

The Number of Tire Age Recommendations Grows: Bridgestone-Firestone is the Latest Entry

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Tire age degradation hit the radar of safety advocates, regulators and members of Congress following the Firestone ATX / Wilderness recalls in 2000 and 2001 when experts concluded that age degradation played a role in the catastrophic failure of these tires. Since the recalls Safety Research & Strategies (SRS) began examining what was known about the issue worldwide and found startling evidence that both tire and vehicle manufacturers have known tires, whether or not they are actually used, can experience tread separations due to internal oxidative aging, a process that is largely invisible. Following SRS' docket submissions to NHTSA about their findings and an active campaign to alert the public of the danger through the media, some manufacturers have quietly started to address the issue. Bridgestone-Firestone's release of a "Technical Bulletin" to its dealers in late 2005 alerting them that 10 year-old tires should not be used, regardless of tread wear, is the latest indication that the industry is changing its tack.

Bridgestone-Firestone's bulletin, which recommends the replacement of tires once they reach 10 years old "even when tires appear to be usable from their external appearance or the tread depth may have not reached the minimum wear out depth" is said to be based on a recommendation from the Japan Automotive Tyre Manufacturers Association (JATMA), also issued in 2005. In an attempt to embrace, yet distance itself from any expiration recommendations, BFS's bulletin says the company "is not aware of technical data that supports a specific tire service life" and "we believe it is appropriate to follow the JATMA recommendation in the interest of further encouraging consumers to focus on the importance of maintaining and properly replacing their tires." BFS, like JATMA recommends tire inspections after 5 years and further qualifies its bulletin stating owner's should follow the vehicle manufacturers replacement recommendations—which in many cases now includes warnings to replace tires after 6 years regardless of tread or use.

Bridgestone-Firestone's Technical Bulletin follows Ford Motor Company and DaimlerChrysler's owner's manual warnings that appeared in 2005. Both vehicle makers warned consumers to replace tires after six years, regardless of tread. Ford quietly slipped a six-year-useable-life recommendation into a tire safety section on its website and added the recommendation to all of its owner's manuals in 2006. The recommendation states:

"Tires degrade over time, even when they are not being used. It is recommended that tires generally be replaced after 6 years of normal service. Heat caused by hot climates and frequent high loading conditions can accelerate the aging process."

Ford's move is particularly significant because of the body of scientific research it published quantifying tire age degradation following the Firestone ATX / Wilderness investigations. Ford studied the significant material property changes that occur with age, and found methods to artificially age tires in a way that correlates to real-world conditions.

DaimlerChrysler's warning was more blunt:

"Tires and spare tire should be replaced after six years, regardless of the remaining tread... Failure to follow this warning can result in sudden tire failure. You could lose control and have an accident resulting in serious injury or death."

DaimlerChrysler's addition of the six year recommendation to its 2006 owner's manuals is thought to be based on work from its Mercedes-Benz research division done in the late 1990s. Mercedes considered the elimination of spare tires from its vehicles because of the risks associated with a tire that is rarely used.

Mercedes' report noted "Tyres undergo an ageing process even when they are not in use. . . The rubber parts become less elastic, the steel webbing inside the tyre corrodes and the rubber mixture of which the tread is formed hardens."

While vehicle manufacturer recommendations first appeared in 1990 owner's manuals of German made and Toyota vehicles, the new warnings are important because they are based on a growing body of evidence that age degradation is an important factor in tire failures. However, the tire industry, through the Rubber Manufacturers Association (RMA) still clings to the argument there is no scientific basis for an expiration date and because of the many comparisons to dairy products keeps asserting, "tires are not milk." The RMA also argues there is no "one-size-fits-all" expiration because tires are constructed using varying grades of materials and at different quality levels and are exposed to a wide range of conditions.

Vehicle manufacturer warnings originated, at least in part, from several German studies published in the late 1980s that warned about an apparent disproportionate rise in failures once tires are reach six years old or older.

According to Sean Kane, President of Safety Research & Strategies, "RMA's position is technically correct, there is no 'one-size-fits-all' expiration, just as there is no one recommendation for tread life; however, there is nothing preventing tire makers from labeling their tires with age expirations based on the specific construction of their product lines much the same way they provide tread wear guidelines of 30,000 or 40,000 miles for example."

BFS' tire age recommendation is the first formal recommendation from a tire maker in the U.S. Many other recommendations exist throughout the world, including a one from the British Rubber Manufacturers Association, of which most of the tire makers are members, that was approved in 2001 but never formerly released. The BRMA's recommended practice on tire aging which states

"BRMA members strongly recommend that unused tyres should not be put into service if they are over 6 years old and that all tyres should be replaced 10 years from the date of their manufacture."

The recommendation goes on to say that:

"In ideal conditions, a tyre may have a life expectancy of that exceeds 10 years from its date of manufacture. However such conditions are rare."

And

"'Ageing' may not exhibit any external indications and, since there is no non destructive test to assess the serviceability of a tyre, even an inspection carried out by a tyre expert may not reveal the extent of any deterioration." Spare tires and tires that are not frequently used were noted as particularly vulnerable to aging.

SRS' examination of crashes caused by tire aging reveals that many of these cases involve SUVs, vans and pickup trucks—particularly when an unused or little used spare with ample tread is put into service after a number of years. Kane believes that as tire tread wear performance has increased during the past two decades in combination with the exponential growth of the light trucks into the market and their increased likelihood of a loss-of-control following a tread separation, tire makers are facing an increased number of aged tire cases.

While much of the tire industry has circled the wagons and continues to deny tire age degradation is a problem, some observers are lamenting the tire industry's conservative attitude and in particular their position in expiration dates. In the June/July 2005 edition of Tire Technology International, associate editor Roger Williams describes the ponderous way the tire industry moves and its self-defensive attitude, including the industry's position on sell-by and use-by dates.

The vehicle industry appears to be afflicted by a similarly conservative attitude toward tire aging. Even though Ford Motor Company has endorsed a six-year use-by date and includes this in its owner's manuals and under the Tire Safety section of its website, their tire aging expert Dr. John Baldwin recently testified that the issue is not a safety problem.

The first tire aging case against a vehicle manufacturer is now underway in Texas against Ford involving a full-sized spare on an Explorer.