

Freeze Point+® Aircraft de-icing fluid blending technology

With Freeze Point+® the focus is on glycol mitigation, allowing operations to de-ice with a fluid blended to the freeze point utilizing the least allowable amount of glycol.

Freeze Point+® is now the benchmark for aviation industry standards in glycol mitigation during de-icing operations. It was developed in detail utilizing technology, automation and decades of operations experience from our customers. Freeze Point+® is designed to assist de-icing operators in continuing to provide an impeccable aircraft de-icing safety record while at the same time reducing bottom line costs incurred during de-icing operations.

Currently with conventional de-icing systems, operators must select a de-icing fluid mixture strength that is based on the lowest projected temperature during the de-icing operation (in some cases the entire season). Until now these practices were the only way operations could ensure that safety standards are not compromised.

With Freeze Point+® the operator can de-ice with a fluid blended to the freeze point (safety buffer included) utilizing the least allowable amount of glycol during the current weather conditions.

TEMPERATURE-CONTROLLED FLUID FREEZE POINT

The Freeze Point+® de-icing fluid blending system will automatically adjust the freeze point of the de-icing fluid in accordance with the Outside Air Temperature (OAT). The Freeze Point+® system then delivers a blended de-icing fluid with a freeze point that correlates with the OAT and the required safety buffers.

EXPERIENCES AND REPORTED FLUID SAVINGS

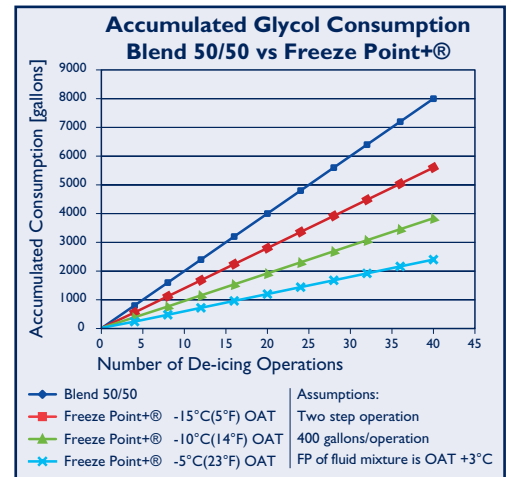
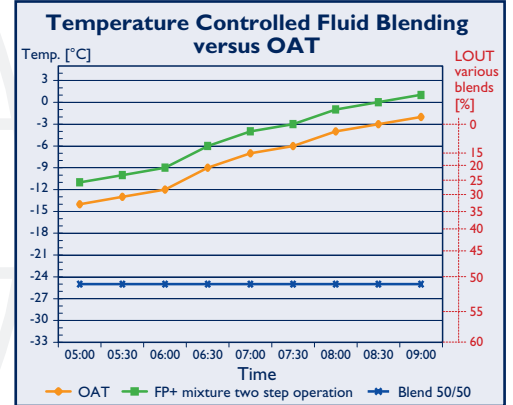
A critical objective of Freeze Point+® is an accuracy of the blend ratio which is independent of the fluid flow rate. The accuracy of both the systems fluid blend ratio and flow rate for each fluid have proven to be better than ± 1%. Also of major importance is the time with which the system reacts to changing fluid freeze points. The Freeze Point+® system can change the freeze point of the de-icing fluid within 0.5 seconds.

This Vestergaard system has been in operation since 1989. The reliability of the system is unsurpassed. More than 100 de-icing units are in operation with this system installed, and the feed-back reports have been nothing but excellent.

Actual fluid savings have depended on traffic, precipitation, temperature, and other variables, but savings up to 50% over conventional de-icing fluid blending systems have been consistently reported.

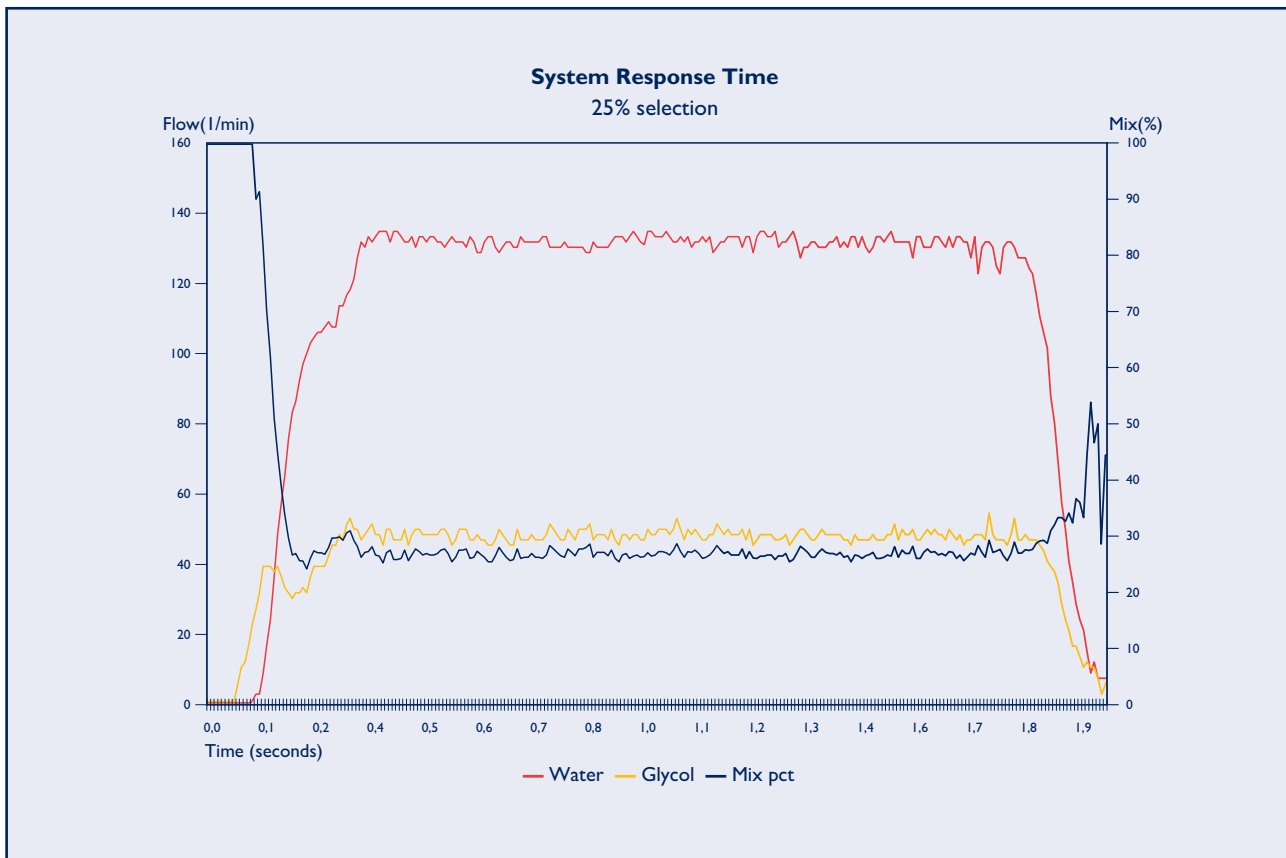
THE "BULLET PROOF" DE-ICING FLUID BLENDING SYSTEM

As with all Vestergaard Company equipment, every means of safeguards have been designed, developed, tested, and then re-tested to ensure that the Freeze Point+® system performs flawlessly under the harshest environments. Operators can be assured that the system is effective, efficient, and operates at the same high level of serviceability that our customers have come to expect from ground service equipment manufactured by Vestergaard Company.



MAJOR ADVANTAGES

- Saves operating costs by minimizing glycol consumption to its lowest possible level
- Saves airport capital costs with no fixed «glycol mixing stations»
- No need for additional operator training
- Reduces fleet downtime for de-icing fluid refill
- Minimizes the environmental impact of de-icing fluids
- Technology has been operationally tested & proven
- Flight safety remains uncompromised



Specifications

Mix ratio	15 – 80%
Typical accuracy	±0.5%
Alarm limits	+2% / ÷ 1%
Flow rate	variable
Max. flow rate	150 – 240 liters/min. (40 – 65 US Gal/min.)
Typical response time	0.4 seconds