

DIMENSIONAL FORMULA OF COMMONLY USED QUANTITIES

S. No.	Quantity		S.I. Units	Dimensional Formula
1.	Area (A)	$A = \ell \times b$	m^2	L^2 or $[M^0 L^2 T^0]$
2.	Volume (V)	$V = \ell \times b \times h$	m^3	L^3 or $[M^0 L^3 T^0]$
3.	Density (ρ)	$\rho = \frac{m}{V}$	$kg\ m^{-3}$	ML^{-3} or $[ML^{-3} T^0]$
4.	Velocity (v) or Speed	$v = \frac{S}{t}$	ms^{-1}	LT^{-1} or $[M^0 LT^{-1}]$
5.	Acceleration (a)	$a = \frac{\Delta v}{\Delta t}$	ms^{-2}	LT^{-2} or $[M^0 LT^{-2}]$
6.	Plane angle	$angle = \frac{arc}{radius}$	Radian Or m°	$[M^0 L^0 T^0]$
6.	Angular Velocity (ω)	$\omega = \frac{\Delta \theta}{\Delta t}$	$rad\ s^{-1}$	T^{-1}
7.	Frequency (ν)	$\nu = \frac{1}{T}$	s^{-1} or hertz (Hz)	T^{-1}
8.	Momentum (P)	$p = mv$	$kg\ ms^{-1}$	$[MLT^{-1}]$
9.	Force (F)	$F = m.a$	$kg\ ms^{-2}$ or Newton (N)	MLT^{-2}
10.	Work, Energy (W, E)	$W = F.S, K = \frac{1}{2}mv^2$	$kg\ m^2s^{-2}$	ML^2T^{-2}
11.	Power (P)	$P = \frac{W}{t}$	$kg\ m^2\ s^{-3}$ or (Js ⁻¹ or watt)	ML^2T^{-3}
12.	Pressure, Stress	$P = \frac{F}{A}$	Nm^{-2} or $kg.m^{-1}s^{-2}$	$ML^{-1}T^{-2}$
13.	Strain	$strain = \frac{\Delta L}{L}$	m°	$[M^0 L^0 T^0]$