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

GB/T 1040.3-2026

**Plastics-Determination of tensile properties-Part 3:Test
conditions for films and sheets**

塑料 拉伸性能的测定 第3部分：薄膜和薄片的试验条件

(English Translation)

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Foreword

GB/T 1040 Plastics - Determination of tensile properties is divided into 5 parts.

- Part 1. General principles;
- Part 2. Test conditions for moulding and extrusion plastics;
- Part 3. Test conditions for films and sheets;
- Part 4. Test conditions for isotropic and orthotropic fibre-reinforced plastic composites;
- Part 5. Test conditions for unidirectional fibre-reinforced plastic composites.

This Part is Part 3 of GB/T 1040, which is equivalent to ISO 527-3:1995 Plastics - Determination of tensile properties - Part 3. Test conditions for films and sheets.

For ease of use, the following editorial changes are made in this Part.

- a) CHANGE "this International Standard" into "this Standard" or "GB/T 1040", "this Part of ISO 527" into "this Part of GB/T 1040" or "this Part";
- b) DELETE the forward of ISO 527-3:1995;
- c) ADD the forward of national standard;
- d) REPLACE two of the three international standards in "Normative references" with the

corresponding national standards equivalent to these two documents;

e) MOVE the note in Subclause 1.2 to Subclause 1.1;

f) USE our national decimal symbol "." to replace the decimal symbol "," in the international standards;

g) The contents of Amendments 1 and 2 of ISO/TC 61/SC 11, respectively, issued in 1998 and 2001, are incorporated into the text.

This Part replaces GB/T 1040-1992 Plastics - Determination of tensile properties and GB/T 13022-1991 Plastics - Determination of tensile properties of films along with other parts.

Compared with GB/T 1040-1992, the major changes in this Part are shown in the Foreword of GB/T 1040.1-2006.

Compared with GB/T 13022-1991, the major changes in this Part are as follows.

- DELETE 1 mm/min, 2 mm/min, 10 mm/min and 30 mm/min from the test speed. ADD 300 mm/min, that is, CHANGE from the original 9 kinds [(1, 2, 5, 10, 30, 50, 100, 200, 500) mm/min] into 6 kinds [(5, 50, 100, 200, 300, 500) mm/min];
- ABOLISH the Type I specimen in the GB/T 13022-1991;
- INCORPORATE the Types II, III and IV specimens in the GB/T 13022-1991 into this Part, and CHANGE the codes of the specimen types into Types 5, 1B and 2, respectively;
- ADD Type 4 specimen, whose dimensions are completely different from the Type I specimen before revision;
- DELETE the contents related to the modulus determination and calculation;
- ADD the "Definition", "Principle", "Precision", etc.; and - ADD more information in the contents of the test report.

This Part was proposed by China Petroleum and Chemical Industry Association.

This Part shall be under the jurisdiction of the Subcommittee of Methods and Products of the National Technical Committee for Standardization of Plastics (TC 15/SC 4).

Responsible drafting organizations of this Part. National Quality Supervision and Inspection Center for Synthetic Resin, National Quality Supervision and Testing Centre of Plastic Product (Beijing), and National Quality Supervision and Testing Centre of Plastic Product (Fuzhou).

Participating drafting organizations of this Part. Resin Application Research Institute of Beijing Yanhua Petrochemical Co., Ltd, National Petrochemical Quality Supervision and Inspection Center for Synthetic Resin and Organic Raw Materials, Zhonghao Chenguang Research Institute of Chemical Industry, Guangzhou Kingfa Science and Technology Co., Ltd, Shenzhen SANS Material Detection Co., Ltd, etc.

Main drafters of this Part. Zhang Yan, Wang Yongming, He Peng and Liu Shansheng.

The previous released editions of the Standards substituted by this Part are as follows.

- GB/T 1040-1979, GB/T 1040-1992; and - GB/T 13022-1991.

Plastics - Determination of tensile properties -Part 3. Test conditions for films and sheets

1 Scope

1.1

This Part of GB/T 1040 specifies the test conditions for determining the tensile properties of plastic films or sheets less than 1mm thick, based upon the general principles given in Part 1.

Note: For sheets greater than 1mm thick, the user is referred to GB/T 1040.2.

1.2

SEE Subclause 1.2 in GB/T 1040.1-2006.

1.3

This Part is not normally suitable for determining the tensile properties of.

- a) cellular materials;
- b) plastics reinforced by textile fibres.

1.4

SEE Subclause 1.5 in GB/T 1040.1-2006.

2 Normative references

The provisions in the following documents become the provisions of this Part through reference in this Part. For dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Part.

However, parties who reach an agreement based on this Part are encouraged to study if the latest editions of these documents are applicable. For undated references, the latest editions apply to this Part.

GB/T 1040.1-2006 Plastics - Determination of tensile properties - Part 1.

General principles (ISO 527-1:1993, IDT) GB/T 6672-2001 Plastics - Film and sheeting - Determination of thickness by mechanical scanning (idt ISO 4593:1993) ISO 4591:1992 Plastics - Film and sheeting - Determination of average thickness of a sample, and average thickness and yield of a roll, by gravimetric techniques (gravimetric thickness)

7 Number of specimens

SEE Clause 7 in GB/T 1040.1-2006.

8 Conditioning

SEE Clause 8 in GB/T 1040.1-2006.

9 Procedure

SEE Clause 9 in GB/T 1040.1-2006.

10 Calculation and expression of results

SEE Clause 10 in GB/T 1040.1-2006, except for "10.3 Modulus calculation" and "10.4 Poisson's ratio, μ ".

11 Precision

The precision of the test method is not known because inter-laboratory data are not available. When inter-laboratory data are obtained, a precision statement will be added at the following revision.

12 Test report

The test report shall include the following information.

a) a reference to this Part of GB/T 1040, including the type of specimen and the test speed, written in the following format.

Tensile test GB/T 1040.3/1B/50 Type of specimen Test speed

b) to q), SEE b) to q) in Clause 12 of GB/T 1040.1-2006.