



Standard Specification for Ice Protection for General Aviation Aircraft¹

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1. Scope

1.1 This specification covers international standards for ice protection aspects of airworthiness and design for “general aviation” aircraft.

1.2 The applicant for a design approval must seek the individual guidance of their respective CAA body concerning the use of this standard as part of a certification plan. For information on which CAA regulatory bodies have accepted this standard (in whole or in part) as a means of compliance to their Small Aircraft Airworthiness regulations (hereinafter referred to as “the Rules”), refer to ASTM F44 webpage (www.ASTM.org/COMMITTEE/F44.htm) which includes CAA website links.

1.3 *Units*—The values are stated in units common to the field of aircraft icing. Typically SI or inch-pound units are used, but in some cases this has resulted in the use of mixed units due to the historical development of these values. In cases where values are given in one system with the other system following in brackets, the values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

F3060 Terminology for Aircraft

F3061 Specification for Systems and Equipment in Small Aircraft

F3066/F3066M Specification for Powerplant Systems Specific Hazard Mitigation

F3093/F3093M Specification for Aeroelasticity Requirements

2.2 Federal Standards:³

14 CFR Part 33 (Amdt 34) Airworthiness Standards: Aircraft Engines

14 CFR Part 23 (Amdt 62) Airworthiness Standards: Normal, Utility, Aerobatic, and Commuter Category Aircraft

2.3 Other Standard:

SAE AS5562 Ice and Rain Minimum Qualification Standards for Pitot and Pitot-static Probes⁴

3. Terminology

3.1 Refer to Terminology F3060 for definitions of terms in this standard.

3.2 Acronyms:

3.2.1 ICTS—ice contaminated tailplane stall

3.2.2 IPS—ice protection system

3.2.3 SLD—supercooled large droplets

3.2.4 TTO Probe—total temperature probe

4. Applicability

4.1 *Operational Requirements*—The aircraft level of approval determines which portions of this specification are applicable for a specific project. The requirements are defined in Table 1.

5. Crew External Visibility

5.1 *Windshields and Windows*—For aircraft approved for flight in icing conditions, a means must be provided to prevent or to clear accumulations of ice from the windshield on an area sufficiently large to provide the view specified in 23.775(f). This means must be designed to function in the icing conditions specified in Section 11 for which approval is sought.

¹ This specification is under the jurisdiction of ASTM Committee F44 on General Aviation Aircraft and is the direct responsibility of Subcommittee F44.10 on General.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

⁴ Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096, <http://aerospace.sae.org>.