

ICS 59.060.01
CCS W 50



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

GB/T 14345-2008

**Testing method for twist of man-made filament
(English Translation)**

Issued on: June 18, 2008

Implemented on: March 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the PRC**

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Terms and definitions...	5
4 Principle...	6
5 Instruments and tools...	6
6 General rules of testing...	6
7 Testing procedures...	9
8 Result calculation...	10
9 Tolerances...	11
10 Indication of twist and direction of twist...	11
11 Testing report...	12
Appendix A (Informative) Rapid conditioning method...	13
Appendix B (Informative) Method for obtaining pretension...	14
Appendix C (Normative) Statistics: terminology and calculations...	15

1 Scope

This Standard specifies the testing method for twist of man-made fibre filaments such as polyester, polyamide (chinson), polypropylene, cellulose fibre.

[Translator note: There is additional 1 nick-name for polyester and polypropylene respectively in Chinese.]

This Standard applies to the determination of the twist of man-made fibre filaments with twist. The man-made fibre filament drawn from the fabric can refer to it for use.

This Standard does not apply to filaments with an elongation greater than 0.5% when the tension increases from 0.05 cN/dtex to 0.1 cN/dtex.

2 Normative references

The following documents contain provisions which, through reference in this

Standard, constitute provisions of this Standard. For the dated references, their subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this

Standard are encouraged to investigate whether the latest editions of these documents are applicable. For undated reference documents, the latest editions apply to this Standard.

GB/T 3291.1 Textiles - Terms of textile material properties and test - Part 1:

Fibre and yarn

GB/T 3291.3 Textiles - Terms of textile material properties and test - Part 3:

General

GB/T 6502 Sampling method of man-made filament yarns

GB/T 6529 Textiles - Standard atmospheres for conditioning and testing

GB/T 8170 Rules of rounding off for numerical values and expression and judgement of limiting values

3 Terms and definitions

The terms and definitions established in GB/T 3291.1 and GB/T 3291.3 apply

In the process of removing the sample, it shall avoid the loss of twist and accidental stress on the sample.

Note: Do not take out rolls which have been accidentally damp, scratched or whose packages have been opened during transportation.

6.2 Standard atmospheres for preconditioning, conditioning and testing

USE standard atmospheres for conditioning and testing of textiles specified in GB/T 6529.

6.2.1 Preconditioning

When the moisture regain of the sample is greater than the conventional moisture regain, preconditioning is required:

- Temperature does not exceed 50 °C;
- Relative humidity is 5%~25%;
- Time is greater than 30 min.

6.2.2 Standard atmospheres for conditioning and testing

Standard atmosphere for conditioning used by polyester and polypropylene filaments:

- Temperature is $(20 \pm 2)^\circ\text{C}$;
- Relative humidity is $(65 \pm 5)\%$;

- Conditioning time is 4 h.

Standard atmosphere for conditioning and testing used by other man-made fibre filaments:

- Temperature is $(20 \pm 2)^{\circ}\text{C}$;
- Relative humidity is $(65 \pm 2)\%$;
- Recommended conditioning time is 16 h.

See Appendix A for the conditioning time agreed by both parties.

6.3 Pretension

6.3.1

The pretension of the sample is calculated according to formula (1):

7.1 Determination of direction of twist

TAKE a sample with a length of about 100 mm; HOLD one end to hang it;

observe the inclined direction of the vertical helix. Those that are consistent with the middle part of the letter "S" are "S" twists. Those that are consistent with the middle part of the letter "Z" are "Z" twists.

7.2 Multifilament testing

Before the test, pull off the filament that may be injured on the surface for several meters. CLAMP one end of the sample into the fixed gripper; USE the tensioning device to apply the specified pretension. After clamping the other end of the sample into the rotating gripper, remove the twist of the sample, until the components of the multifilament are parallel to each other. Or use an analysis needle to pass from the sample at one end of the fixed gripper to the sample end of the rotating gripper; determine the twist; verify the direction of twist.

7.3 Strand testing

7.3.1

The strand testing shall be carried out according to the method for multifilament of 7.2.

7.3.2 To determine the twist of each component of the strand, each component

can be used as a new sample to be determined according to 7.2.

For each component to be determined, the pretension shall be calculated according to the nominal linear density of each component. Before measuring the number of turns, reset the initial length.

7.3.2.1 Same components

If the components of the strands are the same, for the multifilament that has been separated by the first untwisting operation, except for leaving one multifilament, cut off other separated components near the gripper. The remaining one is used to determine the twist.

7.3.2.2 Different components

After the strands are untwisted according to the method described in 7.2, use adhesive tape to fix the ends of each component. Each component is marked so that it can be distinguished during the next determination. Then cut them from between the grippers. Since this result will not maintain the original length,

11 Testing report

The testing report includes:

- a) Name and specification of sample;
- b) Number identification selected as the batch sample package;
- c) Testing method used and all testing parameters;
- d) Individual performance test results of laboratory samples; if the standard deviation and coefficient of variation are calculated, they shall be written into the report;
- e) Reminders on modification of testing procedures after negotiation and other parts that are inconsistent with this Standard;
- f) Observed anomalies;
- g) Test personnel, test date.

.....