



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

GB/T 10006-2021

**Plastics - Film and sheeting - Determination of the coefficients
of friction**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Terms and definitions...	5
4 Principle...	7
5 Test apparatus...	7
6 Test specimens...	9
7 Conditioning...	9
8 Test procedure...	9
9 Calculation of results...	11
10 Precision...	11
11 Test port...	12
Annex A (Informative) Preliminary precision...	13

Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 10006-1988 "Plastics - Film and sheeting - Determination of the coefficients of friction". Compared with GB/T 10006-1988, the main technical changes are as follows.

- Modify the scope (see clause 1; clause 1 of the 1988 edition);
- Modify the normative references (see clause 2; clause 2 of the 1988 edition);
- Modify the terms and definitions (see clause 3; clause 3 of the 1988 edition);
- Add the note "The coefficient of friction of films usually ranges between 0.2 and 1" (see note 1 to 3.4.2);
- Modify the principle (see clause 4; clause 4 of the 1988 edition);
- Add the test device requirement that "Either the sled or the test table can be used as the moving part"; modify figure 1; delete figure 2 (see 5.1 and figure 1; 5.1, figure 1, and figure 2 of the 1988 edition);

- Modify the naming, order of subclauses, and structure of the "Test apparatus" (see clause 5; clause 5 of the 1988 edition);
- Add the test speed setting requirement of "500 mm/min $\pm$ 10 mm/min" (see 5.2.3);
- Add the requirement for checking the transition time when using the force-measuring system of a tensile tester (see 5.2.4);
- Modify "Directly connect the sled and the load cell" to "The spring shall be replaced by a rigid connection" (see 5.2.5; 5.6 of the 1988 edition);
- Add the overshoot requirement for the coefficient of friction (see the note to 5.2.5);
- Modify specimen requirements (see clause 6; clause 7 of the 1988 edition);
- Modify the conditioning (see clause 7; clause 8 of the 1988 edition);
- Add the general rules of test procedure (see 8.1);
- Modify the test procedure of "Film against film" and "Film in contact with metal or another material" (see 8.2 and 8.3; 9.1 and 9.2 of the 1988 edition);
- Modify the calculation of results of static coefficient of friction and dynamic coefficient of friction (see 9.1 and 9.2; 10.1 and 10.2 of the 1988 edition);
- Delete the requirement of "Significant figures for result calculation" (see

10.3 of the 1988 edition);

- Add a description of precision (see clause 10);
- Modify the test report requirements (see clause 11; clause 11 of the 1988 edition);
- Add "Preliminary precision" (see annex A).

This Standard, using translation method, is identical to ISO 8295.1995 "Plastics

- Film and sheeting - Determination of the coefficients of friction".

This Standard was proposed by China National Light Industry Council.

This Standard shall be under the jurisdiction of National Technical Committee

48 on Plastic Products of Standardization Administration of China (SAC/TC 48).

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The previous edition of the standard replaced by this Standard was released as follows.

- GB/T 10006-1988.

Plastics - Film and sheeting -

Determination of the coefficients of friction

1 Scope

This Standard specifies a method for determining the coefficients of starting and sliding friction of plastic film and sheeting when sliding over itself or other substances.

2 Normative references

The following documents are indispensable for the application of this document.

For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

3 Terms and definitions

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

The force acting perpendicular to the surfaces in contact.

4 Principle

The surfaces to be tested are placed together in plane contact and under uniform contact pressure. The force needed to displace the surfaces relative to each other is recorded.

5 Test apparatus

Figure 1 shows an example of apparatus in which the table is moved horizontally for the determination of the coefficients of friction.

6 Test specimens

For each measurement, two test specimens measuring about 80 mmx200 mm are needed. Three such pairs of test specimens taken from points uniformly distributed over the width of the sample, or the circumference in the case of tubular film, shall be tested.

7 Conditioning

Unless otherwise specified, film specimens shall be conditioned for at least 16 h in standard atmosphere 23/50 as defined in ISO 291 prior to testing. The test shall be carried out in the same environment.

8 Test procedure

If the frictional behaviour of a film in contact with the surface of another material is to be determined, the specimen of the material is fixed on the horizontal test table. Otherwise, the same procedure as 8.2 shall be used.

The coefficients of friction determined in this way are dependent on the type of material as well as on its surface finish.

9 Calculation of results

The frictional force acting during the sliding motion often differs from the value which would exist in an ideal situation due to secondary effects related to