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Docket Management Facility, M-30
U.S. Department of Transportation
1200 New Jersey Avenue S.E.
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Comments of Consumer Reports to the
National Highway Traffic Safety Administration on
the Advance Notice of Proposed Rulemaking;
Federal Motor Vehicle Safety Standards: Tires
Docket No. NHTSA-2019-0011

Consumer Reports, the independent, non-profit member organization,[1] welcomes the opportunity to submit comments to the National Highway Traffic Safety Administration (NHTSA) on the advance notice of proposed rulemaking to review and revise vehicle safety standards related to tires. For more than 25 years, CR has provided consumers with all-weather ratings of replacement tires suited to cars and light duty trucks. Testing includes how well tires stop and handle on dry and wet roads, resist hydroplaning, and accelerate on snow and stop on ice, as well as our expert judgments on comfort and quietness. CR is a unique third party source evaluating tires for rolling resistance, a factor in vehicle fuel efficiency, and performs vehicle treadwear testing by running tires thousands of miles on a road course in Texas. We offer the following recommendations on the basis of our tire experience.

In general, CR supports NHTSA reviewing tire safety standards and updating them as appropriate. The tire strength test and tire bead unseating resistance test were developed at a time when bias and bias-belted tires were common; however, these tests do not effectively evaluate the steel-belted radial tires found on virtually all cars and light duty trucks today. CR recommends elimination of the tire strength test barring any known field data supporting a need to maintain a measure of tire strength. The tire bead unseating test may not be an effective test in its current form for low aspect ratio tires (low profile, short sidewall tires) and tires with large

[1] Founded in 1936, Consumer Reports uses its dozens of labs, auto test center, and survey research center to rate thousands of products and services annually. CR works together with its more than 6 million members for a fairer, safer, and healthier world, and reaches nearly 20 million people each month across our print and digital media properties.

wheel diameters that are common on many vehicles today, and should be replaced with a test to accommodate all tires. We ask NHTSA to determine if the tread chunking failure mode sometimes observed in the tire endurance test is a byproduct of testing on an indoor wheel drum, and if the issue is not seen in the field, then perhaps the issue may be considered simply a test failure. Finally, CR is in favor of removing non-informative tire sidewall markings that could be misleading or redundant to consumers.

Background

Tire strength and bead unseating resistance tests introduced in 1967 as part of FMVSS No. 109 – New Pneumatic Tires were designed at a time when tires were prominently bias construction and had relatively tall sidewalls, typically of 78 and 85 aspect ratio. The strength test is in FMVSS No. 119 – New Pneumatic Tires for Vehicles Other than Passenger Cars and in FMVSS No. 139 – New Pneumatic Radial Tires for Light Vehicles. The bead unseating resistance test is included in FMVSS No. 139. FMVSS No. 139 was created pursuant to the TREAD (Transportation Recall Enhancement, Accountability and Documentation) Act to provide tougher high speed and endurance tests, and included a low-pressure test to evaluate tread separation resistance.

Tire Strength Test "Breaking Energy of the Tire Tread Area"

Today, nearly all passenger car tires are of radial design, which is known to be less prone to tread breakage in the tire strength test. Further, the popularity of low aspect ratio tires means that this test is less relevant overall. The short distance between the tread to the wheel may cause the radially applied plunger to push the tread to contact the wheel before generating the minimum breaking energy. NHTSA acknowledges that radial tires have flexible sidewalls that absorb deflections and have high-strength belt packages. Reflecting on the popularity of radial tires, FMVSS No. 139 was adopted specifically for radial tires for light vehicles and does maintain the strength test.

- CR suggests that the strength test is no longer necessary for radial tires based on data presented in the ANPRM where tires meet the minimum breaking energy or the plunger device bottoms-out to the wheel before meeting the minimum breaking energy. Also, testing on a modified wheel with deeper well to allow more plunger travel does permit testing tires to the minimum tire strength, but all tires met the standard.
    - CR questions the relevance of testing for tire strength on a tire that does not exceed the minimum breaking energy before bottoming-out and likewise how realistic it is to use a deep well wheel to test the minimum breaking energy. The modified wheel is not representative of real-world conditions.
    - CR knows of no field data to support the need of a radial tire strength test, but would ask NHTSA to review tire recall reports[2] and other databases for the prevalence of real-world examples of tire failures that appear related to tread area strength.
    - Barring any field data in support of a test, CR supports removal of the strength test from FMVSS No. 139 as it applies to radial tires for light vehicles.

[2] https://www-odi.nhtsa.dot.gov/owners/SearchSafetyIssues?prodType=T

- The test was designed for bias tires and still should have relevance to the few bias and bias-belt tires still sold and covered under FMVSS No. 109 and No. 119.

Tire Bead Unseating Resistance

The tire bead unseating test evaluates the force to unseat a tire from the wheel resulting in air loss. The force is applied by a block pressing against the tire's sidewall. Tires must meet minimum standards under FMVSS No. 109 and No. 139.

- The test was developed for bias tires with wheel sizes of 13, 14, and 15 inches diameter and for radial tires. In recent years, the trend toward low profile radial tires and use of larger wheel diameters have made it difficult if not impractical to evaluate some tire sizes. The current test does not have specifications to test tires with wheel diameters greater than 20 inches, but the adoption of the ASTM F2663-15 recommendation of block profiles and procedures could evaluate most tires up to 30 inches diameter. CR supports NHTSA adopting this ASTM standard or a similar standard that can evaluate all tire sizes.
- USTMA (United States Tire Manufacturer Association) claims there is no effect on tire bead seating performance in countries without a tire bead unseating performance standard. USTMA did not provide data, and it could just be tires sold in those countries meet a minimum level of bead unseating resistance.
    - CR thinks it would be prudent that some sort of bead unseating resistance test or standard should be maintained given that sudden air loss from an unseated tire could be a catastrophic event.

Tire Endurance Test: Failure Due to Chunking

In the tire endurance test, a tire is run at a specific load and inflation pressure against a round drum (67.23" diameter) at speed as outlined in FMVSS No 139. At completion of the test, tire pressure shall be no less than 95% of the initial setting and there should be no visual sign of tire degradation (such as separation, chunking, or cracking). Tire manufacturers say that tread chunking occurs in the test from running on a drum, unlike a flat road surface, where they claim no tread chunking occurs. We generally agree with the industry observations, but NHTSA should explore if tread chunking truly is only a test phenomenon and not observed in the field before allowing the removal of tread chunking as a failure criteria.

Tire Marking for Ply Description, Ply Rating, Tubeless and Radial

CR is in support of removing "legacy" tire markings including ply rating, tubeless, and radial. Nearly every passenger tire is "radial," all are "tubeless," and "ply rating" quantifies load capacity. Radial is already defined by the inclusion of the "R" designation in the size designation of radial tires and ply rating is better served by the load capacity and load index provided on each tire. CR thinks that elimination of these markings would pose no safety issue. In addition to taking this step, NHTSA should consider broader changes to required tire markings in order to ensure they are useful, informative, and intuitive to consumers. These changes could include adding terms like "summer," "all season," "all-terrain," or "winter," as appropriate; spelling out speed ratings in common language instead of using symbols; including markings reflecting Uniform Tire Quality Grading (UTQG) for traction, treadwear, and temperature once these

ratings have been reviewed to ensure they are up-to-date; and adding the date of manufacture and the date a tire should be removed.

Thank you for considering our comments on this important topic. We look forward to continuing to work with NHTSA to ensure Federal Motor Vehicle Safety Standards stay up to date in order to best protect consumers.

Respectfully submitted,



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