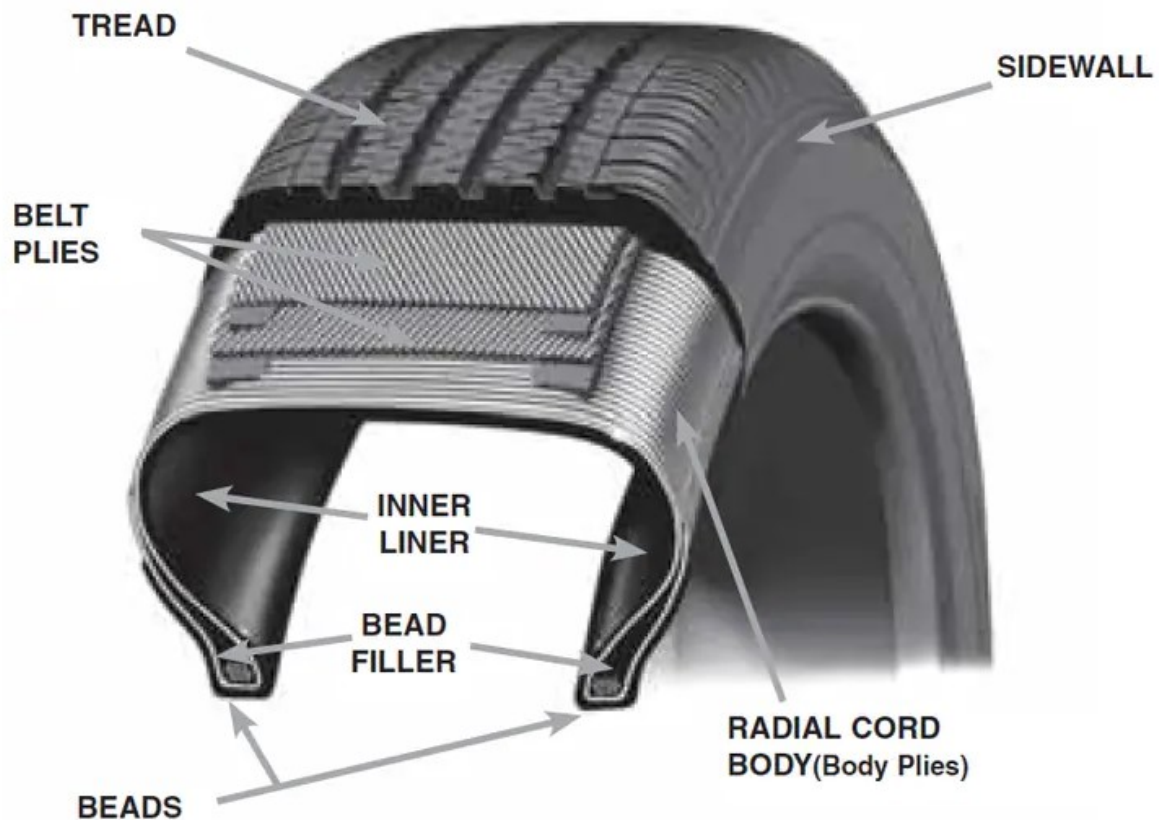


Q.3. What are the different parts of tires? Differentiate between types of tires on the basis of their construction.



TIRE BEADS

Tire beads hold the tire to the rim, or the outer edge of the wheel. They're made of copper, brass, or bronze-plated high tensile steel wires wound into a rubber band. Tire beads prevent the tire from sliding out of place when the wheel rolls.

BEAD FILLER

Bead filler is a rubber compound inside the tire's beads. It provides stability to the lower sidewall and bead area. The density and stiffness of a tire's bead filler help to determine a tire's performance characteristics.

RADIAL CORD BODY

The cord body gives the tire strength and transmits cornering forces from the tread to the wheel. Rubber coated fabric cord, called body plies, make up the

cord body. Body plies can be made of polyester, rayon, or nylon. Polyester is most commonly used.

INNER LINER

The inner liner (in the centre of the tire diagram) is a rubber compound bonded to the inside of the cord body that retains air under pressure. It has no cord reinforcement, and it functions like an inner tube.



BELT PLYS

Belt plies are two or more strong layers of cord just under the tread area of the tire. The primary function of belt plies is to provide strength and stability to the tire tread. They play a role in improving tire mileage, impact resistance, and traction. Steel is the most common cord material used in belt plies.

SIDEWALL

The area of a tire from the bead to the tread—the side of the tire—is called the sidewall. It forms a protective covering for the cord body. Information about the tire is printed on the sidewall. This information includes the tire size, load index, and speed rating. Sidewall rubber compounds are designed to resist damage from ozone, cuts, and snags.

TYPES OF TIRES ON THE BASIS OF THEIR CONSTRUCTION

Radial Ply Tyres	Bias Ply Tyres
	
In radial tyres the steel belts run at a 90-degree angle with the tread line	In bias ply tyres the nylon belts run at 30 to 45-degree angle with the tread line
There is low sidewall flex and more contact with the ground	The stiff internal construction causes less contact with the ground and may result in overheating
Runs cooler at highway speeds and under load	Smoother ride on rough surfaces
Steel belts provide tougher construction and higher puncture resistance	Tougher side walls due to the crosshatch construction
It allows the sidewall and the tread of the tyre to function independently	The multiple, over lapping rubber plies in these tyres connect the sidewall and tread
Uniform contact with the ground provides uniform tread wear	Tread wears faster due to higher traction