MBR), sand/carbon filtration, reverse osmosis systems, etc.

PERFORMANCES

The solutions proposed by Deltacque allow to achieve the following objectives:

1- COD reduction up to 98%;

2- BOD reduction up to 99%;

3- Reduction of nitrogen compunds (ammonia and nitrates) up to 95%;

4- Abatement of suspended solids up to 99%;

5- Reduction of the sludge produced up to 50% (compared to a chemical-physical treatment).

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