Environmental Engineering

Industrial emission- and watertreatment
Odour control

Industrial waste water
and process water treatment

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TASK Environmental Engineering

TASK Environmental Engineering is specialized in the realization of industrial waste water treatment installations.

Since years now, Task has been active in the field of waste water treatment plants. This long-term experience has, over the years, been translated into numerous successful references.

We design, build, deliver, install and maintain waste water treatments plants for a wide range of applications in various industries.

Our goal is to build durable, high-quality, maintenance free, energy saving and performing installations. We never lose sight of the economical aspect of such an investment, as we are convinced that a correct price quality ratio in combination with a long-term view (with durable, expandable and adaptable installations) is always offering the most economic and the most ecologic solution.

Integrated applications

Task has ample experience in the area of design and installation of environmental equipment at industrial sites. The systems offered entirely correspond to all specific requirements the customer might have and are adapted to all process prerequisites. Of course, we also adapt our systems to the existing production plant. This integrated approach of the problem, the combination of our technology and know-how results in thorough solutions for the specific technical-environmental requirements of each company.

Custom-made installations

There are no standardized or identical waste water flows; each company also has its own specific demands. Task gladly meets the customer's wishes and builds custom-made installations exactly according to the customer's needs. Custom made also means in our standards : easily adaptable and expandable, whenever necessary. Years of experience in numerous industries and a thorough knowledge of the existing techniques are indispensable to deliver optimal functioning, long-term performing systems. For us custom-made is the standard, the installation supplied made to perfect measures of our customer.

Renovation - optimization

Task is also a strong player in the field of renovation and optimization of existing waste water treatment plants. We thoroughly adapt installations that are not functioning properly, non expandable installations, installations not in accordance with the standards and reconfigure them into a correctly functioning unit, offering enough flexibility for future production increase and entirely adapted to the actual environmental standards.

Physicochemical waste water treatment units

Several techniques can be used : e.g. neutralisation, heavy metals separation, coagulation-flocculation reactors, chromium detoxification reactors, sludge treatment, etc.
Design, advice and selection
Determine the prerequisites for a waste water treatment unit has to be well considered and integrated within the company’s existing situation. Knowing whether the unit is going to be installed inside or outside, what the exact composition is of the incoming water, what the standards and regulations are for the treated water, which dosage of chemicals to use, security and maintenance data to keep in mind, how to edit the working principle; this is all a combination of factors and conditions to make a selection within. Competent and experienced support is indispensable in this context. This all also needs to be framed within the current Vlarem/regional or national licensing requirements. Task is guiding the customer through this whole procedure, from feasibility study up to turn-key installation.

Test-unit
Some waste water flows with a complex composition are difficult to treat. The interference of several factors can make the outcome more or less unpredictable. It is always a challenge for us to offer a feasible and moreover affordable installation.
In those cases it is eligible to do some tests at site. Executing such pilot tests has several important advantages, for the customer as well as for ourselves, as for a potential contractor. Many preliminary questions can be answered, the tests allow ourselves as well as the customer to get some guarantees on the achievement of the desired results.

Warranty, service and maintenance
Task guarantees quality and this recognizable in the warranty definitions. We aim to build durable, maintenance free, correctly dimensioned and faultlessly functioning installations. Moreover, a thorough training of the operating staff at site should guarantee a trouble free long-term functioning of the installation. If despite our efforts, problems occur, a quick intervention is always guaranteed.

Industrial waste water treatment –
Our strengths :

- physicochemical treatment plants
- Jet aeration
- NH₃ stripping towers-absorbers
- oil separators – oil removal from process baths
- agitators
- polymer production units
- Membrane techniques(UF-NF, RO)
- Neutralization units
- deferrization
- sludge treatment
- maintenance-renovation-optimization

More than 25 years of experience!
Membrane technology – membrane filtration – water reuse – treatment and reuse of process water – membrane degasification

Membrane filtration techniques are used for very specific applications in the field of industrial wastewater treatment. Membrane filtration is often applied as final step in the treatment of wastewater, usually within the scope of water recuperation or reuse. However, this technology is also used for the treatment of very specific wastewater and process water flows, such as for the treatment of oil-emulsions and other specific emulsions.

Based on the separative capacity of the membranes, there are mainly four different steps to be distinguished in the field of membrane filtration, including microfiltration (separation of +/- 0.1 to 1 \( \mu \)m particles), ultrafiltration (separation of 0.01 to 0.1 \( \mu \)m particles), nanofiltration (separation of 0.001 to 0.01 \( \mu \)m particles) and reverse osmosis (separation of 0.0001 to 0.001 \( \mu \)m particles).

Most filtration techniques can only separate undissolved particles from the water. Microfiltration and ultrafiltration can only separate the suspended solids from the pretreated wastewater. This way for instance, dissolved salts, pigments, metal ions (influencing the conductivity of the wastewater) and sugars remain present in the wastewater. Consequently the COD/BOD values of the wastewater treated with ultrafiltration and microfiltration techniques will remain too high to be reused in the production process. Only the last step, reverse osmosis, will allow to effectively separate salts, metal ions etc. During the reverse osmosis process the membranes will have to support very high pressures. Only high-technological and pressure resistant membranes are having the right features for this kind of application.

Advantages using membrane techniques in wastewater and process water treatment
- material reliability
- less chemicals required
- relatively simple follow-up, once the installation is correctly set
- efficient use of energy
- no change in state of aggregation necessary

Disadvantages using membrane technology in wastewater and process water treatment
- high purchase price of the membranes
- residue (very concentrated filtrate) has to be collected or further treated

Possible application areas of membrane filtration in wastewater and process water treatment
- oil/water separation, treatment of lyophilic substances
- recycling of car wash water
- treatment of liquid manure
- treatment of wastewater from the cosmetics industry
- treatment of wastewater from the food and beverage industry
- filtration of suspended solids out of wastewater
- biomass separation
- cooling oil separation
- ink separation in the flexographic printing industry
- reuse of process water
- rain water recycling
- reuse of several kinds of effluent
- membrane degasification of water and liquids

More information on www.task.be – section water (process water, membrane technology)