

Tyre husbandry It's not rocket science!

Guidance document

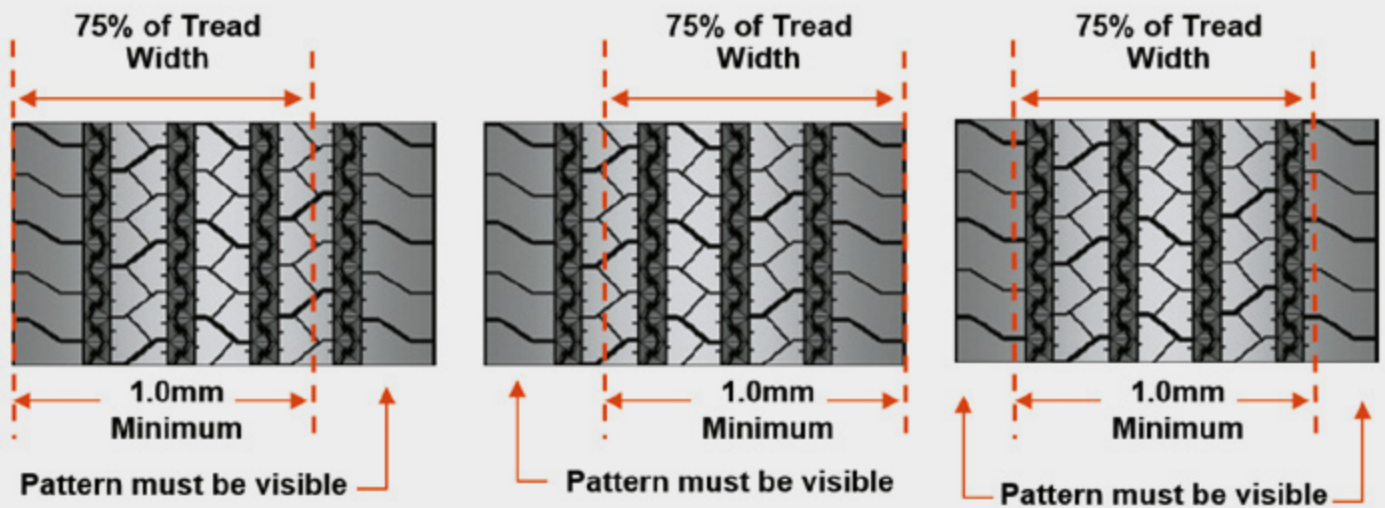
With so much focus being placed on tyres condition these days Logistics UK has developed some simple tips on how to check tyres to keep your Heavy Goods Vehicles and Trailers safe and drivers/operators compliant.

If you would like more details guidance on tyre management, Logistics UK has helped the British Tyre Manufactures Association produce this in more detail:

<https://btmauk.com/advice-about-tyres/professional-road-users/#1591345971856-cb3d3b98-16d9>

The responsibility for checking tyres falls to two main parties – driver and maintenance providers – these tips are aimed at these two groups.





Driver checks

TPMS (Tyre Pressure Monitoring System) operation – tyre pressures

TPMS makes checking tyre pressures on vehicles and trailers significantly more straightforward for drivers.

Manufacturers' TPMS systems fitted to vehicles often use a dashboard light, which generally illuminate when the ignition is switched on (which indicates that the system is being checked) and then goes out – unless it has identified an underinflated tyre.

If the light stays on (or the vehicle has some other type of warning system – which may be a text display indicating which tyre is underinflated), then the system is warning of an underinflated tyre, which should investigate before using the vehicle on the road.

If your vehicle and/or trailer is fitted with an after-market system, then checking this system should be undertaken in line with the manufacturer's instructions.

If the DVSA (Driver and Vehicle Standards Agency) finds a vehicle having been driven with a TPMS warning lamp illuminated, or warning system active, they may take enforcement action.

Tread depth

Although it can sometimes be difficult to check the tread depth of certain tyres, due to wheel guards, or mud flaps, getting a general idea of tread depth of tyres is not too difficult as a driver can feel this as well as look.

The minimum legal limit for tyres on commercial vehicles (over 3,500 kg) is 1mm (about the thickness of the rim on a coin) over 75% of the breadth (width) of a tyre, around the entire circumference, with visible tread on the remaining 25% – some tread must be visible, so care should be taken to look for any bald patches.

There are significant risks associated with running a vehicle with tyres where the tread depth is close to the legal limit. Logistics UK's advice is "if in doubt, check it out" – operators should get their maintenance provider, technician, or tyre fitter to assess their tyre(s).

Tyre condition and debris

Checking the condition of tyres can be a little more problematic, as drivers often cannot see or feel the whole tyre – but this should be no excuse for not trying. Many tyre "blow-outs" are due to

foreigner objects having penetrated a tyre. So, drivers need to look for objects that may have penetrated a tyre. If drivers cannot see the whole tyre, then with a gloved hand they could feel around the tyre tread to identify items that should not be there. Care should be taken if dislodging objects, as this may cause personal injury.

Tyre wall condition

Checking the outward face wall of a tyre can be straightforward, unlike the inner facing wall, or the inward faced walls on twin tyres, where direct vision is not possible – the use of a mirror could help.

Cuts in tyre walls are often a main defect item, but bulges in tyres can also be problematic – so it is important to check for these defects also.

Although less rare, the perishing of tyres can be problematic – perishing of tyres tends to be a result of age and progressively gets worse over time. These types of defects should be being identified during the regular safety inspections/servicing of vehicle/trailers.

Workshop checks

TPMS (Tyre Pressure Monitoring System) operation

Operation of a vehicle or trailer TPMS should be part of safety inspections/servicing and undertaken in the same manner to that which a driver undertakes. However, some of these systems use sensors in the tyre valve/caps and these may be affected where caps are removed and tyre inflations checked/adjusted - where necessary, resetting the TPMS may be required – refer to the manufactures instructions.

Tyre markings – meanings

Generally, tyres are usually replaced on a "like for like" basis, but this may not always be the case.

Tyres must be suitable for the vehicle/trailer's use and the carrying capacity of the axle to which it is fitted (see the vehicle/Trailer's Plating Certificate for those details – or the Manufacturers Plate). When assessing the suitability of tyres, there are a few simple basics considerations – tyres should always be:

- 1 The same size across an axle.
- 2 Of the same composition of the other tyres across an axle.

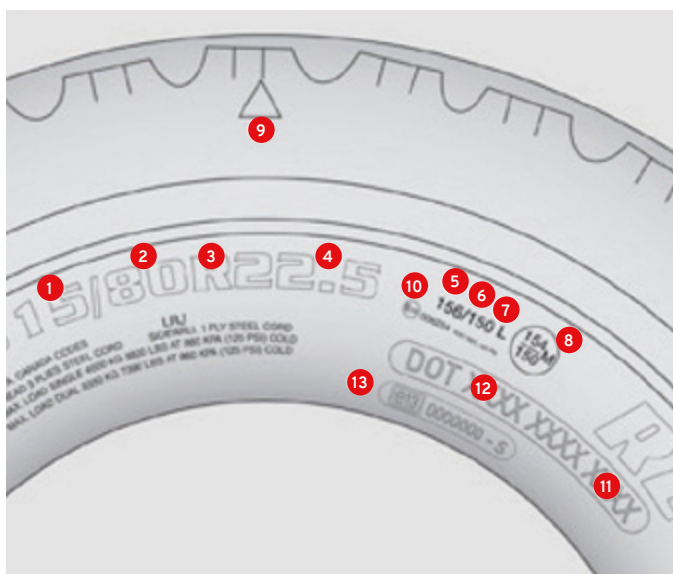
- 3 Marked with a “Load Index” capable of carrying the plated weight of the axle upon which they are fitted.
- 4 Fitted in accordance with the manufacturer’s markings, i.e. where marked as such, be fitted so as to rotate in the direction indicated on the tyre wall marking.
- 5 Less than 10 years old – see note below.

Note: Since 01 February 2021, it has been illegal to fit tyres that are 10 years or older to the front steered axle or axles of goods vehicles with a gross mass of more than 3,500kg. For the purpose of these requirement, the front steering axle is deemed to be forward of the chassis midpoint and directly controlled by the steering system.

For an understanding of tyre “Load Index”, go to the HGV Inspection Manual IM number 07 – Size and Type of Tyres.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1072577/hgv-inspection-manual.pdf

The following explains what the markings are on tyres.



Principal tyre markings

- 1 Tyre Section width
- 2 Aspect ratio
- 3 Construction (R=radial)
- 4 Rim diameter (inches)
- 5 Load Index (single tyre)
- 6 Load Index (dual mounted)
- 7 Speed symbol
- 8 Load indices when used at alternative maximum speed
- 9 Location of tread wear indicator
- 10 Type approval number
- 11 Manufacturing date code
- 12 DOT manufacturing site code
- 13 Supplementary type approval information

Logistics UK’s advice when checking tyres is:

- a Ensure that the size and Load Index of the tyres fitted to the vehicle/trailer are the same or higher that that stated on the vehicle/trailer Plating Certificate.
- b Where a) is not known, that the tyres are check for compatibility to the carrying capacity of the vehicle/trailer.

- c That a record is made of the first tyre seen on each axle, and check that all other tyres on the same axle/s are the same size and rating. Where a difference is noted, then tyres should be checked for stability to the axle weight.

Note: Not all tyres may be the same; size; aspect ratio; or load index. Logistics UK’s advice is to check each tyre separately, comparing those on the same axle against each other, and all of them against the vehicle/trailer’s Plated Weight. A simple way to do this is to note the details of the first tyre checked, then assess all the other tyres against this – even if there is a tyre size change (usually in the case of Steered Vs Drive axle), noting the details of a second tyre will reduce the information having to be remembered.

Tread condition and debris (also between tyres)

During a safety inspection the whole of each tyre must be inspected for tread depth, condition and for debris, so performing this may require the vehicle to be moving – or the wheel to be lifted to rotate the tyre through 360 degrees.

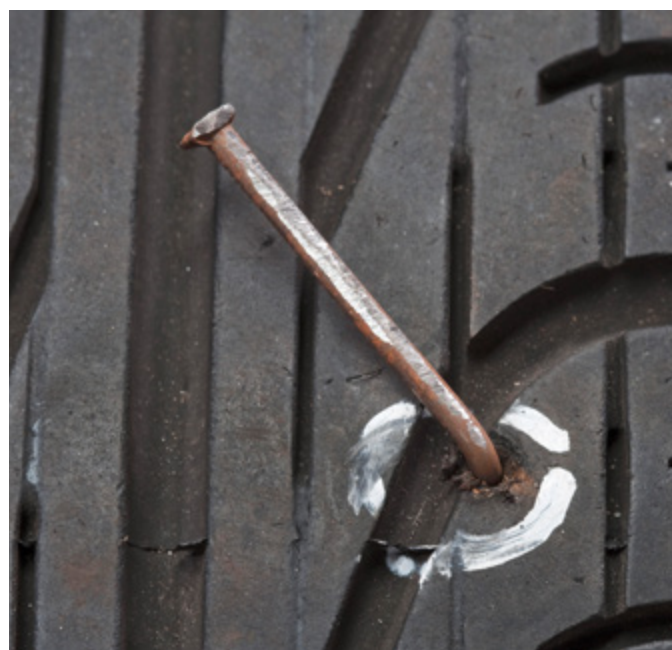
On twin wheel combinations, the condition of tyre inner walls must be checked (particularly for tipper vehicles, or those that are used in construction), as debris may be present and/or damage caused from debris. On construction/tipper vehicles, finding bricks lodged between twin tyres can be quite common – if not removed these can be extremely dangerous to other road users.

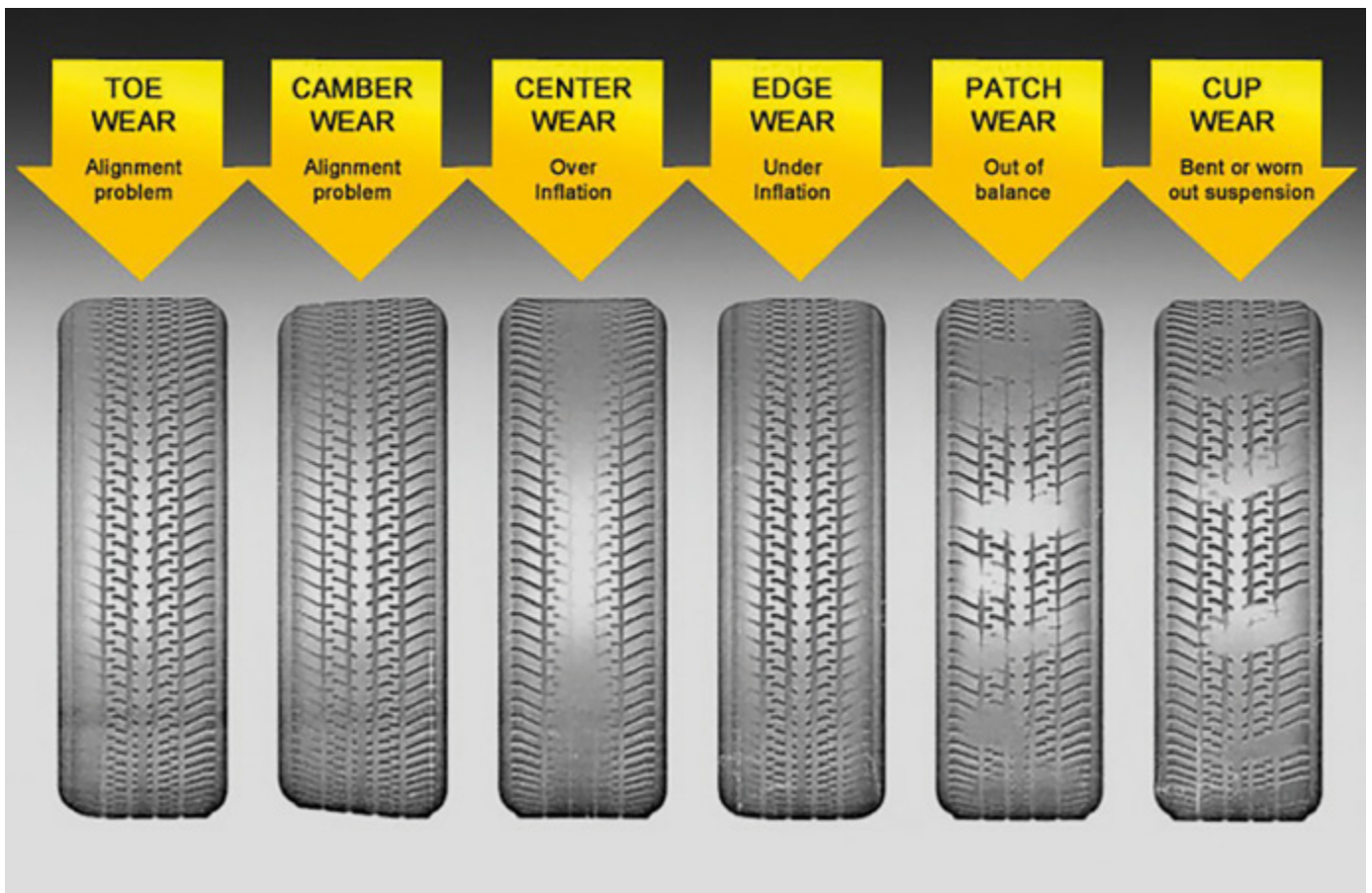
Although the legal limit for tread depth is only 1mm, this is a minimum requirement and consideration must be given to the amount of wear and tear the tyres is likely to be subject to before the vehicle/trailer’s next safety inspection. Tyres should be changed at the depth dictated by the operator, but where this is unknown and the tyre depth is within 2–3 mm, then the owner/operator should be informed, so a decision can be made over its replacement. Regardless of the tyre tread depth, Logistics UK strongly recommends that the minimum tread depth of all tyres is recorded on safety inspection records – this allows for effective monitoring of tyre wear and their management.

Recut tyres

Where a tyre has been re-cut, particular attention must be made to the depth of the recutting, to ensure that this has not exposed or damaged any tyre cords. Where this should be the case, the tyre will must be replaced.

Note: Recut tyres are only allowed to be fitted to vehicles with an unladen weight of 2,540kg or more and to trailers with an unladen weight more than 1,020kg.





Uneven wear

Tyres should be checked for unusual wear characteristics, as this may indicate problems elsewhere with the vehicle/trailer (i.e. steering geometry) that may need attention.

Tyre wall condition

Although most damage to side walls are concentrated on outer-walls, it is important to check inner-walls as these tyres may be, or have been, rubbing on other parts of the vehicle when the vehicle/trailer is laden.

On twin tyres, a check the inner facing wall can be challenging, the use a mirror may help.

Cuts – unless those are minor surface cuts, all cuts should investigate to ensure that they have not reached, or damaged, the tyre cords – if so, the tyre must be replaced. Care should be taken when probing a tyre, and sharp implement should **not** be used – doing so could damage the tyre further and/or result in personal injury.

Bulges – if these indicate a failing in the tyre construction, the tyre should be replaced. However, some bulges may be confused with that of manufacturing undulations – these tend to be regularly spaced and hard to the touch. If a bulge in the tyre can easily be compressed, then the integrity of the tyre is likely to

have been compromised and should be replaced.

Perishing – both age and other factors (heat and sunlight) will contribute to the structural integrity of tyres. Along with assessing the age of the tyre (see “Tyre Markings” above) an assessment of tyre deterioration should be made – and “If in doubt, throw it out”

Manufacturer’s instructions – directional rotation, etc

Tyre must be fitted in accordance with the manufacturer’s instructions. “Directional rotation” and “Trailer Use Only” are two such instructions that may be noted. “FRT” (Free Rolling Tyres) are not permitted on Front-steering axles or on Drive axles.

Tyre inflation

During service/safety inspections, tyre pressures must be checked and where necessary reset to either the manufacturers recommendations, or those specified for the vehicle/trailer. Reliance should not be placed on any TPMS, as many of these systems will not detect over-inflation.

Pre and post inflation pressures for all tyres should be recorded on the vehicle/trailer safety inspection record – these may be used at future safety inspection to identify any slow punctures.