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REQUEST TO LIST IN THE COMPENDIUM OF CANDIDATES
THE UNITED STATES OF AMERICA FEDERAL MOTOR VEHICLE SAFETY
STANDARD FMVSS No. 139 – NEW PNEUMATIC RADIAL TEST FOR LIGHT
VEHICLES

Transmitted by the representative of the United States of America

Note: The document reproduced below is submitted by the United States of America to the Executive Committee (AC.3) for consideration. It contains a request to include in the Compendium of Candidates FMVSS No. 139 on New pneumatic radial tyres for light vehicles.

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REQUEST TO LIST IN THE COMPENDIUM OF CANDIDATES
THE UNITED STATES OF AMERICA FEDERAL MOTOR VEHICLE SAFETY
STANDARD FMVSS No. 139 – NEW RADIAL PNEUMATIC TYRES FOR LIGHT
VEHICLES

The United States of America requests that the Federal Motor Vehicle Safety Standard (FMVSS) No. 139 – New radial pneumatic tyres for light vehicles be listed in the Compendium of Candidates.

Background

Section 10 of the United States Congress's Transportation Recall Enhancement, Accountability, and Documentation Act of 2000 (TREAD) mandated that the National Highway Traffic Safety Administration (NHTSA) conduct a rulemaking proceeding to revise and update the safety performance requirements for tyres and to issue a new final rule.

Prior to the enactment of the TREAD Act, the Firestone tyre recalls in 2000 focused public attention on the agency's passenger car tyre standard, federal Motor Vehicle safety Standard (FMVSS) No. 109. The standard had not been substantively revised since first issued over 30 years ago in 1967. At that time more than 99 per cent of passenger car tyres in the United States of America were of bias, or bias ply construction. Accordingly, the requirements and test procedures in FMVSS No. 109 were developed primarily to address bias tyres. Today, bias tyres have been almost completely replaced by radial tyres on passenger cars and other light vehicles. The use of radial tyres has grown to the extent that they represent more than 95 per cent of passenger tyres in both the U.S. and Europe and are used on most other new light vehicles sold in the United States of America. NHTSA does not require that light vehicles be equipped with radial tyres, but regulates radial tyre performance through FMVSS Nos. 109 and 119. Given the superior performance of radial tyres relative to bias tyres, it is easier for them to comply with the requirements of FMVSS No. 109.

While the durability and performance of tyres have improved over the past 30 or so years, the conditions under which tyres are operated have become more rigorous. Higher speeds, greater loads, extended lifetimes of tyres, longer duration of travel and shifting demographics of vehicles sales have all contributed to much greater stresses and strains being placed upon today's radial tyres than those endured by earlier generation radial tyres. The characteristics of a radial tyre construction in conjunction with present usage and purchasing patterns render the existing required minimum performance levels in the high-speed test, endurance test, strength test, and bead- unseating test ineffective in differentiating among today's radial tyres with respect to these aspects of performance.

NHTSA examined the value of modifying each of the existing tests in its tyre standards applicable to tyres for light vehicles, i.e., those vehicles with a gross vehicle weight rating of 10,000 pounds (4,536 kg) or less, except motorcycles and low speed vehicles. In addition, NHTSA examined the value of adopting several new tests. In doing so, it placed particular emphasis on improving the ability of tyres to withstand the effects of factors mentioned during the consideration and enactment of the TREAD Act, such as tyre heat build up, low inflation, and ageing. The agency conducted extensive testing, data gathering and analyses as well as

reviewed other existing international, industry and national standards and proposals, and submissions by the public.

Description of Regulations

This standard specifies tyre dimensions, testing requirements, labelling requirements, and defines tyre load ratings. It applies to new pneumatic tyres for use on motor vehicles (other than motorcycles and low speed vehicles) that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less and that were manufactured after 1975. The final rule is effective 1 June 2007 with voluntary compliance permitted before that date.

Specifically, NHTSA upgraded the existing high speed and endurance tests, although to a more modest degree than originally proposed under the Notice of Proposed Rulemaking (NPRM). Both the high speed test and the endurance test contain testing parameters (ambient temperature, load, inflation pressure, speed, and duration) that make the tests more stringent than those tests found in the original tyre standards, as well as the tests suggested by industry. Most significantly, the high speed test specifies test speeds of 140, 150, and 160 km/h, which are substantially higher than those specified in the original passenger car tyre standard. Likewise, the new endurance test specifies a test speed, which is 50 per cent higher. Also, under the new endurance test, a tyre is assessed over 50 per cent more distance than a tyre must endure under the old endurance test.

The agency is adopting a low inflation pressure test that seeks to ensure a minimum level of performance safety in tyres when they are under inflated to 140 kPa (20 psi). That is the minimum level of inflation at which tyre pressure monitoring system warnings will be required to be activated. This requirement mirrors conditions of long distance family travel in the United States of America and will assist in ensuring that tyres will withstand conditions of severe under inflation during highway travel in fully loaded conditions.

Given the increased preference of American consumers for using light trucks for personal transportation purposes, NHTSA, for the first time, is requiring light trucks to have a specified tyre reserve, the same as for passenger cars, under normal loading conditions. The agency is also extending the tyre performance requirements for passenger car tyres to LT tyres (load range C, D, and E) used on light trucks.

Instead of replacing the strength test in FMVSS No. 109 with a new road hazard test, the agency is retaining the strength test for passenger car and LT tyres. Post-NPRM agency testing data and public comments called into question whether the proposed road hazard impact test, which was modelled after a SAE recommended practice, would provide both a more stringent and more real world test than the current test. NHTSA will address these uncertainties in the near future.

Instead of replacing the current bead unseating test with a proposal based on a Toyota test, the agency is retaining the bead unseating test and extending it to LT tyres. Industry previously recommended dispensing with a bead unseating test because radial tyres are easily able to satisfy the current one. Results from the agency's 1997–1998 rollover testing provided a strong rationale for upgrading, rather than deleting, the bead unseating test. Post-NPRM agency testing data and public comments, however, called into question whether the Toyota test provides both a more stringent and more real-world test than the FMVSS No. 109 bead unseating test. The

agency will conduct research on bead unseating before initiating rulemaking to adopt a new or revised test.

Safety Benefits

The regulation will increase the strength, endurance, and heat resistance of tyres by raising the stringency of the existing standard on endurance and high speed tests and by requiring a low pressure performance test. The agency anticipates that tyres that meet these tests will experience fewer tyre failures. For a fuller discussion of the benefits, see the agency's Final Regulatory Evaluation (FRE). A copy of the FRE is attached to this memorandum.

Estimated Costs

The following is a summary of the costs associated with the adoption of the performance requirements contained in the new tyre standard. It is based on the increased stringency of the high speed and endurance tests and the addition of a low inflation pressure performance test.

NHTSA anticipates that between 5 percent and 11 per cent of the combined sales of P-metric and LT tyres will not pass the adopted tests. There are an estimated 287 million light vehicle tyres sold of which 5 to 11 percent might increase in price by US\$0.25 to US\$1 per tyre. The overall annual cost for new original equipment and replacement tyres is estimated at US\$3.6 million (287 million tyres x .05 x US\$0.25) to \$31.6 million (287 million tyres x .11 x US\$1) and the net costs per equivalent life saved will be about \$5 million based on the mid-point of cost and discounted benefits estimates.

USA does not anticipate an increase in costs for the road hazard impact and bead unseating tests because its testing indicates that all current production tyres pass these tests.

The final rule is estimated to increase test costs by US\$76.40 per tyre model tested. With about 5,540 tyre models tested annually, the incremental test costs are estimated to be US\$423,000 per year. The final rule will not require any new or different testing equipment than that currently used by tyre manufacturers.

Related documents:

FMVSS No. 139 Regulatory Text - New Pneumatic Tyres for Light Vehicles
Final Regulatory Evaluation (FRE) for New Pneumatic Tyres for Light Vehicles
