P.S.I.™ THE INFLATION SYSTEM

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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Day in the Life of a Trailer Tire

In the February issue we mistakenly gave credit for the photo we used.

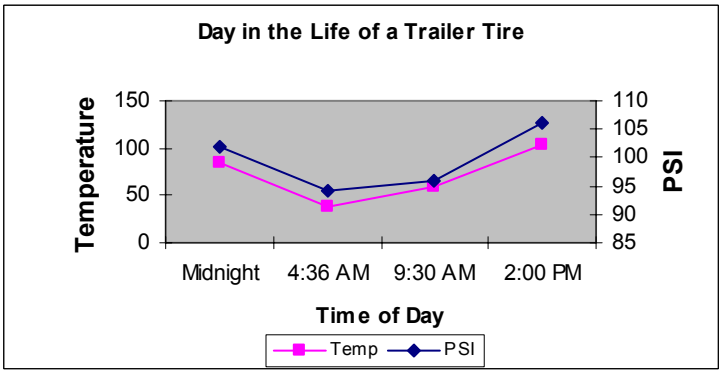
The proper credit for the photo should go to Bridgestone Firestone North American Tire, LLC

In just 24 hours, a commercial truck tire sure can take a lot of abuse. A trailer tire with 12/32" of tread depth will make over 250,000 revolutions in a typical 500 mile travel day. During that day, it will experience changes in load weight, speed and ambient temperatures which influence how the tire will perform and how air pressure will be affected.

As we always remind you, air is what carries the load in the trailer. A loaded 295/75R22.5 dual trailer tire is rated to carry a maximum 5675 pounds at 110 PSI. However, trailer tires historically carry less load weight – closer to 4,000 actual pounds. It is important to understand that the rated load and inflation which is marked on the sidewall of the tire is the MAXIMUM load carrying capacity at a given pressure. Because fleet operations vary – it is up to each company to determine the actual air pressure needed based on their worst case actual tire load scenario. For instance, if you inflated trailer tires to the pressure marked on the sidewall but the actual load/tire was only 4,000 pounds, the tire footprint would not even be close to optimum. Tires would develop significant irregular wear leading to bad fuel economy, lower mileage, and poor traction. We recommend that each fleet perform actual weight studies to determine their worst case tire load and work with their tire professional to determine the optimum tire pressure. All the tire manufacturers have a tire load/inflation chart on their respective web sites.

Once you establish the best tire pressure for your tires, keep in mind that air pressure changes with temperature. But exactly how much? As an example, let's take a look at a trailer tire just sitting under a loaded trailer for 24 hours: At midnight on a calm, Texas evening, a thermocouple attached to the wheel recorded a temperature of 84° F and the outside dual trailer tire was measured to be 102 PSI. By 4:36 AM, the temperature outside dropped significantly to 38°F and the corresponding tire air pressure dipped 8 PSI to 94 PSI. Five hours later (9:30 AM), with the sun rising, the temperature at the wheel-well was now 59°F and the tire air pressure shot back up to 96 PSI. By 2:00 PM, the hottest part of the day, the temperature was recorded to be 103° F at the wheel, with the actual tire pressure increasing a full 10 PSI to 106 PSI in just five hours.

So, during the course of one day, the tire pressure ranged from 94 PSI on the low end to 106 PSI on the high-side; and this was for a non-moving trailer.



Once the trailer starts running down the highway at full load, the air pressure will increase an average of 14% in only 20 minutes. If a driver actually checked his tire pressure on a "hot" tire, just coming off the road, he would think that the tire was significantly over-inflated. This is not the case. Tires are designed to take into account dramatic pressure changes depending on load, speed, and ambient temperature conditions.

Running your tires with the recommended air pressure ALL the time, will keep the tires running cool, maximize mileages, maximize fuel economy, and minimize those expensive roadside service calls.

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