

ICS 83.060

G 40



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

**中华人民共和国国家标准**

GB/T 528-2009/ISO 37: 2005

Replace GB 528-1998

**Rubber, vulcanized or thermoplastic —  
Determination of tensile stress-strain properties**

**硫化橡胶或热塑性橡胶**

**拉伸应力应变性能的测定**

(ISO 37: 2005, IDT)

**Issued on April 24, 2009**

**Implemented on December 01, 2009**

**Issued by General Administration of Quality Supervision, Inspection and  
Quarantine of the People's Republic of China**

**Standardization Administration of the People's Republic of China**

## Contents

<b>Foreword</b> .....	1
<b>1 Scope</b> .....	1
<b>2 Normative References</b> .....	1
<b>3 Terms and definitions</b> .....	1
<b>4 Principle</b> .....	5
<b>5 General</b> .....	5
<b>6 Test pieces</b> .....	6
<b>7 Apparatus</b> .....	7
<b>8 Number of test pieces</b> .....	9
<b>9 Preparation of test pieces</b> .....	9
<b>10 Conditioning of sample and test pieces</b> .....	10
<b>11 Marking of dumb-bell test pieces</b> .....	11
<b>12 Measurement of test pieces</b> .....	11
<b>13 Procedure</b> .....	12
<b>14 Temperature of test</b> .....	13
<b>15 Calculation of results</b> .....	13
<b>16 Expression of results</b> .....	16
<b>17 Test report</b> .....	17
<b>Annex A (Normative) Preparation of type B ring test pieces</b> .....	18
<b>Annex B (Informative) Precision</b> .....	20
<b>Annex C (Informative) Analysis of ITP data and dumb-bell shape</b> .....	24
<b>Bibliography</b> .....	29

## Foreword

This Standard is identical to ISO 37: 2005 *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties* and its technical corrigendum 1: 2008.

This Standard will replace GB/T 528-1998 *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*.

This Standard is identical to translate ISO 37: 2005 and ISO 37: 2005/Cor.1: 2008

For ease of use, following editorial changes for this Standard have been made:

- Changed the “this International Standard” as “this Standard”;
- Replaced the comma “,” by decimal point “.”;
- Deleted the Foreword of International Standard;
- For ease of use, added two Notes (Note 1 in Clause 1 and Note 2 in Article 13.1).

Comparison with GB 528-1998, main changes of this Standard are as follows:

- Added a new dumbbell test piece with named Type 1A (6.1 of this standard);
- Added Annex B, ITP data of Type 1, Type 2 and Type 1A test piece (Annex B of this standard);
- Added Annex C, analysis of ITP data and dumb-bell shape(Annex C of this standard);
- Deleted the Annex B of 1998 version.

This Standard is proposed by China Petroleum and Chemical Industry Association (CPCIA).

Annex A and Annex B of this Standard are normative annex, Annex C is informative annex.

This Standard is under the jurisdiction of Subcommittee 2 of Rubber Physical and Chemical Test Method of National Technical Committee 35 on Rubber of Standardization Administration of China.

Draft unit of this Standard: Shenyang Rubber Research and Design Institute of China Rubber Group.

Participated units of this Standard: Beijing Rubber Industry Research and Design Institute and Chengde Precision Tester Co., Ltd.

Chief drafters of this Standard: Fei Kanghong and Ji Lianzhong.

Participated drafters of this Standard: Xie Junfang, Ding Xiaoying, Zhao Lingyun and Wang Xinhua.

This standard replaces the following historical editions issued:

— GB 528-1992, GB 528-1998.

# Rubber, vulcanized or thermoplastic —

## Determination of tensile stress-strain properties

**WARNING — Persons using this Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.**

### 1 Scope

This Standard specifies a method for the determination of the tensile stress-strain properties of vulcanized and thermoplastic rubbers.

The properties which can be determined are tensile strength, elongation at break, stress at a given elongation, elongation at a given stress, stress at yield and elongation at yield. The measurement of stress and strain at yield applies only to some thermoplastic rubbers and certain other compounds.

Note: If required, determination of set after break can also be added.

### 2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 2941 Rubber - General procedures for preparing and conditioning test pieces for physical test methods (GB/T 2941-2006, ISO 23529: 2004, IDT)

ISO 5893 Rubber and plastics test equipment -- Tensile, flexural and compression types (constant rate of traverse) – Specification

### 3 Terms and definitions

For the purposes of this Standard, the following terms and definitions apply.

---

---

## 完整版本请在线下单

或咨询：

TEL： 400-678-1309

QQ： 19315219

Email：[info@lancarver.com](mailto:info@lancarver.com)

<http://www.lancarver.com>

---

---

## 对公账户：

单位名称：北京文心雕语翻译有限公司

开户行：中国工商银行北京清河镇支行

账 号：0200 1486 0900 0006 131

---

---

支付宝账户：[info@lancarver.com](mailto:info@lancarver.com)

---

---

注：付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！