

SOLUTIONS

for the **WATER** sector



TECNIUM®

INDUSTRIAL PROCESSES SOLUTIONS SINCE 1957



WELCOME TO A WORLD OF SOLUTIONS



HISTORY

Founded in 1957 in Manresa, Barcelona, TECNIUM has always stood out as a pioneering leader in the provision of solutions to problems experienced by industry in relation to corrosion and atmospheric pollution.

ABOUT US

Tecnum is a company that aims to meet our customers' needs through our integrated range of services and products with proven efficacy, in order to contribute to the well-being of society, through the improvement and preservation of the environment.

The basis of our strategy is the provision of a basically two-pronged solution:

- The pumping and storage of corrosive fluids.
- Atmospheric pollution.

TECNIUM WORLDWIDE

Thanks to our facilities spanning more than 15.000 m² and our team of professional experts, TECNIUM has all the necessary means to undertake projects related to the management of corrosive fluids, the emission of polluting gases and the treatment of odours.

TECNIUM's in-house engineering department, manufacturing capacity and personnel specialised in installation and commissioning allows it to provide turnkey solutions in any part of the world. More than 1,000 international references attest to the benefits and the reassurance of working with TECNIUM.





TECNIUM SOLUTIONS for the

WATER sector

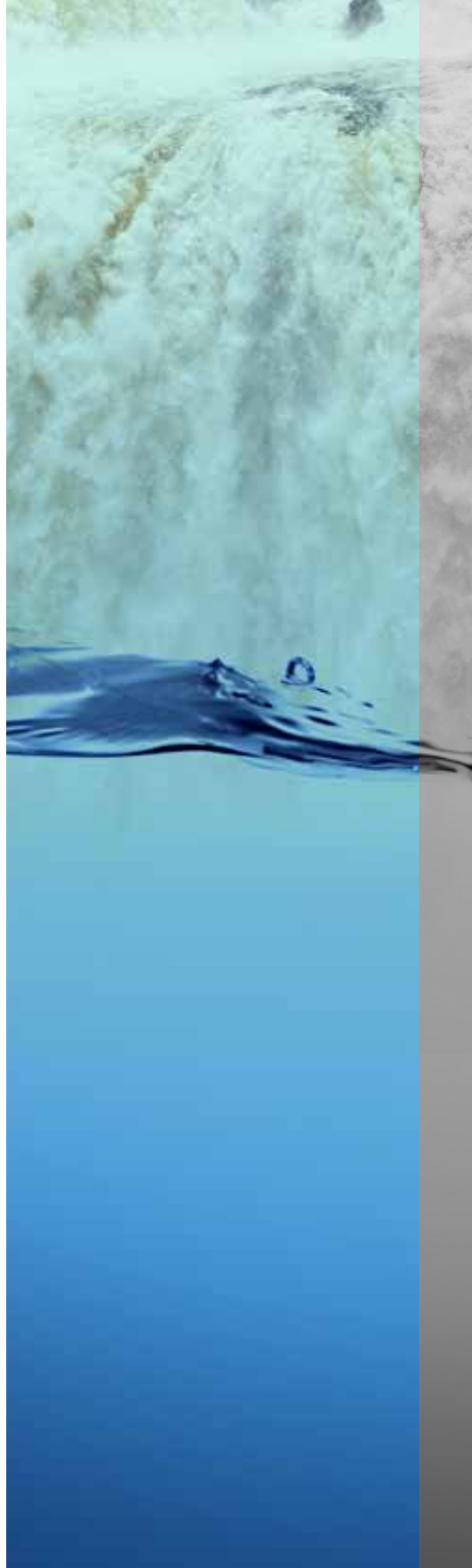
Water is a scarce and basic resource, whose collection, use and subsequent cleaning and/or recycling requires planning.

Due to the fact that water treatment has constituted a central part of our activity since our inception, many of our references are related to this sector. We can be found in potable water treatment plants, in municipal or industrial waste water treatment plants, providing facilities for the removal of odours and gas treatment, modular covers and storage and pumping of corrosive products.



TECNIUM APPLICATIONS for

- URBAN WASTEWATER TREATMENT STATIONS (WWTP) / PUMPING STATIONS (WWPS) / INDUSTRIAL WASTEWATER TREATMENT PLANTS (IWWTP)
 - DEODOURISATION, DESULPHURISATION AND DEGASSING (STRIPPING) 04
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TECNIUM APPLICATIONS for

URBAN WASTEWATER TREATMENT STATIONS (WWTP) / PUMPING STATIONS (WWPS) / INDUSTRIAL WASTEWATER TREATMENT PLANTS (IWWTP)

DEODOURISATION, DESULPHURISATION AND DEGASSING

TECNIUM has a range of technologies that adapt to each project according to the design parameters, space and investment budgets, in order to provide a solution to the different problems related to gases and odours at these plants.



Deodourisation at urban WWTP with 2 chemical treatment stages (H_2SO_4 / $NaOCl$ + $NaOH$) for $Q = 50.000 \text{ m}^3/\text{h}$



Structured fill



Unstructured fill

CHEMICAL ABSORPTION (TECNIUM-CHEM)

Technology commonly used and known to be effective for the treatment of odours on an unrestricted basis in terms of the flow to be treated and that is easily adaptable to contaminants and fluctuations in flow.



Deodourisation at urban WWTP with a double carbon bed tower for $40.000 \text{ m}^3/\text{h}$

ACTIVATED CARBON ADSORPTION (TECNIUM-CARB)

Technology that maximises the high porosity of the activated carbon to adsorb and attach compounds that generate odours to its surface. The proper selection of carbon, depending on the contaminants present, as well as the proper sizing of the filter, materials, dimensions, etc., is essential.



HIGH RANGE ADSORPTION (TECNIUM-K)

This has evolved from adsorption with activated carbon, where and impregnated alumina and zeolite adsorbents are now used. They have the advantage of having a greater capacity for the adsorption of contaminants than traditional activated carbon, as well as the fact that a broader spectrum of pollutants can be removed. They are also used when treating gases with a high moisture content.





The main applications of these equipments are focused on:

- Odour control (pre-treatment, sludge, thickeners/fermenters, etc.)
- Biogas desulphurisation
- Degassing of water and leachate



BIOLOGICAL FILTRATION (TECNIUM-BIO)

Clean technology for the removal of odours and VOC's, based on the micro-organisms contained in the biomass, where the contaminants can be removed using biological action.

It is very high-yielding as well as very economical to run.

We have several organic and inorganic biomedias that are tailored to each type of application.

*Deodourisation in urban WWTP (Q = 6.100 m³/h).
Make-up water: WWTP secondary effluent*

Deodourisation at urban WWTP with a pre-humidification stage and organic biofilter for Q = 10.000 m³/h



BIOTRICKLING/TRICKLING BIOLOGICAL FILTER (TECNIUM-BIO-TR)

Biological technology in which the biofilm is grown on a specific large-surface inorganic support.

Unlike a traditional biofilter, this allows larger contaminant loads and flows with a lower requirement for space and without the biomedias becoming degraded.

*Desulphurisation of biogas in urban WWTP
(Q = 100 m³/h, 2.500 ppm de H₂S)*

OTHER TECHNOLOGIES

STRIPPING/DEGASSING (TECNIUM-DEGAS)

Technology that allows the removal of soluble compounds with a high water and leachate vapour pressure.

Compounds such as NH₃, SO₂, CO₂ and numerous organic derivatives are sensitive to the application of stripping.

REGENERATIVE THERMAL OXIDATION (TECNIUM-RTO)

Technology that oxidises contaminants by incineration in ovens working at temperatures higher than 700° C, in the case of regenerative thermal oxidation or close to 400° C for those using catalysts.



NH₃ stripping of leachates from an anaerobic reactor with further recovery.



TECNIUM APPLICATIONS for

URBAN WASTEWATER TREATMENT STATIONS (WWTP) / PUMPING STATIONS (WWPS) / INDUSTRIAL WASTEWATER TREATMENT PLANTS (IWWTP)

CONFINEMENT, COVERS AND VENTILATION

It is essential to carry out a study of the emission points and the confinement of the same, in the odour control strategy at the water treatment plants, as well as to ensure the proper ventilation of all areas in order to obtain the appropriate results when reducing the effects of unpleasant odour. We have all types of covers and hoods for this, as well as ventilation systems.

COVER TYPE	CONFIGURATION	DESIGN	APPLICATIONS
CIRCULAR			
WITH INTERMEDIATE BRIDGE	Modular		Thickeners Buffer tanks Sludge tanks Decanters
	Flat		
WITHOUT INTERMEDIATE BRIDGE	Domes		Homogenisation tanks Sludge tanks Decanters
RECTANGULAR			
SEMICIRCULAR MODULE	Fixed		Archimedes screws Biofilters Channels Primary decanters Biological reactors
	Manual telescopic Automatic telescopic		
FLAT	Ribbed		Degreasing tanks Overflow tanks Tanks Grit chambers
	Manual canvas Automatic canvas		Grit chambers Pre-filter wells Pumping wells
VAULTS			Grit chambers Biofilters Biological reactors
TRAMEX BLIND			Screening channels Extraction pump pits Manholes Recesses
SPECIAL			
MIXED DOME			Thickeners Decanters Tanks
BUILDING ENCLOSURE			



Circular cover for decanter with intermediate bridge



Set of rectangular covers



Set of telescopic and fixed rectangular covers



Fixed flat semicircular cover for Archimedes screws



Decanter biofilter circular cover



Fixed rectangular cover for biofilters



Telescopic rectangular cover for well



Ribbed flat roof for grit chambers



Blowing of fresh air and stale air extraction collection



Screen enclosure



Grit chambers canvas cover



TECNIUM APPLICATIONS for

URBAN WASTEWATER TREATMENT STATIONS (WWTP) / PUMPING STATIONS (WWPS) / INDUSTRIAL WASTEWATER TREATMENT PLANTS (IWWTP)

REAGENT STORAGE

The need to use water treatment chemicals has allowed for the provision of storage tanks at this type of facility to ensure the continual operation of the same. These industrial products tend to be corrosive, the reason why the storage tanks must meet certain chemical resistance technical requirements.



Reagent storage tanks



Double-walled reagent storage tanks



TECNIUM is a specialist in the manufacture of plastic tanks for the storage of corrosive liquids, using various materials such as GRP (glass reinforced polyester), PP, HDPE, PVC, etc.

This tank set is known as a Reagent Storage Park, where the selection of materials and the calculation of the thickness necessary are vitally important to ensure both mechanical and chemical resistance, as well as compliance with the regulations that apply to this type of storage (MIE-APQ-6).

TECNIUM can supply both simple wall plastic tanks to be installed in holding tanks, as well as double-walled tanks as provided for in regulations to ensure that the second wall prevents any spillage of liquid in the event of any crack in the tank.



CO₂ and moisture absorbers



URBAN WASTEWATER TREATMENT STATIONS (WWTP) / PUMPING STATIONS (WWPS) / INDUSTRIAL WASTEWATER TREATMENT PLANTS (IWWTP)

REAGENT PUMPING

The presence of chemical reagents points towards the need for their handling, which is often a delicate part of the process, due to the corrosiveness of these liquids. TECNIUM provides solutions specifically adapted to these applications.

TECNIUM designs, manufactures and supplies centrifugal pumps in plastic materials for the handling of reagents. Materials such as the following are used:

- PP (Polypropylene)
- PVC (Polyvinyl Chloride)
- PVDF (Polyvinylidene fluoride)
- PE (Polyethylene)
- E-CTFE (Ethylene-chlorotrifluoroethylene)
- PTFE (Polytetrafluoroethylene)

They are selected on the basis of chemical compatibility, temperature and the solids content of the product to be dealt with.

The following are some of the applications these pumps are used for:

- Transfer reagents from their storage tanks up to consumption points.
- Unloading trucks.
- Recirculation in reactors or wash towers.
- Collection of wastewater.



Transfer pumps to transfer to consumption points



Truck discharge pumps



Water collection pumps for manholes, drainage, leachate, etc.





TECNIUM APPLICATIONS for DRINKING WATER AND TREATED WATER TREATMENT STATIONS

TECNIUM has solutions for the provision of emergency chlorine leak solutions as well as reagent and water storage tanks for water treatment plants.

We are also specialists in degassing installations for water from wells or aquifers for the removal of gases dissolved in the water (NH_3 , CO_2 ; COV's, etc.).

We also supply tanks and pumps for the pumping and storage of demineralised, osmotised, filtered and other types of water.



Storage of reagents or treated water



Degassing (stripping) of aquifer water



Chlorine leak emergency installation



TECNIUM APPLICATIONS for

SEA WATER / DESALINATION TREATMENT STATIONS

There has been a considerable increase in the demand for drinking water in the last few decades. There has been an exponential increase in the installation of sea or brackish water desalination plants in order to deal with this situation, which have provided water for industrial and agricultural use. The current state of the technology allows quality water to be obtained using reverse osmosis or distillation processes.

TECNIUM provides different products for these types of plants, adapted to their level of corrosivity.



Manhole and wash water collection pumps



Pumps for membrane cleaning



Brine, softened water, CIP process tank and reagent storage tanks



Truck discharge pumps



Reagent transfer pumps and transfer to consumption points



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