CaseStudy

SIMONA

KWB

SIMONA® PE Twin-Wall Sheets for biological air cleaning

Top/bottom left: outdoor Nitro Air scrubber developed by KWB, Netherlands; Bottom right: Nitro Air scrubber in use

KWB are experts in the field of biological air treatment for livestock farming. With their Nitro Air scrubbers it is possible to reduce the output of ammonia, dust and odours, which commonly occur in pig farming, and thus meet strict Dutch environmental regulations. In order to guarantee a long service life for the scrubbers, which are exposed to particularly heavy weather wear, KWB opted for housings made of SIMONA® PE Twin-Wall Sheets.

Project at a glance

Project
Design of biological scrubbers for use in livestock farming

Dimensions of the scrubbers
- Tank modules approx. 3 x 3 x 4 m

Requirements
- Permanent resistance to high levels of ammonia (above 30 ppm)
- UV resistance
- High stability
- Light weight
- Durability

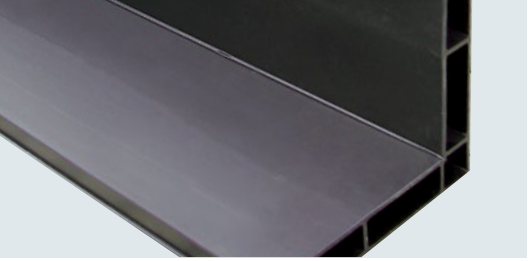
Manufacturer
KWB, Boxtel/Netherlands

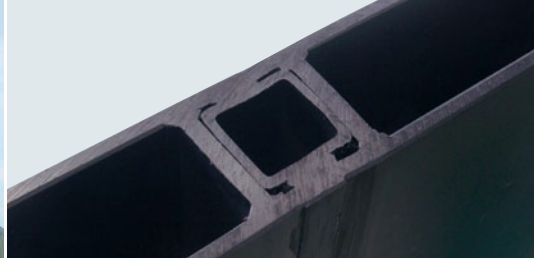
Technical consultancy
Technical Service Center
SIMONA AG, Kirn

Products used
- SIMONA® PE-HKP Twin-Wall Sheets
- SIMONA® PE-HKP Corner Elements
- SIMONA® PE 100 Pipes and Fittings

Project time
Prototypes: 2006
Certification: 2008

More overleaf ▶





From left to right: Prefabricated corner elements; Outdoor scrubber made of SIMONA® PE-HKP; Welded side elements

Robust and long-lasting: SIMONA® PE Twin-Wall Sheets

Initial situation

In 2006 the Dutch Ministry of Agriculture (VROM) issued strict environmental regulations with regard to the odour inconvenience caused by livestock farming; as from 2013 this legislation will apply to all pig-farming facilities in the Netherlands. The requirements also apply as a basis for harmonised European regulations. It was against this background that KWB developed a high-performance scrubber designed to filter out ammonia, odours and dust.

Task

The new scrubber had to be a combined solution for filtering out ammonia, reducing odours and collecting dust from the air. In addition to their low maintenance and cleaning costs, the scrubbers had to be made of a durable material and meet the following requirements:

- Excellent resistance to ammonia
- Very good resistance to microorganisms
- Insensitivity to weather, UV resistance
- Light weight for transport and assembly
- High strength and insensitivity to impact

Solution

The construction kit system of the Nitro Air scrubbers, including the pipes, is made of black PE 80 plastic. The entire housing is made of PE twin wall sheets developed by SIMONA. A number of scrubbers can be connected in parallel, depending on the flow of waste air. Refer to the high rigidity of the material, no additional cross-ribbing or steel sections for reinforcement are required. The excellent chemical resistance and guaranteed long service life, especially with exposure to UV light and weather influences, proved more than convincing for KWB. The KWB-designed Nitro Air scrubber has proven its reliability and been approved and certified by the Dutch Ministry of Agriculture – to the benefit of local residents and farmers.

SIMONA® Twin-Wall Sheets

Properties

- Light weight
- Excellent chemical resistance
- Excellent fabrication capability
- High rigidity and strength
- High break resistance
- Versatile

Product range

- Sheets made of PE, PP, PPs or PP-C in various formats with variable web spacing and different sheet thicknesses
- Corner elements

Further information

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