

RSA



# Your Guide to Tyre Safety

Údarás Um Shábháilteacht Ar Bhóithre  
Road Safety Authority

# How do tyres contribute to safe driving?

The tyres on your vehicle are the only part of your vehicle in contact with the road. Therefore, they play a key role in vehicle safety. Between the years 2007 – 2012, An Garda Síochána reported tyre defects as a factor in 172 collisions. Some of these collisions were fatal, others resulted in serious and minor injuries.

## Why is tyre safety so important?

Your safety, along with the safety of your passengers and other road users, could depend directly on the condition of your vehicle's tyres.

Tyres must:

- be the right kind and size for your vehicle
- be properly inflated
- be free from defects and
- have a tread depth of at least 1.6mm

### Dangers of using sub-standard or incorrect tyres include:

- Reduced road handling – you have less control of your vehicle
- Increased braking distances – it could take up to twice the normal braking distance to stop
- Aquaplaning – where your tyres lose grip on the road in wet conditions
- Blow-outs – resulting in loss of control of the vehicle

## What are the legal requirements for tyres in Ireland?

By law, it is a driver's responsibility to make sure that their vehicle meets legal requirements and is in a roadworthy condition at all times. The Road Traffic (Construction and Use of Vehicles) Regulations 2003 sets out requirements for tyre condition and tyre tread depth for vehicles which are used on a public road.

If you drive with damaged or worn tyres, you are putting your own life and the life of others at risk. You also risk prosecution. If you are convicted of the offence of driving with dangerous tyres, you could be fined up to €2,500, or receive a 3-month prison sentence, or both. You will also have five penalty points on your licence on conviction.

# What kind of tyres should I buy?

## Types of Tyres

There are three distinct categories of tyres:

1. Winter tyres have tread patterns that are specially designed to bite into snow and ice. They're made from softer rubber than normal tyres and they stay more flexible in cold weather. This means the tyre can grip the road better in snow or icy conditions. Winter tyres are labelled 'MS' or 'M&S' (Mud and Snow) with the alpine symbol as shown in *Figure 1*.
2. Summer tyres are most commonly used in Ireland. This does not mean that they are for use during the summer only—it's merely the term used to separate them from winter tyres in countries where there is a practical need and sometimes a legal requirement to fit winter tyres.
3. All-season tyres are a cross between summer and winter tyres and are designed to cope with all sorts of conditions, including dry roads and rain. They are not specially designed for any one kind of weather condition. All-season tyres carry the marking MS or M&S (Mud and Snow) but without the alpine symbol.



Figure 1: Alpine Symbol

## Should I fit winter tyres in Ireland?

Irish law does not require you to fit winter tyres, and there is no law against fitting them. If you decide to fit a set of winter tyres, you should always fit a full set of four to ensure that your steering is not affected. Once the risk of snow and ice passes, you should remove your winter tyres and re-fit your all-season or summer tyres. If you leave winter tyres on in warmer weather, the soft rubber they're made from may wear out faster.

## What is an 'E-mark' tyre?

An E-mark on a tyre confirms that it meets minimum EU or International (UNECE) standards in relation to its size, load and speed rating. E-mark tyres have been tested to ensure they have adequate tread depth and performance ability. The E-mark consists of an 'E' or 'e' and a number within a circle or a rectangle.

## What is an 'S-mark' tyre?

Tyres sold in the European marketplace must have an 'S-mark'. This is a 'sound marking' certifying that the amount of road noise produced by the tyre complies with EU standards. Since 1 October 2011, retailers cannot sell new tyres unless they have an S-marking on the sidewall.

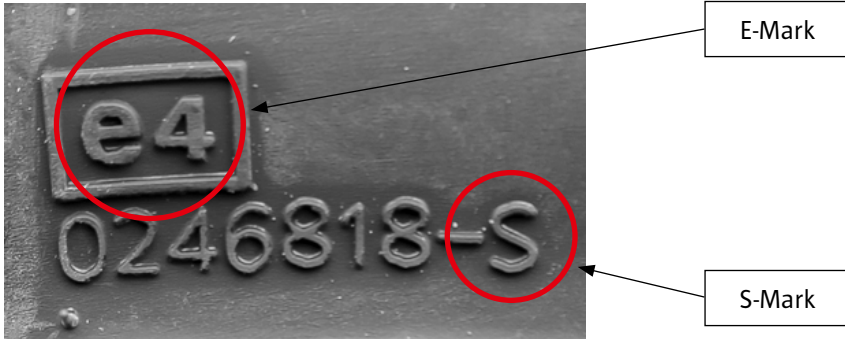
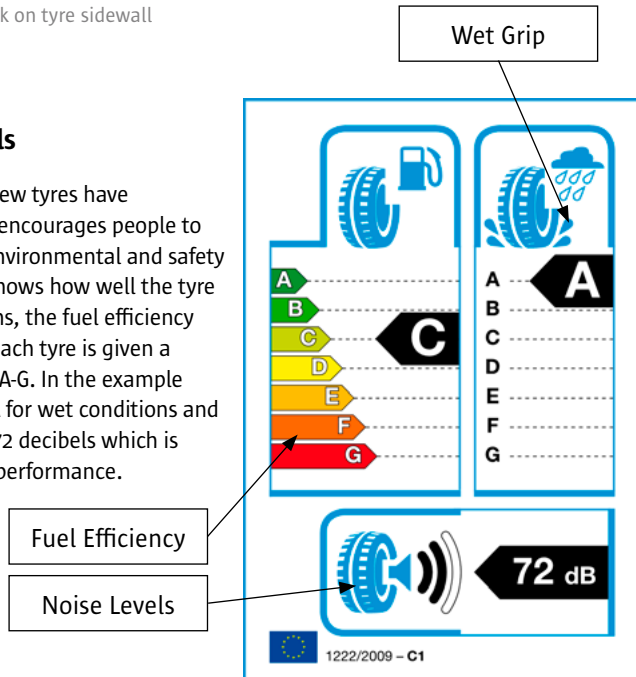


Figure 2: E-Mark and S-Mark on tyre sidewall

## Buying a New Tyre – Performance Labels

EU law requires that all new tyres have performance labels. This encourages people to buy tyres with superior environmental and safety performance. The label shows how well the tyre performs in wet conditions, the fuel efficiency and noise performance. Each tyre is given a performance rating from A-G. In the example shown, the tyre is rated A for wet conditions and C for fuel efficiency, and 72 decibels which is normal or average noise performance.



EU Tyre Label. An A rating indicates best performance, down to G rating which is the worst.

# Buying second-hand (part worn) tyres

Second-hand or part-worn tyres are tyres which have been used on another vehicle. If you are thinking about buying a part worn tyre, you must ensure the tyre is safe and meets the minimum legal requirements. You should also think about whether or not you're getting real value for money.

The following are some important points to look out for before buying a part-worn tyre:

1. Check for an **E-Mark** on the tyre (*Figure 2*). Your tyres will need to carry an E-mark for the NCT.
2. Check that there is a **minimum tread depth of 1.6mm** on the tyre. Anything less is illegal for use on a public road. A tyre's tread depth can be measured by using the **handy pop-out tyre tread depth gauge** attached to this leaflet (*Figure 5*). Always measure in the middle of the tyre surface, and not at the edges.



Figure 3: Tyre tread depth

3. Tyres also have a 'tread wear indicator' block set into them at a depth of 1.6mm. You should check this block to ensure that this indicator is not at the same level as or lower than the tyre tread.



Figure 4: Tread Wear Indicator block



Figure 5: How to use the handy pop-out tyre tread depth gauge.

4. Ask the seller if the tyre has undergone a **condition check** (including when it is inflated) to make sure it meets the minimum legal requirements and is free from defects both internally and externally. Common defects include tears, lumps and bulges. A tyre that is not roadworthy will result in a car failing its NCT as well as reducing your safety on the road. Examples of particular tyre defects are shown below.



Figure 6: Examples of Tyre Damage/Wear

5. Ask the seller to confirm that the tyre you are buying is the correct size and design for your vehicle, and that it has the correct load and speed rating for its intended use. If you're not sure about what tyre is best suited for your vehicle, you could consult your vehicle manufacturer or look it up in the owner's handbook.
6. Find out the age of the second hand tyre and make sure that it is not more than six years old. A tyre that is six years old is a 'pass advisory' item at the NCT. A tyre's age can be determined by the serial number on the tyre sidewall. This serial number comprises of a four digit code as shown in *Figure 7* and refers to the tyre's date of manufacture. The last two digits refer to the year or manufacture; the first two refer to the week in that year. For example, 1411 = week 14 of 2011.



Figure 7: Production Date Code 2014 = 20th week of 2014

Tyres deteriorate with age. Signs of tyre aging include cracking or crazing (lots of fine cracks) on the side wall of the tyre caused by the tyre's flexing movements. The shape of the tyre tread can become distorted too. Tyre aging increases the risk of tyre failure. Tyres may begin to show the signs of aging from when they are six years old.

7. Be aware that there could be damage to the inside of the rubber which you mightn't be able to see from just looking at it, but that it would be possible to see in an x-ray. The seller might be able to show that the tyre was x-rayed to prove that there is no internal damage.
8. Be satisfied that you are getting value for money. The remaining tread depth of a second-hand tyre is very important, and this is something you need to consider carefully in terms of the value for money. To check the percentage of usable tread remaining, use the pop-out tyre tread depth gauge provided in this leaflet.

## Part Worn Tyres: Am I saving Money?

### Example:

A part worn tyre costing €30 has tread thickness of 3.6mm. Therefore, it has 2 mm of useable tread before it reaches the minimum legal tread depth of 1.6mm. This works out at €15 per mm of useable tread.

On the other hand, a new tyre costing €80 has 8mm of tread. Therefore, it has 6.4 mm of useable tread before it reaches the minimum legal tread depth of 1.6mm. This works out at €12.50 per mm of useable tread, and therefore offers better value.

In addition to the increased costs in this example, you would have to buy three sets of these part worn tyres in order to get the same life as one new set of tyres.

# Tyre Maintenance

## Correct Inflation Pressure

Correct inflation pressure is important, as the pressurised air inside your tyre has to support the weight of your vehicle and its load. Inflation pressure can also affect your vehicle's fuel efficiency. Tyre pressures vary depending on the vehicle model and the load being carried.

We recommend that you go to your local service station and check your tyre pressures regularly against the manufacturer's specifications for your vehicle. You'll find the inflation specifications in your vehicle owner's handbook. The following illustrations demonstrate how the effects of correct and incorrect inflation pressure can be seen on your tyre tread pattern.

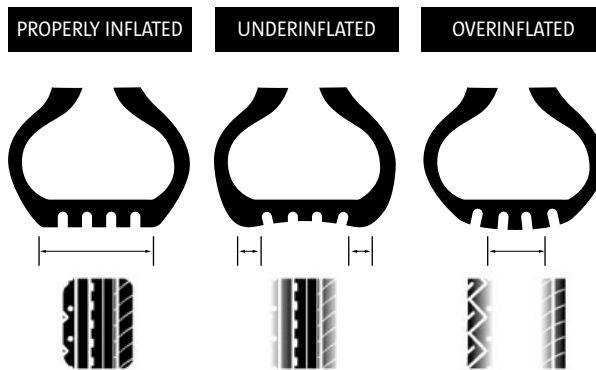


Figure 8: Tyre Inflation Pressure

## Wheel Alignment & Balancing

You may hear the terms 'wheel alignment' and 'wheel balancing' used interchangeably, but they are separate issues, both important in the upkeep of your tyres and vehicle.

**Wheel alignment** consists of adjusting the angles of the wheels so that they are perpendicular to the ground and parallel to each other. Aligning your wheels can help maximise tyre life and ensure that your vehicle drives straight and true when on level surfaces.

The effects of tyre misalignment may be detected by either of the following:

- uneven or rapid tyre wear
- when driving on a straight flat road the driver can feel the steering wheel pulling to one side (having to exert a slight extra force to keep the vehicle driving in a straight line).



**Wheel balancing** allows the tyres and wheels to spin without causing any vibrations. Your wheels' balance is gauged by checking for any heavy spots on the wheel-tyre combination and compensating for such flaws by placing a measured balancing weight on the opposite side of the wheel from where the heavy spot is located.

The symptoms of a wheel that is out of balance include:

- vibration in the steering wheel, seat or floor-pan, usually at motorway speeds
- 'scalloped' or 'cupped' wear pattern on the tires

If your tyres demonstrate any of the symptoms outlined above, we advise that you seek advice from your local authorised tyre repair centre.

#### **The benefits of proper tyre maintenance are:**

- Improved car handling and braking – gives you more control
- Improved safety on the road – makes the road a safer place for you and other road users
- Longer tyre life – saves you money
- Reduction in fuel consumption – saves you money
- Reduction in CO<sub>2</sub> emissions – helps protect the environment

If your vehicle's tyres show signs of deterioration (wear and tear), you should remove them and replace them. Do not drive on the public road with sub-standard tyres on your vehicle.

Please refer to *Figure 6* above for examples of tyre damage and signs of wear and tear. There are several tell-tale signs you should keep an eye out for:

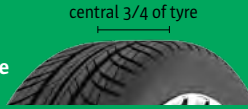
- cracking or crazing of the side wall of the tyre, caused by its flexing
- distortion of the tyre tread
- deformation of the main body of the tyre
- loss of pressure despite regular pumping up
- deep cuts
- bulges
- separated or perished rubber
- vibrations through the tyres when you drive

## CHECK'EM!

Place the coloured corner of the gauge in your tyre tread – if you can see:

- **Part of the red band** – your tyre is below the 1.6mm limit and needs to be replaced.
- **Part of the orange band** – your tyre will need to be replaced very soon.
- **Only the green area** – your tyre tread depth is fine but do check it regularly.

This gauge is intended as a guide only. If you have any doubts about your tyre's condition or depth of tread, you should arrange an inspection by a reputable tyre supplier.



**Make sure your tyres have the legal minimum tread depth of 1.6mm. Use this handy pop-out gauge to check your tyre tread depth on a regular basis.**

\*Figures used are based on a new tyre with 8mm tread.

**For safety, it is recommend that you should have at least 3mm tread on each of your tyres.**

\*Source ROSPA

Tread depth must not be less than the legal minimum limit of 1.6 mm. The tread is the part of the tyre in contact with the road in normal conditions. Your vehicle's safety and performance – particularly in wet conditions – are reduced as your tyres wear.

## Tyre Checks at the NCT

From 2008 – 2013, tyres were consistently one of the top three failure items at the NCT.

At the NCT, tyres are inspected for tread depth, condition and the presence of European type approval ('E' or 'e') marks. At the NCT, you will be told if any of your tyres have a tread depth of less than 3mm or if the date of manufacture of a tyre that is more than six years old. This is classed as a 'pass advisory' item. This will not cause your vehicle to fail its NCT, but it is to advise you to that your tyres may soon need to be changed.

# Working to Save Lives

## % tread remaining

Tread depth (mm)	% usable tread remaining
1.6	0%
2	6%
3	22%
4	38%
5	53%
6	69%
7	84%
8	100%

Place the coloured corner of the gauge in your tyre tread – if you can see:

**Part of the red band** – 0% useable tread; Illegal for use.

**Part of the orange band** – Less than 22% useable tread; Not economical to buy second hand.

**Only the green area** – More than 22% usable tread; If buying second hand ensure it offers value compared to a new tyre.



## Údarás Um Shábháilteacht Ar Bhóithre Road Safety Authority

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