

Tecnam P2006T Takeoff Performance

ASSUMED CONDITIONS

Weight: 1,230 kg (2,712 lb)

Flaps: T/O

Speed at Lift-Off: 65 KIAS

Speed over 50ft Obstacle: 70 KIAS

Throttle Levers: Full Forward

Runway: Grass

CORRECTIONS

Headwind: -8 ft/kt or -2.5m/kt

Tailwind: +33'/kt or +10m/kt

Paved Runway: -6% ground roll

Runway Slope: +5% ground roll per 1%

EXAMPLE OVER 50' OBSTACLE

Pressure Altitude: 1,500 feet

Temperature: 30°C

Tailwind: 5 knots

Runway: Paved

Slope: .5% up

Interpolate between 1,000 and 2,000 foot pressure altitude and 25°C and 50°C to conservatively estimate the pre-correction figures. We'll average the value of the four highlighted boxes.

$$(479 + 586 + 535 + 654) \div 4 = 563.5 \text{ meters}$$

Now we factor in corrections:

5 knots of tailwind adds 50 meters; 613.5 meters.

A paved runway reduces ground roll by 6% but the POH applies that to the ground roll only. We conservatively ignore it. Positive runway slope increases the ground roll per the POH, but since we are conservative, we will make that adjustment to our distance over 50' as well. We increase total distance by 2.5%

This results in a final figure of just under 629 meters. Multiply by 3.28 feet per meter to arrive at a final figure of just under 2,064 feet.

CONSIDER

Watch your units carefully. Takeoff performance must be started in metric and later converted to feet (if desired in feet). We recommend converting either before adding the corrections, or after, but whichever you do, make sure that the corrections are in the appropriate units. Don't, for example, convert to imperial units and then add 10 feet per knot to correct for a tailwind. This could quickly create an unsafe situation.

Wherever possible, be conservative. Interpolation is a skill that pilots must demonstrate to examiners, but you can also complete the process faster if you err far on the side of caution. In our practice example you could, for instance, use a 2,000 foot pressure altitude, 50°C, 5 knot tailwind, and ignore the paved runway, since that increases performance.

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	207	263	328	401	301
	At 50 ft AGL	271	345	429	525	394
1000	Ground Roll	231	294	366	447	330
	At 50 ft AGL	303	385	479	586	432
2000	Ground Roll	258	328	409	500	362
	At 50 ft AGL	338	430	535	654	474
3000	Ground Roll	289	367	457	559	398
	At 50 ft AGL	378	480	598	731	521
4000	Ground Roll	323	411	511	625	438
	At 50 ft AGL	423	537	669	818	573
5000	Ground Roll	362	460	572	700	481
	At 50 ft AGL	473	602	749	916	630
6000	Ground Roll	405	515	642	785	530
	At 50 ft AGL	531	675	840	1027	694
7000	Ground Roll	455	578	720	880	584
	At 50 ft AGL	595	757	942	1152	765
8000	Ground Roll	511	650	809	989	645
	At 50 ft AGL	669	850	1059	1295	844
9000	Ground Roll	575	730	909	1112	712
	At 50 ft AGL	752	956	1190	1456	932
10000	Ground Roll	647	822	1023	1252	786
	At 50 ft AGL	847	1076	1340	1638	1029