

Assignment 2 – Question 3

Different parts of tires -

1. **Beads** - beads, found beneath the sidewall near the rim on either side of the tire, provide structure to keep the tire rooted along the rim without shifting
2. **Tread** - Tire tread, the surface level feature that directly grips the road as you drive, is worth mentioning first. Gripping the road, and doing so in different kinds of conditions, requires specific tread designs
3. **Sidewall** - The sidewall is closest to the rim, and usually features the tire make and model on its relatively smooth surface. The purpose of the sidewall is to protect the integrity of the internal parts of the tire while providing structure and flexibility.
4. **Inner liner** - The inner liner is the part of the tyre that helps in holding the air pressure inside the tyre. These are rubber sheets that can seal the air pressure.
5. **Belts** - These are sheets of wire that are attached to the tyre surface.

Different Between Types of Tyres on basis of it's Construction -

1. **Cross Ply Tyre Construction** - It is also known as bias ply tyre construction. This tyre has better a resistance against wear. They have good bonding to the road. Cross ply tyres consist of carcass layers made from nylon cord which are placed diagonally along each other in the tread and the sidewalls, at an angle of 50 degrees.

Advantages of Cross Ply Tyre

- These tyres provide high vehicle stability.
- They also provide good resistance against sidewall damages.
- These tyres are economical as their production is cheaper.

Disadvantages of Cross Ply Tyre

- Due to the rolling resistance these tires heat up quickly.
- Cross ply tires being rigid, prove to be less comfortable.
- Due to high resistance of the tire, the fuel consumption is high.

2. Radial Ply Tyre Construction - It consists of a carcass ply which is formed by textile arcs running one bead to the other. Each ply embedded at an angle of 90 degree to the rolling direction. At the top of tyre crown several plies is reinforced with metal wire on the top of carcass ply.

Advantages of Radial Ply Tire

- These tyres have a lower rolling resistance loss which leads to less fuel consumption.
- They have a longer tread life as less heat generated.
- They provide better braking efficiency.
- They have larger resistance to punctures and cuts.

Disadvantages of Radial Ply Tire

- These tyres have a steel belt due to which it does not fare well against minor bumps in the road.
- Their soft sidewalls are vulnerable.
- Due to harder tread they make huge noise.