EN

Environmental Engineering
SANBOS® Wastewater
Wastewater treatment
Product Information

SANBOS

SANBOS® Wastewater

SANBOS® - competent partner at your side

SANBOS® Wastewater technology is used for an economic and cost-effective treatment of municipal and industrial wastewater. Our know-how and efficient components ensure an optimal treatment performance. Enormous cost savings in the range of total investment and operating costs are opened up by patented and brilliant technical solutions.

SANBOS® - the right decision

With the decision for SANBOS® you achieve an effective, low-maintenance and simple solution for wastewater treatment. In the municipal as well as in the industrial field we offer you our longtime experience with flexible, high-quality and nevertheless low-priced solutions for all kinds of wastewater.

Industries:

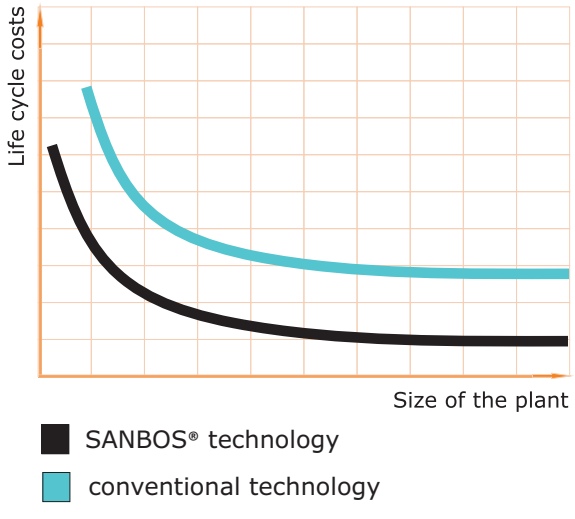
- paper industry
- food industry
- textile industry
- chemical industry
- agriculture

Patents:

All advantages at a glance

- **low investment costs** due to optimized specific solutions
- **complete service** from one single source
- **flexible plant engineering** with open system for simple installation, maintenance and retrofitting
- **high-quality technology** for high process stability
- **highest cleaning capacity** of municpial and industrial wastewater
- **low space required** by compact integral construction
- biodegradation of carbon, nitrogen and phosphorus
- **low operating costs** due to low labour, energy consumption, sludge production and recirculation
- **easiest** operation and handling
- **energy-saving operation**
- **fully automated** cost-saving operation

Costs of SANBOS® technology:



Sanbos® technology offers an enormous cost advantage by using a smart plant arrangement and latest techniques.

References

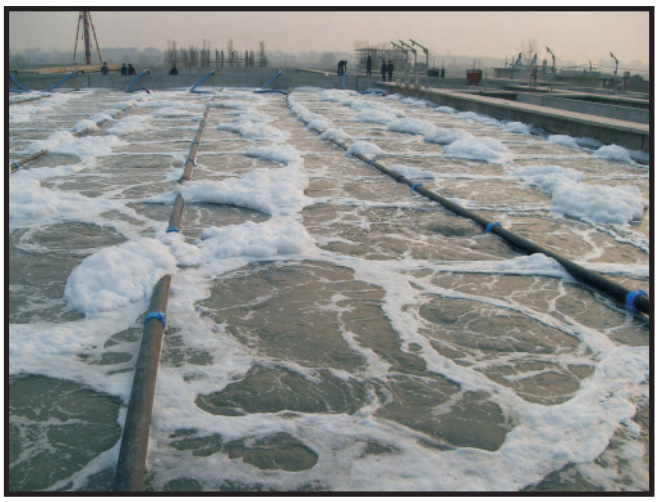
Tangermünde, Germany

Laiwu, China

Danjiangkou, China

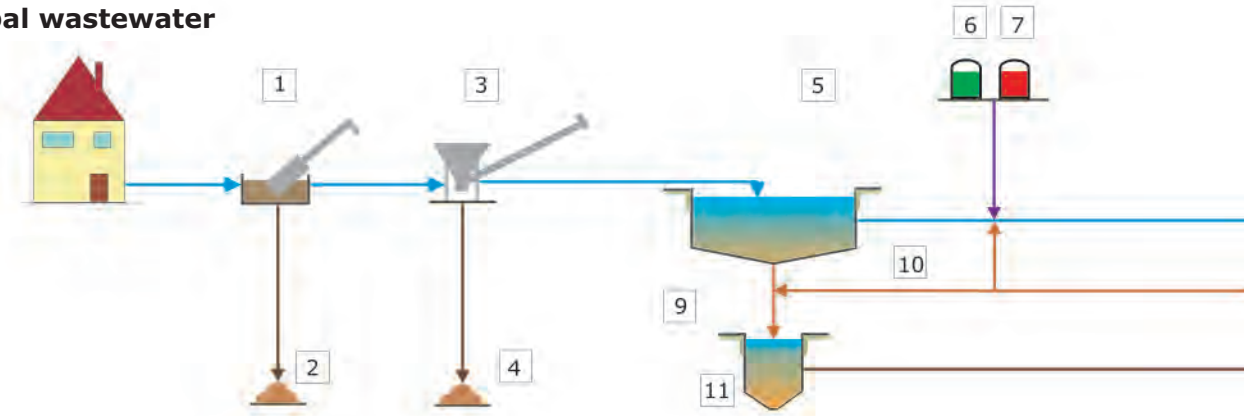
Binzhou, China

Nanning Sugar, China

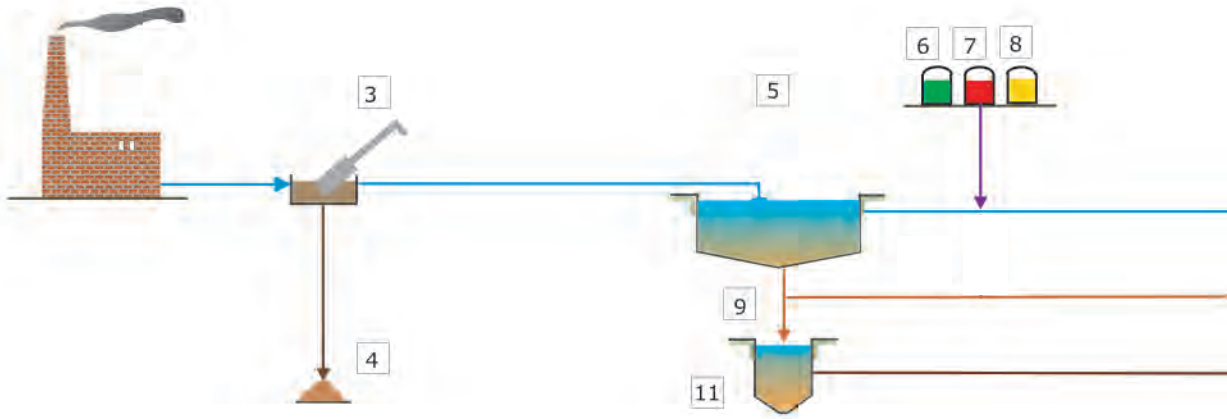


Huanggang, China

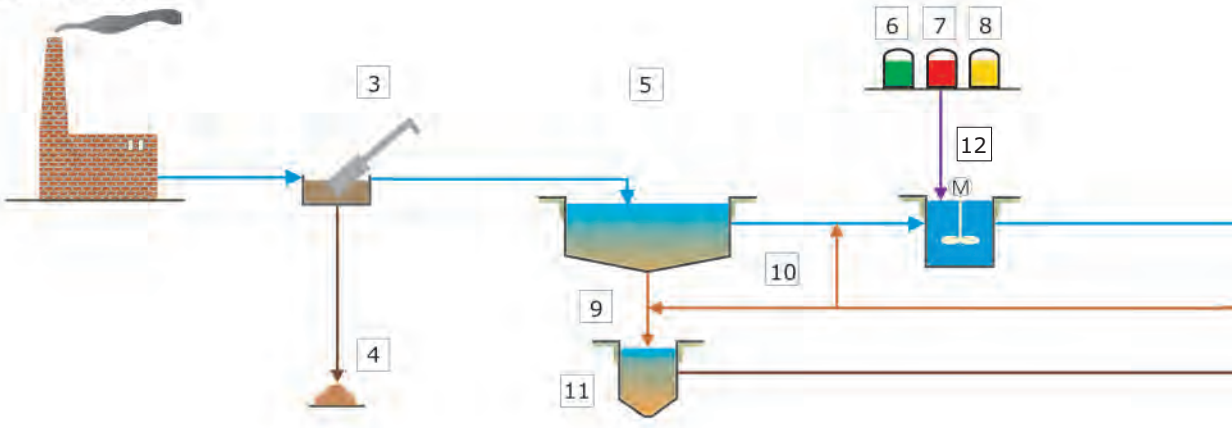
Municipal wastewater

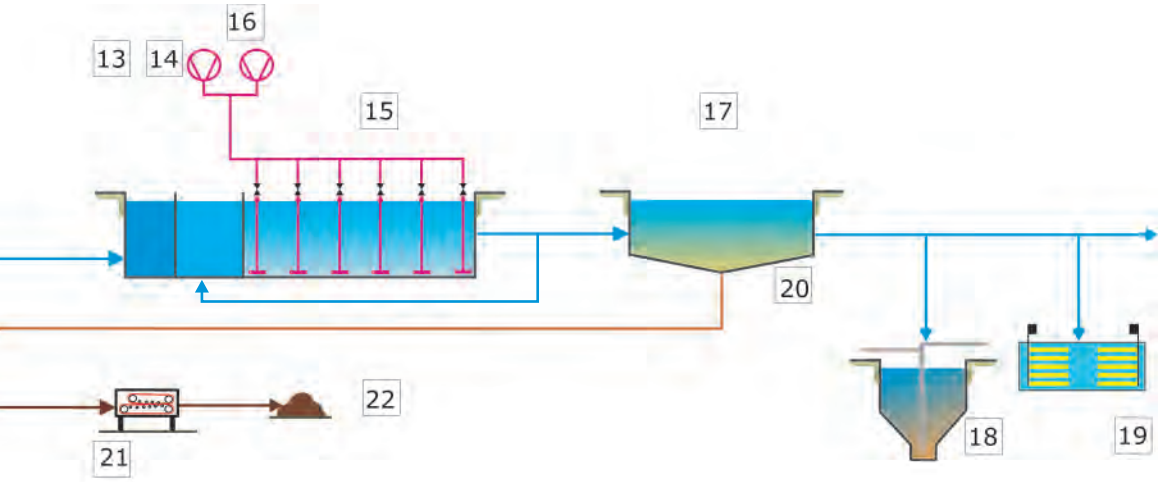


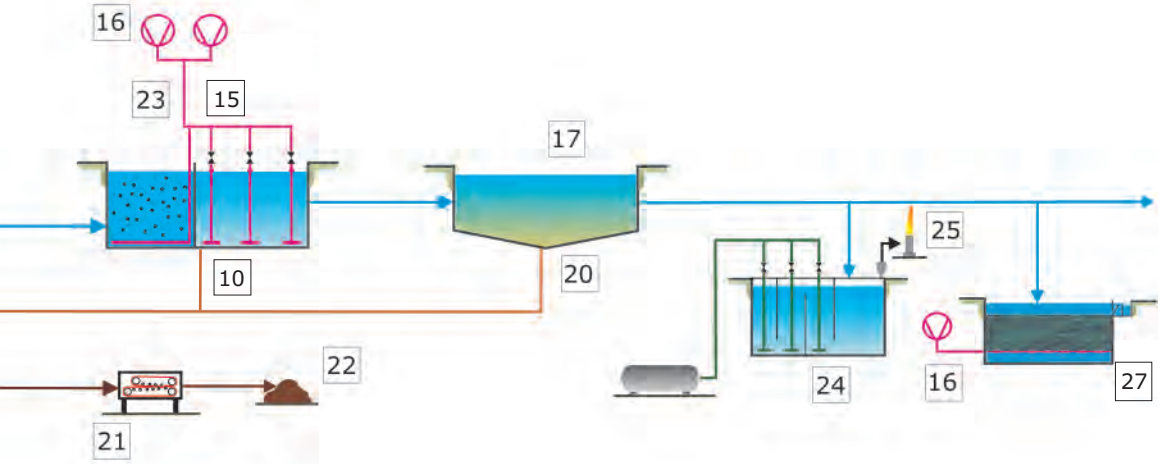
Paper industry

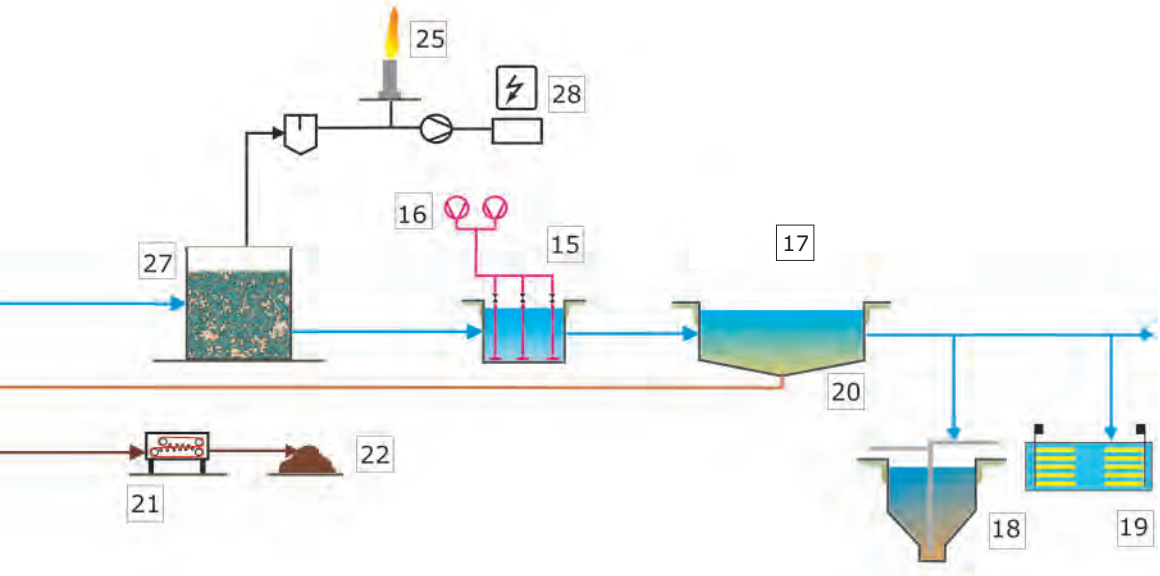


Food industry









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Mechanical treatment

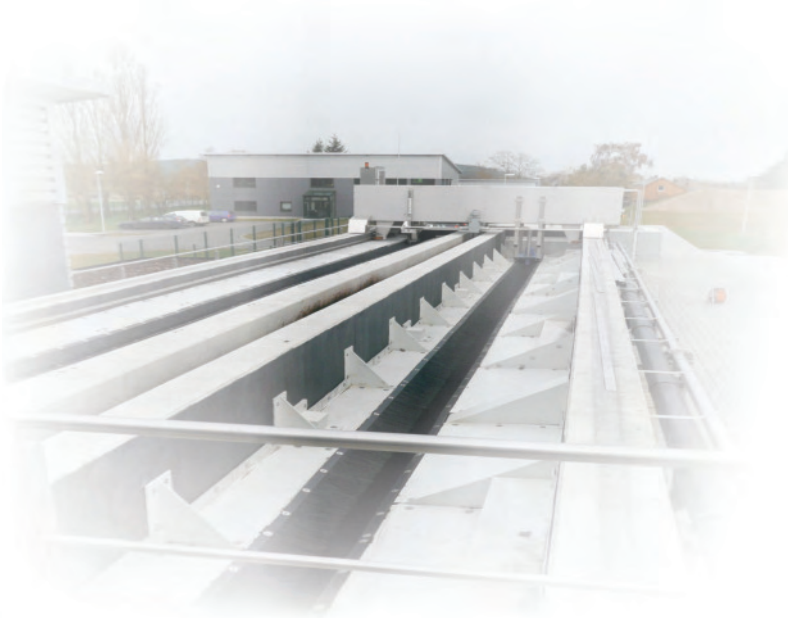
Screen

The screens are specified according to the composition and flow rate of the wastewater.

- cost- and space-saving channel installation
- low-maintenance technique made of stainless steel
- compact engine: screening, washing, transport, dewatering and compacting
- weight reduction up to 50 %
- efficiency of dewatering up to 40 %DS

Grit chamber

In order to protect the adjacent equipment in other treatment levels, the separation of sand and grit proceeds by using the grit chamber technology.



- constant and reliable filtration efficiency up to 95% at a diameter of 0,2 mm
- low-cost technique made of concrete or stainless steel
- space-saving due to outdoor installation

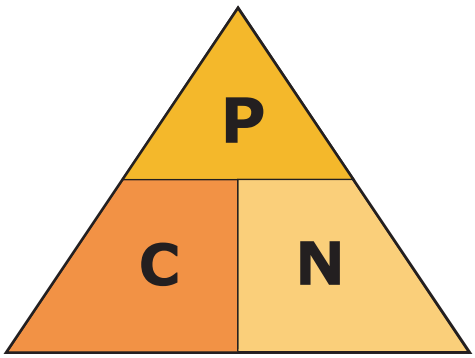
Primary sedimentation tank / final sedimentation tank

Inside the sedimentation tanks COD, BOD and DS are reduced, following treatment processes relieved and activated sludge separated.

- cost-efficient construction
- constant sludge withdrawal

Biological treatment

Biological treatment is designed to eliminate phosphate, organic carbon and nitrogen compounds biologically.



Activated sludge tank

- degradation of COD up to 95% and BOD up to 95%
- 75 % nitrate degradation by upstream denitrification
- biological treatment processes without additional costs for chemical precipitating agents
- high speed degradation reduces required space and investment costs
- enhanced treatment performance by aeration with pure oxygen

Anaerobic bioreactor

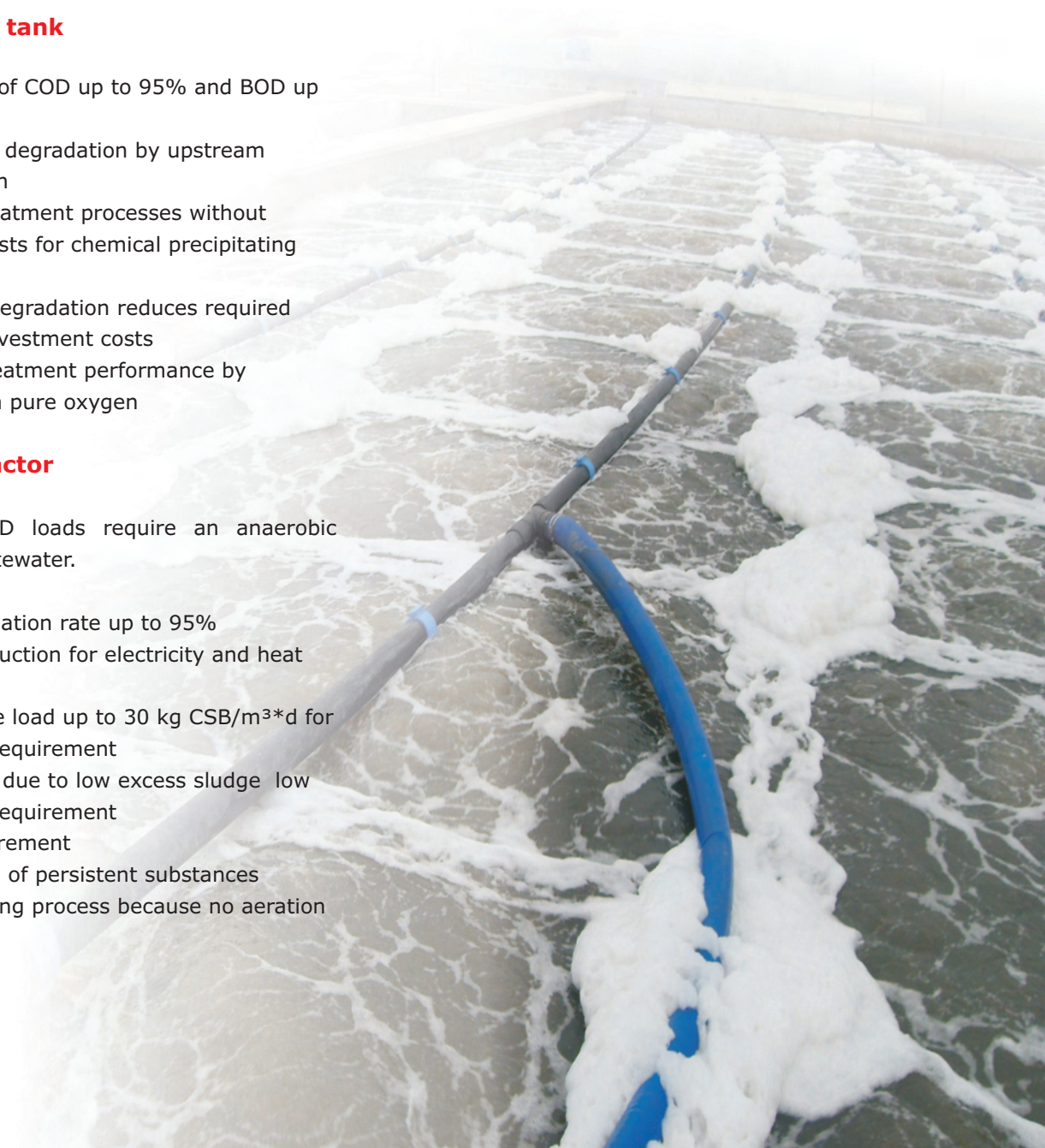
High COD and BOD loads require an anaerobic treatment of the wastewater.

- high degradation rate up to 95%
- biogas production for electricity and heat generation
- high volume load up to 30 kg CSB/m³*d for low space requirement
- cost-saving due to low excess sludge low low space requirement
- space requirement
- degradation of persistent substances
- energy-saving process because no aeration necessary

Fluidized bed reactor

Fluidized bed reactors are used for the nitrification of industrial wastewater with high ammonium-nitrogen levels and low availibility of areas. Fluidized bed reactors consists of floatig carrier material with high specific surface area, where the biomass is settled.

- high volume load up to 6 kgBOD/m³*d
- BOD elimination > 60 %
- COD elimination up to 40 %
- retention systems for carriers and special aeration systems are required
- no sludge recirculation
- stable against inlet fluctuations



Fine-bubble aeration system

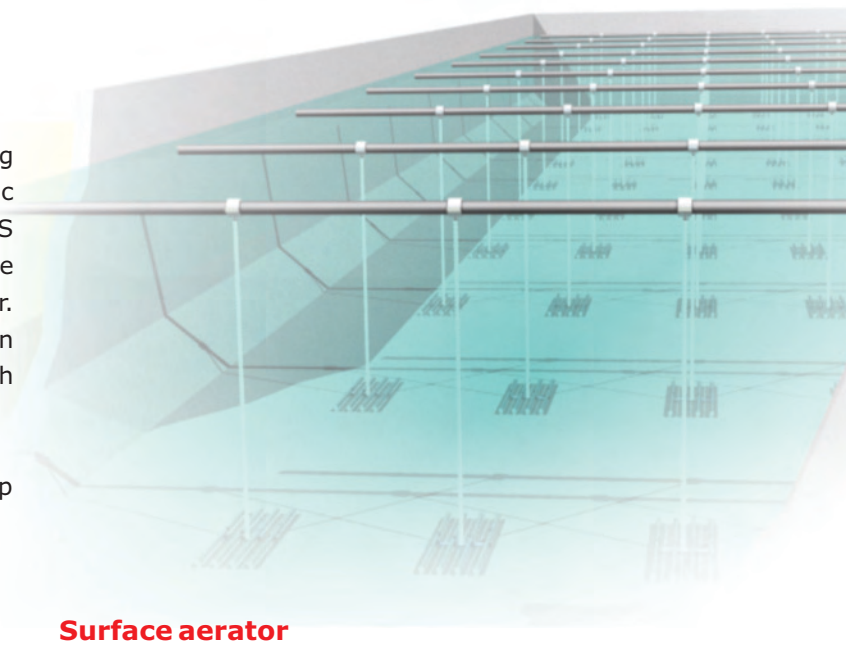
The input of oxygen into the wastewater by using aeration systems is necessary to achieve an aerobic degradation. The patented modular SANBOS® FAS consists of aeration elements on the bottom of the basin and floating tube registers to distribute the air. High quality stainless steel distributors and aeration membranes guarantee a high durability and a high input of oxygen under service conditions.

- low energy consumption due to minimal drop in pressure
- depths up to 8 m realizable
- individual and flexible adaption to existing plants
- no firmly mounted pipeline system
- low-cost and easy installation and maintenance, also during system operation due to the modular construction
- different materials of membranes available, such as silicone or EPDM
- tube aerator for a continuous and intermittent operation

Compressor station

The used rotary blowers assure the best possible reliable compressed-air generation in case of high volume flow rates and compressions up to 1000 mbar.

- low operating costs and high efficiency due to energy-saving motors
- competitive outdoor construction by special weatherproof casing
- low noise level using sound insulation
- intelligent construction for low maintenance



Surface aerator

The used surface aerators have a special constructed propeller for an optimal oxygen input and intensive intermixture of the basin.

- optimal recirculation due to maximum transmission of energy to the water
- high oxygen input
- no roping or formation of aerosol
- minimal noise level
- low-maintenance construction out of stainless steel
- different installation types: floating or fixed to bridges

Sludge treatment

The efficiency of the wastewater treatment plant to degrade the substances is characterized by the sludge age. The higher the sludge age the higher is the specialization of the bacteria and more advanced is the degradation process.

- sludge thickening up to 8 % DS by treating with pre-thickener
- sludge dewatering up to 30 % DS by using a filter belt press
- improved dewatering capacities due to the use of organic, polymeric coagulants
- reduction of landfilling costs

Chemical Treatment

SANBOS® CODAM

SANBOS® CODAM is a mixture of anorganic adsorbents, metallic salts and organic polymers to eliminate soluted organic or anorganic matters inside the wastewater by formation of settleable flocs.

- reduction of COD up to 85% and DS up to 50 %
- low dosage and long-living effects guarantee a high efficiency
- effectiveness in food and paper industry, butcheries and municipal sectors

Flocculation and neutralizer

To assure an optimal feeding of micro-organisms, a quantity-based dosage of nutrients (nitrogen, phosphor) as well as acids and bases for the compensation of pH-value fluctuations in the wastewater inlet, occurs. The dosage is added fully automatic from storage tanks into the process by a pumping system.

Advanced treatment

High standards on discharge values require an advanced treatment. The treated wastewater could be returned as process water into the circulation or can be used for irrigation in agriculture.

Sand filter

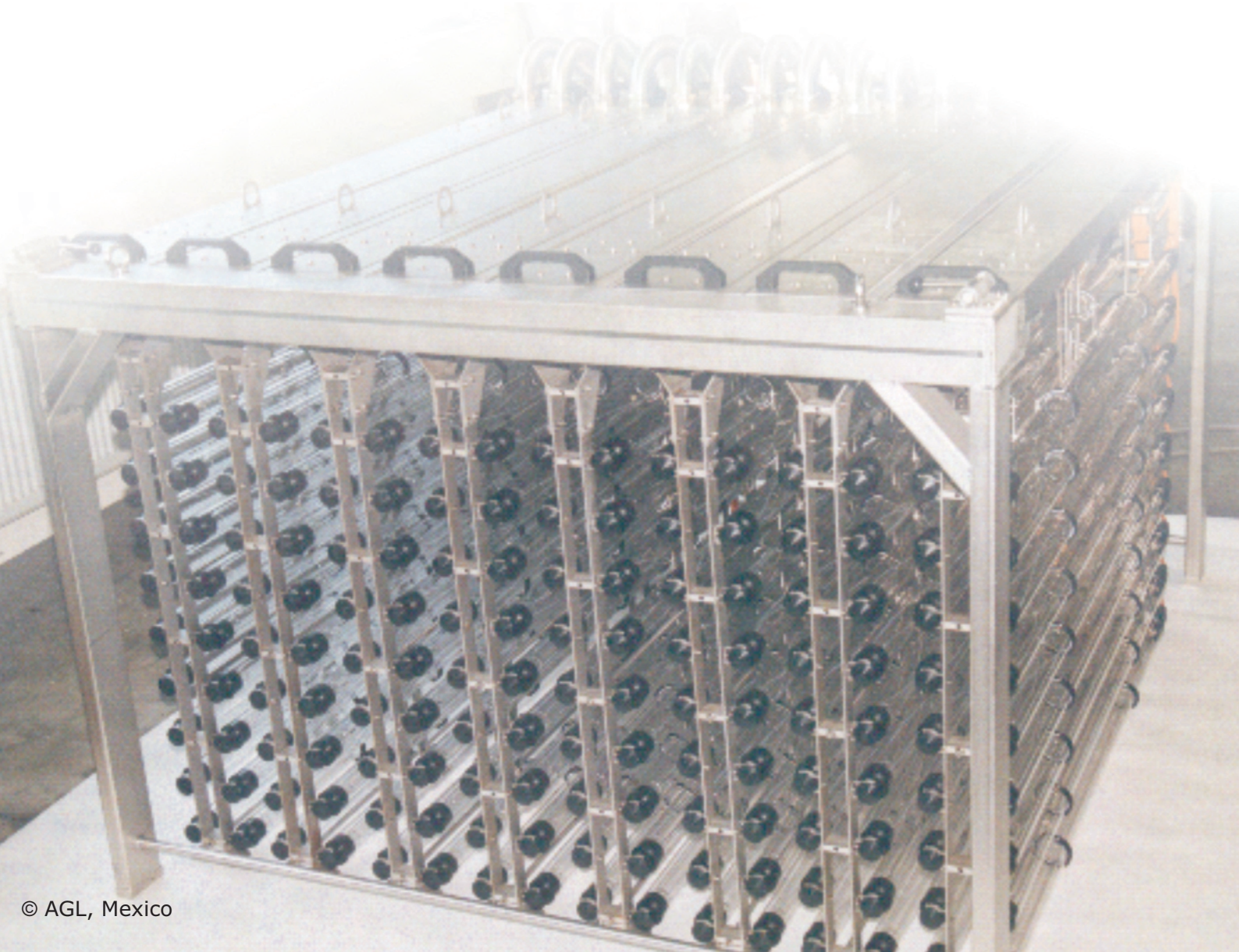
Continuous top down streamed sand filters could be used for advanced wastewater treatment.

- elimination of solid matters and phosphate
- degradation of BOD and COD
- reduction of the bacterial count
- degradation of nitrogen by anoxic denitrificants inside the filter
- low-maintenance construction out of concrete or stainless steel

UV treatment

Optimal installed UV heaters desinfect and sanitize the treated wastewater.

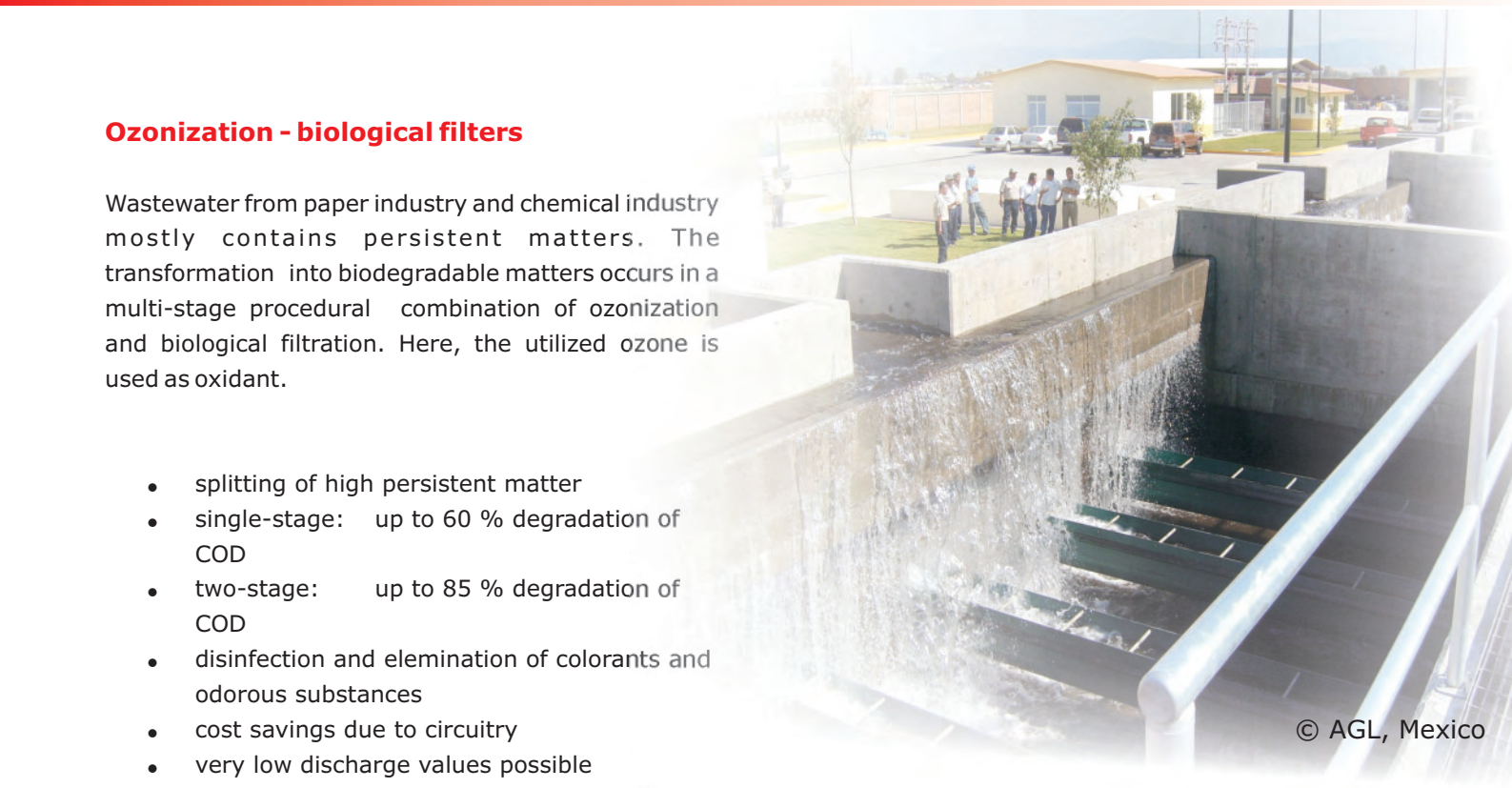
- flexible horizontal or vertical installation
- easy maintenance and handling due to clear construction
- neither overdosage nor underdose possible
- no building costs for additional tanks necessary due to assembly in existing channels
- easy to refit



Ozonization - biological filters

Wastewater from paper industry and chemical industry mostly contains persistent matters. The transformation into biodegradable matters occurs in a multi-stage procedural combination of ozonization and biological filtration. Here, the utilized ozone is used as oxidant.

- splitting of high persistent matter
- single-stage: up to 60 % degradation of COD
- two-stage: up to 85 % degradation of COD
- disinfection and elemination of colorants and odorous substances
- cost savings due to circuitry
- very low discharge values possible
- cost savings due to less sludge production



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