



COMMERCIAL FLEET TIRE DIGEST

The authoritative guide to reducing commercial tire expenditures from Pressure Systems International, the manufacturer of the Meritor Tire Inflation System by PSI™

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Understanding Low Rolling Resistance Tires

Look for an announcement soon on our new and expanded facility.

Every commercial tire manufacturer markets low rolling resistance (LRR) tires. The major benefit of specifying them is to improve vehicle fuel economy and there is normally a price premium associated with these tires.

SmartWay publishes a list of verified LRR new tires and retreads on their website. <https://www.epa.gov/verified-diesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire>

As of June 1, this list is comprised of 678 specific tire makes & models. This verified technology list of LRR tires assume the tires will be used on class 8 long-haul tractors and trailers.

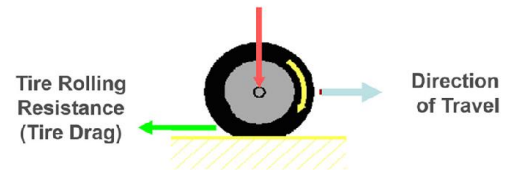


To make the SmartWay verified LRR list, tires are run on a 67" wheel dynamometer at 50 mph. If the measured tire rolling resistance (RR) shows a 3% or more improvement versus a baseline tire, then that tire make and model can make this verified list. The actual tire rolling resistance assumes the tire is running properly inflated. In the real world this is a big issue, especially on poorly maintained trailer tires. THIS IS ONE OF THE REASONS WHY AUTOMATIC TIRE INFLATION SYSTEMS ON TRAILERS HAS BECOME SO POPULAR WITH FLEETS

So what exactly is rolling resistance?

During the official SAE wheel dynamometer test, a tire is run at the rated load and inflation at 50 mph. The rolling resistance is measured in units of pounds. The lower the number the lower the tire rolling resistance which will result in improved vehicle fuel economy.

Keep in mind that all tires are not created equal. Just because a tire makes the SmartWay verified list does not imply that all these tires have the same improved rolling resistance.



Tire RR → The longitudinal (drag) force which acts opposite to the direction of tire travel

In a recent evaluation of four popular LRR tire makes/models, the actual tire rolling resistance of a 295/75R22.5 load range G tire run under fully loaded conditions ranged from 20 to 24 pounds at 100 psi. The same tires run 30% underinflated, as found on many inside dual tires, revealed RR values from 22 - 29 pounds.

As a comparison, a 445/50R22.5 widebase tire run fully loaded at the recommended tire air pressure resulted in RR of 44 pounds. If that tire ran underinflated, the RR increased to 49 pounds, which is an average increase of 10% rolling resistance.

The only serious way to determine the actual fuel economy improvement that your fleet may see by specifying LRR tires is to run a real world field evaluation such as SAE Type II Fuel Economy Test Procedure J-1321.

There are many factors that will impact fuel economy which include: vehicle make/model, the driver, routes, loads and speeds.

The driver alone can impact vehicle fuel economy by as much as 35%. The higher the vehicle speeds the worse the fuel economy. As vehicle speeds increase, fuel economy decreases. On the flip side, more aerodynamic devices such as full side skirts, nose cones, wheel covers, and reducing the gap between the tractor and trailer will all help improve fuel economy and reduce your overall cost/mile.

If you choose to run LRR tires in your fleet, work with your tire professional so you make the best choice of which make/model to purchase.

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