

# Vehicle Tyres

---

Tyres are a very important feature of a car. The overall performance of your fleet may well depend on what type of tyres you fit on your cars. Safety? How do tyres contribute to this? One must ask themselves various questions when dealing with tyres in vehicle management. This section will, in time, give the Logistics staff a better understanding on how to select and manage tyres and deal with situations in emergencies.

## a. Specifications

### i. What is a tyre?

It is an inseparable assembly of materials with different properties, whose manufacture demands great precision.



(Refer "<http://www.michelin.co.uk/uk/images/auto/keskinpn.jpg>" \\*)

From a logistics point of view, the tread is very important. Depending on where the vehicle is going to be used, the tread will vary. Some factors to consider when a user requests for tyres are: -

- The terrain
- The road surface in project area
- The weather in the specific area
- Weight/load

### ii. What is the tread?

This is the patterned part of the tyre that will be in contact with the road and is laid over the bracing plies. Bracing plies is steel that is stuck to the rubber and circles the crown of the tyre. The tread in the contact patch must be able to resist very significant stresses. The tread rubber compound must grip on all types of surfaces, resist wear and abrasion, and heat up as little as possible.

In specifying the type of tyre, the user must be very specific in the type of conditions the tyres will be exposed to. Some examples are: -

# Vehicle Tyres

---

- Treads for off-road driving



- Treads for both off-road and on-road driving



50% on-road driving  
50% off-road driving

- Treads ideal for rugged terrain



- Treads ideal for snow conditions



On snowy Roads

## b. Tyres in Emergency Situations

In Emergencies logistics, sometimes organisation must make do with whatever available resources they have until additional supplies are received without endangering life or risking the safety of the vehicles. This is applicable to all items including tyres. What are some of the scenarios one would one have to deal with and how would they do this? Some tips

- Worn tyres

Q. Why put used or less worn tyres at the rear?

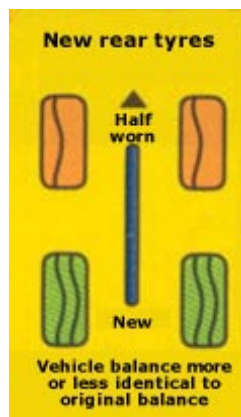
A. Whether you have front or rear wheel drive, it is recommended that newer tyres are used for the rear set. This is for extra safety in unforeseen or difficult situations ( emergency braking, tight bends etc) particularly on wet surfaces.

# Vehicle Tyres

---



Numerous tests have shown that it is easier to control the front wheels than those at the rear. Front tyres generally wear quicker than those fitted at the rear, particularly on front wheel drive cars, which are currently in the majority



Fit new or less worn tyres at the rear of the vehicle for:

- better grip on bends
- extra safety.

ii. Is it possible to fit different tyres?

List the type of vehicles in the project and consult both the vehicle or tyre manufacturer or appointed dealer and record the information so that it is always available for reference.

iii. How to read a tyre?

Have you ever wondered what the numbers on your tyres mean?

They correspond to the tyre's dimensions and characteristics. They are a very crucial part of the tyre specification when raising purchase requests and purchase orders.

iv. What are the functions of a tyre?

- Steering

The tyre should steer the vehicle with precision, irrespective of the state of the surface and / or climatic conditions. The stability of a vehicle's path depends on the tyre's holding their course. A tyre must stand up to transversal forces without drifting from its path. In general each vehicle has a particular inflation pressure per axle. Respecting pressure variations between front and rear ensures ideal directional stability.

- Carrying

# Vehicle Tyres

---

Tyres support a vehicle not only when it is moving, but also when it is standing and they must be able to resist considerable load transfers during acceleration and braking. A car tyre carries more than 50 times it's weight

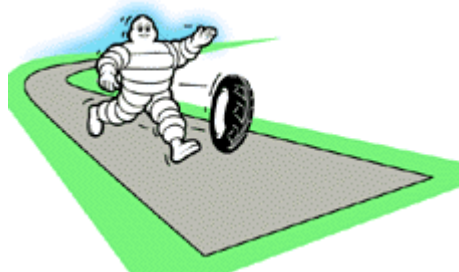
- Cushioning



Tyres absorb the shocks due to obstacles and cushions the vehicle from other irregularities in the road, ensuring driver and passenger comfort as well as contributing to the lifestyle of the vehicle.

The main characteristic of a tyre is it's great suppleness, particularly vertically. The great elasticity of the air contained enables it to take deformation inflicted on it by obstacles and surface roughness. The correct tyre pressure, then, gives good level of comfort whilst retaining good steering capacity.

- Rolling



Tyres roll more evenly, more surely, with less rolling resistance for greater driving pleasure and better fuel consumption

- Transmitting drive



Tyres transmit drive: the engine's usable power, braking effort. The quality of the few square inches in contact with the ground dictates the level of transmission of drive etc.

- Lasting

# Vehicle Tyres

---

Tyres last. That is, keep their optimum performance level for millions of wheel revolutions. The wear on a tyre is of course dependent on its conditions of use such as: -

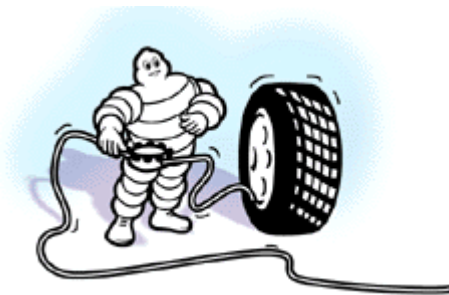
- Load
- Speed
- State of road surface
- State of vehicle
- Driving style

and to a large extent: -

- The quality of its contact with the ground

Pressure therefore has a major role to play and acts upon: -

- The size and shape of the contact patch
- The distribution of stresses on the different points of the tyre in contact with the ground



A tyre needs air to work and last. It is vital to check tyre pressure regularly. In fact, a tyre loses its precious air, molecule by molecule, because of the natural (very slight) porosity of rubber. To this are often added accidental causes such as valves or rims no longer being completely airtight, small perforations in a tyre etc.

Pressure dictates all a tyre's functions: Incorrect pressure erodes functions such as, functions of safety, economy and comfort. A quick, regular check will greatly reduce this area of concern for the driver.

These above functions guarantee safety, comfort and economy. They are provided during the entire lifetime of a tyre, but elementary precautions for use must be taken by the user.