

READY FOR TAKE-OFF

APPLICATION DETAILS

- Conveying glycol based de-icing fluids for aircrafts from tanks to vehicles
- Temperature: 10-60 °C
- Viscosity range: 5 – 50,000 mPas

KEY SPECIFICATIONS

- Minimum shear force to protect the medium
- Pumps handle a wide range of viscose media
- Robust pump design for long life performance and low maintenance

BACKGROUND

Winter weather and safe flying – not a combination you can rely on. Ice on an aircraft's wings or tail alters the aerodynamics and adds undesirable weight. Ice and snow falling off the plane can end up in the engines and even damage the tail. In the case of fully loaded planes, this can have severe consequences when taking off, making de-icing aircraft in winter essential. Safety first!

In order to prevent these risks, airplanes are sprayed with a glycol-based de-icing mixture before take-off. Depending on outdoor temperature and airplane type, various de-icing fluids with different characteristics are used.

A German EPC company (Engineering-Procurement-Construction) has been building systems for handling hazardous fluids, particularly in the chemicals industry, for more than 40 years. Using this expertise, they delivered storage and distribution stations for de-icing applications to many commercial airports. Ensuring air traffic safety is one of the main goals of any airport worldwide. And this means SEEPEX pumps are in high demand.

TASK AND TARGET

The requirement for SEEPEX was to customize a conveying system that was capable of handling all existing types of de-icing fluids. Important to know, de-icing fluids are shear sensitive. The key ingredient, glycol, requires extremely careful treatment. The pumps have to minimize the shearing effects on glycol in order to avoid destroying its molecular structure and therefore to maintain product efficiency.



De-icing of an airplane wing just before take-off.

MINIMAL SHEAR EFFECT PLEDGES SAFETY

COST SAVINGS

LONG PUMP LIFETIME

REDUCED SPARE PARTS COSTS

REDUCED RESOURCE COSTS

EFFICIENT USE THROUGH GENTLE PUMPING

SEEPEX PRODUCTS

Dosing pumps in 2 different sizes

- Pump type N, pump range BN
- Pressure: 2-3 bar
- Conveying capacity: 10 - 60 m³/h

SOLUTION AND RESULTS

To meet these requirements, progressive cavity pumps come into play. Due to the construction of the two conveying elements, rotor and stator, the medium is pumped into conveying chambers, ensuring a gentle conveying of the fluid. This gentle treatment ensures improved surface adhesion properties of the de-icing fluid on the plane.

“Progressive cavity pumps are ideal for shear sensitive liquid products. We know precisely how to convey a sensitive medium in a gentle manner and we ensure that our customer’s needs are met.”, states Thomas Dufner, Regional Market Manager, SEEPEX GmbH.

Winter after winter, the pumps from the BN range handle a fluid temperature of approximately 10 °C to 60 °C. The pumps are designed to work with all types of de-icing fluids with a wide range of viscosities. Installed close to the storage tank, the pumps convey the de-icing fluid from the tank to the de-icing vehicles for further use.

BENEFITS

- Low installation costs as pumps are applicable for all variants of de-icing fluids
- Durable pump construction for a long service life
- Efficient use of resources through gentle pumping



Progressive cavity pumps of BN range cope easily with shear sensitive products.