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Proposed Standard No. 139; New pneumatic tires for motor vehicles with a GVWR of 10,000 pounds or less.
Submittal to Docket No. NHTSA-00-8011 -28

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For the convenience of the reader, we have attached a document that shows how the proposed regulatory text in the Notice of Proposed Rulemaking (NPRM) for improved tire safety information, Docket No. NHTSA-01-11157 (66 FR 65536; December 19, 2001) and the proposed regulatory text in the NPRM for new and more stringent tire performance requirements, Docket No. NHTSA-00-8011 (67 FR 10049; March 5, 2002), may appear together in Standard No. 139; New pneumatic tires for motor vehicles with a GVWR of 10,000 pounds or less.

Attachment

§ 571.139 Standard No. 139; New pneumatic tires for motor vehicles with a GVWR of 10,000 pounds or less.

S1. *Scope and purpose.* This standard specified tire dimensions, test requirements, labeling requirements, and defines tire load ratings.

S2. *Application.* This standard applies to new pneumatic tires for use on motor vehicles (other than motorcycles) that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less and that were manufactured after 1975.

S3. *Definitions.*

Bead means the part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

Bead separation means a breakdown of the bond between components in the bead.

Bias ply tire means a pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

Carcass means the tire structure, except tread and sidewall rubber which, when inflated, bears the load.

Chunking means the breaking away of pieces of the tread or sidewall.

Cord means the strands forming the plies in the tire.

Cord separation means the parting of cords from adjacent rubber compounds.

Cracking means any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

CT means a pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Extra load tire means a tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Groove means the space between two adjacent tread ribs.

Innerliner means the layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

Innerliner separation means the parting of the innerliner from cord material in the carcass.

Light truck (LT) tire means a tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating means the maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating means the load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure means the maximum cold inflation pressure to which a tire may be inflated.

Measuring rim means the rim on which a tire is fitted for physical dimension requirements.

Open splice means any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

Outer diameter means the overall diameter of an inflated new tire.

Overall width means the linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

Ply means a layer of rubber-coated parallel cords.

Ply separation means a parting of rubber compound between adjacent plies.

Pneumatic tire means a mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Radial ply tire means a pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

Reinforced tire means a tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Rim means a metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

Section width means the linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

Sidewall means that portion of a tire between the tread and bead.

Sidewall separation means the parting of the rubber compound from the cord material in the sidewall.

Test rim means the rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

Tread means that portion of a tire that comes into contact with the road.

Tread rib means a tread section running circumferentially around a tire.

Tread separation means pulling away of the tread from the tire carcass.

Treadwear indicators (TWI) means the projections within the principle grooves designed to give a visual indication of the degrees of wear of the tread.

Wheel-holding fixture means the fixture used to hold the wheel and tire assembly securely during testing.

S4. *Tire and rim matching information.*

S4.1. Each manufacturer of tires shall ensure that a listing of the rims that may be used with each tire that it produces is provided to the public in accordance with S4.1.1 and S4.1.2.

S4.1.1 Each rim listing for a tire shall include dimensional specifications and a diagram of the rim and shall be in one of the following forms:

(a) Listed by manufacturer name or brand name in a document furnished to dealers of the manufacturer's tires, to any person upon request, and in duplicate to: Docket Section, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590; or

(b) Contained in publications, current at the date of manufacture of the tire or any later date, of at least one of the following organizations:

(1) The Tire and Rim Association.

(2) The European Tyre and Rim Technical Organization.

(3) Japan Automobile Tire Manufacturers' Association, Inc.

(4) Tyre & Rim Association of Australia.

(5) Associacao Latino Americana de Pneus e Aros (Brazil).

(6) South African Bureau of Standards.

S4.1.2 A listing compiled in accordance with paragraph (a) of S4.1.1 need not include dimensional specifications or a diagram of a rim whose dimensional specifications and diagram are contained in a listing published in accordance with paragraph (b) of S4.1.1.

S4.2. Information contained in a publication specified in S4.1(b) that lists general categories of tires and rims by size designation, type of construction, and/or intended use, shall be considered to be manufacturer's information pursuant to S4.1 for the listed tires, unless the publication itself or specific information provided according to S4.1(a) indicates otherwise.

S5. *General requirements.*

S5.1. *Size and construction.* Each tire shall fit each rim specified for its size designation in accordance with S4.1.

S5.2 *Performance requirements.* Each tire shall conform to each of the following:

(a) It shall meet the requirements specified in S6 for its tire size designation, type, and maximum permissible inflation pressure.

(b) It shall meet each of the applicable requirements set forth in paragraphs (c) and (d) of this S5.2, when mounted on a model rim assembly corresponding to any rim designated by the tire manufacturer for use with the tire in accordance with S4.

(c) Except in the case of a CT tire, its maximum permissible inflation pressure shall be either 32, 36, 40, or 60 psi, or 240, 280, 300, 340, or 350 kPa. For a CT tire, the maximum permissible inflation pressure shall be either 290, 330, 350, or 390 kPa.

(d) Its load rating shall be that specified either in a submission made by an individual manufacturer, pursuant to S4, or in one of the publications described in S4 for its size designation, type and each appropriate inflation pressure. If the maximum load rating for a particular tire size is shown in more than one of the publications described in S4, each tire of that size designation shall have a maximum load rating that is not less than the published maximum load rating, or if there are differing maximum load ratings for the same tire size designation, not less then the lowest published maximum load rating.

S5.3. *Test sample.* For the tests specified in S6, use:

(a) One tire for high speed;

(b) Another tire for endurance and high speed low inflation pressure performance;

(c) Another tire for road hazard impact test and bead unseating; and

(d) A fourth tire for aging effects.

S5.4. *Treadwear indicators.* Except in the case of tires with a 12-inch or smaller rim diameter, each tire shall have not less than six treadwear indicators spaced approximately equally around the circumference of the tire that enable a person inspecting the tire to determine visually whether the tire has worn to a tread depth of one sixteenth of an inch. Tires with 12-inch or smaller rim diameter shall have not less than three such treadwear indicators.

S5.5 *Tire Markings.* Except as specified in paragraphs (a) through (i) of this S5.5, each tire shall be marked on each sidewall with the information specified in S5.5 (a) through (e) and on one sidewall with the information specified in S5.5 (f) through (i). The markings shall be placed between the maximum section width and the bead on at

least one sidewall, unless the maximum section width of the tire is located in an area which is not more than one-fourth of the distance from the bead to the shoulder of the tire. If the maximum section width falls within that area, those markings shall appear between the bead and a point one-half the distance from the bead to the shoulder of the tire, on at least one sidewall. The markings shall be in letters and numerals not less than 0.078 inch high and raised above or sunk below the tire surface not less than 0.015 inch. The tire identification and DOT symbol labeling shall comply with part 574 of this chapter.

(a) The symbol DOT, which shall constitute a certification that the tire conforms to applicable Federal motor vehicle safety standards;

(b) The tire identification number required by part 574 of this chapter;

(c) The tire size designation as listed in the documents and publications specified in S4.1.1;

(d) The maximum permissible inflation pressure;

(e) The maximum load rating;

(f) The generic name of each cord material used in the plies (both sidewall and tread area) of the tire;

(g) The actual number of plies in the sidewall, and the actual number of plies in the tread area if different;

(h) The words "tubeless" or "tube type" as applicable; and

(i) The word "radial" if the tire is a radial ply tire.

S5.5.1 Each tire shall be labeled with the name of the manufacturer, or brand name and number assigned to the manufacturer in the manner specified in part 574.

S5.5.2 [Reserved]

S5.5.3 If the maximum inflation pressure of a tire is 240, 280, 290, 300, 330, 340, 350 or 390 kPa, then:

(a) Each marking of that inflation pressure pursuant to S5.5(d) shall be followed in parenthesis by the equivalent psi, rounded to the next higher whole number; and

(b) Each marking of the tire's maximum load rating pursuant to S5.5(e) in kilograms shall be followed in parenthesis by the equivalent load rating in pounds, rounded to the nearest whole number.

S5.5.4 If the maximum inflation pressure of a tire is 420 kPa (60 psi), the tire shall have permanently molded into or onto both sidewalls, in letters and numerals not less than ½ inch high, the words "Inflate to 60 psi" or "Inflate to 420 kPa (60 psi)." On both sidewalls, the words shall be positioned in an area between the tire shoulder and the bead of the tire. However, in no case shall the words be positioned on the tire so that they are obstructed by the flange of any rim designated for use with that tire in this standard or in Standard No. 110 (§ 571.110 of this part).

S6. *Test procedures, conditions and performance requirements.* Each tire shall meet all of the applicable requirements of this section when tested according to the conditions and procedures set forth in S5 and S6.1 through S6.7.

S6.1. *Tire dimensions.*

S6.1.1 *Test conditions and procedures.*

S6.1.1.1 *Tire Preparation.*

S6.1.1.1.1 Mount the tire on the measuring rim specified by the tire manufacturer or in one of the publications listed in S4.1.1

S6.1.1.1.2 In the case of a P-metric tire, inflate it to the pressure specified in the following table:

Radial and Bias-belted inflation pressure (kPa)		Diagonal (bias-ply) inflation pressure (kPa)			T-type temporary use spare inflation pressure (kPa)	CT Tires (kPa)	
Standard	Reinforced	Ply rating				Standard	Reinforced
		4	6	8			
180	220	170	190	220	420	230	270

S6.1.1.1.3 In the case of a LT tire, inflate it to the pressure index given by the manufacturer.

S6.1.1.1.4 Condition the assembly at 25 $\pm$ 5° C for not less than 24 hours.

S6.1.1.1.5 Readjust the tire pressure to that specified in S6.1.1.2.

S6.1.1.2 *Test Procedure.*

S6.1.1.2.1 Measure the section width and overall width by caliper at six points approximately equally spaced around the circumference of the tire, avoiding measurement of the additional thickness of the special protective ribs or bands. The average of the measurements so obtained are taken as the section width and overall width, respectively.

S6.1.1.2.2 Determine the outer diameter by measuring the maximum circumference of the tire and dividing the figure so obtained by Pi (3.14).

S6.1.2 *Performance Requirements.* The actual section width and overall width for each tire measured in accordance with S6.1.1.2, shall not exceed the section width specified in a submission made by an individual manufacturer, pursuant to S4.1.1(a) or in one of the publications described in S4.1.1(b) for its size designation and type by more than:

(a) (For tires with a maximum permissible inflation pressure of 32, 36, or 40 psi) 7 percent, or

(b) (For tires with a maximum permissible inflation pressure of 240, 280, 290, 300, 330, 350 or 390 kPa, or 60 psi) 7 percent or 10 mm (0.4 inches), whichever is larger.

S6.2 *High Speed.*

S6.2.1 *Test conditions and procedures.*

S6.2.1.1 *Preparation of tire.*

S6.2.1.1.1 Mount the tire on a test rim and inflate it to the pressure specified for the tire in the following table:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard load	220
Extra load	260
Load Range C	320
Load Range D	410
Load Range E	500
CT:	
Standard load	270
Extra load	310

S6.2.1.1.2. Condition the assembly at 35 ± 5° C for not less than three hours.

S6.2.1.1.3 Before or after mounting the assembly on a test axle, readjust the tire pressure to that specified in S6.2.1.1.1.

S6.2.1.2. *Test procedure.*

S6.2.1.2.1 Press the assembly against the outer face of a test drum with a diameter of 1.70 m ± 1%.

S6.2.1.2.2 Apply to the test axle a load equal to 85% of the tire's maximum load carrying capacity.

S6.2.1.2.3 Break-in the tire by running it for 15 minutes at 80 km/h.

S6.2.1.2.4 Allow tire to cool to 40°C and readjust inflation pressure to applicable pressure in 6.2.1.1.1 immediately before the test.

S6.2.1.2.5 Throughout the test, the inflation pressure is not corrected and the test load is maintained at the value applied in S6.2.1.2.2.

S6.2.1.2.6 During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, shall be maintained at not less than 40° C.

S6.2.1.2.7 The test is conducted, continuously and uninterrupted, for ninety minutes through three thirty minute consecutive test stages at the following speeds: 140, 150, and 160 km/h.

S6.2.1.2.8 Not more than 15 minutes after running the tire for the specified time, measure its inflation pressure. Allow the tire to cool for one hour. Then, deflate the tire and remove it from the test rim.

S6.2.2 *Performance requirements*. When the tire is tested in accordance with S6.2.1:

(a) There shall be no visible evidence of tread, sidewall, ply, cord, innerliner, belt or bead separation, chunking, open splices, cracking, or broken cords.

(b) The tire pressure, when measured not more than 15 minutes after the test, shall not be less than the initial pressure specified in S6.2.1.

S6.3 *Tire Endurance.*

S6.3.1 *Test conditions and procedures.*

S6.3.1.1 *Preparation of Tire.*

S6.3.1.1.1 Mount the tire on a test rim and inflate it to the pressure specified for the tire in the following table:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard load	180
Extra load	220
LT:	
Load Range C	260
Load Range D	340
Load Range E	410
CT:	
Standard load	230
Extra load	270

S6.3.1.1.2 Condition the assembly at 35 ± 5° C for not less than three hours.

S6.3.1.1.3 Readjust the pressure to the value specified in S6.3.1.1.1 immediately before testing.

S6.3.1.2. *Test Procedure.*

S6.3.1.2.1 Mount the assembly on a test axle and press it against the outer face of a smooth wheel having a diameter of 1.70 m ± 1%.

S6.3.1.2.2 During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, shall not be less than 40° C.

S6.3.1.2.3 Conduct the test, without interruptions, at not less than 120 km/h test speed with loads and test periods not less than those shown in the following table:

Test period	Duration (hours)	Load as a percentage of tire maximum load rating
1	8	90%
2	10	100%
3	22	110%

S6.3.1.2.4 Throughout the test, the inflation pressure is not corrected and the test loads are maintained at the value corresponding to each test period, as shown in the table in S6.3.1.2.3.

S6.3.1.2.5 Not more than 15 minutes after running the tire for the time specified in the table in S6.3.1.2.3, measure its inflation pressure. Allow the tire to cool for one hour. Then, deflate the tire and remove it from the test rim.

S6.3.2 *Performance requirements.* When the tire is tested in accordance with S6.3.1:

(a) There shall be no visible evidence of tread, sidewall, ply, cord, innerliner, belt or bead separation, chunking, open splices, cracking or broken cords.

(b) The tire pressure, when measured not more than 15 minutes after the test, shall not be less than the initial pressure specified in S6.1.1.

S6.4 *Low Inflation Pressure Performance.*

S6.4.1 *Test conditions and procedures.*

S6.4.1.1 *Preparation of tire.*

S6.4.1.1.1 Mount the same tire tested in accordance with 6.3 on a test rim and inflate it to the following appropriate pressure:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard load	140
Extra load	160
LT:	
Load Range C	200
Load Range D	260
Load Range E	320
CT:	
Standard load	170
Extra load	180

S6.4.1.1.2 Condition the assembly at 35 ± 5° C for not less than three hours.

S6.4.1.1.3 Before or after mounting the assembly on a test axle, readjust the tire pressure to that specified in S6.3.1.1.1.

[Proposed S6.4.1.2 through S6.4.1.2.6 -- Alternative 1]

S6.4.1.2 *Test procedure.*

S6.4.1.2.1 The test is conducted for ninety minutes at the end of the test specified in S6.3, continuous and uninterrupted, at a speed of 120 km/h.

S6.4.1.2.2 Press the assembly against the outer face of a test drum with a diameter of 1.70 m ± 1%.

S6.4.1.2.3 Apply to the test axle a load equal to 100% of the tire's maximum load carrying capacity.

S6.4.1.2.4 Throughout the test, the inflation pressure is not corrected and the test load is maintained at the initial level.

S6.4.1.2.5 During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, is maintained at not less than 40° C.

S6.4.1.2.6 Not more than 15 minutes after running the tire for the specified time, measure its inflation pressure. Allow the tire to cool for one hour. Then, deflate the tire and remove it from the test rim.

[Proposed S6.4.1.2 through S6.4.1.2.6 -- Alternative 2]

S6.4.1.2 *Test procedure.*

S6.4.1.2.1 Press the assembly against the outer face of the test drum.

S6.4.1.2.2. Apply to the test axle a load equal to 67% of the tire's maximum load carrying capacity.

S6.4.1.2.3 Throughout the test, the inflation pressure is not corrected and the test load is maintained at the original level.

S6.4.1.2.4 During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, is maintained at not less than 40° C.

S6.4.1.2.5 The test is conducted, continuously and uninterrupted, for ninety minutes through three consecutive test stages of 30 minutes each at the following speeds: 140, 150, and 160 km/h.

S6.4.1.2.6 Allow the tire to cool for one hour. Then deflate the tire and remove it from the test rim.

S6.4.2 *Performance requirements.* When the tire is tested in accordance with S6.4.1:

(a) There shall be no visible evidence of tread, sidewall, ply, cord, innerliner, belt or bead separation, chunking, open splices, cracking, or broken cords. For tires tested at a speed of 300 km/h or above, superficial blistering in the tire tread due to localized heat build-up in the test drum is acceptable.

(b) The tire pressure, when measured not more than 15 minutes after the test, shall not be less than the initial pressure specified in S6.4.1.1.1.

S6.5 *Road Hazard Impact.*

S6.5.1 *Test conditions and procedures.*

S6.5.1.1 *Test conditions.*

S6.5.1.1.1 The tire is prepared and mounted on the equipment in accordance with section 3.2 of SAE Recommended Practice J1981 (JUN94), Road Hazard Impact Test for Wheel and Tire Assemblies (Passenger Car, Light Truck, and Multipurpose Vehicles).

S6.5.1.1.2 The test pressure shall be inflated to the appropriate test pressure:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard load	180
Extra load	220
LT:	
Load Range C	260
Load Range D	340
Load Range E	410

S6.5.1.2 *Test procedures.* The test is conducted in accordance with the test procedures described in section 3.3 of SAE Recommended Practice J1981 (JUN94). Initiate the test by raising the pendulum to a drop height based on a pendulum centerline angle of 80 degrees to the vertical. Repeat the test so that the impact occurs at five test points equally spaced around the circumference of the tire.

S6.5.2 *Performance requirements.*

S6.5.2.1 When the tire has been tested in accordance with S6.5.1.2 using a test rim that undergoes no permanent deformation, the test pressure shall not be less than the initial test pressures specified in S6.5.1.1.

S6.5.2.2 There shall be no visible evidence of tread, sidewall, ply, cord, inner liner, belt or bead separation, chunking, open splices, cracking, or broken cords.

S6.6 *Bead Unseating.*

S6.6.1 *Test conditions and procedures.*

S6.6.1.1 *Test conditions.*

S6.6.1.1.1 *Tire inclination angle.* The tire inclination angle is 5° to the vertical axis.

S6.6.1.1.2 *Simulated road surface inclination angle.* The simulated road surface inclination angle is 10° to the horizontal. The road surface shall be free from rubber and other substances.

S6.6.1.1.3 *Tire mounting.* No lubricant, such as soapy water, is used when mounting tire. The tire inflation pressure, after mounting, is set at the appropriate test pressure:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard load	180
Extra load	220
LT:	
Load Range C	260
Load Range D	340
Load Range E	410

S6.6.1.2 *Test procedure.* Apply a lateral force of 2.0 times the maximum tire load labeled on the tire sidewall at a rate of 220 millimeters per second (mm/s) to the tire, and maintain the lateral force for 20 seconds. Repeat the test at no less than four points equally spaced around the tire circumference.

S6.6.2 *Performance requirements.* When a tire is tested in accordance with S6.6.1.2., no air loss shall occur.

S6.7 *Aging Effects.*

[Proposed S6.7.1 through S6.7.2 -- Alternative 1]

S6.7.1. *Test conditions and procedures.*

S6.7.1.1 *Preparation of Tire.*

S6.7.1.1.2 Mount the tire on a test rim and inflate it to the pressure specified in the following table:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard load	180
Extra load	220
LT:	
Load Range C	260
Load Range D	340
Load Range E	410

S6.7.1.1.3 Condition the assembly at 35 ± 5° C for not less than three hours.

S6.7.1.1.4 Readjust the pressure to the value specified in S6.6.1.1.2 immediately before testing.

S6.7.1.2 *Test Procedure.*

S6.7.1.2.1 Mount the assembly on a test axle and press it against the outer face of a smooth wheel having a diameter of 1.70 m ± 1%.

S6.7.1.2.2 During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, is not less than 40° C.

S6.7.1.2.3 Conduct the test, without interruptions, at not less than 120 km/h (75 mph) test speed for 24 hours with loads not less than those shown in the following table:

Test period	Duration (hours)	Load as a percentage of tire maximum load rating
1	8	90%
2	8	100%
3	8	110%

S6.7.1.2.4 Throughout the test, the inflation pressure is not corrected and the test loads are kept constant at the value corresponding to each test period.

S6.7.1.2.5 Allow the tire to cool for one hour. Then, deflate the tire and remove it from the test rim.

S6.7.2 *Performance requirements.* The tire, after being testing in accordance with S6.7.1.2, exhibits a peel strength of not less than 30 pounds per inch in accordance with American Society for Testing and Materials Method D 413-98 (Machine Method).

[Proposed S6.7.1 through S6.7.2 -- Alternative 2]

S6.7.1 *Test conditions and procedures.*

S6.7.1.1 *Preparation of Tire.*

S6.7.1.1.2 Mount the tire on a test rim and inflate it, with a gas blend of 50% O_2 (oxygen) and 50% N_2 (nitrogen), to the pressure specified in the following table:

Tire Application	Test Pressure (kPa)
P-metric	275
LT:	
Load Range C	390
Load Range D	450
Load Range E	550

S6.7.1.1.3 Condition the assembly at 35 $\pm$ 5° C for not less than three hours.

S6.7.1.1.4 Readjust the pressure to the value specified in S6.6.1.1.2 immediately before testing.

S6.7.1.2. *Test Procedure.*

S6.7.1.2.1 Mount the assembly on a test axle and press it against the outer face of a smooth wheel having a diameter of 1.70 m $\pm$ 1%.

S6.7.1.2.2 During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, is not less than 40° C.

S6.7.1.2.3 Conduct the test, without interruptions, at not less than 96 km/h (60 mph) for 250 hours with loads not less than those shown in the following table:

Tire Application	Load as a percentage of tire maximum load rating
P-metric	111%
LT:	
Load Range C	112%
Load Range D	98%
Load Range E	92%

S6.7.1.2.4 Throughout the test, the inflation pressure is not corrected and the test loads are maintained at the original level.

S6.7.1.2.5 Not more than 15 minutes after running the tire the specified time, measure its inflation pressure. Allow the tire to cool for one hour. Then, deflate the tire and remove it from the test rim.

S6.7.2 *Performance requirements.* When the tire is tested in accordance with S6.7.1:

(a) There shall be no visible evidence of tread, sidewall, ply, cord, inner liner, belt or bead separation, chunking, open splices, cracking or broken cords.

(b) The tire pressure, when measured not more than 15 minutes after the test, shall not be less than the initial pressure specified in S6.1.1.

[Proposed S6.7.1 through S6.7.2 -- Alternative 3]

S6.7.1. *Test conditions and procedures.*

S6.7.1.1. *Preparation of Tire.*

S6.7.1.1.2 Condition tire in an oven at 75°C (167°F), continuously and uninterrupted for 14 days.

S6.7.1.1.2. Mount the tire on a test rim and inflate it to the pressure specified in the following table:

Tire Application	Test Pressure (kPa)
P-metric:	
Standard	180
Reinforced	220
LT:	
Load Range C	260
Load Range D	340
Load Range E	410

S6.7.1.1.3. Condition the assembly at 35 ± 5° C for not less than three hours.

S6.7.1.1.4. Readjust the pressure to the value specified in S6.3.1.1.2 immediately before testing.

S6.7.1.2. *Test Procedure.*

S6.7.1.2.1. Mount the assembly on a test axle and press it against the outer face of a smooth wheel having a diameter of 1.70 m ± 1%.

S6.7.1.2.2. During the test, the ambient temperature, at a distance of not less than 150 mm and not more than 1 m from the tire, is not less than 40° C.

S6.7.1.2.3. Conduct the test, without interruptions, at not less than 120 km/h test speed with loads and test period not less than those shown in the following table:

Test period	Duration (hours)	Load as a percentage of tire maximum load rating
1	8	90%
2	8	100%
3	8	110%

S6.7.1.2.4. Throughout the test the inflation pressure is not corrected and the test loads are maintained at the value corresponding to each test period.

S6.7.1.2.5. Not more than 15 minutes after running the tire the specified time, measure its inflation pressure. Allow the tire to cool for one hour. Then, deflate the tire and remove it from the test rim.

S6.7.2. *Performance requirements* When the tire is tested in accordance with S6.7.1:

(a) There shall be no visible evidence of tread, sidewall, ply, cord, inner liner, belt or bead separation, chunking, open splices, cracking or broken cords.

(b) The tire pressure, when measured not more than 15 minutes after the test, shall not be less than the initial pressure specified in S6.1.1.

[Proposed S7 through S7.3 -- Alternative 1]

S7. *Phase-In Schedule*

S7.1 P-metric tires manufactured on or after September 1, 2003 and before September 1, 2004. For tires manufactured by a manufacturer on or after September 1, 2003 and before September 1, 2004, the amount of tires complying with S4 through S6 must be 50 percent of the manufacturers production of P-metric tires during that period.

S7.2 P-metric tires manufactured on or after September 1, 2004. Each P-metric tire manufactured on or after September 1, 2004 must comply with S4 through S6 of this standard.

S7.3 LT tires manufactured on or after September 1, 2005. Each LT tire manufactured on or after September 1, 2005 must comply with S4 through S6 of this standard.

[Proposed S7 through S7.3 -- Alternative 2]

S7. *Phase-In Schedule*

S7.1 P-metric tire manufactured on or after September 1, 2003. Each P-metric tire manufactured on or after September 1, 2003 must comply with S4 through S6 of this standard.

S7.2 LT tires manufactured on or after September 1, 2004. Each LT tire manufactured on or after September 1, 2004 must comply with S4 through S6 of this standard.