

CaseStudy

SIMONA

V Amargo
tank think tank

Efficient storage of de-icing agents with cross-ribbed SIMONA® PE 100 Twin-Wall Sheets



Above: AmargTank® storage tank made of cross-ribbed SIMONA® PE 100 Twin-Wall Sheets; bottom left: cross-ribbed SIMONA® PE 100 black Twin-wall Sheet; bottom right: fully assembled AmargTank® storage tank

Warsaw Chopin Airport was in need of a state-of-the-art solution for the safe storage of de-icing fluids. The focus was on durable, corrosion-resistant, and low-maintenance storage tanks to ensure operational safety, minimize the risk of outages, and guarantee the safety of staff and passengers. SIMONA supplied cross-ribbed SIMONA® PE 100 Twin-Wall Sheets for this purpose, which Amargo®, a Polish manufacturer of plastic tanks, used to produce the innovative AmargTank® storage tanks.

The project at a glance

Project

Design and manufacture of a 25 m³ storage tank made of cross-ribbed SIMONA® PE 100 Twin-Wall Sheets

Requirements

- Plastic tanks made of PE 100 Twin-Wall Sheets (total volume of 25 m³ each, usable volume of 24.5 m³ each)
- External dimensions of the tank: 6,000 × 2,582 × 2,120 mm
- Operating pressure: unpressurized
- Medium: propylene-glycol-based aircraft de-icing concentrate
- Calculation and design for a service life of at least 20 years
- Insulated design to protect the properties of the medium

Client

LS Airport Services S.A.,
Warsaw, Poland

Contractor

Amargo®,
Ożarów Mazowiecki Koparki, Poland

Technical support

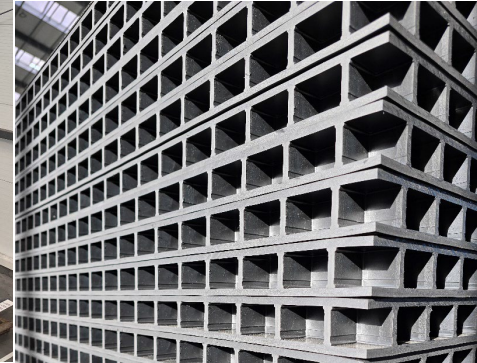
SIMONA AG,
Kirn, Germany

Products used

- Cross-ribbed Twin-Wall Sheets made of SIMONA® PE 100 black, 2,000 x 1,000 x 40 mm

Duration of project

7 months



From left to right: welding of the individual components on site; insulated design to protect the properties of the medium (insulation with rock wool mats); cross-ribbed SIMONA® PE 100 black Twin-Wall Sheets measuring 2,000 x 1,000 x 40 mm.

SIMONA® Twin-Wall Sheets – light, sturdy, durable

Initial situation

A keen sense of responsibility and significant technical expertise are essential to maintaining operational standards at airports. This applies in particular to the storage and provision of de-icing fluids, which are indispensable when it comes to ensuring the reliable de-icing of aircraft in winter. At Warsaw Chopin Airport, it became clear that a state-of-the-art solution was needed to store these critical fluids safely and efficiently. The tanks have to meet exacting safety and quality standards while also offering the benefits of cost-effectiveness and low maintenance.

Task

The aim was to provide storage tanks that meet the unique requirements of de-icing fluid. Not only did the tanks have to be highly corrosion-resistant and durable, they also had to be capable of ensuring stable storage conditions for the purpose of maintaining the chemical properties of the fluid under all weather conditions. At the same time, it was essential that their functionality be ensured through simple maintenance and inspection as well as optimized discharge.

Solution

SIMONA supplied cross-ribbed SIMONA® PE 100 Twin-Wall Sheets for the production of innovative AmargTank® storage tanks. These tanks boast a high degree of rigidity, excellent impact resistance, and dimensional stability at a low weight. Due to the exceptional corrosion resistance of polyethylene, a service life of at least 20 years can be guaranteed without any additional anti-corrosion treatment.

The tanks were insulated with rock wool mats. This prevents temperature fluctuations that might otherwise lead to decomposition of the de-icing fluid as well as a deterioration in its effectiveness or chemical instability. The design of the tanks has been optimized in the form of sloping floors for quick and complete discharge as well as level indicators and manholes to ensure easy maintenance and inspection.

SIMONA® Twin-Wall Sheets

Properties

- High rigidity and stability
- Good thermal insulation properties
- High fracture strength
- Corrosion-free
- Rectangular tank without the need for steel reinforcement
- Lower weight compared to solid material due to hollow sections

Fields of application

- Tank and equipment engineering
- Gas and exhaust air scrubbers
- Swimming pool technology

Product range

- Cross-ribbed Twin-Wall Sheets made from SIMONA® PE 100 black, SIMONA® PE 100 UV white, SIMONA® PP-C and SIMONA® PPs, 2,000 x 1,000 x 40 mm
- Lengthways-ribbed Twin-Wall Sheets made from SIMONA® PE 100 black, SIMONA® PP-H AlphaPlus® and SIMONA® PPs, 3,000 x 1,000 x 54 and 58 mm
- Corners, 45° and 90°
- Flat connectors

Further Information

SIMONA AG

Phone +49 (0) 67 52 14-0
mail@simona-group.com

Amargo®

Jaśminowa 16 St.
05-850 Ożarów Mazowiecki
Koprki, Poland
Phone +48 798 775 760
eksperci@amargo.pl
www.amargo.pl