



Fleetio



BRIDGESTONE

Tire Deep Dive

White Paper

Where the Rubber Meets the Road



For any fleet vehicle, tires are the foundation and regular tire inspections are a great way to prevent unexpected surprises. If your assets aren't fitted with the right tires and you don't conduct proper inspections, you could experience unnecessary downtime and compromise earning potential.

Proper Tire Inflation

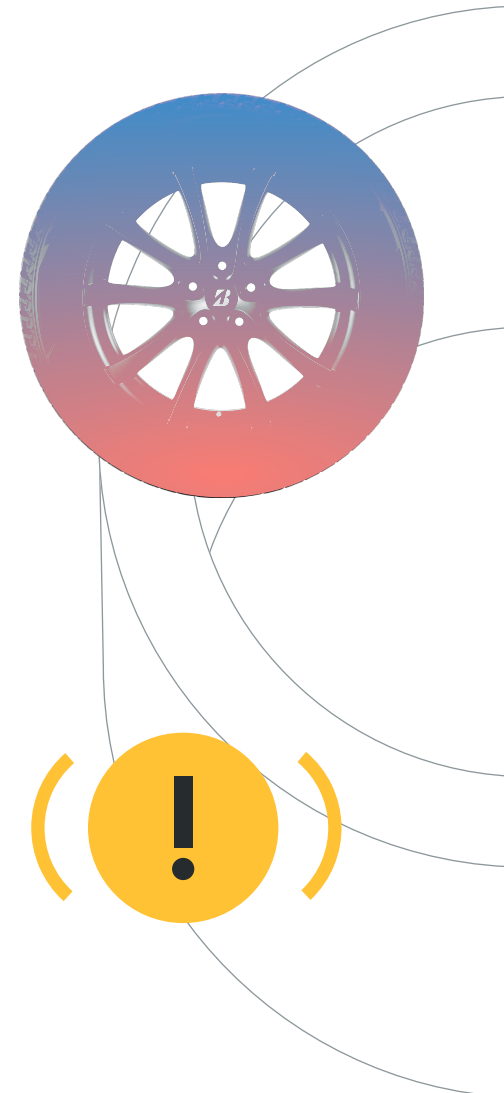
Tires are created from rubber and other compounds that are fused together through heat. Due to this, heat is also the tire's ultimate enemy. As a tire rolls, it warms up. As speed increases, the strain and amount of heat increase as well.

Tires that aren't inflated properly, won't function properly. Inflating PSI (pounds per square inch) to proper levels is critical for the tire to carry out its necessary functions.

It's also important that you don't rely solely on a Tire Pressure Monitoring System (TPMS). A TPMS is helpful, but it isn't an aspect of a preventive maintenance plan. It is not a replacement for regular tire inspections because it may not display actual pressure and often times, the warning alert on an assets dash isn't triggered to appear until the tire loses 10 PSI.

Time and Temperature

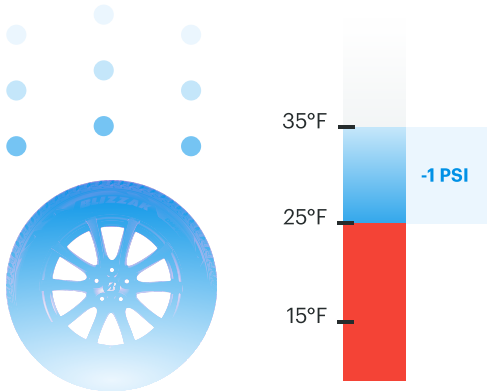
Time and temperature are the primary culprits of lower tire PSI levels (assuming there isn't damage or a puncture). As the case is for any asset part, wear and tear accumulate as time goes on. For tires, it's no different.



Time and Temperature cont.

Pressure loss of Commercial tires may be as much as **two PSI every month**. If operators went three months without checking PSI levels, their tire pressure could be 15 percent less than the manufacturers advised amount.

Temperature can also have a drastic impact on PSI levels. **Tires lose 1 PSI every 10 degrees (Fahrenheit) drop in temperature.** Bottom line, if the weather is colder and it has been a while since you last checked PSI levels, your tires are most likely underinflated.



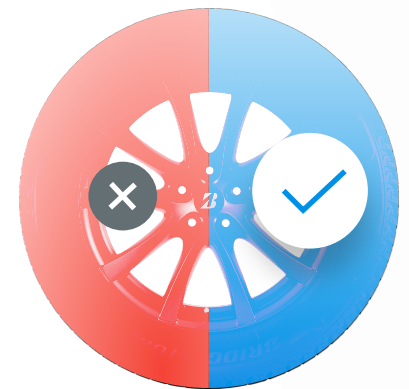
Tire Inspection

When inspecting tires there are several areas you want to address. Since tires are critical to the functionality of an asset, inspections should be routine, and it's best to incorporate tires inspections into your daily vehicle inspection reports.

PSI levels are the most common thing to check on tires. It's a **best practice to test tire PSI levels when the tire is cold.** A tire that's been driven on will be warm, which can lead to a misleading PSI reading

Having sufficient tire tread is another important component for tire use. It ensures enough contact is made between the tire and the road for sufficient traction. Proper tread depth is critical for vehicle safety. The tread provides traction for braking, cornering and steering. Sufficient depth is especially critical for traction in rainy weather.

All tires approved for highway use have a treadwear indicator. It's a raised rubber ridge in the grooves positioned laterally across the tire's tread. The indicator should be below the top of the tire's tread ribs. If the treadwear indicator is nearly flush with the tread surface, it's time to replace the tire.



Another trick to check tire tread depth is by measuring it with a penny using Abe Lincoln's head as an indicator. After all, Honest Abe never lies, right?



1

Place a penny into one of the lateral grooves of the tire with Abe's head pointing upside down.



2

The depth of the tread should cover Abe's forehead on the penny.



3

If you can see part of Abe's hair or forehead, it's time to replace your tires.

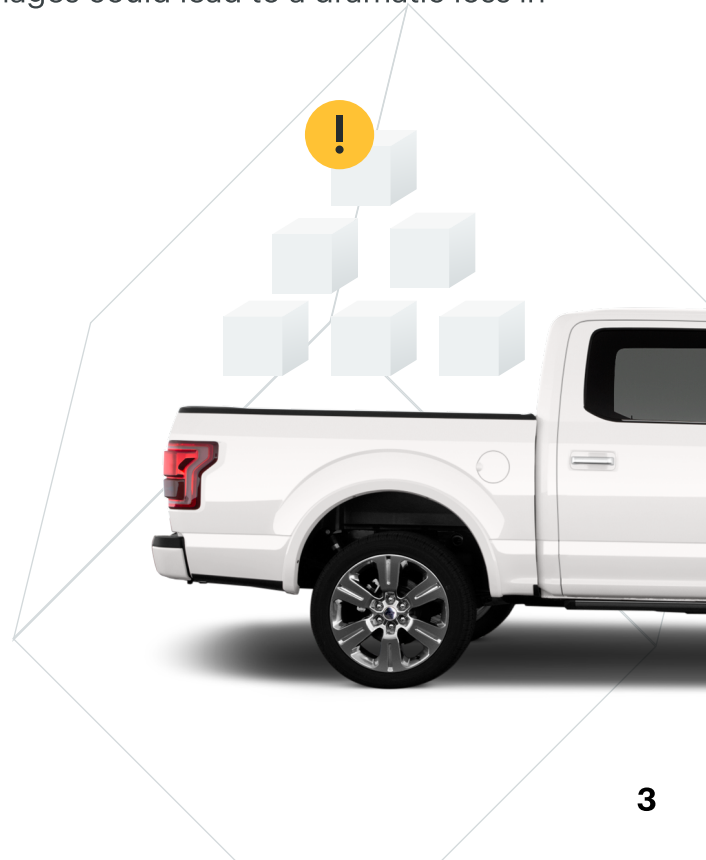
If you've inspected your tires and noticed a lack of proper tread, don't take any unnecessary risks. These indicators are warning signs that will help you avoid a potential tire blowout.

Operators should also verify there are no cracks, punctures or nails in the tires (which can be especially common on job sites). Any of these damages could lead to a dramatic loss in PSI levels and potentially cause a tire blowout.

Load Capacity

Underinflation also results in reduced load carrying capacity, and if it's severe enough, tire overloading – even when the vehicle is unloaded.

Proper inflation is especially important for tires on loaded vehicles. Under full vehicle loads, the risk of overloading the tires through underinflation is greatly increased.





Benefits of Proper Tire Inflation

- Maximizes tread life, which maximizes the investment made in your tires.
- Improved braking, steering response and stability under load.
- Maximizes load capacity for hauling.
- Promoting a safe environment for drivers to operate.
- Helps get the most out of estimated fuel economy.

Tire Replacement, Rotation and Alignment

Remember to rotate tires often in order to maintain an even distribution of tread use and wear. It's best to rotate the two front tires to the rear since most commercial vehicles are front wheel drive. Typically, tire manufacturers recommend rotating tires every 5,000 – 8,000 miles.

Modern tires range in lifespan, but the typical average is around 50,000-60,000 miles. This means you should rotate your tires around eight times before they near the end of the lifespan.

If you choose to replace only two tires, be certain to install them on the rear axle. This will ensure more grip on the rear tires and will prevent oversteering from occurring.

✓ Typically, tires on the driven axle will wear out first.

✓ Proper tire inflation can improve treadwear by 5-25 percent.

✓ If the tire is older, it will produce less mileage in its lifespan.

✓ It's best to replace all four tires at once to maintain performance.

The angle of alignment can also have an impact on vehicle performance. If the tires are angled toe in or toe out, they could result in excess wear and affect steering. The frequency of alignments will depend on the vehicle, suspension, and road conditions. Sometimes, vehicles can go a couple of years before needing an alignment.

By rotating your tires and having regular alignments, you will better promote even wear across all four tires and maximize your return on tire investment.