

**U.S. Tire Manufacturers Association
Supplemental Technical Comments
Advanced Notice of Proposed Rulemaking
Federal Motor Vehicle Safety Standards; Tires,
84 FR 69698, RIN 2127-AL96 (December 19, 2019)
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U.S. Tire Manufacturers Association (USTMA)¹ appreciates the opportunity to provide additional technical comments to assist the National Highway Traffic Safety Administration (NHTSA) in the above-referenced rulemaking. These additional comments, promised in our February 18, 2020 comments, are intended to supplement our original comments. Particularly, USTMA provides comments regarding adopting provisions of the Global Technical Regulation (GTR) for tires, updating provisions of FMVSS 119 and 139 to reflect current products in the marketplace and updating the NHTSA Test Procedures. USTMA also offers additional information about market trends in the tire industry and requests that NHTSA publish its tire/rim matching letters on the NHTSA website to increase transparency and assist manufacturers.

I. USTMA Recommends Changes to Adopt Provisions of the Global Technical Standard No. 16 for Tyres (Tyre GTR) to Reduce Testing and Administrative Burdens and Enhance Tire Testing Requirements

As USTMA described in its February 18, 2020 comments, the U.S. government, represented by NHTSA, international governments, and the global tire industry, including USTMA (formerly RMA) and the U.S. tire manufacturing industry, have been active since 1997 with efforts to harmonize best regulatory practices into a global regulatory model for tires. Since the UNECE 1998 Agreement on

¹ USTMA is the national trade association for tire manufacturers that produce tires in the U.S. USTMA members operate manufacturing facilities in 17 states, employ nearly 100,000 workers and generate annual sales of more than \$27 billion. Our member companies include Bridgestone Americas; Continental Tire the Americas, LLC; Cooper Tire & Rubber Company; Giti Tire (USA) Ltd.; The Goodyear Tire & Rubber Company; Hankook Tire America Corp.; Kumho Tire U.S.A., Inc.; Michelin North America, Inc.; Nokian Tyres Inc.; Pirelli Tire LLC; Sumitomo Rubber Industries; Toyo Tire Holdings of Americas Inc. and Yokohama Tire Corporation.

Establishing Global Technical Regulations (“1998 Agreement”) was created, U.S. government and industry identified it as a promising vehicle for achieving harmonized regulatory tests for tires. Work began in earnest in the early 2000s to establish a global technical regulation for tires.

Today, nearly forty nations are contracting parties to the 1998 Agreement and representatives from many of these nations have actively participated in the development of the Global Technical Regulation No. 16 for Tyres (“Tyre GTR”), which was adopted in late 2014 and amended in 2016 and 2020. The objective of the Tyre GTR “is to establish provisions for new radial pneumatic tyres typically equipping passenger cars and light truck (commercial) vehicles up to and including 4,536 kg (10,000 pounds).”² The Tyre GTR provides testing standards and requirements for passenger tires in several key performance areas, including high speed, endurance, low pressure endurance, strength, resistance to bead unseating, rolling resistance, wet grip and noise, in addition to plant codes, markings and dimensions. USTMA believes the Tyre GTR increases regulatory cooperation among governments and has the potential to reduce non-tariff barriers to trade (technical barriers to trade). In a very competitive global tire industry, the reduction of technical barriers reduces unnecessary and duplicative testing and lowers costs without sacrificing safety, thus increasing the competitiveness of tires manufactured in the U.S.. As a contracting party to the agreement, USTMA encourages the U.S. to implement the agreed rules in the GTR, such as sidewall markings through NHTSA rulemakings.

a. NHTSA Should Adopt Harmonized High-speed Tests for Passenger Car Tires and Light Truck Tires

NHTSA should adopt the harmonized high-speed tests for passenger car tires and light truck tires contained in the Tyre GTR, which would provide the tire testing basis for marking tires with speed symbol, a marking that USTMA advocated in its February 18, 2020 comments. Harmonizing these tests

² UNECE World Forum for Harmonization of Vehicle Regulations, Proposal for Amendment No. 2 to UN GTR No. 16 (Tyres); <https://www.unece.org/fileadmin/DAM/trans/doc/2020/wp29/ECE-TRANS-WP29-2020-041e.pdf>.

would reduce duplicative testing requirements for tire manufacturers that are sold in multiple geographic markets, which would in turn lower regulatory compliance costs while increasing tire performance requirements for tire sold in the U.S.

In addition to modifying the testing requirements for some tires, harmonizing the high-speed test in FMVSS No. 139 with UN GTR No. 16 would necessitate NHTSA's adoption of the speed symbol concept in FMVSS No. 139. While nearly all tires subject to FMVSS No. 139 sold in the U.S. currently contain speed symbols, speed symbols currently are not regulated in the U.S. Adding speed symbols would allow NHTSA to tailor its requirements to a tire's speed capabilities and would upgrade NHTSA's current requirements. Additionally, due to testing efficiencies contained in the UN GTR No. 16 test, the new tests would reduce testing duration while increasing severity, which would reduce testing costs. Adopting the high-speed test in the Tyre GTR would improve the tire's ability to resist heat and accepting speed symbols into FMVSS 139 would eliminate the need for the UTQG Temperature test.

For passenger car tires, developing a harmonized test posed challenges, since UN Regulation No. 30 high-speed test and the high-speed test contained in FMVSS No. 139 were quite different. The FMVSS test focuses on assuring that a tire performs well at speeds significantly higher than U.S. posted speed limits, whereas the UN test assesses a tire's performance at its highest rated speed, as determined by the speed symbol on the tire's sidewall. During the development of the GTR-harmonized test, the global tire industry evaluated a significant volume of test data generated using each of the two test procedures to determine which test was most severe for tires with each tire speed symbol. Based on that evaluation, the Tyre GTR high speed test for passenger car tires is based on a combination of the FMVSS No. 139 high-speed test and the UN Regulation No. 30 high-speed test. Likewise, when the Tyre GTR high-speed performance test was harmonized for LT/C tires, the global tire industry used a similar approach to determine the most severe test for tires marked with each speed symbol by conducting an industry testing program.

The chart below shows the changes we recommend to the FMVSS No. 139 high-speed test:

<u>Tire type/speed symbol</u>	<u>Recommendation consistent with UN GTR No. 16</u>
Passenger car tires with speed symbols S or below	Retain FMVSS No. 139 S6.2 high-speed test
Passenger car tires with speed symbols T and above	Adopt UN GTR No. 16 Sections 3.6.1.4, 3.6.1.5, 3.6.1.6 and 3.6.1.7
LT/C tires with speed symbols P and below	Retain FMVSS No. 139 S6.2 high-speed test
LT/C tires with speed symbols Q and above	Adopt UN GTR No. 16 Section 3.6.2.2

Following the Tyre GTR, passenger car tires with lower speed ratings (speed symbol S and below) and LT/C tires with lower speed ratings (speed symbol P and below) would continue to be subject to the testing provisions currently contained in FMVSS No. 139 S6.2, since this test was found to be the most severe for these tires. For passenger car tires with higher speed symbols, UN Regulation No. 30 was shown to be more severe, so the Tyre GTR provisions include that test for passenger car tires with speed symbols T and above.

For LT/C tires with speed symbols Q and above, the Tyre GTR contains a modified version of the UN Regulation No. 54 load/speed endurance test method with demonstrated equivalency to the FMVSS 139 high-speed performance test in terms of test severity. This modified UN Regulation No. 54 test represents a more efficient test than the FMVSS 139 high-speed performance test because it is of shorter duration, which impacts the capacity of testing facilities and reduces testing costs while representing a test that is comparable in terms of safety. Additionally, eliminating the break-in and cool down cycles further economizes laboratory resources without affecting test results.

b. NHTSA should update the definitions and requirements included in FMVSS No. 139 to add definitions contained in the Tyre GTR

In its comments filed February 18, 2020 in this rulemaking, USTMA advocated that NHTSA update its marking requirements in FMVSS 139 to harmonize with the Tyre GTR. Now, USTMA encourages NHTSA to update its definitions in FMVSS 139 consistent with the recommendation to harmonize marking requirements.

Even though NHTSA abstained from voting when the most recent amendments to the Tyre GTR were approved by the World Forum for Harmonization of Vehicle Regulations in June 2020, USTMA encourages NHTSA to lead other nations that are Contracting Parties to the 1998 Agreement by adopting definitions and requirements contained in the Tyre GTR that are not included in FMVSS No. 139. These additional provisions will not create a new regulatory burden for tire manufacturers but will help to clarify the definitions, sidewall markings and dimensions currently applicable to most (if not all) passenger and light truck tires sold in the United States. These changes will streamline tire requirements globally and reduce costs for U.S. tire manufacturers without negatively impacting safety.

Below is a comprehensive list of definitions and requirements that USTMA urges NHTSA to adopt:

DEFINITIONS

<u>GTR</u>	<u>139</u>	<u>Description</u>
2.30	None	Add the GTR definition for "Intended outboard sidewall".
2.32	None	Add the GTR definition for "Light load tire".
2.34	None	Add the GTR definition for "Load index".
2.36	None	Add the GTR definition for "Load range" and the inflation table.
2.70	None	Add the GTR definition for "Section height".
2.72	None	Add the GTR definition for "Service description".
2.78	S3	Consider replacing the current FMVSS 139 definition for "Snow Tire" with a definition based on the GTR definition for "Snow tire for use in severe snow conditions," while continuing to specify the ASTM spin traction test method. This would also be consistent with the USTMA criteria for Alpine ("3-Peak Mountain with Snowflake") S
2.81	None	Add the GTR definition for "Speed symbol".

These additional definitions will help to clarify what is currently on the sidewall of most (if not all) passenger and light truck tires in the US market.

SIDEWALL MARKINGS

<u>GTR</u>	<u>139</u>	<u>Description</u>
3.3.1.2.2.	None	Country of Manufacture. This is already a U.S. requirement, so NHTSA does not need to add it to FMVSS.
3.3.1.2.3.2.	None	Add the GTR requirement for Service Description.
3.3.1.2.3.3.1.	S5.5(d)	Update language to match the GTR requirement for Load Range markings.
3.3.5.	S5.5.6	Update language to match the dual/single fitments stamping requirement in GTR addressing maximum load rating and corresponding inflation pressure.
3.3.6	None	Add the GTR marking requirement for EXTRA LOAD or LIGHT LOAD.
3.3.7	S5.5(g)	Update to match the GTR requirement of just TUBETYPE (eliminate "TUBELESS" marking).

These additional markings will help to clarify what is currently on the sidewall of most (if not all) passenger and light truck tires in the U.S. market.

DIMENSIONS

<u>GTR</u>	<u>139</u>	<u>Description</u>
3.5.1.2.5.	S6.1.1.2.1	Update to match the GTR requirement of "at least four equally spaced" instead of six. It was globally accepted at GTR, GRRF, GRBP, and WP.29 that at least four equally spaced measurements are enough to adequately measure the overall width of a tire.

II. NHTSA Should Revise the Definition in FMVSS 139 for "Severe Snow" to Reflect the Change from the Old 14" Standard Reference Test Tire (SRTT) to the 16" SRTT for Snow Testing, Consistent with ASTM F2493-19 and the USTMA Tire Information Service Bulletin No. 37³

FMVSS 571.139 currently uses outdated and superseded references to define "Snow Tire", stating that

Snow tire means a tire that attains a traction index equal to or greater than 110, compared to the ASTM E1136-93 (Reapproved 2003) (incorporated by reference, see §571.5) Standard Reference Test Tire when using the snow traction test as described in

³ U.S. Tire Manufacturers Association (USTMA), Tire Information Service Bulletin (TISB) 37 No. 6, "USTMA Definition for Passenger and Light Truck Tires for Use in Severe Snow Conditions, 2019.

ASTM F1805-00 (incorporated by reference, see §571.5), and that is marked with an Alpine Symbol specified in S5.5(i) on at least one sidewall.

USTMA recommends that this definition be updated as follows in FMVSS 139 (red text indicates recommended additions):

“Snow tire for use in severe snow conditions tire” (also known as a winter tire) means a tire that attains a traction index equal to or greater than 110, compared to the ASTM E1136-19 (incorporated by reference, see §571.5) Standard Reference Test Tire when using the snow traction test as described in ASTM F1805-20 (incorporated by reference, see §571.5) or equal to or greater than 112 compared to the ASTM F2493-19 (incorporated by reference, see §571.5) Standard Reference Test Tire (SRTT) when using the snow traction test as described in ASTM F1805-20 (incorporated by reference, see §571.5), and that is marked with an Alpine Symbol specified in S5.5(i) on at least one sidewall.

III. NHTSA Should Clarify the Permissible Markings for Light/Standard Load and Extra Load Tires

FMVSS 139 S5.2 (c) states a tire’s “permissible inflation pressure shall be 240, 280, 300, 340, or 350 kPa.” Similarly, FMVSS 109 S4.2.1 (b) that a tire’s “maximum permissible inflation pressure shall be either 32, 36, 40, or 60 psi or 240, 280, 300, 340, or 350 kPa.”

To reduce confusion, Tire & Rim Association (TRA) Year Book specifies that for Standard Load, Light Load, and Standard Load (ISO), the maximum permissible inflation pressure marking must be either 240 kPa (35 psi), 300 kPa (44 psi), or 350 kPa (51 psi). For Extra Load (XL) and XL (ISO) the maximum permissible inflation pressure marking must be either 280 kPa (41 psi) or 340 kPa (50 psi).

Certain European original equipment manufacturers (OEMs) often pressure tire manufacturers to mark XL tires with a maximum inflation pressure of 350 kPa (51 psi). Per the current FMVSS regulations, it is unclear whether XL tires can be marked with 350 kPa (51 psi). A table clearly indicating that the plunger energy requirement for SL tires is 2,600 in-lbs. and for XL tires is 5,200 in-lbs. would be clear and remove any potential misinterpretation. This is the approach used in the approved GTR No. 16, which clearly shows test provisions based on LL, SL or XL, not by Inflation pressure marking.

USTMA recommends that NHTSA clarify whether 350 kPa is acceptable as a “Maximum Permissible Inflation Pressure” marking for XL tires. Industry also requests NHTSA rewrite FMVSS 139/109 to clarify marking and testing based on load classification (Light Load, Standard Load, Extra Load) instead of on inflation pressure marking.

IV. NHTSA Should Remove References to Gross Vehicle Weight Rating (GVWR) from FMVSS 119 and 139 to Improve Clarity for Compliance Purposes

USTMA recommends that NHTSA remove references to Gross Vehicle Weight Rating (GVWR) from FMVSS 119 and FMVSS 139 because in some cases the reference to GVWR in these standards can cause confusion for tire manufacturers in determining which standard a tire must comply. Additionally, the reference to GVWR provides no value to governmental regulatory agencies or any discernable safety benefit.

For those Federal Motor Vehicle Safety Standards (FMVSS) which apply to the vehicle, such as FMVSS 110 and FMVSS 120, the differentiation of vehicles by Gross Vehicle Weight Rating (GVWR) is appropriate. However, the inclusion of GVW rating to tire safety standards such as FMVSS 139 and FMVSS 119, the GVWR reference is inappropriate. Comparatively, FMVSS 109 contains no reference to GVWR. By way of example, we will demonstrate how the inclusion of GVWR to tire standards adds confusion to tire manufacturers and users. Additionally, it is not clear how the GVWR adds any value to government regulatory agencies, whether NHTSA or other agencies.

Tire safety standards specify regulatory requirements based on the class of tire referenced within the title, scope, and/or application. The vehicle GVWR may have no direct relationship on the type of tire selected for the vehicle or its acceptability for use. Conversely, within the vehicle safety standards (FMVSS 110 and 120) it is certainly appropriate for the regulatory authorities to specify the type of tire that may be applied to a given class of vehicle, the tire loading criteria, and tire reserve load

requirements, if so regulated. This distinction is critical, as the tire does not know the vehicle's gross weight rating. The critical factor is the vehicle load component on each individual tire.

a. Including GVWR in FMVSS for tires (FMVSS 119 and 139) creates confusion about which standard applies to some tires

Following are examples to demonstrate the confusion and lack of clarity in specifying vehicle GVWR in tire safety standards. Actual vehicles names and models are provided to allow the agency to verify these examples. The listed models are typical of the industry. Other brands and models will have similar applications.

In conclusion, for vehicle regulations such as FMVSS 110 and FMVSS 120 it is appropriate to differentiate vehicles by GVWR and to prescribe requirements as to what types of tires can be fitted to these vehicles and under what constraints, such as loading limitations, reserve load, placard inflation pressures, etc. Tire regulations do not require a reference to GVWR. Removing the GVWR references from tire regulations will increase clarity and transparency for tire manufacturers, thus reducing costs and barriers to compliance, as well as to assist the Agency in compliance testing for tire standards FMVSS 119 and 139.

This confusing practice of referencing GVWR in tire regulations was replicated in the Tyre GTR because U.S. Department of Transportation Federal Motor Vehicle Safety Standards (FMVSS) are considered authoritative regulations for the development of GTRs. Yet, the fact that the references to GVWR are now included in the Tyre GTR does not justify maintaining these references in FMVSS 119 and 139. The U.S. can take the lead in keeping tire regulations distinct and separate from vehicle regulations, by removing reference to GVWR tire regulations. Further, upon removing these references from FMVSS 119 and 139, USTMA recommends that NHTSA pursue their removal from the Tyre GTR.

Example 1. Light Truck Applications

a) LT245/75R17 Load Range E Load Index 121/118

- i. Ford F350 Super Duty XLT (Dual Rear Wheels)
GVWR = 14,000 lb**
- ii. Ford F350 4 x 2 Single Rear Wheels
GVWR = 9,900 lb**
- iii. Nissan Titan XD S
GVWR = 8,600 lb**
- iv. GMC Sierra 2500 HD
GVWR > 11,000 lb**
- v. Chevrolet Silverado 2500 HD LT
GVWR = 10,300 lb**

In this example, the same tire is an appropriate fitment for several vehicles, some with GVWR above 10,000 lb and others with GVWR below 10,000 lb. The tire size on each vehicle is identical. Tire loading is appropriate for each vehicle. The tire does not know the vehicle GVWR. The tire manufacturer does not know on which vehicle the vehicle manufacturer or the consumer will install the tires. The tires can only be tested to one safety standard (based on test conditions within the appropriate standard). Including the GVWR as a differentiator within the tire safety standard is confusing and meaningless.

b) LT275/70R18 Load Range E Load Index 125/122

- i. Chevrolet Silverado 2500 HD LT
GVWR = 10,450 lb**
- ii. Super Duty F350 XLT SRW, 4x4 Regular Cab XLT
GVWR = 9,900 lb**

In this example, the same tire is an appropriate fitment on one vehicle with GVWR above 10,000 lb and another with GVWR below 10,000 lb. The tire size on each vehicle is identical. Tire loading is appropriate for each vehicle. The tire does not know the vehicle GVWR. The tire manufacturer does not know on which vehicle the vehicle manufacturer or the consumer will install the tires. The tires can only be tested to one safety standard (based on test conditions within the appropriate standard). Including the GVWR as a differentiator within the tire safety standard is confusing and meaningless.

Example 2. Trailer Applications

Haulmark Gooseneck Race Trailers

(not a current model year fitment, but the example is valid)

Race Trailer WT3

GVWR = 10,000 lb

Tandem 5,200 lb GAWR axles

4 tires: ST225/75R15 Load Range D tires

Load Index (Single/Dual) = 113/108

Race Trailer WR3

GVWR = 15,000 lb

Triple 5,200 lb GAWR axles

6 tires: ST225/75R15 Load Range D tires

Load Index (Single/Dual) = 113/108

In this example, the same tire is the appropriate fitment for two different trailers – one with 10,000 lb GVWR and the other with 15,000 lb GVWR. The tire does not know the GVWR. Each tire is appropriate for the axle rating and the individual tire load. ST (Special Trailer) tires are only regulated under 571.119. Including the GVWR as a differentiator within the tire safety standard is confusing and meaningless.

Example 3. Medium Truck Application

(hypothetical illustration, no known commercial applications)

§ 571.120 S5.1.2

.....When a passenger car tire is installed on a multipurpose passenger vehicle, truck, bus, or trailer, the tire's load rating shall be reduced by dividing by 1.10 before calculating the sum (i.e., the sum of the load ratings of the tires on each axle, when the tires' load carrying capacity at the recommended tire cold inflation pressure is reduced by dividing by 1.10, must be appropriate for the GAWR).

Tire: P305/45R22 Extra Load Tire; Load Index = 118

2,910 lb @ 41 psi

Reduce by 1.10 for truck application (per § 571.120 S5.1.2)

(2,910 lb / 1.10) = 2,645 lb

i. Box Truck Illustration:

Single front steer axle - 5,000 lb GAWR

Twin rear drive axles, dual fitment - 10,000 lb GAWR each

Truck GVWR = 25,000 lb

(Could be fitted with passenger car tires!)

This is an extreme example, with remote probability of application. However, it does illustrate that by following the passenger car tire '1.10 load reduction', even de-rated passenger car tires could theoretically carry the loads in this box truck example. The use of

passenger car tires on such a truck would not be a desired application since passenger car tires are not typically rated (intended) for dual application. Adding more clarity to § 571.120 S5.1.2 would be helpful; perhaps stating the passenger car tires, even if de-rated, are only intended for single application.

b. USTMA Recommendations to Amend FMVSS 119 and FMVSS 139 to Remove GVWR and Add Specificity to the Applicability of Each Standard

i. Recommended changes to FMVSS 119

FMVSS 119 contains a GVWR reference in the title (49 CFR 571.119), Scope (49 CFR 571.119 S1), and Application (49 CFR 571.119 s3). USTMA recommends the revision of FMVSS 119 as follows to reduce confusion (recommended additions shown in red text; recommended deletions shown in red strikeout):

TITLE: “§ 571.119 Standard No. 119; New pneumatic tires for **medium and heavy** motor vehicles ~~with a GVWR of more than 4,536 kilograms (10,000 pounds)~~ and motorcycles.” This change would make the language in the title of FMVSS 119 consistent with the title of FMVSS 139 and remove the reference to GVWR.

S1. Scope. This standard establishes performance and marking requirements for **new pneumatic** tires for use on **medium and heavy** motor vehicles ~~with a GVWR of more than 10,000 pounds~~ and motorcycles.

S2. Purpose. The purpose of this standard is to provide safe operational performance levels for tires used on **medium and heavy motor** vehicles ~~with a GVWR of more than 10,000 pounds~~, trailers, and motorcycles, and to place sufficient information on the tires to permit their proper selection and use.

S3. Application. This standard applies to:

~~(a) New pneumatic tires for use on motor vehicles with a GVWR of more than 4,536 kilograms (10,000 pounds) manufactured after 1948;~~

(a) Bias ply light truck tires;

(b) Radial light truck tires with a tread depth of 18/32 inch or greater, ~~for use on motor vehicles with a GVWR of 4,536 kilograms (10,000 pounds) or less~~ manufactured after 1948;

(c) Radial light truck tires with a sidewall marking for inflation pressure of 650 kPa (95 psi) or greater;

(d) Bias and radial commercial truck-bus and trailer tires;

(~~ee~~) Tires for use on special-use trailers (ST, FI and 8-12 rim or lower diameter code); and

(~~df~~) Tires for use on motorcycles manufactured after 1948.

ii. Recommended changes to FMVSS 139

FMVSS 139 contains the GVWR reference within the Application section (49 CFR 571.139 S2) as well as the Definition of Passenger car tire (49 CFR 571.139 S3). USTMA recommends the following changes to FMVSS 139 (shown in red text):

S2 Application. This standard applies to new pneumatic radial tires for use on light 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. ~~This standard does not apply to special tires (ST) for trailers in highway service, tires for use on farm implements (FI) in agricultural service with intermittent highway use, tires with rim diameters of 8 inches and below, or T-type temporary use spare tires with radial construction.~~

This standard applies to:

- (a) Radial passenger car tires; and
- (b) Radial light truck tires with a load range up through F and a sidewall marking for inflation pressure of less than 650 kPa (95 psi)

This standard does not apply to:

- (a) Bias ply passenger tires (*see* FMVSS 109);
- (b) Bias ply light truck tires (*see* FMVSS 119);
- (c) Radial light truck tires with a tread depth of 18/32nds of inch or greater (*see* FMVSS 119);
- (d) Radial light truck tires with a sidewall marking for inflation pressure of 650 kPa (95 psi) or greater (*see* FMVSS 119);
- (e) Special tires (ST) for trailers in highway service (*see* FMVSS 119);
- (f) Tires for use on farm implements (FI) in agricultural service with intermittent highway use (*see* FMVSS 119);
- (g) Tires with rim diameters of 8 inches and below (*see* FMVSS 109); and
- (h) T-type temporary use spare tires with radial construction (*see* FMVSS 109).

V. USTMA Recommends Updates to FMVSS No. 119 to Reflect Current Products in the U.S. Tire Market

a. USTMA Recommends Updates to FMVSS No. 119, Table II to add missing values

On January 10, 2013, NHTSA published a supplemental notice of proposed rulemaking that would correct and update FMVSS 119 (“2013 SNPRM”).⁴ USTMA continues to support these updates and corrections and advocates that NHTSA publish a final rule to implement them. In addition, USTMA proposes values of breaking energy (BE) in Table II for Load Range L, M, and N tubeless truck tires, see the red text in Table II below.⁵

The proposal is based on the following (*see* Table A-1 and Chart A-2):

1. The recommendation is based on Load Range C through J tube-type versus tubeless BE ratios, with the extension of the tubeless curve based on the 78 percent of the tube-type ratio starting from the Load Range G, H, and J points.
2. Averaging the last 3 BE tube-type versus tubeless values for LR G, H, and J gives 77.3 percent and adopting the 78 percent of the tube-type values is recommended for the LR L, M, and N tubeless truck tires.
3. Individual company internal BE guidelines are similar to the values proposed in this document. Actual customers’ tire experience and the absence of reported performance issues justify the acceptance of these minimum BE performance values.

⁴ 78 Fed. Reg. 2,236 (January 10, 2013).

⁵ Table II is the version of the table that appeared in the above-referenced 2013 Federal Register Notice. That notice contained several proposed changes to the referenced table, including returning Load Range A through E bias ply tires to the tables, which had been inadvertently removed from the eCFR by the Government Printing Office sometime in the past. USTMA continues to support this important update, in addition to the update described below.

Table II—Minimum Static Breaking Energy: **Red Text = Proposal** (Base table is version contained in 2013 SNPRM)

Tire characteristic	Motorcycle		All 12 rim diameter code or smaller except motorcycle		Tubeless 17.5 rim diameter code or smaller and Light Truck		Tires other than Light Truck, Motorcycle, 12 rim diameter code or smaller							
							Tube type greater than 12 rim diameter code				Tubeless greater than 17.5 rim diameter code			
Plunger diameter (mm and inches)	7.94 mm	5/16"	19.05 mm	3/4"	19.05 mm	3/4"	31.75 mm	1 ¼"	38.10 mm	1 ½"	31.75 mm	1 ¼"	38.10 mm	1 ½"
Breaking Energy	J	in-lb	J	in-lb	J	in-lb	J	in-lb	J	in-lb	J	in-lb	J	in-lb
Load Range:														
A.....	16	150	67	600	225	2,000	.....	.....	.....	.....	.....	.....	.....	.....
B.....	33	300	135	1,200	293	2,600	.....	.....	.....	.....	.....	.....	.....	.....
C.....	45	400	203	1,800	361	3,200	768	6,800	.....	.....	576	5,100	.....	.....
D.....	.....	.....	271	2,400	514	4,550	892	7,900	.....	.....	734	6,500	.....	.....
E.....	.....	.....	338	3,000	576	5,100	1,412	12,500	.....	.....	971	8,600	.....	.....
F.....	.....	.....	406	3,600	644	5,700	1,785	15,800	.....	.....	1,412	12,500	.....	.....
G.....	.....	.....	.....	.....	711	6,300	.....	.....	2,282	20,200	.....	.....	1,694	15,000
H.....	.....	.....	.....	.....	768	6,800	.....	.....	2,598	23,000	.....	.....	2,090	18,500
J.....	.....	.....	.....	.....	.....	.....	.....	.....	2,824	25,000	.....	.....	2,203	19,500
L.....	.....	.....	.....	.....	.....	.....	.....	.....	3,050	27,000	.....	.....	2,383	21,100
M.....	.....	.....	.....	.....	.....	.....	.....	.....	3,220	28,500	.....	.....	2,519	22,300
N.....	.....	.....	.....	.....	.....	.....	.....	.....	3,389	30,000	.....	.....	2,643	23,400

NOTE: For rayon cord tires, applicable energy values are 60 percent of those in table.

[Joules (J) and Inch-Pounds (in-lb)]

Proposed Minimum Static Breaking Energy (in-lbs)						
Load Range	Tube-Type Current FMVSS 119	Tubeless Current FMVSS 119	Tubeless BE = % Tube-Type	78% Tube-Type (LR L, M, N) Proposed	Tubeless BE LR L, M, N Proposed (in-lbs)	Tubeless BE LR L, M, N Proposed (Joules)
C*	6,800	5,100	75%			
D*	7,900	6,500	82%			
E*	12,500	8,600	69%			
F*	15,800	12,500	79%			
G	20,200	15,000	74%			
H	23,000	18,500	80%			
J	25,000	19,500	78%			
L	27,000		78%	21,060	21,100	2,383
M	28,500		78%	22,230	22,300	2,519
N	30,000		78%	23,400	23,400	2,643

* Greater than 17.5" rim diameter code

Table A-1

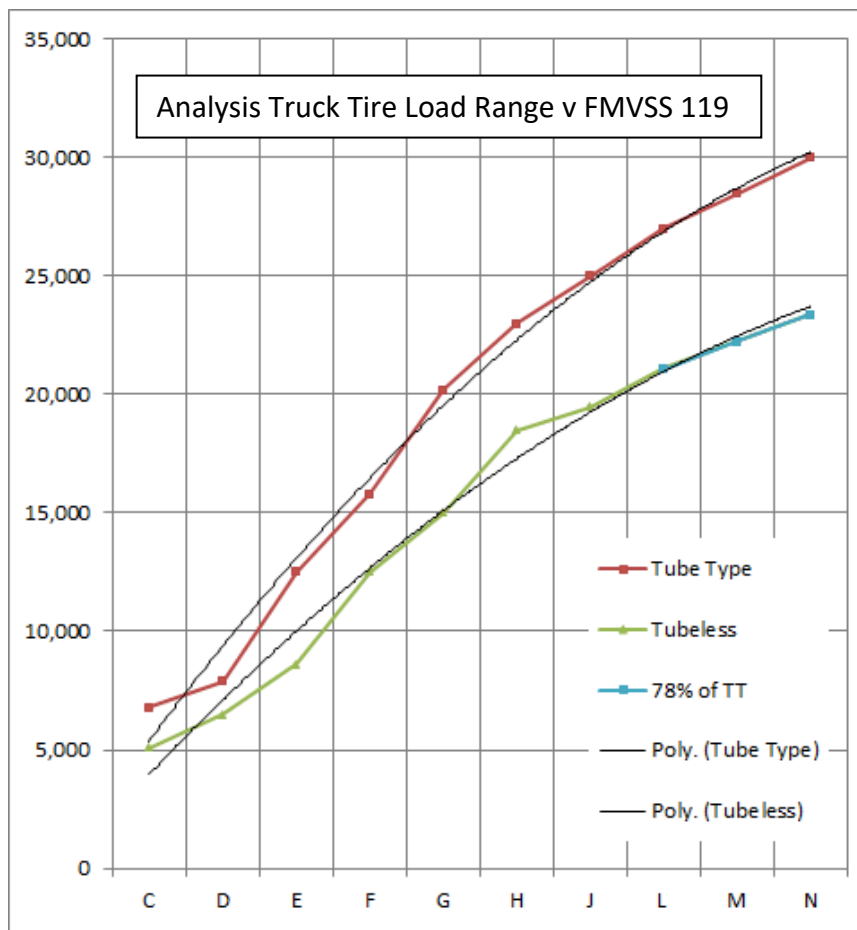


Chart A-2.

b. Add a New Category for 43 mph Speed Restricted Rires in the Description Column of FMVSS No. 119 Table III (Endurance Test Schedule), with Test Wheel Speed, Test Load and Total Test Revolution Values per Load Range “L” and Higher.

FMVSS 119 Table III “Endurance Test Schedule” needs to be updated to reflect the current industry criteria, especially as it relates to certain heavy duty, large load capacity tires. In 2010, 70 km/h (43 mph) “speed restricted service” tires (international speed symbol “E”), an additional class of mobile crane tires, were standardized by the Tire and Rim Association, Inc. (TRA), the European Tyre and Rim Technical Organisation (ETRTO), and the Japan Automobile Tire Manufacturers’ Association (JATMA). These speed-restricted service tires should be referenced in Table III of FMVSS 119.

USTMA requests that NHTSA amend FMVSS 119 Table III to add a row providing values for 70 kph (43 mph) “speed-restricted service” tires (international speed symbol “E”). Using the version of Table III proposed in the NHTSA September 29, 2010 notice of proposed rulemaking (“2010 NPRM”)⁶, proposes that NHTSA amend Table III as shown below:

Table III—Endurance Test Schedule: **Red Text = Proposal** (Base table is version contained in 2010 NPRM)

Description	Load range	Test wheel speed	Test load: Percent of maximum load rating		
		km/h	Step I (7 hours)	Step II (16 hours)	Step III (24 hours)
Speed-restricted service:					
90 km/h (55 mph)	All	40	66	84	101
80 km/h (50 mph)	C, D	48	75	97	114
	E, F, G, H, J, L, M, N	32	66	84	101
70 km/h (43 mph)	All	28	66	84	101
56 km/h (35 mph)	All	24	66	84	101
Motorcycle	All	80	^a 100	^b 108	117
Radial	F, G, H, J, L	80	85	90	100
All other	A, B, C, D	80	^a 75	^b 97	114
	E	64	70	88	106
	F	64	66	84	101
	G	56	66	84	101
	H, J, L, M, N	48	66	84	101

^a 4 hours for tire sizes subject to high speed requirements S6.3.

^b 6 hours for tire sizes subject to high speed requirements S6.3.

⁶ 75 Fed. Reg. 60,036 (September 29, 2010).

c. Review and Update Test Procedures (TPs)

USTMA recommends that NHTSA review and update the test procedures for FMVSS 139 to assure their consistency with regulatory requirements and to assure that they reflect current testing practices.

VI. New Trends in Tire Markets

USTMA also takes this opportunity to provide additional information to NHTSA regarding new trends in the marketplace that have the potential to affect tire and vehicle safety. Two such new trends are high load capacity (“HLC”) tires and J-N Rim contours, which are both described below.

a. High Load Capacity (“HLC”) Tires

HLC tires are an emerging segment of Extra Load (XL) tires. These tires have increased load capacity compared to current XL (extra load) tires, at the same reference inflation pressure (290 kPa.) The driving force for these tires is from the original equipment vehicle manufacturers. They are developing heavier vehicles on existing platforms, therefore being restricted from using larger tires. Electrification of internal combustion engine (ICE) vehicles is a key factor, but commercialization of these HLC tires will not be limited to electric vehicles.

The current indication is that these tires will be differentiated from current XL tires by a ‘HL’ prefix to the tire size. These tires will be fully compliant with FMVSS 139 as it is now published. All required test procedures are fully compatible with HLC tires. Test inflation pressures will be the same as current XL tires. Test loads, as appropriate, will be the promulgated load as a percent of the load marked on the sidewall (same as current XL tires). No additional regulatory action is required for these HLC tires. However, the industry has made NHTSA aware of the confusion regarding the marking of maximum permissible inflation pressure for XL tires. Any regulatory clarification for XL maximum permissible inflation pressure would also be appropriate for HLC tires.

Currently, no HLC tires are published in any of the standards organizations publications listed in 571.139 S4(b) but are expected to be added by 2022. HLC tires will be standard equipment on selected new vehicles starting in 2021. Therefore, HLC tires will also appear in the replacement market at the same time. Until the time of publication, tire manufacturers can notify NHTSA in compliance with 571.139 S4 Tire and rim matching information, S4.1, and S4.1.1 (a).

b. J-N Rim Contours

A few European vehicle manufacturers have begun to specify a rim on certain vehicles that has an outboard flange that is a narrower width (8 – 15 mm) than a normal rim flange (11 – 15 mm). Called the “J-N contour” rim, this type of rim was introduced in the past to reduce the weight of the rim and has been specified by vehicle manufacturers on new vehicles sold in the U.S. on a very limited basis since then. Recently per the European Tyre and Rim Technical Organization (ETRTO), these rims should be marked with a “- N” after the rim size designation, for example 15 x 4 ½ J – N.

The J-N contour changes the contact area and radius between the bead area of the tire and is not a standardized rim dimension across regional tire standards organizations. The J-N contour is standardized only by the ETRTO and is not recognized by the Tire and Rim Association (TRA) in the U.S. nor the Japan Automobile Tire Manufacturers Association (JATMA). TRA and JATMA do not recognize J-N due to concern that the new flange could potentially cause higher stresses to the bead area of the tire, particularly when replacement tires are not specifically designed for these rims. When installed with an original equipment tire on a new vehicle as an OE fitment, performance is expected to be acceptable.

In July 2018, USTMA published a Tire Information Service Bulletin (TISB), TISB 51 “J-N Rim Contour on Certain Passenger Vehicles”⁷ explaining certain original equipment vehicle manufacturers are using a

⁷ USTMA makes its Tire Information Service Bulletins (TISBs) available on its website free of charge. TISB 51, “J-N Contour on Certain Passenger Vehicles” is available at https://www.ustires.org/sites/default/files/TISB_51_2018.pdf.

new rim contour with a narrow flange width on the outboard side only and that these wheels have the letter 'N' stamped as part of the size designation.

VII. Increasing Transparency

a. Make Tire and Rim Matching Letters Public

USTMA recommends that NHTSA publish on its website letters that tire manufacturers submit to the agency pursuant to FMVSS 139 S4.1.1. Referred to as “tire and rim matching letters,” these letters provide “dimensional specifications and a diagram of the rim or increased load over any published values. A tire manufacturer would submit a tire and rim matching letter to NHTSA if a tire or rim dimension is not included in a publication of one of the tire standards organizations listed in the regulation or if a tire has an increased load capacity over those dimensions included in a standards manual. When such a tire would use an existing, published rim dimension, a tire manufacturer is not required to submit a diagram.

Typically, tires not listed in a tire standards organization publication are new market entrants. Publishing the tire and rim matching letters would assist tire manufacturers in better understanding emerging trends in tire sizes, thus enhancing competition among tire manufacturers.