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

GB/T 21536-2024

Replacing GB/T 21536-2008

Track and field sports shoes

田径运动鞋

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This document serves as a replacement for GB 21536-2008 Athletic Shoes. In comparison with GB 21536-2008, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

- a) The term and definition of "front plate" is deleted (see 3.2 of Version 2008), and the term and definition of "spike length" is added (see 3.3);
- b) The requirements and test method for appearance quality are added (see 6.9 of Version 2008), and "cold resistance of finished shoes" is modified into "low-temperature flexural property" (see Table 1 in 5.3, and 6.3.2; Table 2 in 5.3, and 6.17 of Version 2008);
- d) The requirements and test method for the wear resistance of the outsole are modified (see Table 1 in 5.3, and 6.3.6; Table 2 in 5.3, and

6.10 of Version 2008);

e) The requirements and test methods for color fastness to water and color fastness to dry rubbing are deleted (see Table 1 in 5.2, and

6.5 of Version 2008);

f) The requirements and test method for color fastness to wet rubbing are added (see Table 1 in

5.3 and 6.3.10), and the color fastness to perspiration and the lateral bearing strength of spike are modified from safety performance items to physical property items (see Table 1 in 5.3; Table 1 in

1 Scope

GB/T 21536-2024 is the Chinese product standard for track and field shoes: spikes and racing flats. It is a small standard for a category that has become technically contentious, since the carbon plate and thick midsole shoes that transformed distance running raised the question of where a shoe stops being footwear and starts being equipment. The standard sets the classification of the shoes by event, the requirements on the materials and construction, the dimensional and fitting requirements, the physical requirements including the peel strength of the sole bond, the abrasion resistance and flex resistance of the outsole, the attachment strength of the spikes and the spike plate, the slip resistance, the mass, the colour fastness and the requirements on the harmful substances in the materials, together with the test methods, the inspection rules and the marking, packaging, transport and storage. The 2024 edition replaces GB/T 21536-2008. For a shoe maker, a brand sourcing in China or a buyer inspecting a delivery, this is the acceptance text.

This document provides the classification of track and field sport shoes, specifies the technical requirements and inspection rules, marking, packaging, transportation and storage, and describes the corresponding test methods. This document applies to spikes and non-spike shoes worn in track and field sports (including running, jumping, throwing and walking, etc.).

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 2941 Rubber - General Procedures for Preparing and Conditioning Test Pieces for Physical Test Methods

GB/T 3920 Textiles - Tests for Color Fastness - Color Fastness to Rubbing

GB/T 3922 Textiles - Tests for Color Fastness - Color Fastness to Perspiration

GB/T 9867-2008 Rubber, Vulcanized or Thermoplastic - Determination of Abrasion Resistance Using a Rotating Cylindrical Drum Device

GB/T 17593.2 Textiles - Determination of Heavy Metals - Part

6.3.6.1 In accordance with the provisions of

GB/T 9867-2008 (Method A), carry out the test. The test pressure is. (10 0.2) N for solid bottom and (5 0.1) N for microporous bottom. The test site is the outsole force-bearing site, namely, the plantar flexion site of the forefoot and the heel site of the rear foot.

6.3.6.2 Select a flat surface for testing. A surface with slight patterns but a pattern depth not exceeding

0.5 mm can be regarded as a flat surface.

6.3.6.3 For solid bottoms, if the depth of the outer sole pattern is greater than

0.5 mm, then, the pattern shall be polished by appropriate methods before sampling and testing, and this shall be noted in the result report.

6.3.6.4 For microporous bottoms, grinding shall not be performed. If the depth of the outer sole pattern is greater than

0.5 mm, then, the same batch of raw materials shall be tested, and this shall be noted in the result report.

6.3.7 Adhesion strength In accordance with

GB/T 21396, carry out the test.

6.3.8 Anti-slip performance (dry method) In accordance with

HG/T 3780-2005, carry out the test.

6.3.9 Color fastness to perspiration In accordance with the provisions of

GB/T 3922, carry out the test.

6.3.10 Color fastness to wet rubbing In accordance with the provisions of

GB/T 3920, carry out the test.

6.3.11 Lateral bearing strength of spike In accordance with the provisions of Appendix A, carry out the test. When the top block and the spike on the spike lateral bearing strength tester slip, then, this item will not be tested.

6.4 Health and Safety Performance

6.4.1 Health and safety performance of formaldehyde and degradable harmful aromatic amine dyes In accordance with the provisions of

GB 25038, carry out the test.

6.4.2 Extractable heavy metals Textiles, artificial leather and synthetic leather shall comply with the provisions of

GB/T 17593.2, and leather and fur shall comply with the provisions of

GB/T 22930.1. with the head facing downward. A.5.1.2 Fix it to the fixing device of the spike lateral bearing strength tester (A.4) and adjust the clamping device, so that the axial direction of the spikes is perpendicular to the movement direction of the top block. A.5.1.3 Adjust the pressing claws, so that their upper and lower clamping points are 1 mm outside the spike bottom diameter and pressed against the outsole. A.5.1.4 Adjust the movable block, so that the top block is placed 10 mm below the spikes under test, and the end of the top block is aligned with the tangent plane at the spike bottom. If there is no tangent plane, then, align it with the edge close to the bottom (see Figure A.2). The top block runs at a push-up speed of (5 ± 1) mm/min. A.5.1.5 When the value displayed on the recorder is equal to 400 N, stop the movable block and remove the driving force, and observe the condition of the spikes and spike bottom. A.5.1.6 When the value displayed on the recorder is less than 400 N, and the spikes or spike bottom show relatively obvious abnormality or the spikes slip off, then, stop the test. A.5.2 Test steps for spike length