



Ice Awareness

While icing could be encountered at any time of the year, in the UK the winter brings an increase in visible moisture and a decrease in temperatures, two factors that increase the likelihood of icing. Let's explore how to preflight and make aeronautical decisions around icing.

Want to learn more than this brief guide? Complete the Icing Awareness course on cirrusapproach.com.

1) Meteorology

Dealing with icing begins while planning a flight. Our first order of business is to check <https://www.metoffice.gov.uk>. In particular, briefing charts F214 and F215. Here, we're looking for conditions that could lead to icing. Fronts, convection, freezing level and precipitation type can be used as indicators. Flight planning apps like Sky Demon and Foreflight will also graphically depict potential icing areas.

Understanding the types of ice that we are likely to encounter will also help us fine-tune our strategy:

- Clear - Clear, sometimes hard to identify, builds slowly, hard to get rid of
- Rime - Rough, White, develops and clears quicker
- Mixed - Combination of Clear and Rime

2) Pre-flight

While every season has the potential for icing, it is possible to go for months without using Anti-ice systems. Cirrus recommends 'wetting out' the FIKI system every 30 days as part of a preflight to prevent the sponges behind the panels from drying out. When running the system on the ground, make sure that the entire wing has fluid coming out.

Safety point: TKS fluid has an expiry date. Shelf-life depends on the brand used, so be sure to check the date on the TKS container.

Any type of airframe icing (including the lightest layer of frost) will negatively affect aerodynamic characteristics. **DO NOT TAKE OFF WITH ANY ICING ON THE AIRCRAFT.** If you show up for pre-flight and you notice some frost, what works well is a spray bottle with a pump (the kind you would use for weed killer) filled with hot water. Add some TKS fluid to help keep ice from forming if temps are below freezing. This has a lower environmental impact, is not corrosive, and cost effective.

3) Got Ice? What Next?

If you suspect you will encounter icing, and you have a FIKI-equipped aircraft, best practice is to turn the system on before entering icing conditions. The SR22's system is an anti-ice, not a de-ice. If you inadvertently enter icing conditions switch the system on all the same, and use the max flow settings to encourage the rapid wetting of the entire wing.

Whether or not you have a FIKI-equipped Cirrus, the deal is always to try to get out of icing conditions. Most of the time, the icing is in a band 3-5,000 feet thick. You have four options:

- **Descend** if you have terrain clearance, and if airspace allows
- **Climb** if you have the engine power, service ceiling, airspace and meet oxygen requirements
- **Turn-around** if you aren't sure what lies ahead.

- **Continue** if you know the nearest clear air is ahead of you.

ATC will always work with you to help get you out of icing conditions. Not doing anything is the biggest risk.



5) Operating limitations

The icing limitations are covered extensively in the Cirrus Icing Awareness course on cirrusapproach.com.

Remember that FIKI systems are not designed for severe icing conditions. If these are forecast, go grab a coffee and sit by the fireplace. For TKS equipped SR22s, the minimum dispatch quantity of TKS is 5 gallons, providing TKS flow for 22.5-90 minutes, depending on flow rate.

Flap settings are limited to 0% or 50% during all phases of flight. Remember the impact this has on landing distance when choosing your destination airfield!

Lastly, the Pitot Heat is limited to a maximum of 45 seconds while on the ground, regardless of the conditions. Scenarios where there is a risk of exceeding this are during preflight, at the holding point waiting for take-off clearance, or after landing.

Know your speed limits

95 KIAS - Min speed in ice

120 KIAS - Min holding speed in ice

177KIAS - Max speed in ice