

Known-Ice Certification And The Myth

There is a big difference between being equipped with ice protection, and certification for flight in icing conditions. Some pilots feel adding portions of an ice protection system are enough to give the same level of safety as a fully certified system. There's a lot more to "known ice" certification, however, than wing leading edge protection and a heated pitot tube. Certification for flight in icing conditions requires testing in three different areas:

- **Airframe and systems ice protection, including heated stall warning and fuel vents, and in many cases redundant ice protection systems.**
- **Aircraft handling and performance, investigated by test-pilot flights in actual icing conditions, and wind tunnel or in-flight testing with foam blocks simulating natural ice accumulation shapes on leading edges and control surfaces.**
- **Powerplant ice protection, including ice ingestion, impact ice and propeller ice accumulation in propeller-driven airplanes.**



Ice certification is not just a matter of affixing inflatable boots or alcohol-dispensing equipment on some parts of the airframe. It's the result of significant design and testing. Even then, ice certification is limited to certain types and rates of ice accumulation. It's a myth to think ice protection, even known-ice certification, gives an airplane "all-weather utility."