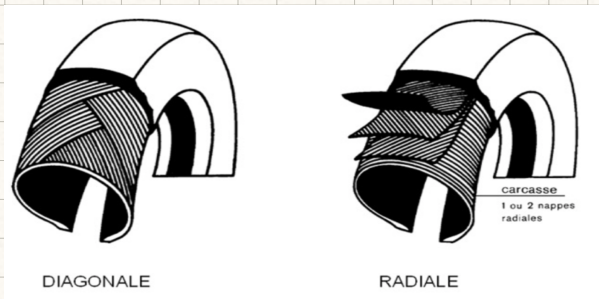
Tires

Construction

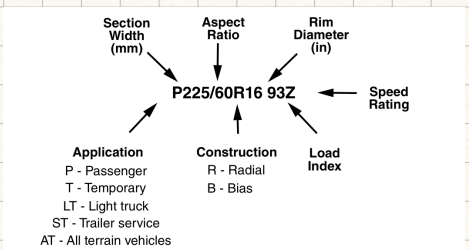
Two types - radial and bias-ply.

Radial characterized by parallel plies running directly across the tire from one bead to another at a nominal 90° angle to the circumference. These plies are called "carcass". Makes an extremely flexible sidewall and a soft ride but provides little to no directional stability. Directional stability is supplied by a stiff belt of fabric or steel wire that runs around the circumference of the tire between the carcass and the thread.

In bias tire the carcass is made up of two or more plies extending from bead to bead with the cords at high angles (35°-40°) and alternating in direction. High angles result in tires which are soft for ride comfort, but low angles are best for directional stability.

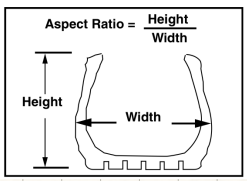


Characteristics

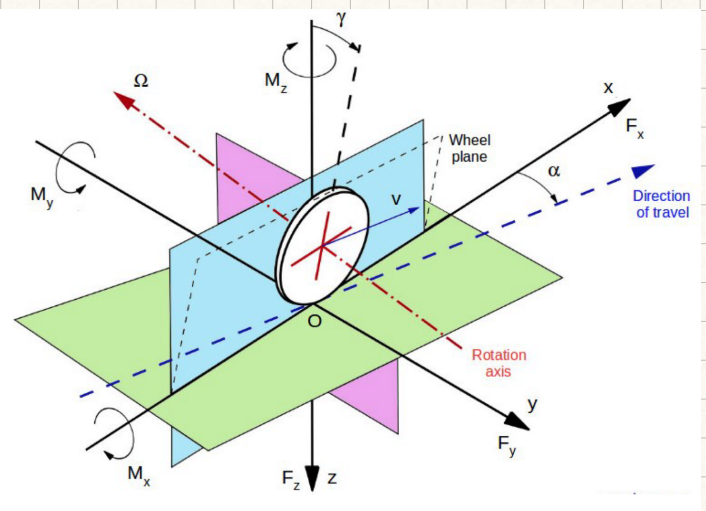


1 inch = 2,54 cm

Speed Rating
S - 180 km/h (112 mph)
T - 190 km/h (118 mph)
U - 200 km/h (124 mph)
H - 210 km/h (130 mph)
V - 240 km/h (149 mph)
W - 270 km/h (168 mph)
Y - 300 km/h (186 mph)
Z - above 300 km/h



Tire-road interaction



F_x longitudinal force
F_y lateral force
F_z vertical load / normal force

M_x overturning moment
M_y rolling resistance moment
M_z self aligning torque