Winter conditions at Finnish airports – requirements for pilots and air operators

Winter conditions at airports in Finland can be very challenging from October to April, when there is plenty of snow and ice. For safety reasons, pilots and air operators with limited experience from difficult winter conditions in northern Europe should read these instructions carefully.

The weather and surface conditions specially at northern Finland airports can be very difficult. Besides runways, the taxiways and aprons may also be partly or entirely covered with snow and ice, but yet in an operable condition.

Airport conditions are reported in SNOWTAM messages

Pilots are required to check the content and effect of SNOWTAMs before operating to airports in Finland. It is important to understand how the reported conditions actually affect flight operations. Air carriers must ensure that their pilots receive sufficient SNOWTAM training.

Airport movement area conditions are reported using a SNOWTAM message. Some of the most important issues to consider are listed below.

- Reported RWYCC and contaminant type, coverage and depth are based upon runway inspector's overall assessment of the surface conditions. Measurements and sensor data may supplement visual observations. Runway conditions reporting is based on Global Reporting Format (GRF). Runway Condition Assessment Matrix (RCAM) is used in order to assign the RWYCC and for runway surface description.
- When assessing the contamination and friction the runway inspector can either downgrade or upgrade the reported RWYCC value compared to the contaminant specific value in the RCAM table.
- In SNOWTAM messages, the conditions are reported for each third of the runway, beginning from the smaller runway designator. In landing instructions provided by ATIS or the ATS unit, however, they are given in the direction of landing.
- SNOWTAM and ATIS messages may contain information regarding the take-off significant contaminant (TOSC) on the runway. The usage of contaminant reported as take-off significant must be carefully considered and based on the operator's own procedures regarding its operational utilization.
- When determining TOSC, the reporting system collects all contaminants reported on the runway and divides them into thin (none drag causing) and thick (drag causing) contaminants in respect to airplane performance. The system reports TOSC as an additional information, in compliance with an interpretation of the aircraft performance requirements specified in regulation CS-25 AMC 1591.

The aim is to time runway maintenance according to the needs of air traffic. Flight planning must take into account the possibility that the conditions prevailing at take-off time may be significantly different from landing time.

There are no Specially prepared winter runway (SPWR) operations in Finland.

Up-to-date information on runway conditions is available from ATIS or the ATS unit. Airport maintenance actions can also be requested where necessary.

Sand is not used in Finland to improve surface friction. The ATS unit and airport maintenance are there at the pilots' service.

En-route and initial approach

Runway conditions and prevailing weather may vary. Whenever necessary, ask for the latest information directly from the destination airport in good time. The information is available during opening hours which can vary daily. Check the opening hours from https://www.ais.fi/en NOTAMs. Up-to-date information on runway conditions is available on ATS frequency during flight.

Airports may provide AFIS, radar service or procedural ATC service. The effect of the service level on pilot responsibilities must be noted.

When providing ATS surveillance services, the controller will issue clearances such that prescribed obstacle clearance will exist at all times. The controller takes the effect of temperature into account whenever the temperature at the airfield is below 0 °C. Such a clearance will include correction for low temperature effect when the required correction exceeds 20% of the prescribed minimum obstacle clearance.

If correction for low temperature effect is taken into account by the controller, given clearance includes "TEMPERATURE CORRECTED BY ATC". The temperature limit for when temperature correction is required may vary from airport to airport.

At AFIS airports and airports with procedural ATC, pilots are responsible for calculating any temperature corrections themselves. It is particularly important to take account of temperature corrections in cold winter conditions.

Aerodrome Flight Information Service (AFIS)

Some Finnish airports are not providing air traffic control service, but only have an AFIS unit that provides Aerodrome Flight Information Services. The AFIS unit reports any known traffic, and the pilot-in-command is responsible for maintaining safe distance to other traffic based on these reports and in compliance with the Rules of the Air. Pilots are also required to report their own intentions. The AFIS unit is responsible for the use of any necessary aerodrome equipment, and for controlling vehicle traffic.

Operational procedures for AFIS aerodromes are described in section GEN 3.3, paragraph 3.1 of the Aeronautical Information Publication, AIP Finland. Please read them before operating to any AFIS aerodrome.

Approach and landing

To minimize the risk of runway excursion, it is essential to make sure that the approach is stabilized. Special attention is required when approaching a runway with Runway Condition Code RWYCC = 3 or lower.

In some cases (available) runway width may be less than in AIP published nominal width.
The decision on making a go-around must be made early in case of any signs of an unstabilized approach. It is also important to note that the touchdown zone markings may not be fully visible.

When there are reported deposits (e.g. snow and ice) on the runway, friction may vary significantly along the runway length and, in some wind conditions, also between the left and right side of the runway centerline.

AIREP

The pilots' possible assessments of the runway condition (AIREP) must be reported according to Runway Condition Assessment Matrix scale good – less than poor.

Runway, taxiways and apron

Conditions on taxiways and at the apron may differ from those on the runway, usually in the lower direction. Taxiway and apron conditions are only reported when conditions are assessed slippery, poor or less than poor. Under such conditions utmost caution shall be taken when manoeuvring the aircraft. Note that there is normally snow and ice on the taxiways and apron, and they can be slippery. In such conditions, it is especially important to prepare for any movements or changes well in advance.

Some aerodrome signage and markings can be covered with ice and snow. Keep available and

utilize current onboard aerodrome maps for further reference while maneuvering on taxiways and apron.

At some airports, the apron or aircraft stands may be on sloping ground, which means that parking brakes must be used. Check the need for using brakes from airport ground services.

It is important to note that freezing temperatures may affect brakes and other aircraft devices.

Passengers must also be warned that the apron may be slippery.

De-icing and anti-icing

It is crucial that the aeroplane must not take off if the pilot-in-command has not been able to assess whether the aeroplane is free of frost, ice and snow. This requirement can also be met by having the aeroplane checked by personnel with relevant training and ratings.

In winter, operators must identify the possible need for aircraft de-icing on the ground, make sure that de-icing services are available, and verify that their aircrews are appropriately trained also for de-icing operations on the ground.

Under challenging winter conditions, proper de-icing is an essential element of flight safety. When there is reason to suspect that frost, ice or snow is adhering to aircraft surfaces, the need for de-icing must be determined. This must be done from a point offering good visibility of the aircraft surfaces. Once the need for de-icing has been determined, the pilot-in-command is responsible for deciding whether de-icing treatment is necessary.

The ‘Clean Aircraft Concept’ ensures safe flight operations. In all operations, the pilot-in-command is responsible for assessing whether operation is safe. The aircrew and ground or maintenance personnel must still report anything that may affect flight safety. Open communication is vital, and all matters affecting airworthiness must be communicated to the pilot-in-command in a clear and brief manner.

Any contamination observed before a flight can be removed by applying a hot de-icing fluid that will melt and flush off ice and snow deposits. Moreover, anti-icing fluid may be sprayed on critical surfaces before take-off to prevent new formations of frost and ice.

The pilot-in-command must check the hold-over times of de-icing fluids from the tables available. It is important to ensure ‘Clean Aircraft Concept’ also during departure taxing and take off.

The time needed for aircraft de-icing and anti-icing varies depending on the conditions and the equipment in use (typically 15-30 minutes). Cooperation and coordination with ground handling service provider regarding the time needed for de-icing and anti-icing is important in order to maintain the Estimated Off-Block Time (EOBT) according to the flight plan. The airline is responsible for the validity of the flight plan.

Cabin pressurization during ground heating

Ground heating of the aircraft cabin in winter, using either the aircraft’s own systems or external equipment, may create an undetected cabin pressure differential. For example, when opening the door of the aircraft, this differential may cause the door to blow open with excessive force, creating a serious personnel safety and structural risk. Ensure personnel are briefed and trained to follow the operator’s and the aircraft manufacturer’s procedures for cabin heating.

Winter clothes

The flight crew must also be equipped for cold and challenging winter conditions. Working outdoors in Finland's cold conditions requires special equipment, as temperatures can drop very low, especially in the north. In the aviation industry, safety is always a priority, and all these measures and preparations are part of it, so that every flight goes safely despite the winter conditions.

Weather services supporting operations in winter conditions

Finnish Meteorological Institute provides aeronautical meteorological services in Finland. Nordic Significant Weather Chart including for example icing forecast can be found from https://ilmailusaa.fi which is the official service for aeronautical meteorological services.

As additional services FMI provides i.a. EFHK Weather Display for Helsinki Airport and ILMARI AWOSVIEW for other airport to view real-time observations. Airport Forecast is produced to Helsinki Airport which is a specialized forecast to support interpreting weather conditions. FMI has also developed Winter Weather forecast products related to icing and de-icing to users across Europe. Products are SWIM compliant and can be found via: https://eur-registry.swim.aero/services.

Further information

Further information on winter operations, seasonal snow plan for winter season and runway condition assessment (GRF) are available from:

- Aeronautical information circular (AIC A) Seasonal snow plan for the winter season and eAIP, AD 1.2 at https://www.ais.fi/eaip/

For aeronautical meteorological services, contact the Finnish Meteorological Institute at: ilmailu@fmi.fi

Have a safe flying season and welcome to airports in Finland!

This information leaflet was drafted jointly by Finavia Corporation, Lappeenranta, Enontekiö, Mikkeli and Seinäjoki airports, Finnair, Norra, Fintraffic ANS, Finnish Meteorological Institute and the Finnish Transport and Communications Agency (Traficom), which is the civil aviation authority of Finland.