



Allard Emballages paper and cardboard production

BIOPAQ®ICX



The Paques BIOPAQ®ICX helps us to save on cost for biomass, chemicals and energy. The BIOPAQ®ICX is the best available technology and the installation led to an increased biogas production of 32%, which compelled Allard to install a bigger boiler for a higher steam production to be used in the paper mill production process. The system has a high removal efficiency and performs very smoothly. Paques helped Allard to meet important environmental regulations of the government.



Mr. Laurent Bauvais
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A flexible anaerobic industrial effluent treatment system for purifying industrial, COD containing waste water, producing biomass and green energy for the paper production process.

The challenge

- Get a reliable and stable process
- Reuse of existing assets
- Effectively treat COD containing wastewater
- Decrease chemical consumption
- Eliminate biomass loss
- Increase biogas production

The solution

- Application of the advanced BIOPAQ®ICX technology
- Reuse of the existing tank for storage excessive biomass
- Reuse of existing peripheral equipment

The benefit

- Increased COD removal efficiency up to 80%
- Biomass growth instead of biomass loss
- No chemical dosing needed
- >30% more biogas: reduction of CO₂ emission
- Closed system: no odour issues
- Low operational costs
- Bypass of high COD process water to post-treatment no longer required

Facts and figures

Processing

- 80.000 tons of paper/year

Effluent

- WW flow: 70 - 80 m³/h
- 6000 - 7000 kg/d COD

BIOPAQ®ICX process

- COD removal efficiency 80%
- Biogas production: 2400 - 3000 m³/d
- Quality: 70% CH₄



The challenge

Allard Emballages, Paper and cardboard manufacturers, is a family-owned independent company, founded in the late 1920's.

The manufacturer of paper for recycled corrugated cardboard is aiming to deliver the best possible quality to its customers, which is achieved by making economic, ecological and social decisions. Allard owns three cardboard

production plants which manufacture packaging solutions, using paper produced at their own paper manufacturing plants and is the only French representative of ALLIABOX, a European network of companies providing corrugated packaging. In the seventies, the company started to modernise its production facilities. Part of this process was to implement

water-treatment plants for process effluent treatment. Some years ago, Paques was asked to help solving the problems Allard had with the anaerobic treatment system, like a continuous biomass loss and clogging of the system. Besides that, Allard wanted to increase the biogas production and a smoother operation.

The solution

After studying the circumstances in which the original anaerobic treatment system worked, Paques advised to replace the system by a BIOPAQ®ICX: a high-rate, closed, compact anaerobic system, which allows reuse of equipment and is flexible in the requested tank design. A demo-unit was offered, but Allard, confident about Paques products, decided to purchase a full scale system immediately. The BIOPAQ®ICX can handle higher loading rates in the same tank size compared to the former system used, by which a smooth operation in a continuous process like Allard's paper mill is ensured.

Due to the higher capacity, there is less need to bypass production water. This led to a >30% higher production of biogas, for which the company happily invested in a bigger boiler. The increased production of steam is a direct saving on the energy cost of the paper mill. The BIOPAQ®ICX technology works perfectly at a lower temperature and temperature fluctuations do not affect the process. The system requires less chemicals and it produces biomass instead of losing it, for which the old tank is now used for storage. Allard is really happy with the carefree performance of the upgraded water treatment plant.

Essential results of BIOPAQ®ICX for Allard Emballages Paper and cardboard

- Efficiency of COD removal 80%
- Biogas production: 2400 - 3000 m³/d
- Biogas quality: 70% CH₄

The technology

BIOPAQ®ICX combines advanced anaerobic technology and a high performance of COD removal with a modular design with regard to tank design. The compact system can be implemented in existing tanks, which considerably reduces investment costs. Besides that, the BIOPAQ®ICX can be installed as a new build installation, for extending the capacity or replacing the current installation.

Due to a high overall biomass level and concentration, the system can deal with high volumetric loading rates. The 2-stage biomass retention prevents wash-out of biomass while high liquid velocities and excellent mixing properties enables handling a wide range of industrial wastewater, even water with high calcium levels. Due to the completely closed design BIOPAQ®ICX does not cause odour emissions. The cleaning nozzles in the setting unit allow a low maintenance and decrease the risk of clogging.