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

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**Sports areas with synthetic surfaces for primary and middle
schools**

中小学合成材料面层运动场地

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Category	3
5 Technical requirements	3
5.1 Paving requirements	3
5.2 thickness	4
5.3 Physical and mechanical properties	4
5.4 Synthetic material surface layer resistant to artificial weathering	5
5.5 Content of inorganic fillers and polymers in the surface layer of synthetic materials	5
5.6 Limits and odors of harmful substances in finished products and raw materials of synthetic materials	5
6 Test method	8
6.1 Determination of thickness	8
6.2 Determination of impact absorption	8
6.3 Determination of vertical deformation	8
6.4 Determination of tensile strength and elongation at break	8
6.5 Determination of anti-slip value	8
6.6 Determination of flame retardant properties	8
6.8 Determination of single tuft pullout force	8
6.9 Determination of aging resistance	8
6.10 Determination of the content of inorganic fillers	8
6.11 Determination of total amount of polymer	9
6.12 Determination of the content of harmful substances in finished products and solid raw materials of synthetic materials	9
6.13 Determination of the release of harmful substances in the finished surface of synthetic materials	9
6.14 Odour Rating	9
6.15 Determination of the content of harmful substances in non-solid materials of synthetic materials surface 9 7 sampling requirements	10
7.1 Witness sampling	10
7.2 Synthetic material top layer raw material sample	10
7.3 Synthetic material surface finished product sample	10

7.4 Transportation, storage and testing time	10
8 Inspection rules	11
8.1 Acceptance inspection	11
8.2 Type inspection	11
8.3 Determination of test results	11
8.4 Re-inspection rule	11
38 Table J.1 Odour class	41

Foreword

The full technical content of this standard is mandatory. This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 19851.11-2005 "Sports equipment and venues for primary and secondary schools - Part 11. Synthetic material surface sports field Land. Compared with GB/T 19851.11-2005, the main technical changes except editorial changes are as follows:

---Increased synthetic material surface layer, cast-in-place surface layer, prefabricated surface layer, artificial grass surface layer, water-permeable surface layer, non-permeable surface layer, solid Raw materials, non-solid materials, thickness, impact absorption, vertical deformation, tensile strength, elongation at break, slip resistance, aging resistance, resistance Terms and definitions of fuel properties, total volatile organic compounds, volatile organic compounds, removed synthetic layers, flatness, pressure Contraction recovery rate, terminology and definition of Class 1 flame retardant (see Chapter 3, Chapter 3 of the.2005 edition);

--- Added classification (see Chapter 4);

--- Increased paving requirements (see 5.1);

--- Revised the thickness requirements (see 5.2, 4.4 of the.2005 edition);

--- Removed the appearance and specifications, marking lines, flatness requirements (see.2005 edition of 4.1, 4.2, 4.3);

--- Increased physical and mechanical properties of impact absorption, vertical deformation, anti-sliding value items and indicators, deleted hardness (Shao A), compression Recovery rate, rebound value performance requirements, revised tensile strength items and index requirements, modified elongation at break and its index requirements (See 5.3.1, 4.6 of the.2005 edition);

--- Modified test methods for thickness, tensile strength, elongation at break, and flame

retardancy (see 6.1, 6.4, 6.6, appendix for 2005 edition) B,
5.6 and Appendix E);

--- Increased test methods for impact absorption, vertical deformation and slip resistance (see Appendix D, Appendix E and Appendix F);

--- Increase the physical and mechanical performance requirements and test methods of artificial grass surface layer (see 5.3.2, 6.2, 6.3, 6.7, 6.8);

--- Increased the aging resistance requirements and test methods of synthetic materials (see 5.4, 6.9);

1 Scope

China's mandatory standard for synthetic sports surfaces in primary and middle schools - the running tracks and playing surfaces laid in schoolyards, and one of the very few Chinese standards written in direct response to a public scandal. From 2015 onward a series of newly laid school tracks were found to be emitting solvents and other volatile substances strongly enough to make children ill, and the episode became known as the toxic running track affair; this standard is the regulatory answer to it. It specifies the terms and definitions, the classification, the technical requirements, the test methods, the sampling requirements and the inspection rules for the synthetic surfaces of sports areas in primary and middle schools. What distinguishes it from an ordinary sports surface specification is that the harmful substance requirements are not an annex but the point. The standard limits what the finished surface may contain and, more unusually, what it may release: the volatile organic compounds, the formaldehyde, the benzene and the toluene and xylene emitted from the laid surface, measured on the material and in a chamber test that represents the surface in place; the polycyclic aromatic hydrocarbons and the phthalate plasticizers that come from recycled rubber infill; the heavy metals; and the substances that increase with temperature, since the whole problem appeared in summer on hot surfaces. Alongside them sit the physical requirements a sports surface still has to meet - the thickness, the force reduction and shock absorption that protect a child's joints, the vertical deformation, the slip resistance, the tensile properties and the flame retardance - and, critically, the sampling and site acceptance provisions, because the failure in the original scandal was not in the specification of the material but in what was actually laid and in the absence of any test on the finished job. Issued on 14 May 2018 and in force since 1 November 2018.

This standard specifies the terms and definitions, classification, technical requirements, test methods, sampling requirements and requirements for the surface sports ground of synthetic materials in primary and secondary schools. testing regulations. This standard is applicable to the design, material selection, paving, testing and design of outdoor synthetic material surface sports venues for new, rebuilt and expanded schools. acceptance.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 4498.1-2013 Determination of rubber ash - Part 1

GB/T 6682-2008 Analytical laboratory water specifications and test methods

GB/T 10111-2008 Generation of random numbers and its application in product quality sampling inspection

GB/T 10654-2001 Determination of tensile strength and elongation at break of polymer porous elastic materials

GB/T 14833-2011 synthetic material track surface layer Rubber and rubber products - Determination of the composition of vulcanizates and unvulsives - Part 1 . Butadiene Rubber, ethylene-propylene binary and terpolymer, isobutylene-isoprene rubber, isoprene rubber, styrene-butadiene rubber Rubber and rubber products - Determination of the composition of vulcanized and unvulcanized rubber - Part 2. Acrylonitrile Butadiene rubber and halogenated butyl rubber

GB/T 16422.2-2014 exposure test methods for plastics - Part 2. Xenon arc lamps

GB/T 16483 chemical safety data sheet content and project sequence

GB/T 18204.2 Methods of sanitary inspection in public places - Part 2. Chemical contaminants

GB/T 18446 Determination of diisocyanate monomers in paint-based isocyanate resins for lacquers and varnishes

GB 18581-2009 Indoor decoration materials Limits of harmful substances in solvent-based wood coatings

GB 18583 Limits of harmful substances in adhesives for interior decoration materials

GB/T 18883-2002 Indoor Air Quality Standard

GB/T 22517.6 Requirements and test methods for sports grounds - Part 6. Track and field venues