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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19390-2023

Dipped polyester cord fabric for tyres

轮胎用聚酯浸胶帘子布

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 19390-2023 covers the dipped polyester cord fabric that reinforces a tyre carcass - the product classification and specifications, the technical requirements, and the methods by which the fabric is tested and accepted. The classification separates high-modulus low-shrinkage fabric from the high-strength and the high-dimensionally-stable grades, so that a tyre maker orders by property rather than by supplier name. The requirements clause covers the physical and chemical properties together with the appearance indicators, judged roll by roll. Test conditions, product batching and specimen preparation are fixed before the methods themselves, because tensile results on a textile move with the atmosphere the specimen sat in and with the way the cord was gripped; the physical and chemical methods then run from the tensile test to the H-test adhesive strength, which is

what shows whether the cord will hold its bond to the surrounding rubber. Inspection of tissue specifications and appearance quality, the inspection rules, and the packaging, marking, quality guarantee, transport and storage clauses close the document, with informative annexes on the CRT tensile machine method and on pneumatic grips. Cord that loses strength or shrinks unevenly leaves a tyre that grows out of shape or separates in service. Written for cord fabric producers, tyre manufacturers, and their incoming inspection laboratories.

This document specifies product classification and specifications, technical requirements, test conditions, regulations on product batching and specimen preparation methods, physical and chemical properties test methods, tissue specifications and appearance quality inspection methods, inspection rules as well as packaging, marking, quality guarantee, transportation and storage FOR dipped polyester cord fabric for tyres.

This document is applicable to the identification and acceptance of the quality of dipped polyester cord fabric for tyres.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 2942-2009, Rubber, vulcanized - Determination of static adhesion to textile cord - H-pull test

GB/T 3291 (all parts), Textiles - Terms of textile material properties and test

GB/T 4666-2009, Textiles - Fabrics - Determination of width and length

GB/T 4668-1995, Textiles - Woven fabrics - Determination of number of threads per unit length

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 3291 (all parts) as well as the followings apply.

3.1 H-test adhesive strength

The force required to pull the cord from the H-shaped rubber-cord test piece in the direction perpendicular to the rubber block per unit length.

3.2 dip pick-up

The dipping component of the dipped cord is separated from the white cord by chemical method and dried to a constant weight. The ratio of the constant mass of the impregnated substance to the constant mass of the blank cord shall be the dip pick-up.

3.5 warp density within specified width from each edge

The number of warp threads within a certain length from both sides of the cord fabric to the cloth edge.

3.6 net weight

The mass of dipped cord fabric obtained by subtracting the mass of all packaging materials from the mass of the cord fabric roll when leaving the dipping machine.

4 Product classification and specifications

4.1 According to physical and chemical properties, dipped polyester cord fabrics are divided into high-modulus low-shrinkage (HMLS), high-strength high-modulus low-shrinkage (HTHMLS) and high-dimensionally-stable high-modulus low-shrinkage (HDS-HMLS).

4.3 Each specification of dipped polyester cord fabric can be divided into various specifications according to the warp density. Commonly used dipped polyester cord fabric has 15 specifications, see Table 1.

5 Technical requirements

5.1 Physical and chemical properties

5.2 Appearance indicators

5.2.1 The appearance quality of dipped polyester cord fabric is evaluated in units of rolls. The length of each roll of dipped polyester cord fabric is calculated as 1080 m.

6 Test conditions, regulations on product batching and specimen

preparation methods

6.1 Test conditions

6.2 Regulations on product batching and specimen preparation methods

6.2.1 Take several roll cord fabrics produced from the same warp bobbin as a batch of goods. However, if they are produced by different processes or are not continuously

Cord specifications

6.2.3 From 20 cm away from the edge of the test cloth, uniformly extract cords with a length of 500 mm ~ 600 mm from 6 positions equidistant from each other. Remove the weft. After mixing, it is used as the specimen of this batch of dipped polyester cord fabric.

6.2.4 In the event of disputes between the supplier and the buyer over the test results, the test results jointly accepted by randomly selected specimens shall prevail.

7 Test methods for physical and chemical properties

7.1 Tensile property test

7.1.1 Principle

Under the specified conditions, clamp the cord specimen between the two clamps of the CRE electronic tensile testing machine. Stretch the specimen to fracture at the specified tensile speed. Determine the breaking strength, constant load elongation and breaking elongation of the specimen directly from the strength-elongation curve or data display.

7.1.2 Test instruments

This document recommends using CRE tensile testing machine. See Annex A when using a CRT tensile testing machine. In case of any dispute over the tensile test results, the test results of the CRE tensile testing machine shall prevail.

7.1.3 Number of specimens

It shall be ensured that the number of effective specimens is 20.

7.1.4 Test conditions

Distance between the jaws of the upper and lower fixtures. (250 $\pm$ 1) mm.

Tensile speed. (300 $\pm$ 5) mm/min.