

# TECNICANARIAS

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TECNICANARIAS, S.A. – ACSA. ENVIRONMENT SOLUTIONS

## SEWAGE TREATMENT PLANTS

### *General description:*

TECNICANARIAS sewage treatment plants are characterized by their compact design, disposed in a closed installation that assures an easy integration in the environment and the security of operating, for so it incorporates the necessary ventilation elements.

Sewage treatment plant has in a single plant the functions of oxygen-activated sludge system with an aeration clarifier and a secondary clarifier, existing an interior circuit of sludge that makes useless the pumping to transport the return sludge.

For the aeration is used the fine bubbles system, which facilitates a high oxygen contribution (up to 30 g/m<sup>3</sup> of air) easily controlled, by means of connection/disconnection of the individual compressors. Everything guarantees permanently a great efficiency in the oxygen contribution and reduced energy consumption, even in case of strong load oscillations. For the generating compressed air, some robust compressors of gyratory piston are used; these are placed next to the plant.

The sewage plant is composed by the following phases or treatments:

- Preliminary treatment with casket for rough dresses of thickness and sand cleaner
- Aeration clarifier
- Sedimentation tank
- Camera for separation of sludge

### *Description of the process:*

The wastewater ‘influent’ arrives at the aeration clarifier through lateral canals, that has levelled pipes to get equally entrance of water in the aeration area. The aeration units placed in the centre of the chamber achieve, thanks to the upward air, the formation of a double whirl of water that facilitates the mixture in very short time.

A wall from the secondary clarifier, which considers a degasification area, separates the aeration area. In degasification area, due to the reduced speed of water the air bubbles are separated.

After degasification area, the mixture of sludge pass to the secondary treatment. In this step, gravity separates sludge, scum end clean water from the wastewater. The importance of the degasification is in preventing that the bubbles of air are moving freely, may carry on non-settleable solids on the water flows to the secondary.

Finally the mixture of sludge is more thickener, settled and returning as return sludge (of high specific weight) towards the aeration chamber, through the return grooves prepared in the bottom. From this mixture of sludge it is separated the clean water, especially in the separation area, although also in the inferior strata of the secondary treatment. This water flows upwards going through the sludge that moves down.

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In the clean water area, that is located above that of separation area, still some swept sludge are settled. The clean water comes out laterally, through regular saw, towards the exit canals.

The circuit of interior sludge, that responds to the convenience of separating the secondary treatment and the aeration camera, offers excellent results of operation compared to other systems that only possess a groove of inferior communication between both areas. In these cases, the groove should be crossed in both senses by the water and the sludge, and, as consequence, they are frequently given retentions it in the area of secondary, so then, after certain time, it begins to remove and float gases, perturbing the waste water treatment effect.

## *Technical specifications:*

- Closed module with no chimney that includes the installation.
- Tight electric board with protections and control of the components.
- Air blowers of revolving piston, with air filters, gauges, retention valve and mufflers.
- Air diffusers of fine bubble, prepared in the aeration pool.
- Dosifying bomb of hipochlorite sodium dissolutions, if requested.



Sewage treatment Plant of the Heidelberg School, 1980.  
Controlled by the School itself



Sewage Treatment Plant in the middle of the Heidelberg School's. Gran Canaria. Spain

The manufacturer reserves the right of modifying the technical characteristics contained in this brochure, without previous notification.

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