

Airport Design - Runway

Design the minimum FAR runway requirements for proposed aircraft and actual runway length with following aircraft characteristics and environmental conditions, if the runway is to be used in both directions:

1. An aircraft has these runway performance characteristics:

For a normal takeoff; lift-off distance is 8200 ft, and the aircraft reaches a height of 35 ft above the end of runway at a distance of 8950 ft from the runway threshold.

For an engine-failure takeoff, the lift-off distance is 10,250 ft and the aircraft reaches a height of 35 ft above the end of the runway at a distance of 11,150 ft from the runway threshold.

For an aborted takeoff, the accelerate-stop distance is 10,750 ft.

For landing, the stop distance is 5300 ft.

2. Environmental Conditions:
 - a. Aerodrome elevation – refer to contour map.
 - b. Aerodrome reference temperature : 27.8° C
 - c. Temperature in the standard atmosphere for 150 m : 14.025° C
 - d. Runway slope: 0.678 %