

# Code of Federal Regulations

## ▼ Sec. 25.105

Part 25 AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES	
Subpart B--Flight	Performance

### Sec. 25.105

#### Takeoff.

[ (a) The takeoff speeds prescribed by Sec. 25.107, the accelerate-stop distance prescribed by Sec. 25.109, the takeoff path prescribed by Sec. 25.111, the takeoff distance and takeoff run prescribed by Sec. 25.113, and the net takeoff flight path prescribed by Sec. 25.115, must be determined in the selected configuration for takeoff at each weight, altitude, and ambient temperature within the operational limits selected by the applicant--

- (1) In non-icing conditions; and
- (2) In icing conditions, if in the configuration of Sec. 25.121(b) with the takeoff ice accretion defined in appendix C:
  - (i) The stall speed at maximum takeoff weight exceeds that in non-icing conditions by more than the greater of 3 knots CAS or 3 percent of  $V_{SR}$ ; or
  - (ii) The degradation of the gradient of climb determined in accordance with Sec. 25.121(b) is greater than one-half of the applicable actual-to-net takeoff flight path gradient reduction defined in Sec. 25.115(b).]
- (b) No takeoff made to determine the data required by this section may require exceptional piloting skill or alertness.
- (c) The takeoff data must be based on--
  - (1) In the case of land planes and amphibians:
    - (i) Smooth, dry and wet, hard-surfaced runways; and
    - (ii) At the option of the applicant, grooved or porous friction course wet, hard-surfaced runways.
  - (2) Smooth water, in the case of seaplanes and amphibians; and
  - (3) Smooth, dry snow, in the case of skiplanes.
- (d) The takeoff data must include, within the established operational limits of the airplane, the following operational correction factors:
  - (1) Not more than 50 percent of nominal wind components along the takeoff path opposite to the direction of takeoff, and not less than 150 percent of nominal wind components along the takeoff path in the direction of takeoff.
  - (2) Effective runway gradients.

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