PALL Water Processing

Case Study

Membralox® Ceramic Membrane Bio-Reactor for Industrial Wastewater Treatment

Société d'Impression d'Hem (SIH)

Created in 1974, the Société d'Impression d'Hem (SIH) is a major company specializing in bleaching, the impression, the dyeing and the finish on textiles. SIH generates highly coloured effluents due to the presence of pigments.

In 1992, SIH applied the first membrane filtration unit equipped with **Pall Membralox** highly compact industrial modules allowing the complete retention of the insoluble pigments and a reduction of the chemical oxygen demand (COD) to the standards set by the administration.

In 2004, to comply with new Directives of the Urban Community of Lille and to be able to discharge the treated effluent into the environment, SIH decided to treat its highly loaded effluents (10 - 15 g/L COD) with the **Pall Membralox** Ceramic Membrane Bio-Reactor, which combines a biological treatment with ceramic ultrafiltration.

Buffer Tank Inlet

Buffer Tank Inlet

Pall Membralox Ultrafiltration Unit

The system consisted of 4 filtration loops in parallel, corresponding to a total filtration surface area of 432 m^2, treating up to 58 m^3 of effluent per hour.

The fully automated plant operates continuously 24 hours a day, 7 days a week. Permeate quality is beyond the standards required by the legislation. This new plant enables the recycling of 50% of the treated effluent for use as washing water for the printing machines.

Thanks to recycling, SIH has significantly decreased its city water consumption and made profits on taxes on water discharged into the wastewater network.

Benefits of the **Pall Membralox** Ceramic Membrane Bio Reactor vs. Conventional Activated Sludge Treatment (biological treatment with settling tank)

- Higher quality of the produced water (0.1µm filtration rate)
- Complete removal of suspended solids
- Reuse or recycling of treated water without the need for additional treatments or polishing steps
- More reliable and stable performances: no risk of bacteria or suspended solids leaks and easy absorption of pollution peaks
- Higher yields/efficiency: Biological Oxygen Demand reduction up to 99%
- Small foot print of the plant, modular, easy to operate, fully automated
- 2 - 3 times lower volume of the bioreactor
- 2 - 3 times lower sludge production

Raw water

Treated water

Pall Corporation

Pall Water Processing

Portsmouth - **UK**
+44 (0)23 9230 3303 telephone
+44 (0)23 9230 2506 fax
processuk@pall.com

New York - **USA**
+1 516 484 3600 telephone
+1 888 333 7255 toll free
+1 516 625 3825 fax

Visit us on the web at www.pall.com

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Filtration. Separation. Solution.SM

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