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

GB/T 12830-2008

Replacing GB/T 12830-1991

**Rubber, vulcanized or thermoplastic -- Determination of shear
modulus and adhesion to rigid plates -- Quadruple shear
methods**

硫化橡胶或热塑性橡胶 与刚性板剪切模量和粘合强度的测定 四板剪切法

(English Translation)

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Foreword

2007 "Determination of vulcanized rubber or thermoplastic rubber and rigid plate shear modulus and adhesion strength. ISO 1827 equivalent standards adopted Four plate shear method "(in English).

This standard replaces GB/T 12830-1991 "vulcanized rubber and metal bonding shear strength determination of four plate method." this standard is equivalent translation ISO 1827:2007.

For ease of use, this standard made the following editorial changes.

- a) 'this International Standard' to replace the word 'this standard';
- b) Remove the preface international standards;
- c) In Chapter 11 units N/mm² unity expressed in MPa;
- d) adding a provision in the note section 6.1 of this standard.

This standard compared with GB/T 12830-1991 main changes are as follows.

--- Changing the name of the standard;

Determination of the object --- expanded from vulcanized rubber vulcanized rubber, thermoplastic rubber;

--- Increasing the shear modulus measurement method (Excerpts 3.1,4.1,10.1,11.1,12.1);

--- Use text instead of the original deltax showing adhesive strength, deleting the original $S = 1 \times 10^{-3} \text{m}^2$ values \u200b\u200b(1991 version 8.1; edition 11.2.1).

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standards Commission rubber physical and chemical test methods for Standardization Technical Committee (SAC/TC35/SC2) centralized.

This standard was drafted. Shanghai Rubber Products Research Institute, Beijing Rubber

Industry Research and Design Institute.

1 Scope

This standard specifies the determination between the four parallel rigid plates bonded rubber shear modulus and rubber and metal or other rigid board adhesive Test methods for strength.

A method for the determination of shear modulus of the rubber.

Method B for the determination of rubber adhesion strength.

This method is applicable to samples under standard laboratory conditions of preparation, the test results may also be a rubber material and the adhesive member cut production Research and control method for providing test data.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2941 rubber physical test method for preparing and conditioning General Procedure (GB/T 2941-2006, ISO 23529:2004, IDT) ISO 5893:2002 Rubber & Plastics tensile, bending and compression type (a constant speed) test equipment specification

3 Terms

The following terms and definitions apply to this standard.

The total shear stress divided by the shear stress direction according to standard methods specified in the rubber part of the bonding area of the specimen calculated on strain.

Note 1: The shear strain (γ) is a half divided by a rubber sheet that is monolithic plate thickness deformation measurements.

Shear stress (τ) is the value of the applied force divided by a rubber sheet that is double the value of the single board adhesive area.

Note 2: The specimen shall be prepared to ensure that the adhesive surface of the normal stress is zero, so that deformation can be considered pure shear deformation state.

Note 3: The standard definition of the shear modulus is sometimes called the secant modulus.

Principle 4

4.1 Method A Determination of shear modulus

Principle of the method is the determination to make the standard sample size to achieve a predetermined force required to shear deformation value. Such samples from the four rubber sheet Symmetrical parallel plates and adhered to the four components. Maximum force parallel to the bonding face, and usually does not destroy the sample, the force GB/T 12830-2008/ISO 1827:2007