

Tyre / RIM = Wheel

Grip / Adhesion / Traction



Tire + RIM

- ✓ Car Wheel: **Tire & RIM**
- ✓ Car Wheel: Metal Sheet or ALLOY
- ✓ Light Weight, so car move easily
- ✓ RIGID, so car can bear weight/ Speed

Spare Wheel

(Stepney, Donut / space-saver wheel, Emergency wheel, Temporary Wheel)

- ✓ Less durable, Less Weight capacity (**500 kg** Per tyre)
- ✓ **80 km/h**, **80-200 Km** Distance, Smaller means Less Wide

Over 3500 kg must have a full Wheel



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Tyre Traction



Slippery Pavement



Stone chipping



Hazard of Snow



Reduced Visibility



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Spare Wheel or Repair Kit – Any!

- You Must be able to continue **SAFELY**
- Even if you have Road-side Assistance included in **INSURANCE**
- A spare wheel OR



Check Monthly or before long trips
Or you get FINE of **200 €**

If tire BLOWS OUT, Call Road-Side Assistance, and you don't get FINE

Is a spare tire mandatory?

No, it's not mandatory—as long as the car is equipped with an alternative solution

Acceptable alternatives include:

- ✓ A tire repair kit (sealant + air pump)
- ✓ Run-flat tires - Side Wall (80 km, 80 km/h)
- ✓ Safely reach a workshop – No need to change the tire on road
- ✓ Either a spare wheel or an approved alternative system

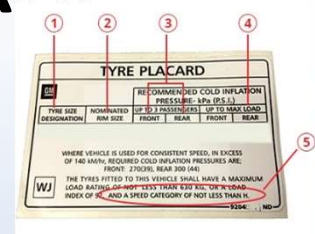


You're still following the rules in Spain.



Tire Pressure (Inflation)

- ✓ Indications recommended by the **MANUFACTURER**
- ✓ in each tire (Front/ Rear)
- ✓ Label on the edge of the driver's **DOOR FRAME**
- ✓ **Wrong Pressure** Wears More + **More Fuel**



- ✓ Pounds Per Square Inch (**PSI**)
- ✗ **Under Inflated:** Depreciate on sides
- ✗ **Over Inflated:** Depreciate in the center



Less Traction, Increased Braking Distance

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Tire Wear Reasons

1. Driving style
 2. Vehicle speed
 3. The weather (+ wear in summer)
 4. Load and mass
 5. Incorrect tyre pressure
 6. Steering and wheel alignment
 7. The suspension
 8. A faulty braking system.
 9. Improper tyre inflation
- ✗ A faulty exhaust system
 - ✗ A faulty gearbox
 - ✗ A faulty electrical system

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Tire Pressure Check

- ✓ **Once or Twice** a month
- ✓ Check when tires are **COLD**
- ✓ increases When tire are **Hot**
- ✓ Before a **long** distance TRIP



Pressure gauge

The air under pressure leaks between the inner tube and the tire



(airtight) lining that replaces the inner tube.



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TPMS – ADAS – Watch Video

- ✓ **TPMS** – Tire Pressure Management System
- ✓ **Constantly Detects**, and Alerts the Driver
- ✓ **Warns** When Underinflated.
- ✓ Safe Driving, Prevents Accidents

- ✓ **Wrong Pressure** Wears More + **More Fuel**
- ✓ Pounds Per Inch (**PSI**)

- ✗ **Under Inflated:** Depreciate on sides
- ✗ **Under Inflated:** Depreciate in the center



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Replace the Tires – Tread Depth

- ✓ Tread Depth is 2 mm (**Recommended**)
- ✓ Tread Depth is less than 1.6 mm (**Mandatory**)
- ✓ Cuts, Cracks, other type of damage (**Mandatory**)

Manufacturing Date

- ✓ After 5 Years if you see any damages (**Mandatory**)
- ✓ After 5 Years (**Recommended**)
Loss of elasticity, grip

Hardened with age,
Lose Grip/ Skid

✓ **Can install of better Specifications.**

✓ **Wider Tire:** More Fuel + Good Grip

Change: Same Size, at lease Same for each Axle

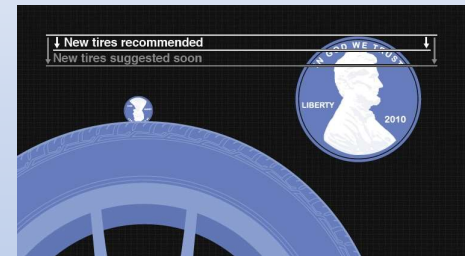
Regardless of
Tread Depth



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Checking Tread Depth

- ✓ With Tread Depth Gauge
- ✓ Tread Depth is less than 1.6 mm (**Mandatory**)
- ✓ **Unbalance Wheel:** Go to Workshop
- ✓ **Puncture:** Don't Change, Go to Workshop
- ✓ **Blowout:** Firm Steering, Release Accelerator Slowly, Apply Brakes, **Never** drive to Workshop
Never Leave Vehicle, where it is, dangerous



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Aqua Planning - Hydroplaning

- ✓ Tyre unable to evacuate the Water
- ✓ Loses traction with ground
- ✓ Vehicle floats on water

Precautions:

- ✓ Drive with properly inflated tyres
- ✓ Sufficient Tread Depth
- ✓ So they can displace water effectively
- ✓ Hold Steering Wheel FIRMLY
- ✗ Do not slow down inside Water
- ✗ No Abrupt Accelerating, Lose Accelerator a bit



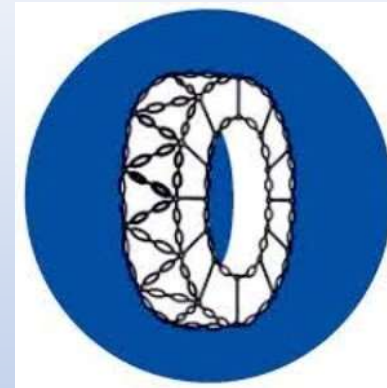
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Chains on Tyres – DRIVE Wheels

When road is ALREADY covered with SNOW



- ✓ **Winter Tires**, improve the grip under 7 °C
- ✓ **Chains**, may be Mandatory on DRIVE WHEELS
- ✓ **Directly Affect:** Braking, Steering, Stability, and Fuel Efficiency
- ✓ **Speed Limit** May Apply – 30-50
- ✗ Keeping Chains is **NOT** an Obligation
- ✗ **Don't** use When **NO Snow** – Damage Chain n Road.
- ✓ Use appropriate Gears, Smooth, Extra Fuel,
- ✓ Water Food, Warm Clothing



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| Summary | |
|------------------|------------------|
| Winter tires | When to use them |
| When to use them | How to use them |
| How to use them | When to use them |
| When to use them | When to use them |



Special Winter Tyres

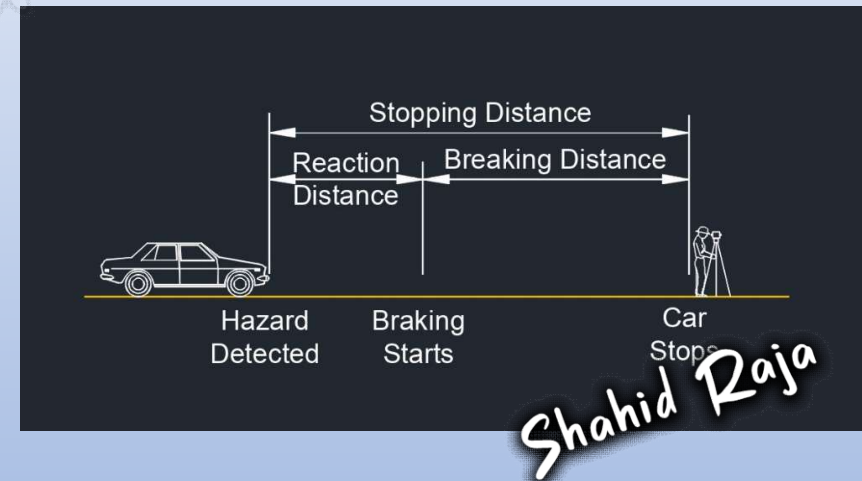
- ✓ Obligation not to continue driving without special winter tires.
- ✓ **Winter Tires**, improve the grip under 7 °C commonly used in winter
- ✓ **3PMSF** symbol — the Three-Peak Mountain Snowflake mark
- ✓ Certifies passed specific snow performance tests
- ✓ **M+S** = better suited for off-road, mud, or snow



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Grip / Traction / Adhesion?

- ✓ **Best Grip Achieved:** After driving a few KM
- ✓ **Rain:** 2 Times
- ✓ **Snow/ Compact Snow:** 4-5 Times
- ✓ **ICE:** 10 Times or More

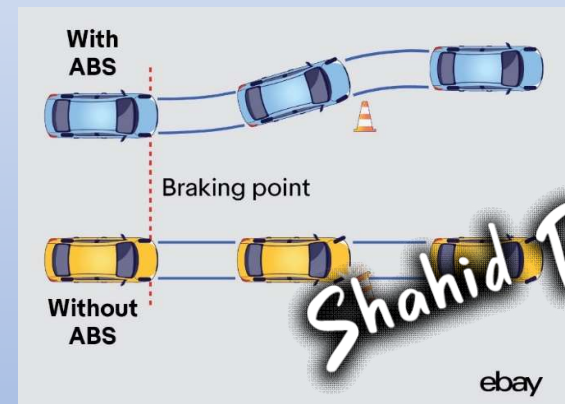


ABS Brakes – (Anti-lock Braking System)

- ✓ Prevents Wheel Locking/Skidding
- ✓ Steer while braking and maintain control, STABILITY
- ✓ Stopping distance may be **equal, shorter, or longer**
- ✓ **ABS** is a permanent function, usually can not be turned off
- ✓ **ABS Malfunction:** Vehicle can still use normal Braking
Light Turns ON

Even While Turning –
Enhances Safety

Wheels Lock: Long Stopping Distance
Lose the Control



Brakes

- **Service brake:** Foot Brake - Applies to all wheels
- **Parking brake:** The hand brake, Normally brakes the rear wheels
- **Skidding front axle:** Turn to the opposite side of the skid.
- **Skidding rear axle:** Turn to the same side of the skid.

(Drive into Skidding)



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What is Suspension



Shock Observer

Three Main Parts

- ✓ **Springs:** Hold the car's weight and absorb big bumps
- ✓ **Shock Absorbers:** Control the motion of the springs, Prevent bouncing
- ✓ **Linkages & Bushings:** Connect wheels to the car's frame

Faulty Suspension

- Car bounces after hitting a bump
- Uneven tire wear , Clunking noises



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Brake Maintenance

- ✓ Brake **Warning Light**
- ✓ Check **Brake Fluid** - Change Every 40K km or 2 years
Moisture, LOW Efficiency
- ✓ **Fluid Low** = Need Full-down Pressing
- ✓ **Color dark**, its OLD, check type in Manual
- ✓ **Spongy feel**, AIR in Brake fluid pipes



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