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

GB/T 6036-2020

Replacing GB/T 6036-2001

**Rubber, vulcanized or thermoplastic. Determination of
low-temperature stiffening(Gehman test)**

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Standardization Administration**

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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 6036-2001 "Determination of Low Temperature Rigidity of Vulcanized Rubber or Thermoplastic Rubber (Gimen Test)", and

Compared with GB/T 6036-2001, the main technical changes are as follows:

---Improved the accuracy requirements for temperature measuring devices (see 4:5, 3:4 in:2001 edition);

---Modified the time requirements of the measurement interval in the case of continuous heating (see 7:2, 7:3, and 5:3, 5:4 of the:2001 edition);

---Added the principle (see Chapter 3);

---Added calibration specifications (see Appendix A):

This standard uses the translation method equivalent to ISO 1432:2013 "Determination of Low-temperature Rigidity of Vulcanized Rubber or Thermoplastic Rubber (Gimman Test) Test)":

This standard was proposed by the China Petroleum and Chemical Industry Federation:

This standard is under the jurisdiction of the National Rubber and Rubber Products Standardization Technical Committee (SAC/TC35):

Drafting organizations of this standard: Shenyang Rubber Research and Design Institute Co., Ltd., Guangzhou Synthetic Materials Research Institute Co., Ltd., Jiangsu Mingzhu Testing Machine

Machinery Co., Ltd., Jiangsu Xinzhenwei Testing Machinery Co., Ltd., Qingdao Junxiang Technology Co., Ltd., Beijing Rubber Industry Research and Design Institute Co., Ltd:

Company, High-speed Rail Testing Instruments (Dongguan) Co., Ltd., Dongguan Songshu

Testing Instruments Co., Ltd., Sailun Group Co., Ltd:

1 Scope

This standard specifies the determination of the relative stiffness of vulcanized rubber or thermoplastic rubber in the static process from room temperature to -150°C:

The method of sexual characteristics is also called the Gimen test:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article

Pieces: For undated references, the latest version (including all amendments) applies to this document:

GB/T 25269-2010 Rubber test equipment calibration guide (ISO 18899:2004, IDT)

ISO 23529 Rubber-General procedures for the preparation and adjustment of rubber physical test methods (Rubber-General procedures for preparing and conditioning test pieces for physical test methods)

3 Principle

Starting from low temperature, the torsional stiffness is measured as a function of temperature: The rigidity measurement method is to combine the sample with the calibrated spring wire

When connecting, when twisting the top of the steel wire 180°, measure the twisting angle of the sample:

4 Test equipment

4:1 Torsion device

As shown in Figure 1, it is composed of a twisting head that can twist 180° in a plane perpendicular to the twisted steel wire: The top of the wire is fixed to

Turn on the head: The bottom of the steel wire is connected to the sample holder: An electrical or mechanical method should be provided to display or record the angle "without friction"

The high-speed device can adjust the zero point conveniently and accurately: The display or recording system should be able to read or record the twist angle to the nearest degree:

4:2 Torsion wire

The steel wire is made of tempered spring steel wire, and its length is 65mm+/-8mm: The torsion constant of the steel wire is 0.7mN.m,

2.8mN.m and 11.2mN.m: In case of dispute, a steel wire with a torsion constant of 2.8mN.m should be used:

4.3 Sample holder

The frame is made of material with poor thermal conductivity and is used to fix the sample vertically in the heat transfer medium: The structure of the sample holder can hold multiple test