

Part II—Airframe Ice Accretions for Showing Compliance With Subpart B.

(a) *Ice accretions—General.* The most critical ice accretion in terms of airplane performance and handling qualities for each flight phase must be used to show compliance with the applicable airplane performance and handling requirements in icing conditions of subpart B of this part. Applicants must demonstrate that the full range of atmospheric icing conditions specified in part I of this appendix have been considered, including the mean effective drop diameter, liquid water content, and temperature appropriate to the flight conditions (for example, configuration, speed, angle-of-attack, and altitude). The ice accretions for each flight phase are defined as follows:

(1) *Takeoff ice* is the most critical ice accretion on unprotected surfaces and any ice accretion on the protected surfaces appropriate to normal ice protection system operation, occurring between the end of the takeoff distance and 400 feet above the takeoff surface, assuming accretion starts at the end of the takeoff distance in the takeoff maximum icing conditions defined in part I of this Appendix.

(2) *Final takeoff ice* is the most critical ice accretion on unprotected surfaces, and any ice accretion on the protected surfaces appropriate to normal ice protection system operation, between 400 feet and either 1,500 feet above the takeoff surface, or the height at which the transition from the takeoff to the en route configuration is completed and V_{FTO} is reached, whichever is higher. Ice accretion is assumed to start at the end of the takeoff distance in the takeoff maximum icing conditions of part I, paragraph (c) of this Appendix.

(3) *En route ice* is the critical ice accretion on the unprotected surfaces, and any ice accretion on the protected surfaces appropriate to normal ice protection system operation, during the en route phase.

(4) *Holding ice* is the critical ice accretion on the unprotected surfaces, and any ice accretion on the protected surfaces appropriate to normal ice protection system operation, during the holding flight phase.

(5) *Approach ice* is the critical ice accretion on the unprotected surfaces, and any ice accretion on the protected surfaces appropriate to normal ice protection system operation following exit from the holding flight phase and transition to the most critical approach configuration.

(6) *Landing ice* is the critical ice accretion on the unprotected surfaces, and any ice accretion on the protected surfaces appropriate to normal ice protection system operation following exit from the approach flight phase and transition to the final landing configuration.

(b) In order to reduce the number of ice accretions to be considered when demonstrating compliance with the requirements of § 25.21(g), any of the ice accretions defined in paragraph (a) of this section may be used for any other flight phase if it is shown to be more critical than the specific ice accretion defined for that flight phase. Configuration differences and their effects on ice accretions must be taken into account.

(c) The ice accretion that has the most adverse effect on handling qualities may be used for airplane performance tests provided any difference in performance is conservatively taken into account.

(d) For both unprotected and protected parts, the ice accretion for the takeoff phase may be determined by calculation, assuming the takeoff maximum icing conditions defined in appendix C, and assuming that:

(1) Airfoils, control surfaces and, if applicable, propellers are free from frost, snow, or ice at the start of the takeoff;

(2) The ice accretion starts at the end of the takeoff distance.

(3) The critical ratio of thrust/power-to-weight;

(4) Failure of the critical engine occurs at V_{EF} ; and

(5) Crew activation of the ice protection system is in accordance with a normal operating procedure provided in the Airplane Flight Manual, except that after beginning the takeoff roll, it must be assumed that the crew takes no action to activate the ice protection system until the airplane is at least 400 feet above the takeoff surface.

(e) The ice accretion before the ice protection system has been activated and is performing its intended function is the critical ice accretion formed on the unprotected and normally protected surfaces before activation and effective operation of the ice protection system in continuous maximum atmospheric icing conditions. This ice accretion only applies in showing compliance to §§ 25.143(j) and 25.207(h), and 25.207(i).

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APPENDIX D TO PART 25

Criteria for determining minimum flight crew. The following are considered by the Agency in determining the minimum flight crew under § 25.1523:

(a) *Basic workload functions.* The following basic workload functions are considered:

(1) Flight path control.

(2) Collision avoidance.

(3) Navigation.

(4) Communications.