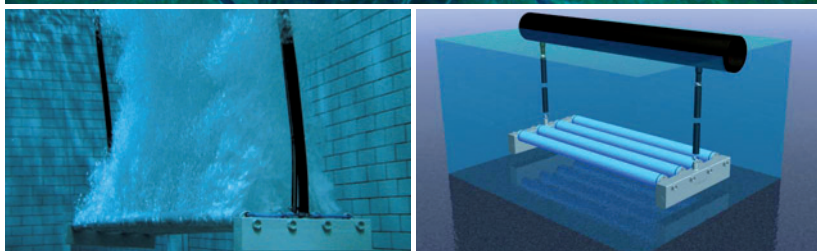
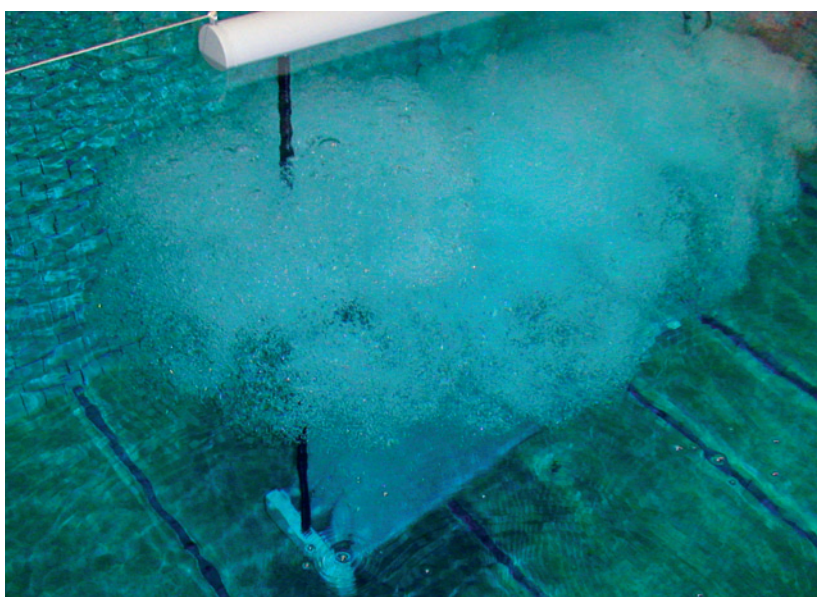


SIMONA

Bioworks®

BIOWORKS® puts its trust in SIMONA pipes



Extensive tests have confirmed efficiency improvements in the biodegradation process. The introduction of micro-bubble atmospheric oxygen enhances the process of carbon-compound biodegradation performed by aerobic bacteria and other microorganisms.

BIOWORKS® Verfahrenstechnik GmbH, a pioneering specialist in biological wastewater treatment, produces floating micro-bubble aeration systems. Their new OXIWORKS® aerator required the very best in materials to meet market standards. At the same time, the treatment specialists were keen to team up with a supplier capable of offering exceptional technical expertise. In SIMONA and its SIMONA® PP-H AlphaPlus, BIOWORKS® found both a reliable partner and a best-in-class product solution.

The project at a glance

Project

Development and production of an aeration system for biological wastewater treatment, using modified SIMONA® PP-H AlphaPlus

Requirements

- High chemical resistance
- Extreme rigidity even at higher temperatures
- Long service life
- Permanent corrosion resistance
- Low weight

Client and Developer

BIOWORKS® Verfahrenstechnik GmbH, Putzbrunn

Plastics Engineering

BIOWORKS® Verfahrenstechnik GmbH, Hochstetten-Dhaun plant

Consultant and Materials Engineer

- Project Group Industrial Piping Systems, SIMONA AG, Kirn

Products Used

- Special pipes based on SIMONA® PP-H AlphaPlus
- SIMONA® PE 100 pipes and fittings
- SIMONA® PE 100 pump units

Project Duration

2007



Fig. f.l.t.r.: Production of OXIWORKS® aerators; assembly of aerator lines; example of application

SIMONA® PP-H AlphaPlus – An exceptional material for state-of-the-art wastewater treatment

Initial situation

Microorganisms require oxygen in order to perform the task of biological wastewater treatment. By adding micro-bubble atmospheric oxygen, the efficiency of aerobic degradation processes can be improved markedly. The introduction of oxygen is performed by aeration systems deployed at sewage treatment plants. However, high water temperatures and media containing aggressive chemical substances often have a detrimental effect on conventional aeration units, both in terms of technical and commercial viability.

Task

BIOWORKS® was looking for a material that would be suitable for its new OXIWORKS® aerator. The required specifications were as follows:

- Excellent resistance to wastewater containing chemical pollutants
- Permanent corrosion resistance
- Torsion resistance even at elevated temperatures
- Superior cost-effectiveness thanks to long service life
- Low weight even when incorporated into complex designs

Solution

SIMONA AG was integrated within the development process for the pioneering aeration system at a very early stage. The specially developed pipes based on SIMONA® PP-H AlphaPlus proved to be the perfect component, as they are resistant to the majority of chemicals contained in wastewater. At the same time, they provide a high level of protection against corrosion, as well as being simple to process and handle. These properties translate into superior value and versatility, both of which are essential within the field of wastewater treatment. Featuring pioneering technology, OXIWORKS® is a highly effective solution that combines low-energy operation with exceptional flexibility and extended service life. The innovative design of the new OXIWORKS® system, together with the use of special pipes made of SIMONA® PP-H AlphaPlus, is now setting new standards in biological wastewater treatment.

Base Material SIMONA® PP-H AlphaPlus

Properties

- Extremely tough and high level of rigidity
- High chemical resistance against municipal and industrial wastewater (salts, acids, alkalis, alcohols and solvents)
- Superior stress crack resistance
- Excellent corrosion resistance
- Continuous operation at temperatures of up to +80 °C
- Favourable hydraulic properties and low level of incrustation
- Strong, permanently tight welded joints

Product range

- Pipes
- Fittings
- Electrofusion fittings
- Flanges and valves
- Solid rods
- Sheets
- Profiles and welding rods

Further information:

SIMONA AG

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