



M.D. Alignment

As-Driven Solutions™



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SUPERWIDES (450 SUPER SINGLES)



Tread wear (miles per 32nd) on trailer applications remains equal to a standard set of dual tires. On drive axle applications the wear rate is 25% faster than a set of duals. Reason: since the 450 super single (my generic name for this class of tire) has a footprint 25% smaller than a normal set of duals, the horsepower is transferring to the road through a smaller area and

results in more micro-slippage causing faster wear. Reports of drive tire life going from 300,000 miles to less than 200,000 are common.

Shoulder wear problems are also common on this tire. My story (and I'm sticking to it) is that the tire was developed in Europe where the vehicles are restricted to 60 MPH (100 KPH) and the high speeds here in the US are distorting the tread of the tire. At high speeds, centrifugal force stretches the tire making it taller. The outer ribs of the tire are attached to the sidewall preventing them from moving as much as the center ribs. This means that we have center ribs with a greater rolling circumference than the outer ribs making the outer ones drag to keep up. Just like matching a tall and a short tire in a dual application, the short one wears faster. Restricting operating speeds to about 60 MPH makes this problem manageable. Tire manufacturers are attempting to control this with air pressure.

The use of a 2" offset rim with this tire causes more camber axle deflection and results in a de-rating of the axles max loads. Dana rates its drive axles with steel hubs at 24,000 lbs. The same axle with aluminum hubs is rated at 19,000 lbs. And with the 2" off set rim, regardless of the hub used, the rating is 17,000 lbs. This means you are operating at the max rating of the axle in normal operations with no margin for error. It is unclear at this point what the long term effect on hubs, bearings and axles will be. In many cases where the fleet operates heavy loaded more than 60% of the time, the axle deflection causes inside shoulder wear on the tires similar to the wear we have seen with loose wheel bearings. This pattern is even more exaggerated on trucks and trailers equipped with the new light weight axles. This product, light weight axles, will be covered in an upcoming bulletin.

Reports have been received of smoother ride, increased fuel efficiency and weight reductions resulting in increased cargo capacity. I have also heard comments that when transitioning from dry pavement to wet the vehicle is a little loose and that the reduction in tire life can cause this to be a problematic product from a cost benefit perspective. Time will tell.

New information has been received that a rim without the 2" offset is now available. It is used with an extended length axle to set the tire out and increase the wheel track. No information is available on whether or not this solves the axle deflection issues. And I am not clear if this is only available on trailers or if it is on drives.

Here are some pictures from a pair of failures on a spread axle trailer. One occurred at 75 MPH and the tire was completely gone by the time the rig was stopped. The other was at 55 MPH and some of the tire was left but as you can see, in both cases the rim was ruined. There are also some images that show the high speed wear patterns.



