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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 9743-2024

Replacing GB 9743-2015

Passenger car tyres

轿车轮胎

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1 Scope

GB 9743-2024 is the Chinese national standard on passenger car tyres, in the field of rubber and plastic industries. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 29 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2025. Classification: ICS 83.160.10, CCS G41. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the requirements, judgment principles, markings, implementation requirements of the standard for passenger car tyres; describes the relevant test methods. This document applies to new passenger car pneumatic tyres.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, for referenced documents with dates, only the version corresponding to that date applies to this document; for referenced

documents without dates, the latest version (including all amendments) applies to this document.

GB/T 521 Test methods for measuring peripheral dimensions of tyres

GB/T 2978 Size designation, dimensions, inflation pressure and load capacity for passenger car tyres

GB/T 4502 Laboratory test methods for passenger car tyres capabilities

GB/T 6326 Tyre - Vocabulary

GB/T 8170 Rules of rounding off for numerical values and expression and judgement of limiting values

GB/T 21910 Method for measuring relative wet grip performance of passenger car tyres

GB/T 29040 Test methods of rolling resistance for motor vehicle tyres - Single point test and correlation of measurement results

GB/T 29042 Thresholds and grading of rolling resistance for motor vehicle tyres

GB/T 30196 Self-supporting run flat tyres

GB/T 39971 Thresholds and grading of relative wet grip index for motor vehicle tyres

3 Terms and definitions

The terms and definitions, which are defined in GB/T 6326, GB/T 4502, GB/T 39971, apply to this document.

4 Requirements

4.1 Main parameters of tyres Tyre specifications, load index or ply, measuring rim, load capacity, inflation pressure, permitted rim shall comply with the provisions of GB/T 2978 or relevant industry technical documents.

Note. Complying with relevant industry technical documents refers to passenger car tyres with any parameter different from GB/T 2978 and not within the scope of GB/T 2978.

4.2 Outer rim dimensions of new tyres The total width and outer diameter of the tyre section shall comply with the provisions of Appendix A.

4.3 Correspondence between tyre speed symbol and maximum driving speed The correspondence between tyre speed symbol and maximum driving speed shall comply with the provisions of Appendix B.

4.4 Correspondence between tyre load index and load capacity The correspondence between tyre load index and load capacity shall comply with the provisions of Appendix C.

4.5 Safety performance

4.5.1 Tyre strength performance Applicable to bias tyres, T-type temporary spare tyres, radial tyres with a nominal aspect ratio of 50 or more. For tyre strength performance test, the destructive energy at each test point shall not be less than the provisions of Table 1.

4.5.2 Unseating resistance of tubeless tyres Applicable to bias tubeless tyres, T-type temporary spare tubeless tyres, radial tubeless tyres with nominal aspect ratio of 50 and above. For tyre unseating resistance test, the unseating resistance at each test point shall not be less than the requirements of Table 2.

4.5.3 Tyre durability After the tyre durability test, the tyre pressure shall not be lower than 95% of the specified initial test pressure; after the test, the appearance inspection shall not have (tread, sidewall, cord layer, belt layer or buffer layer, bead) delamination, cord layer cracks, cord peeling, cord breakage, chunking (except snow tyre PTBC), joint split, cracking, abnormal carcass deformation. If the tyre is damaged, the airtight layer needs to be checked.

4.5.4 Tyre low pressure performance It is applicable to radial tyres, but does not include T-type temporary spare tyres. After the tyre low pressure performance test, the tyre pressure shall not be lower than 95% of the specified initial test pressure; after the test, the appearance inspection shall not have (tread, sidewall, cord layer, airtight layer, belt layer or buffer layer, bead) delamination, cord layer cracks, cord peeling, cord breakage, chunking (except snow tyre PTBC), joint split, cracking, abnormal carcass deformation.

4.5.5 High-speed performance of tyres After the high-speed performance test, the tyre pressure shall not be lower than 95% of the specified initial test pressure; after the test, the appearance inspection shall not show obvious (tread, sidewall, cord layer, airtight layer, belt layer or buffer layer, bead) delamination, cord layer cracks, cord peeling, cord breakage, chunking, joint splitting, cracking, abnormal deformation of the tyre. For tyres with a maximum speed of 300 km/h and above, tread surface blistering or chunking caused by blistering is allowed.

4.6 Tyre rolling resistance It is applicable to radial tyres. However, it does not include tyres which have a rim nominal diameter code <= 10 and a rim nominal diameter code >= 25, nor does it include spare tyres for temporary use only, special purpose tyres, racing tyres, studded tyres. The rolling resistance coefficient of the tyre shall not be greater than the maximum limit specified in Table 3.

4.7 Relative grip performance of tyre on wet road surface It is applicable to radial tyres, but does not include tyres which have a rim nominal diameter code <= 10 and rim nominal diameter code >= 25, nor does it include spare tyres for temporary use only, special purpose tyres, racing tyres, studded tyres. The relative grip index of tyre on wet road surface shall not be less than the minimum limit specified in Table 4.

4.8 Tread wear marks and signs

4.8.1 Each tyre cover shall be provided with no less than 4 normally observable tread wear marks, which are at approximately equal distances along the circumference; the height shall be no less than

4.8.2 Marks indicating the position of tread wear marks shall be engraved on the shoulders on both sides of each tyre.

4.9 Appearance quality For the appearance quality, the tyre shall not have appearance defects that seriously affect the service life, such as delamination between components, sponginess, broken wire rings, serious pull-up of wire rings, multiple cord breakage, wrinkling of tyre inner cords, rubber edge cords of tyre crown. If a cushion belt is used, the appearance of the cushion belt shall not be incomplete and the belt shall not be cracked.

5 Test methods

5.1 The total width and outer diameter of the new tyre after inflation and the height of the tread wear mark shall be measured in accordance with GB/T 521.

5.2 Tyre strength, tubeless tyre unseating resistance, durability, low pressure performance, high speed performance shall be tested in accordance with GB/T 4502.

5.3 The rolling resistance of the tyre shall be measured in accordance with the method specified in GB/T 29040; the results shall be rounded off in accordance with the provisions of GB/T 8170, with one decimal place retained.

5.4 The wet road grip performance of the tyre shall be measured in accordance with the test method specified in GB/T 21910; the results shall be rounded off in accordance with the provisions of GB/T 8170, with two decimal places retained.

5.5 The appearance quality shall be inspected by visual inspection.

6 Judgment rules

6.1 Outer edge dimensions, tread wear mark height, wear sign, appearance quality According to the provisions of GB/T 521, measure the total width, outer diameter, tread wear mark height of the test tyre; visually check the wear mark, wear sign, appearance quality. If the measured total width and outer diameter of the tyre meet the corresponding provisions of 4.2, it is judged that the outer edge dimensions of this item meet the requirements of this document; if the wear mark height meets the provisions of 4.8.1, it is judged that the wear mark height meets the requirements of this document; if the visually inspected wear marks and wear sign meet the provisions of

4.8.2 respectively, then the appearance quality meets the provisions of 4.9, it is judged that it meets the requirements of this document.