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Replacing GB/T 6506-2001

Synthetic fibre - Test method for crimp contraction properties of textured filament yarns

合成纤维 变形丝卷缩性能试验方法

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Foreword

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

This Standard replaces GB/T 6506-2001 "Test method for crimp contraction properties of textured filament yarns".

Compared with GB/T 6506-2001, the main technical changes in this Standard are as follows:

- expanded the scope of application of the standard (see Clause 1 of this Edition, Clause 1 of Edition 2001);
- in normative references, deleted GB/T 6529, GB/T 8170, added GB/T 9994 (see Clause 2 of this Edition, Clause 2 of Edition 2001);
- deleted the terms and definitions (see Clause 3 of this Edition, 3.1~3.6 of Edition 2001);
- modified the pre-tensioning accuracy requirements for shaken filament yarn (see 5.1, 8.3 of this Edition, 5.1, 8.6 of Edition 2001);
- modified the oven temperature-control accuracy requirements (see 5.4, 9.2 of this Edition, 5.4, 9.2 of Edition 2001);
- added the sampling methods and sample requirements for partial laboratory samples (see Clause 6 of this Edition, Clause 6 of Edition 2001);
- modified the standard atmosphere for humidification conditioning and testing use (see Clause 7 of this Edition, Clause 7, 8.1 of Edition 2001);
- modified the filament yarn density setting of the line density $\leq 400\text{dtex}$ sample from the original one to two: when the sample line density is $\leq 200\text{dtex}$, the set value is 2500dtex ; when it is $200\text{dtex} < \text{sample line density} \leq 400\text{dtex}$, the set value is 5000dtex (see 8.6 of this Edition, 8.7.1 of Edition 2001);
- modified the linear density of sample $\leq 200\text{dtex}$ in Table 1 and control table of testing filament yarn's coil number, added the linear density of $>200\text{dtex}$, $\leq 400\text{dtex}$ and control Table 2 of testing filament yarn's coil number (see Table 1, Table 2 of this Edition, 8.7.1 of Edition 2001);
- modified the crimping time (see 9.3 of this Edition, 9.3 of Edition 2001);
- modified the rounding off digits of test result data (see Clause 10 of this Edition, 10.7 of Edition 2001).

Synthetic fibre - Test method for crimp contraction properties of textured filament yarns

1 Scope

This Standard specifies the test methods for crimp contraction properties of textured filament yarns of synthetic fibre.

This Standard is applicable to the textured filament yarns of synthetic fibre.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 4146 (all parts), *Textiles - Man-made fibers*

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

GB/T 9994, *Conventional moisture regain of textiles*

GB/T 14343, *Testing method for linear density of man-made filament yarns*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 4146 (all parts) apply.

4 Principle

Set a certain bus density of filament yarn. After the crimping process, load with the specified loading program then the length of the filament yarn shall change. By using the length of the filament yarn measured under the specified loading procedure, the indicators of crimp contraction properties such as crimping shrinkage CC, curl modulus CM, curl stability CS, etc. of the textured filament yarns can be calculated.

The hammer for load application shall meet the following requirements:

- no deformation at the specified temperature;
- can meet the tension requirements of the loading program.

6 Sampling

6.1 Partial laboratory samples are extracted as required.

6.2 Batch laboratory sample extraction is according to GB/T 6502. Extract 20 packages. And randomly select 15 packages in the 20 packages.

6.3 The laboratory sample shall be taken from the same batch of stress decay time. If the laboratory sample is stored for more than 7 days, the effect of stress decay time on test results may not be considered.

7 Standard atmosphere for humidity conditioning and testing use

7.1 No humidity conditioning is required during testing. In the arbitration test, the vertical suspension made of textured filament yarn shall be added with 0.001 cN/dtex tension and humidity conditioning for 2h.

7.2 Specimen with a nominal moisture regain less than 4.5%: temperature of $(20.0 \pm 2.0)^{\circ}\text{C}$, relative humidity of $(65.0 \pm 5.0)\%$. Specimen with a fixed moisture regain of 4.5% or more: temperature of $(20.0 \pm 2.0)^{\circ}\text{C}$, relative humidity of $(65.0 \pm 3.0)\%$. The specific moisture regain of various fibers shall refer to GB/T 9994.

8 Specimen preparation

8.1 In addition to the nominal linear density of the known specimen, the linear density of the textured yarn is measured according to GB/T 14343, and the linear density is rounded to an integer.

8.2 For laboratory sample, shake 2 yarns per package.

8.3 Before removing the yarn, first remove at least 50 m of surface yarn on each package. The distance between the specimens must be at least 5 m.

8.4 Set the pre-tension shaken yarn according to the nominal linear density of the specimen. The pretension is (0.20 ± 0.02) cN/dtex.

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