(a) For airplanes certificated in accordance with § 25.1420(a)(1), the icing conditions that the airplane is certified to safely exit following detection.

(b) For airplanes certificated in accordance with § 25.1420(a)(2), the icing conditions that the airplane is certified to safely operate in and the icing conditions that the airplane is certified to safely exit following detection.

(c) For airplanes certificated in accordance with § 25.1420(a)(3) and for airplanes not subject to § 25.1420, all icing conditions.

[Amdt. 25–140, 79 FR 65527, Nov. 4, 2014]

§ 25.1325 Static pressure systems.

(a) Each instrument with static air case connections must be vented to the outside atmosphere through an appropriate piping system.

(b) Each static port must be designed and located so that:

(1) The static pressure system performance is least affected by airflow variation, or by moisture or other foreign matter; and

(2) The correlation between air pressure in the static pressure system and true ambient atmospheric static pressure is not changed when the airplane is exposed to the icing conditions defined in Appendix C of this part, and the following icing conditions specified in Appendix O of this part:

(i) For airplanes certificated in accordance with § 25.1420(a)(1), the icing conditions that the airplane is certified to safely exit following detection.

(ii) For airplanes certificated in accordance with § 25.1420(a)(2), the icing conditions that the airplane is certified to safely operate in and the icing conditions that the airplane is certified to safely exit following detection.

(iii) For airplanes certificated in accordance with § 25.1420(a)(3) and for airplanes not subject to § 25.1420, all icing conditions.

(c) The design and installation of the static pressure system must be such that—

(1) Positive drainage of moisture is provided; chafing of the tubing and excessive distortion or restriction at bends in the tubing is avoided; and the materials used are durable, suitable for the purpose intended, and protected against corrosion; and

(2) It is airtight except for the port into the atmosphere. A proof test must be conducted to demonstrate the integrity of the static pressure system in the following manner:

(i) *Unpressurized airplanes.* Evacuate the static pressure system to a pressure differential of approximately 1 inch of mercury or to a reading on the altimeter, 1,000 feet above the airplane elevation at the time of the test. Without additional pumping for a period of 1 minute, the loss of indicated altitude must not exceed 100 feet on the altimeter.

(ii) *Pressurized airplanes.* Evacuate the static pressure system until a pressure differential equivalent to the maximum cabin pressure differential for which the airplane is type certificated is achieved. Without additional pumping for a period of 1 minute, the loss of indicated altitude must not exceed 2 percent of the equivalent altitude of the maximum cabin differential pressure or 100 feet, whichever is greater.

(d) Each pressure altimeter must be approved and must be calibrated to indicate pressure altitude in a standard atmosphere, with a minimum practicable calibration error when the corresponding static pressures are applied.

(e) Each system must be designed and installed so that the error in indicated pressure altitude, at sea level, with a standard atmosphere, excluding instrument calibration error, does not result in an error of more than ±30 feet per 100 knots speed for the appropriate configuration in the speed range between 1.23 V_{SR0} with flaps extended and 1.7 V_{SR1} with flaps retracted. However, the error need not be less than ±30 feet.

(f) If an altimeter system is fitted with a device that provides corrections to the altimeter indication, the device must be designed and installed in such manner that it can be bypassed when it malfunctions, unless an alternate altimeter system is provided. Each correction device must be fitted with a means for indicating the occurrence of reasonably probable malfunctions, including power failure, to the flight crew. The indicating means must be effective for any cockpit lighting condition likely to occur.

(g) Except as provided in paragraph (h) of this section, if the static pressure