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

GB/T 14833-2020

Replacing GB/T 14833-2011

Synthetic materials sports field surfaces

合成材料运动场地面层

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1 Scope

GB/T 14833-2020 is the Chinese national standard on synthetic materials sports field surfaces, in the field of rubber and plastic industries. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 March 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2021. Classification: ICS 83.140.99, CCS G47. 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 standard specifies the terms and definitions, product classification, requirements, test methods, inspection rules, site foundation requirements, surface construction conditions for the surfaces of synthetic material sports fields (hereinafter referred to as the surface). This standard is applicable to the surface of track and field, ball games and multi- purpose sports fields, which are laid with synthetic materials outdoors. This standard does not apply to occasions where climbing, sitting, lying are required.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 529 Rubber, vulcanized - Determination of tear strength (trouser, angle and crescent test pieces)

GB/T 2941 Rubber - General procedures for preparing and conditioning test pieces for physical test methods

GB/T 10654 Flexible cellular polymeric materials - Determination of tensile strength and elongation at break

GB/T 16422.2-2014 Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc sources

GB/T 19995.2-2005 Technical requirements and test methods for natural material sport fields - Part 2: Wooden floor for multipurpose gymnasium

GB/T 20033.2 Technical requirements and test methods for artificial material sports fields - Part 2: Tennis court

GB/T 20033.3 Technical requirements and test methods for artificial material sport fields - Part 3: Artificial turf surface for football fields

GB/T 30314 Rubber or plastic-coated fabrics - Determination of abrasion resistance - Taber abrader

GB 36246-2018 Sports areas with synthetic surfaces for primary and middle schools

GB 50268 Code for construction and acceptance of water and sewerage pipeline works CJJ

1 Code for construction and quality acceptance of road works in city and town Athletics field facilities standard manual (IAAF)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Surface layers of athletic fields A track-and-field surface layer, which is laid with synthetic material.

3.2 Surface layers of sports field for ball games Court floors, which are made of synthetic materials, for basketball, volleyball, badminton, tennis, football.

3.3 Synthetic surfaces intended for multi-sports facilities Surface layers for recreational fitness activities, which are made of synthetic materials.

3.4 Permeable surface A synthetic material sports surface layer, which has a pore structure, AND on which the water is in the form of both surface runoff and permeable surface flow.

3.5 Non-permeable surface A synthetic material sports surface, which has a dense structure AND on which the water on the surface is only in the form of surface runoff.

3.6 Prefabricated surface A synthetic material sports surface layer, which is made by using adhesives or other methods, to lay the surface layer material, on the foundation.

3.7 In-situ casting surface A synthetic sports surface, which is formed by casting in site and paving the factory- produced prepolymers and other raw materials.

4 Product categories

4.1 The surface layer is divided into the following three categories, according to its scope of application: - The surface layer of the athletic field; - The surface layer of sports field for ball games; - The synthetic surfaces intended for multi-sports facilities.

4.2 The surface layer is divided into the following two categories, according to its structure type: - Permeable surface layer; - Non-permeable surface layer.

4.3 The surface layer is divided into the following two categories, according to its paving method: - In-situ casting surface layer; - Prefabricated surface layer.

5.1 Surface properties

5.1.1 Surface layer of athletic field The performance of the surface layer of the athletic field, as well as the corresponding test methods, shall comply with the provisions of Table 1.

6.2.1 Sample thickness

6.2.1.1 Prefabricated surface layer: Use a thickness gauge, which has an index of 1/100 mm, a pressure of (22 ± 5) kPa, a foot diameter of 6 mm, to make measurement. The measurement point is selected as follows: from the inside 20 mm from the end, randomly select five points, along the width direction, to measure the thickness. The arithmetic mean of the five points is taken as the result.

6.2.1.2 In-situ casting surface layer: The thickness of the in-situ casting surface layer sample, with anti-skid structure, shall be measured by a vernier caliper, which has an accuracy of not less than

0.1 mm. At least ten different positions shall be arbitrarily selected, to measure the thickness, at the five convex points and five concave points from the bottom to the surface, respectively. The result is the arithmetic mean of ten measurement results. For the

thickness of the in-situ casting surface layer sample, with smooth surface, is measured by the method of 6.2.1.1.

6.2.2 Surface layer thickness of fields The three-needle thickness detector (accuracy: ± 1 mm) is used to make measurement. The measured points and quantities shall meet the requirements of the surface layer of the relevant sports field. The arithmetic mean of all the measurement points is taken as the result.

6.3 Shock absorption Make measurement, according to the method specified in Appendix B.

6.4 Vertical deformation Make measurement, according to the method specified in Appendix C.

6.5 Anti-slip value, coefficient of friction Make measurement, according to the method specified in Appendix D.

6.6 Tensile strength, elongation at break Make measurement, according to the method specified in GB/T 10654; the tensile speed is (100 ± 10) mm/min.

6.7 Tear strength Make measurement, according to the method specified in GB/T 529. Adopt the right- angle sample without cut; take the median of five specimens as the test result.

6.8 Ball bounce rate (1 piece for testing, 2 pieces for sample preparation).

7.2.2 Sampling method

7.2.2.1 In-situ casting surface layer 7.2.2.1.1 The samples at the construction site shall be randomly prepared in parallel, according to the construction sequence, under the witness of the user, the construction party, the supervisor. 7.2.2.1.2 The end time of the reaction of the sample, under on-site conditions, is at least 14 d. After curing, the sample is packed in polyethylene or polytetrafluoroethylene bags AND placed in a cool and dry place. The project name, sampling date, sampling person, relevant special instructions shall be indicated on the packaging. Samples are valid for 6 months. 7.2.2.1.3 If the reaction of the construction site samples is not completely completed, within 14 days, THEN, the reaction time can be appropriately extended; however, the longest reaction time shall not exceed 28 days.

7.2.2.2 Prefabricated surface layers 7.2.2.2.1 Under the witness of the user, the construction party, the supervisor, randomly select a roll on site. Cut it at the middle position, which is 2 m away from the end. 7.2.2.2.2 The samples are packed in polyethylene or polytetrafluoroethylene bags AND placed in a cool and dry place. The project name, sampling date, sampling person, relevant special instructions shall be indicated on the packaging. Samples are valid for 6 months.