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TEXTILE INDUSTRY STANDARD OF
THE PEOPLE'S REPUBLIC OF CHINA

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FZ/T 12018-2019

Replacing FZ/T 12018-2009

Compact spun combed cotton grey yarn

紧密纺精梳棉本色纱线

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Compact spun combed cotton grey yarn

1 Scope

This Standard specifies the terms and definitions, classification, labeling, requirements, test methods, inspection rules and marks, packaging for compact spun combed cotton grey yarn.

This Standard is applicable to combed cotton grey yarn produced by compact spinning technology.

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 3292.1, *Textiles - Unevenness of textile strands - Part 1: Capacitance method*

GB/T 3916, *Textiles - Yarns from packages - Determination of single-end breaking force and elongation at break*

GB/T 4743-2009, *Textiles - Yarn from packages - Determination of linear density (mass per unit length) by the skein method*

GB/T 5705, *Textiles - Cotton textile products - Terminology*

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

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

FZ/T 01050, *Textiles - Classifying and testing method of yarn faults - Capacitance*

FZ/T 01086, *Test method for yarn hairness - Projection counting method*

FZ/T 10007, *Inspection rules for grey yarn of cotton, man-made fiber or their blend*

FZ/T 10008, *Marking and packing of yarn spun with pure cotton, pure*

chemical fibre or blend

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 5705 as well as the followings apply.

3.1 compact spun combed cotton grey yarn

the yarn that a fiber gathering device is added before the drafting part of the ring spinning frame, and the combed cotton sliver fiber is gathered and spun by airflow or mechanical means

4 Classification, labeling

4.1 The product specifications of compact spun combed cotton grey yarn are classified according to different production processes and linear densities.

4.2 The production process and raw material code of compact spun combed cotton grey yarn are indicated by English letters. CP is the code for compact spinning. JC is the code for combed cotton.

4.3 When the compact spun combed cotton grey yarn is marked with a code, the production process code and raw material code of the yarn shall be marked before the line density.

Example 1: The compact spun combed cotton grey yarn with a linear density of 14.8tex shall be written as CP JC 14.8 tex.

Example 2: The compact spun combed cotton grey double-stranded thread with a linear density of 14.8tex shall be written as CP JC 14.8tex × 2.

5 Requirements

5.1 Items

The technical requirements for compact spun combed cotton grey yarn (thread) include 9 items: linear density deviation rate, linear density variation coefficient, single yarn (thread) breaking strength, single yarn (thread) breaking strength variation coefficient, evenness variation coefficient, kilometer thick section (+50%), kilometer neps (+200%), 100,000-meter yarn defect, hairiness index H value or 2mm hairiness index.

5.2 Grading regulations

Annex B

(normative)

Test method for hairiness index H value

B.1 Principle

The principle of photoelectric hairiness detection is: When the continuously moving yarn passes through the detection zone, the hairiness of the protruding yarn body scatters the continuous monochromatic parallel light in the detection area. The scattered light is accumulated by the lens system and detected by the photoelectric sensor. The electrical signal output by the detector can be processed by the circuit to provide various results indicating the characteristics of yarn hairiness.

B.2 Instruments

B.2.1 Yarn frame: enables the yarn of various packages to be unwound under a certain tension, and prevents the yarn from being accidentally elongated or damaged.

B.2.2 Detector: photoelectric measuring groove and roller traction device that can make the yarn pass through the measuring groove at a certain speed.

B.2.3 Controller: control the testing process and complete the processing of the electrical signal of yarn hairiness. Obtain various test results for display or printing (hairiness H value, sH value, hairiness spectrogram, hairiness unevenness curve and so on.)

B.3 Sampling quantity and test times

B.3.1 Sampling quantity of single yarn and strand: 10 rolled packages.

B.3.2 Test times: 1 test for each rolled package.

B.3.3 The sampling quantity and test times can be specified as needed. The recommended sampling length is 250m~2000m. The length for conventional test is 400m. The length for product acceptance arbitration test is 1000m.

B.4 Atmospheric conditions

B.4.1 The humidity conditioning of the specimen shall be balanced for 24h in accordance with the standard atmosphere in GB/T 6529, that is, when the temperature is $(20.0 \pm 2.0)^{\circ}\text{C}$ and the relative humidity is $(65.0 \pm 4.0)\%$. When more than one test is required for a large and tight sample rolled package or for

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