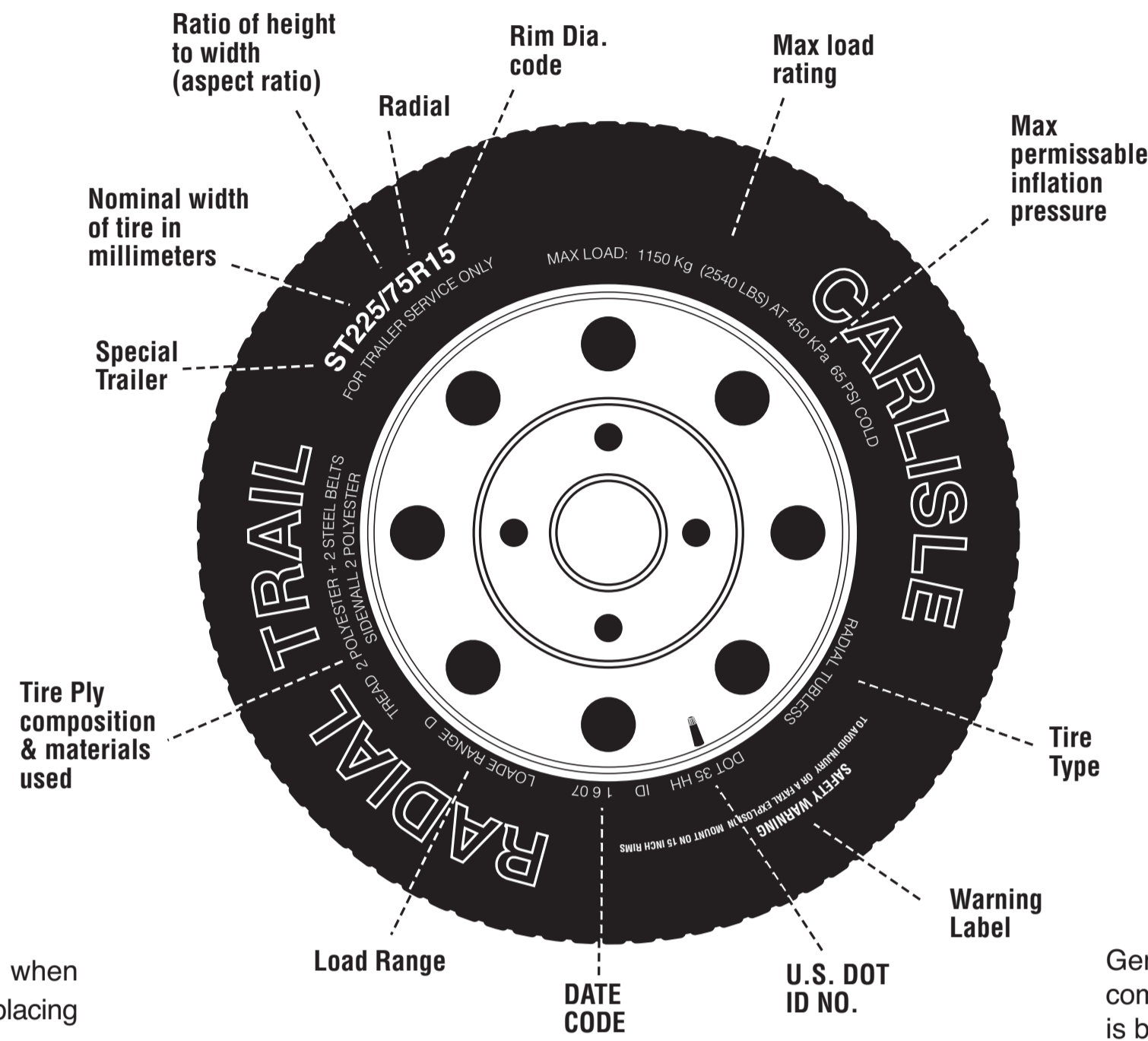




TRAILER TIRES 101



You all know it's not IF you're going to need to, but when you're going to need to. Of course we're talking about replacing the tires on your favorite place to stay on the weekends, your toyhauler. Having bad tires is just asking for trouble especially with summer coming. Roadside blowout changes on busy interstates, getting buzzed by semis, are No Bueno!

For this feature we decided to give you all the information you need and dispel some of the myths associated with trailer tires so with that we will go right to the first point.

What's the difference?

Trailer Tire requirements differ greatly from automotive tires. Automotive tires must maintain traction during all driving conditions: pulling, stopping, turning, or swerving. Because of this they must have more flexible sidewalls to maintain tread to road contact. Since trailers have no driving torque applied to their axles, the only time trailer tires must have traction is during the application of trailer brakes. Trailers with heavy loads, high vertical side loads, or trailers with inadequate tongue weight can be affected by trailer sway problems. Automotive bias or radial tires with their more flexible sidewalls can accentuate trailer sway problems, whereas the stiffer sidewalls of the ST (special trailer) help to control and reduce sway problems. For this reason it is not recommended that (P) Passenger or (LT) Light Truck tires be used on trailers. Best trailer control will be achieved with (ST) Special Trailer tires.

Understanding Load Range

The load range or ply rating branded on a tire's sidewall helps identify its strength and ability to contain air pressure. While specific load ranges are assigned to passenger tires, load ranges are identified in ascending alphabetical order for light truck tires (the further along the letter is in the alphabet, the stronger the tire and the greater amount of air pressure it can withstand and load it can carry). Before load ranges were adopted, ply ratings were used to identify the relative strength of light truck tires with higher numerical values assigned to tires featuring stronger, heavier duty constructions.

Today's load range/ply ratings do not count the actual number of body ply layers found inside the tire, but indicate an equivalent strength based on early bias ply tires. Most radial passenger tires have one or two body plies, and light truck tires, even those with heavy duty ratings (10-, 12- or 14- ply rated), actually have only two or three fabric body plies, or one steel ply.

ST-metric sized special trailer service tires will be branded with their load range ("Load Range D" or "LRD") on their sidewalls and lists their appropriate load range letter in their descriptions as ST205/75R15 LRD.

Load Range	Ply Rating	Load Pressure
ST- Metric B	4	35
C	6	50
D	8	65

Why An ST?

One of the benefits of an ST tire when it comes to trailering is that it has about 10 percent more load capacity than an equivalent LT tire and nearly 40 percent more than a P tire when each is filled to its maximum psi rating.

Furthermore, the ST's mold shape is designed to accommodate trailer wheels, which are typically narrower than P and LT wheels. Being narrow is an advantage on trailer tires, but a disadvantage on wheels that steer and wheels that are attached to the drive axle. Steering and/or driving tires benefit from larger footprint, which provides the extra traction and performance demanded of them.

A free-rolling trailer tire isn't called on to turn, swerve and grab the pavement like a steer or drive tire. Since it doesn't need such a large footprint, it performs its task better by being narrower.

For the same reasons, ST tires don't have as deep of a non-skid tread as P and LT tires. A deep non-skid is necessary for driving and steering tires in wet environments because it provides them with better traction.

A trailer tire is simply free rolling, it doesn't need the same degree of traction on wet pavement and, in fact, it would be detrimental to its performance. Having a shallower tread depth provides the ST tire with two benefits: (1) it doesn't wiggle as much, which can help reduce sway, and (2) it rides cooler, which adds to its longevity.

Generally, the ST tire also has somewhat stiffer sidewalls, especially in its lower section. This reduces sidewall flexing, helping it to track straighter and diminish the risk of trailer sway. The stiffer sides also lessen the risk of sidewall blowout.

Years ago, nearly all ST tires were bias-ply tires, which have crisscrossing cords of polyester or nylon, with the same number of ply on the sides as there are on the tread. Occasionally bias-belted tires were used. These are the same as bias ply, but with added belts, or layers, under the tread.

Bias or Radial?

Radials feature plies that run perpendicularly across the tire, with belts (some of which can be steel) running under the tread. Today, many ST tires are radials. Is bias better than radial, or visa versa? Actually, each has its pros and cons. In making a decision, it is good to talk to the tire manufacturer about your particular application.

Generally speaking, a bias tire has the advantage when it comes to load and high-speed performance. A radial, however, is better when it comes to tread wear. On average a bias tire's tread will last approximately 12,000 miles, whereas a radial typically lasts 40,000 miles. There are exceptions, of course, but this is an average comparison.

Under-Inflation

The most common cause of tire problems is under-inflation. It is estimated that a trailer tire that is 20 percent under-inflated will cut 25 percent off its lifespan; one 30 percent under-inflated will reduce its term by 55 percent. Under-inflated tires also affect fuel efficiency by as much as 10 percent due to added drag.

More important, under-inflation puts undue stress on the tire, producing irregular wear at best. At worst, under-inflation causes complete failure that can result in an accident. Abnormal tire flexing occurs when a tire doesn't have enough air, which can generate an excessive amount of heat will exceed the tire's capabilities and cause the tire plies to separate or result in a blowout.

Don't Eye Ball It!

Merely looking at a tire won't always tell you if its under-inflated. In fact, some tires can lose up to half of their pressure before it is noticeable from appearance alone. (But you still should check for cracks or other signs of wear). And with each pound of pressure loss, there is a corresponding loss of load-carrying ability. Therefore, you should check the tire's pressure regularly with a good quality gauge. And for accuracy, always check the pressure when the tire is cold. Driving only a few miles will heat the tire and increase the pressure reading.

Overloaded!

Another major cause of tire failure is overloading. That is why it is important to know weight of the actual load being towed. That includes all the toys, gas, gear, water the whole shebang! An over-loaded tire will produce large amounts of heat, which can cause tire degradation or blowout.

The Conclusion

For trailers, it is essential that you select the correct tires to match your application and capacity requirements. (ST) Special Trailer tires are normally more expensive than (P) Passenger car or (LT) Light Truck tires because they are built tougher with more material and more bruise resistant. This is necessary because most trailer suspension systems are stiffer and less sophisticated than automotive suspension systems. Consequently the tires must be capable of withstanding more ABUSE. As always consult with a professional for your specific circumstance.



Carlisle Tire & Wheel Company
23 Windham Boulevard Aiken, South Carolina 29805

www.carlisletire.com