

Case Study HOD UV delivering RO protection at Formosa Plastic Group

Background

Founded in 1954, Formosa Plastics Group (FPG) focuses on four main product categories: plastic processing, plastic materials, electronic materials, and polyester products. It's the world's largest manufacturer of secondary plastics and a leader in the manufacture of polyester fibers and copper clad.

The Challenge

The plastic industry uses RO membranes to treat cooling tower water. However, membranes are exposed to biofouling — excessive growth of biofilm on the surface of membranes even after chemical pre-treatment. Studies show that 80% of membrane failures are related to biofouling. Formosa Plastics Group's WWTP plant in Mailiao, Taiwan, treats process wastewater from the surrounding plants.

The RO system includes two trains with 25 m³/h feed flow each. The RO trains are equipped with three cartridge filters per train to handle feed water from process wastewater, operating around the clock, 365 days a year.

The plant used a significant quantity of chemicals and had to carry out frequent CIP which resulted in shutdowns and inefficiency.

Process Diagram



The Solution

Atlantium's HOD system was installed after the cartridge filters and before the RO trains.

The HOD UV system (Model RZ163-12) was placed in front of the trains.



Results

Following installation of Atlantium's system, the plant achieved major savings including:



return on its investment. In acknowledgement of the benefits of Atlantium's HOD UV, the company is about to install more HOD UV systems.

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