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

GB/T 30197-2018

**Test method for work capacity of earth-mover tyres - Drum
method**

工程机械轮胎作业能力测试方法 转鼓法

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 30197-2013 "Engineering Machinery Tire Working Ability Test Method Drum Method". And GB/T 30197- Compared with.2013, the main technical changes except editorial changes are as follows:

--- Added the terms "TKPH rating" "equilibrium temperature" "critical temperature" (see 3.2, 3.3, 3.4);

---Modified the radial runout accuracy of the test machine drum (see 4.1.6, 4.1.6 of the.2013 edition);

--- Added "from the centerline of the tire to the shoulders on both sides, positioning the hole in the block in increments of up to 50mm" The relative position of the hole (see 5.3);

--- Added the requirement of "numbering all temperature measuring holes and performing temperature measurement in the same order for each test" (see 6.4);

--- Deleted the "Test Conditions" record and added a record of "Test Method Standard Code, Drum Diameter, Ambient Temperature" (see Chapter 8, Chapter 9 of the.2013 edition);

--- Revised the description of the numerical calculation and processing section on plotting the TKPH value versus equilibrium temperature (see 7.1,.2013) Version 8.1);

--- Modified the TKPH value to correct equation (1)~(3) when the ambient temperature changes (see 7.2,

8.2 of.2013 edition). This standard was proposed by the China Petroleum and Chemical Industry Federation. This standard is under the jurisdiction of the National Tire Rim Standardization Technical Committee (SAC/TC19). This standard is mainly drafted by: Triangle Tire Co., Ltd., Fengshen Tire Co., Ltd., Guizhou Tire Co., Ltd., Double Qian Tire Group Co., Ltd., Beijing Rubber Industry Research and Design Institute Co., Ltd.,

Shandong Linglong Tire Co., Ltd., Zhongce Rubber Group Co., Ltd., Xuzhou Xulun Rubber Co., Ltd., Anhui Jiatong Passenger Radial Tire Co., Ltd., Jiangsu General Technology Co., Ltd., Even Goodyear Tire Co., Ltd. The main drafters of this standard. Liu Liangliang, Meng Ying, Zhu Haitao, Yang Shichun, Li Bowei, Wang Kexian, Yan Shouyong, Chen Shaomei, Mao Jianqing, Yan Xiaohui, Wang Linfeng, Ding Zhenhong, Yin Qingye, Cheng Hongwei. The previous versions of the standards replaced by this standard are.

---GB/T 30197-2013. Engineering machinery tire working ability test method Drum method

1 Scope

China's national test method for the work capacity of earth-mover tyres, measured on a drum test machine, and the current edition of GB/T 30197, replacing the 2013 edition. It specifies the terms and definitions of the work capacity test, the test equipment and its accuracy, the test conditions, the test procedure, the calculation and processing of the results and the test report, and it applies to new earth-mover tyres. Work capacity is expressed as the TKPH value, tonne-kilometres per hour, the product of the average load carried and the average speed at which it is carried. The reason a large off-the-road tyre is rated this way rather than by load alone is heat. A haul truck tyre is a very large mass of rubber, rubber is a poor conductor, and the energy lost to hysteresis as the tyre deflects under load on every revolution has nowhere to go. The tyre heats up, and above a certain internal temperature the rubber degrades, the belt separates and the tyre fails - often catastrophically, on a machine that costs more per hour than the tyre does. Load and speed both feed that heat generation, so a tyre that is safe at high load and low speed becomes unsafe at the same load and higher speed. TKPH captures the combination, and the test measures it directly by running the tyre against a heated drum until its internal temperature stabilises. The 2018 revision defines TKPH rating, equilibrium temperature and critical temperature as terms, tightens the radial runout accuracy of the drum, specifies the placement and numbering of the temperature measuring holes, and revises the correction equations applied when the ambient temperature differs from the reference. Issued on 28 December 2018 and in force since 1 November 2019.

This standard specifies the terms and definitions of the engineering machinery tire working capacity (TKPH value) test, test equipment and accuracy, test conditions, Test procedures, numerical calculations and processing, test reports. This standard applies to new construction machinery tires.

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 2980 Construction Machinery Tire Specifications, Dimensions, Air Pressure and Load

GB/T 6326 tire terminology and its definition

HG/T 2177 tire appearance quality

3 Terms and definitions

The following terms and definitions as defined in GB/T 6326 apply to this document.

3.1 Job capacity workcapacity It is usually used to evaluate the index value of temperature rise performance during the operation of construction machinery tires.

Note. The unit is tons per hour (TonKilometerPerHour, TKPH).

3.2 Job capacity rating workcapacity rating TKPH rating TKPHrating It is usually expressed as the product of the load and the speed at which the tire reaches the allowable internal maximum safe temperature at an ambient temperature of 38 °C.

3.3 Equilibrium temperature The same temperature measurement hole is continuously measured for 3 times and stops rising or 3 times. The difference between the highest value and the lowest value is less than 3 °C.

3.4 Critical temperature The tire's highest safe temperature inside the tire manufacturer's view that the tire operation will not be damaged.

4.1 Testing machine

4.1.1 The diameter of the test machine drum should be 3000mm±30mm or 5000mm±50mm or 7000mm±70mm.

4.1.2 The test drum surface of the test machine drum shall be a smooth steel surface with a width greater than or equal to the total width of the test tire.

4.1.3 The loading capacity of the test loading device shall be able to meet the requirements of the test method with an accuracy of ±1.5% of full scale.