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capable of being delivered by the power source. The trunnion cups and cushions shall firmly support the tubes when the centrifuge is in motion. Calculate the speed of the rotating head using this equation:

$$r.p.m. = 265[\sqrt{25.4 \times r.c.f./d}]$$

Where:

r.c.f. = Relative centrifugal force, and

d = Diameter of swing, in millimeters, measured between tips of opposing tubes when in rotating position.

Table VI shows the relationship between diameter, swing, relative centrifugal force (r.c.f.), and revolutions per minute.

TABLE VI—ROTATION SPEEDS FOR CENTRIFUGES OF VARIOUS DIAMETERS

Diameter of swing in millimeters <sup>a</sup>	r.p.m. at 600 r.c.f.	r.p.m. at 700 r.c.f.
483 .....	1490	1610
508 .....	1450	1570
533 .....	1420	1530
559 .....	1390	1500

<sup>a</sup>Measured in millimeters between tips of opposite tubes when in rotating position.

**S7.5.2 Procedure.** Balance the corked centrifuge tubes with their respective trunnion cups in pairs by weight on a scale, according to the centrifuge manufacturer's instructions, and place them on opposite sides of the centrifuge head. Use a dummy assembly when one sample is tested. Then whirl them for 10 minutes, at a rate sufficient to produce a r.c.f. between 600 and 700 at the tips of the whirling tubes. Repeat until the volume of sediment in each tube remains constant for three consecutive readings.

**S7.5.3 Calculation.** Read the volume of the solid sediment at the bottom of the centrifuge tube and report the percent sediment by volume. Where replicate determinations are specified, report the average value.

**S7.6 Standard styrene-butadiene rubber (SBR) brake cups.** SBR brake cups for testing motor vehicle brake fluids shall be manufactured using the following formulation:

FORMULATION OF RUBBER COMPOUND

Ingredient	Parts by weight
SBR type 1503 <sup>a</sup> .....	100
Oil furnace black (NBS 378) .....	40

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FORMULATION OF RUBBER COMPOUND—Continued

Ingredient	Parts by weight
Zinc oxide (NBS 370) .....	5
Sulfur (NBS 371) .....	0.25
Stearic Acid (NBS 372) .....	1
n-tertiary butyl-2-benzothiazole sulfenamide (NBS 384) .....	1
Symmetrical dibetanaphthyl-p-phenylenediamine	1.5
Dicumyl peroxide (40 percent on precipitated CaCO <sub>3</sub> ) <sup>b</sup> .....	4.5
Total .....	153.25

<sup>a</sup>Philprene 1503 has been found suitable.

<sup>b</sup>Use only within 90 days of manufacture and store at temperature below 27 °C. (80 °F.).

NOTE: The ingredients labeled (NBS) must have properties identical with those supplied by the National Bureau of Standards.

Compounding, vulcanization, physical properties, size of the finished cups, and other details shall be as specified in appendix B of SAE J1703b. The cups shall be used in testing brake fluids either within 6 months from date of manufacture when stored at room temperature below 30 °C. (86 °F.) or within 36 months from date of manufacture when stored at temperatures below minus 15 °C. (+5 °F.). After removal of cups from refrigeration they shall be conditioned base down on a flat surface for at least 12 hours at room temperature in order to allow cups to reach their true configuration before measurement.

**S7.7 Isopropanol.** ACS or reagent grade.

[36 FR 22902, Dec. 2, 1971]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §571.116, see the List of Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§571.117 Standard No. 117; Retreaded pneumatic tires.

**S1. Scope.** This standard specifies performance, labeling, and certification requirements for retreaded pneumatic passenger car tires.

**S2. Purpose.** The purpose of this standard is to require retreaded pneumatic passenger car tires to meet safety criteria similar to those for new pneumatic passenger car tires.

**S3. Application.** This standard applies to retreaded pneumatic tires for use on passenger cars manufactured after 1948.

**S4. Definitions.**

S4.1 *Casing* means a used tire to which additional tread may be attached for the purpose of retreading.

*Retreaded* means manufactured by a process in which a tread is attached to a casing.

S4.2 All terms defined in §§ 571.109 and 571.110 are used as defined therein.

S5. *Requirements.*

S5.1 *Retreaded tires.*

S5.1.1 Except as specified in S5.1.3, each retreaded tire, when mounted on a test rim of the width specified for the tire's size designation in appendix A of §571.109 shall comply with the following requirements of §571.109:

- (a) S4.1 (Size and construction).
- (b) S4.2.1 (General).
- (c) S4.2.2.3 (Tubeless tire resistance to bead unseating).
- (d) S4.2.2.4 (Tire strength).

S5.1.2 Except as specified in S5.1.3, each retreaded tire, when mounted on a test rim of the width specified for the tire's size designation in appendix A of §571.109, shall comply with the requirements of S4.2.2.2 of §571.109, except that the tire's section width shall not be more than 110 percent of the section width specified, and the tire's size factor shall be at least 97 percent of the size factor specified, in appendix A of §571.109 for the tire's size designation.

S5.1.3 Each retreaded tire shall be capable of meeting the requirements of S5.1.1 and S5.1.2 when mounted on any rim in accordance with those sections.

S5.1.4 No retreaded tire shall have a size designation, recommended maximum load rating, or maximum permissible inflation pressure that is greater than that originally specified on the casing pursuant to S4.3 of §571.109, or specified for the casing in Table I.

S5.2 *Casings.*

S5.2.1 No retreaded tire shall be manufactured with a casing—

- (a) On which bead wire or cord fabric is exposed before processing.
- (b) On which any cord fabric is exposed during processing, except that cord fabric that is located at a splice, i.e., where two or more segments of the same ply overlap, or cord fabric that is part of the belt material, may be exposed but shall not be penetrated or removed to any extent whatsoever.

S5.2.2 No retreaded tire shall be manufactured with a casing—

- (a) From which a belt or ply, or part thereof, is removed during processing; or
- (b) On which a belt or ply, or part thereof, is added or replaced during processing.

S5.2.3 Each retreaded tire shall be manufactured with a casing that bears, permanently molded at the time of its original manufacture into or onto the tire sidewall, each of the following:

- (a) The symbol DOT;
- (b) The size of the tire; and
- (c) The actual number of plies or ply rating.

S5.2.4 [Reserved]

S6. *Certification and labeling.*

S6.1 Each manufacturer of a retreaded tire shall certify that its product complies with this standard pursuant to Section 30115 of Title 49, United States Code, by labeling the tire with the symbol DOT in the location specified in section 574.5 of this chapter.

S6.2 [Reserved]

S6.3 Each retreaded tire shall bear permanent labeling through molding, branding, or other method that will produce a permanent label, or through the retention of the original casing labeling, in at least one location on the tire sidewall, in letters and numbers not less than 2 mm (0.078 inch) high, consisting of the following information:

- (a) The tire's size designation;
- (b) The tire's maximum permissible inflation pressure, either as it appears on the casing or as set forth in Table I;
- (c) The tire's maximum load, either as it appears on the casing or as set forth in Table I;
- (d) The actual number of plies in or the ply rating of the tire sidewall and, if different, the actual number of plies in or the ply rating of the tread area;
- (e) The generic bead name of each cord material used in the plies of both sidewall and the tread area of the tire;
- (f) The word "tubeless" if the tire is a tubeless tire, or the words "tube-type" if the tire is a tube-type tire;
- (g) If the tire is of bias/belted construction, the words "bias/belted;"
- (h) If the tire is of radial construction, the word "radial."

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The information shall either be retained from the casing used in the manufacture of the tire, or may be labeled onto the tire during the retreading process.

TABLE I—PLIES

Tire Size	2ply-4ply (4 ply rating)			4 ply (6 ply rating)			4 ply (8 ply rating)					
	Maximum load		Maximum Inflation Pressure	Maximum load		Maximum Inflation Pressure	Maximum load		Maximum Inflation Pressure			
	lb	kg	psi	kPa	lb	kg	psi	kPa	lb	kg	psi	kPa
6.00-13	1010	458	32	220	1080	499	36	250	1140	517	40	275
6.50-13	1150	522	32	220	1230	558	36	250	1300	590	40	275
7.00-13	1270	576	32	220	1360	617	36	250	1440	653	40	275
6.45-14	1120	508	32	220	1200	544	36	250	1270	576	40	275
6.95-14	1230	558	32	220	1310	594	36	250	1390	630	40	275
7.35-14	1360	617	32	220	1450	658	36	250	1540	698	40	275
7.75-14	1500	680	32	220	1600	726	36	250	1690	767	40	275
8.25-14	1620	735	32	220	1730	785	36	250	1830	830	40	275
8.55-14	1770	803	32	220	1890	857	36	250	2000	907	40	275
8.85-14	1860	844	32	220	1990	903	36	250	2100	953	40	275
5.60-15	0970	440	32	220	1040	472	36	250	1105	501	40	275
5.90-15	1060	476	32	220	1130	513	36	250	1200	544	40	275
6.85-15	1230	558	32	220	1320	599	36	250	1390	630	40	275
7.35-15	1390	630	32	220	1480	671	36	250	1570	712	40	275
7.75-15	1490	676	32	220	1590	721	36	250	1690	767	40	275
8.15-15	1610	730	32	220	1720	780	36	250	1820	826	40	275
8.25-15	1620	735	32	220	1730	785	36	250	1830	830	40	275
8.45-15	1740	789	32	220	1860	844	36	250	1970	894	40	275
8.55-15	1770	803	32	220	1890	857	36	250	2000	907	40	275
8.85-15	1860	844	32	220	1980	898	36	250	2100	953	40	275
9.00-15	1900	862	32	220	2030	921	36	250	2150	975	40	275
9.15-15	1970	894	32	220	2100	953	36	250	2230	1012	40	275
8.90-15	2210	1002	32	220	2360	1070	36	250	2500	1134	40	275
A70-13	1060	481	32	220	1130	513	36	250	1200	544	40	275
D70-13	1320	599	32	220	1410	640	36	250	1490	676	40	275
D70-14	1400	635	32	220	1490	676	36	250	1580	717	40	275
F70-14	1500	680	32	220	1610	730	36	250	1700	771	40	275
G70-14	1620	735	32	220	1730	785	36	250	1830	830	40	275
H70-14	177	803	32	220	1890	857	36	250	2010	912	40	275
J70-14	1860	844	32	220	1980	898	36	250	2100	953	40	275
L70-14	1970	894	32	220	2180	989	36	250	2230	1012	40	275
C70-15	1230	558	32	220	1320	599	36	250	1390	630	40	275
D70-15	1320	599	32	220	1410	640	36	250	1490	676	40	275
E70-15	1400	635	32	220	1490	676	36	250	1580	717	40	275
F70-15	1500	680	32	220	1610	730	36	250	1700	771	40	275
G70-15	1620	735	32	220	1730	785	36	250	1830	830	40	275
H70-15	1770	803	32	220	1890	857	36	250	2010	912	40	275
J70-15	1860	844	32	220	1980	898	36	250	2100	953	40	275
K70-15	1900	862	32	220	2030	921	36	250	2150	975	40	275
L70-15	1970	894	32	220	2100	953	36	250	2230	1012	40	275
165-13	1050	476	32	220	1130	513	36	250	1200	544	40	275

TABLE I—PLIES—Continued

Tire Size	2ply-4ply (4 ply rating)				4 ply (6 ply rating)				4 ply (8 ply rating)			
	Maximum load		Maximum Inflation Pressure		Maximum load		Maximum Inflation Pressure		Maximum load		Maximum Inflation Pressure	
	lb	kg	psi	kPa	lb	kg	psi	kPa	lb	kg	psi	kPa
175-13	1150	552	32	220	1240	562	36	250	1350	612	40	275
185-13	1270	576	32	220	1390	630	36	250	1510	685	40	275
155R13	950	431	32	220	1015	460	36	250	1075	488	40	275
155R14	1010	458	32	220	1080	499	36	250	1140	517	40	275
155R14	1015	460	32	220	1085	492	36	250	1150	552	40	275
165R13	1010	458	32	220	1080	499	36	250	1140	517	40	275
165R14	1120	508	32	220	1200	544	36	250	1270	576	40	275
165R15	1130	513	32	220	1200	544	36	250	1270	576	40	275
175R14	1230	558	32	220	1310	594	36	250	1390	630	40	275
185R14	1360	617	32	220	1450	658	36	250	1540	698	40	275
185/70R13	1090	494	32	220	1140	517	36	250	1190	540	40	275
145-14 <sup>1</sup>	865	392	32	220	905	411	36	250	935	424	40	275
145-15	895	406	32	220	940	426	36	250	975	442	40	275
195-15	1550	703	32	220	1680	762	36	250	1820	826	40	275
205-15	1770	803	32	220	1840	835	36	250	2000	907	40	275

<sup>1</sup> Dash Radial—Not an "R" Radial.

[37 FR 5952, Mar. 23, 1972, as amended at 37 FR 11775, June 14, 1972; 38 FR 2982, Jan. 31, 1973; 38 FR 6999, Mar. 15, 1973; 38 FR 9688, Apr. 19, 1973; 39 FR 1443, Jan. 9, 1974; 39 FR 3553, Jan. 28, 1974; 39 FR 36016, Oct. 7, 1974; 39 FR 39884, Nov. 12, 1974; 61 FR 29494, June 11, 1996; 63 FR 28920, May 27, 1998]

EDITORIAL NOTE: For an interpretation of §571.117, see 38 FR 10940, May 3, 1973.

EFFECTIVE DATE NOTES: 1. At 67 FR 69627, Nov. 18, 2002, §571.117 was amended by revising S6.3 (including removing Table 1 and the undesignated paragraph following S6.3(h)) and adding S7, S7.1, S7.2, and S7.3, effective Sept. 1, 2003. At 68 FR 33655, June 5, 2003, the effective date was delayed until Sept. 1, 2004. At 69 FR 31306, June 3, 2004, the effective date was further delayed until Sept. 1, 2005. For the convenience of the user, the revised text is set forth as follows:

**§571.117 Standard No. 117; Retreaded pneumatic tires.**

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S6.3 *Labeling.* Each retreaded tire shall comply, according to the phase-in schedule specified in S7 of this standard, with the requirements of S5.5. of §571.139.

*S7. Phase-In Schedule for labeling*

S7.1 *Tires retreaded on or after September 1, 2004 and before September 1, 2005.* For tires manufactured on or after September 1, 2004 and before September 1, 2005, the number of tires complying with S6.3 of this standard must be equal to not less than 40% of the retreader's production during that period.

S7.2 *Tires retreaded on or after September 1, 2005 and before September 1, 2006.* For tires manufactured on or after September 1, 2005 and before September 1, 2006, the number of tires complying with S6.3 of this standard must be equal to not less than 70% of the retreader's production during that period.

S7.3 *Tires retreaded on or after September 1, 2006.* Each tire must comply with S6.3 of this standard.

2. At 69 FR 31319, June 3, 2004, §571.117 was amended by revising paragraphs S6.3, S7.1, S7.2 and S7.3, effective Sept. 1, 2005. For the convenience of the user, the revised text is set forth as follows:

**§571.117 Standard No. 117; Retreaded pneumatic tires.**

\* \* \* \* \*

S6.3. *Labeling.* Each retreaded tire shall comply, according to the phase-in schedule specified in S7 of this standard, with the requirements of S5.5 and S5.5.1 of §571.139.

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S7.1. *Tires retreaded on or after September 1, 2005 and before September 1, 2006.* For tires manufactured on or after September 1, 2005

and before September 1, 2006, the number of tires complying with S6.3 of this standard must be equal to not less than 40% of the retreader's production during that period.

S7.2. *Tires retreaded on or after September 1, 2006 and before September 1, 2007.* For tires manufactured on or after September 1, 2006 and before September 1, 2007, the number of tires complying with S6.3 of this standard must be equal to not less than 70% of the retreader's production during that period.

S7.3. *Tires retreaded on or after September 1, 2007.* Each tire must comply with S6.3 of this standard.

**§571.118 Standard No. 118; Power-operated window, partition, and roof panel systems.**

S1. *Purpose and scope.* This standard specifies requirements for power operated window, partition, and roof panel systems to minimize the likelihood of death or injury from their accidental operation.

S2. *Application.* This standard applies to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating of 4536 kilograms or less. The standard's requirements for power-operated roof panel systems need not be met for vehicles manufactured before September 1, 1993.

S3. *Definition.* "Power operated roof panel systems" mean moveable panels in the vehicle roof which close by vehicle supplied power either by a sliding or hinged motion, and do not include convertible top systems.

S4. *Operating requirements.* Except as provided in S5, power operated window, partition, or roof panel systems may be closed only in the following circumstances:

- (a) When the key that controls activation of the vehicle's engine is in the "ON", "START", or "ACCESSORY" position;
- (b) By muscular force unassisted by vehicle supplied power;
- (c) Upon continuous activation by a locking system on the exterior of the vehicle;
- (d) Upon continuous activation of a remote actuation device, provided that