§ 23.181 Dynamic stability.
(a) Any short period oscillation not including combined lateral-directional oscillations occurring between the stalling speed and the maximum allowable speed appropriate to the configuration of the airplane must be heavily damped with the primary controls—
(1) Free; and
(2) In a fixed position.
(b) Any combined lateral-directional oscillations (Dutch roll) occurring between the stalling speed and the maximum allowable speed (V_{FE}, V_{LE}, V_{NO}, V_{FC}/M_{FC}) appropriate to the configuration of the airplane with the primary configuration, or at 1.3 \( V_{SI} \) in other configurations.
(3) The angle of sideslip for these tests must be appropriate to the type of airplane, but in no case may the constant heading sideslip angle be less than that obtainable with a 10 degree bank or, if less, the maximum bank angle obtainable with full rudder deflection or 150 pound rudder force.
(c) Paragraph (b) of this section does not apply to acrobatic category airplanes certificated for inverted flight.

§ 23.177 Static directional and lateral stability.
(a) (1) The static directional stability, as shown by the tendency to recover from a wings level sideslip with the rudder free, must be positive for any landing gear and flap position appropriate to the takeoff, climb, cruise, approach, and landing configurations. This must be shown with symmetrical power up to maximum continuous power, and at speeds from 1.2 \( V_{SI} \) up to \( V_{FC}, V_{LE}, V_{NO}, V_{FC}/M_{FC} \), whichever is appropriate.
(2) The angle of sideslip for these tests must be appropriate to the type of airplane. The rudder pedal force must not reverse at larger angles of sideslip, up to that at which full rudder is used or a control force limit in § 23.143 is reached, whichever occurs first, and at speeds from 1.2 \( V_{SI} \) to \( V_{O} \).
(b) (1) The static lateral stability, as shown by the tendency to raise the low wing in a sideslip with the aileron controls free, may not be negative for any landing gear and flap position appropriate to the takeoff, climb, cruise, approach, and landing configurations. This must be shown with symmetrical power from idle up to 75 percent of maximum continuous power at speeds from 1.2 \( V_{SI} \) in the takeoff configuration(s) and at speeds from 1.3 \( V_{SI} \) in other configurations, up to the maximum allowable airspeed for the configuration being investigated (\( V_{FE}, V_{LE}, V_{NO}, V_{FC}/M_{FC} \), whichever is appropriate) in the takeoff, climb, cruise, descent, and approach configurations. For the landing configuration, the power must be that necessary to maintain a 3-degree angle of descent in coordinated flight.
(2) The static lateral stability may not be negative at 1.2 \( V_{SI} \) in the takeoff configuration, or at 1.3 \( V_{SI} \) in other configurations.

§ 23.181 Dynamic stability.
(a) Any short period oscillation not including combined lateral-directional oscillations occurring between the stalling speed and the maximum allowable speed appropriate to the configuration of the airplane must be heavily damped with the primary controls—
(1) Free; and
(2) In a fixed position.
(b) Any combined lateral-directional oscillations (Dutch roll) occurring between the stalling speed and the maximum allowable speed (\( V_{FE}, V_{LE}, V_{NO}, V_{FC}/M_{FC} \)) appropriate to the configuration of the airplane with the primary
§ 23.201 Wings level stall.

(a) It must be possible to produce and to correct roll by unreversed use of the rolling control and to produce and to correct yaw by unreversed use of the directional control, up to the time the airplane stalls.

(b) The wings level stall characteristics must be demonstrated in flight as follows. Starting from a speed at least 10 knots above the stall speed, the elevator control must be pulled back so that the rate of speed reduction will not exceed one knot per second until a stall is produced, as shown by either:

(1) An uncontrollable downward pitching motion of the airplane;

(2) A downward pitching motion of the airplane that results from the activation of a stall avoidance device (for example, stick pusher); or

(3) The control reaching the stop.

(c) Normal use of elevator control for recovery is allowed after the downward pitching motion of paragraphs (b)(1) or (b)(2) of this section has unmistakably been produced, or after the control has been held against the stop for not less than the longer of two seconds or the time employed in the minimum steady slight speed determination of §23.49.

(d) During the entry into and the recovery from the maneuver, it must be possible to prevent more than 15 degrees of roll or yaw by the normal use of controls except as provided for in paragraph (e) of this section.

(e) For airplanes approved with a maximum operating altitude at or above 25,000 feet during the entry into and the recovery from stalls performed at or above 25,000 feet, it must be possible to prevent more than 25 degrees of roll or yaw by the normal use of controls.

(f) Compliance with the requirements of this section must be shown under the following conditions:

(1) Wing flaps: Retracted, fully extended, and each intermediate normal operating position, as appropriate for the phase of flight.

(2) Landing gear: Retracted and extended as appropriate for the altitude.

(3) Cowl flaps: Appropriate to configuration.

(4) Spoilers/speedbrakes: Retracted and extended unless they have no measurable effect at low speeds.

(5) Power:

(i) Power/Thrust off; and

(ii) For reciprocating engine powered airplanes: 75 percent of maximum continuous power. However, if the power-to-weight ratio at 75 percent of maximum continuous power results in nose-high attitudes exceeding 30 degrees, the test may be carried out with the power required for level flight in the landing configuration at maximum landing weight and a speed of 1.4 VSO, except that the power may not be less than 50 percent of maximum continuous power; or

(iii) For turbine engine powered airplanes: The maximum engine thrust, except that it need not exceed the thrust necessary to maintain level flight at 1.5 VSI (where VSI corresponds to the stalling speed with flaps in the approach position, the landing gear retracted, and maximum landing weight).