



Oversized biowashers made from SIMONA® PE-HWU sheets



Top: Connection of biowashers to production.

Bottom: Assembly and leakage testing of washers.

In 2007 the Swiss company COLASIT AG manufactured three oversized biowashers designed for the purpose of cleaning exhaust air for cellulose manufacturer Sniace in northwest Spain, supplemented by an additional tower unit just a few months later. Each biowasher has a volume of approx. 767 m³, a height of 13.5 m and a diameter of 8.5 m. The total volume of the four biowashers is therefore approx. 3,000 m³.

The project at a glance

Project

Construction of four biowashers from SIMONA® PE-HWU sheets.

Dimensions per washer:

- Diameter: 8,500 mm
- Height: 13,500 mm
- Volume: 767 m³

Requirements

- High chemical resistance
- Suitable for external use
- Outstanding processability

Client

caverion GmbH, Nuremberg

Contractor

COLASIT AG, Switzerland

Technical support

Technical Service Center SIMONA AG

Products used

- SIMONA® PE-HWU sheets, various dimensions and thicknesses, total material weight: 60 tons
- SIMONA® PE 80 pipes
- SIMONA® PE 100 pipes

Year of project

2007

Project duration

7 months



Fig. From left to right: Start of construction, advanced construction section, connection of roof and wall elements

SIMONA® PE-HWU – the intelligent choice for chemically resistant tank constructions

Initial situation

Cellulose production is generally associated with large quantities of exhaust air containing organic odorous and noxious substances. These substances are reduced to a minimum in biowashers. The washers contain aggregate beds on different levels, through which the contaminated process exhaust air passes. The noxious substances are adsorbed on the surface of the carrier substances, where they are broken down by microorganisms. This biological process enables a significant reduction in the odorous and noxious substances in the exhaust air.

Task

caverion GmbH was looking for a material that offers the following advantages:

- High chemical resistance
- Suitable for external use
- Outstanding processability

Solution

SIMONA® PE-HWU sheets were chosen for the four biowashers. 60 tons were fabricated in different dimensions and thicknesses, with a total weld seam length of approx. 6000 m. The total weight of a biowasher is approx. 200 tons, including the wetted washer packing. The structural design of the washers was calculated by COLASIT AG using FEM simulations. In addition to SIMONA® PE-HWU sheets, large quantities of SIMONA® PE 80 and PE 100 pipes were also fabricated. COLASIT AG is one of the world's leading companies in the construction of tanks and plants made from corrosion-resistant plastics for process exhaust air treatment, as well as tank and pipeline engineering. The challenge in this project - even for COLASIT - was not only the oversized dimension of the washers, but also the short project duration: the preassembled parts were transported to Spain and the biowashers constructed and integrated into the existing plant in a total of just seven months.

SIMONA® PE-HWU High heat-resistant polyethylene

Properties

- UV-stabilised
- Suitable for external use
- High chemical resistance
- Outstanding fabrication parameters
- Excellent price-performance ratio
- Use in chemical apparatus engineering including applications in contact with foodstuffs.

Range of products

- Extruded and pressed sheets, solid rods
- SIMONA® PE-HWU-B welding rods

Further information:

SIMONA AG
 Technical Service Center
 Phone +49(0)67 52 14-587
 tsc@simona.de