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Viscose filament yarn

粘胶长丝

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Viscose filament yarn

1 Scope

This Standard specifies the requirements for product classification, technical requirements, test methods, inspection rules and marks, packaging, transportation, and storage of viscose filament yarn.

This Standard is applicable to the viscose filament yarn that is produced from cotton pulp or wood pulp.

This Standard is applicable to the authentication and acceptance of the viscose filament yarn of which the linear density is at 66.7dtex~333.3dtex. Dope colored silk, the ones of which the linear density is below 66.7dtex and above 333.3dtex can refer to this Standard as reference.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 250, *Textiles - Tests for colour fastness - Grey scale for assessing change in colour*

GB/T 1250, *Rules for expression and judgement of limiting values*

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 4146, *Textiles - Man-made fibers*

GB/T 6502, *Sampling method for synthetic filament and textured yarns*

GB/T 6503, *Testing method for moisture regain of man-made fibers*

GB/T 6504, *Man-made fiber - Test method for oil content*

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*

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

GB/T 14344, *Testing method for tensile of man-made filament yarns*

GB/T 14345, *Testing method for twist of man-made filament*

FZ/T 50014, *Method for the determination of residual sulphur in viscose fibers-direct iodimetry*

FZ/T 50015, *Test and assessment for dyeing uniformity of viscose filament yarn*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 3291.1, GB/T 3291.3 and GB/T 4146 as well as the followings apply.

3.1 product lot

The serial production batch number with same raw materials, chemical materials, auxiliary materials, process conditions and product specifications.

3.2 test lot

The test batch that is sampled periodically within a certain range so as to test the stability of product quality during continuous production.

4 Product classification and marks

4.1 According to the different amount of matting agent or color paste added during production, viscose filament yarn is divided into shiny yarn, matting yarn, and colored yarn.

4.2 Product specifications are expressed by linear density (dtex) and number of filaments (f). For example, for the yarn of which the linear density is 133.3dtex, and the number of filaments is 30f, the specification is expressed as 133.3dtex/30f.

4.3 The product model is identified by the pulp, product specifications and production process used in production. For example, 133.3dtex/30f cotton pulp (bright) viscose filament yarn.

For the standard atmosphere for humidity control and test, according to GB/T 6529, the temperature is $(20\pm 2)^{\circ}\text{C}$ and the relative humidity is $(65\pm 2)\%$. Pre-conditioning temperature is less than 50°C and relative humidity is 10%~25%.

6.1.2 Sample preparation

6.1.2.1 Preparation of samples for measuring physical and mechanical properties

6.1.2.1.1 Put each laboratory sample under standard atmospheric conditions to adjust the humidity for 24h (the production plant allows humidity control for 1h under normal conditions, but when the moisture regain of the sample exceeds 15%, the humidity should be adjusted for 24h). Then shake the sample.

6.1.2.1.2 Pull the laboratory sample off the surface silk. Use a length measuring machine to shake 3 strands. Use the first 2 strands to determine the linear density (fineness). Use the last 1 strand to determine the number of filaments, dry fracture strength, wet fracture strength and elongation at break.

6.1.2.1.3 The 2 strands for measuring linear density and 1 strand for measuring dry fracture strength and elongation shall be baked in an oven with a temperature of 50°C to be lower than the public moisture regain (the production plant can bake at 70°C for 30min). Then put them under standard atmospheric conditions to absorb moisture for 2h~6h, so that the silk thread absorbs moisture fully and reaches the moisture absorption balance.

6.1.2.1.4 The sample for measuring twist is obtained directly from the laboratory sample.

6.1.2.2 Preparation of samples for determination of residual sulfur

Cut the sample into small pieces (about 2cm in length). Mix evenly. Put them into a ground bottle to keep moisture.

6.2 Linear density and number of filaments

Strip the surface silk of each laboratory sample, in accordance with GB/T 14343.

6.3 Breaking strength and breaking elongation

Strip the surface silk of each laboratory sample, in accordance with GB/T 14344.

6.4 Twist

In accordance with GB/T 14345.

6.5 Residual sulfur

7.5.1 The grades for the physical and mechanical properties and dyeing and chemical properties of a lot of products are conducted item by item according to Table 1. The grades are respectively based on the rounding value comparison method in GB/T 1250. The lowest grade is used as the highest grade of this lot of products.

7.5.2 The appearance quality of each silk tube, silk skein, and silk cake in a lot of products is graded based on Table A.1, Table A.2, Table A.3 in Annex A item by item. The grades are respectively according to the rounding value comparison method in GB/T 1250. The lowest grade is used as the grade of each filament tube in this lot.

7.5.3 The grade of each silk tube (twist, cake) in a lot of products is determined according to the lowest grade among the evaluation results of physical and mechanical properties, dyeing properties and appearance defects.

7.5.4 The test data of each sample is based on one test and no retest is allowed. If the tester finds an abnormality in the operation or the instrument, the tester shall take a sample from the original laboratory sample and do it again after taking measures. And use the redo data as the test result.

8 Reinspection rules

8.1 When the shipment arrives at the consignee, check whether the outer packaging quality, number of pieces, and net quality of the package are consistent with the manifest. If the quality problems are caused due to transportation or storage process, it shall find out the reasons and the responsibility shall be taken by the responsible party.

8.2 Within three months, if the product performance quality is found to be inconsistent with the quality report, it can be submitted for re-inspection. If more than one-third of this lot of products is used, no re-inspection is allowed.

8.3 For products within one year exited from the factory, if the quality of this lot of products affects the quality of the post-processed products during use, and causes serious losses, the supplier and the purchaser shall analyze the reasons, clarify the responsibilities, and negotiate the treatment.

8.4 The inspection items during the reinspection are the same as those specified in 7.2 inspection items.

8.5 The batching shall be conducted according to the original product lot during reinspection.

8.6 The sampling method during the reinspection shall be carried out according

lot number, box number, official mass and actual weight, raw materials, storage date and quality inspection employee number on it.

9.2 Packaging

9.2.1 The viscose filament yarn products are divided into tube, skein and cake. The weight of the same lot of products, the weight of the tube, the skein and the cake shall be consistent.

9.2.2 The packaging of the product shall be firm, safe, moisture-proof and easy to transport to ensure that the product is not damaged.

9.2.3 Products of different lot numbers, varieties, grades and specifications shall be packaged separately.

9.2.4 The moisture regain rate of the product during packaging shall be within 8%~15%. When exceeding, the humidity shall be adjusted to the specified range before packaging.

9.3 Transportation

Handle with care during transportation. Prohibit damage to the outer packaging and moisture.

9.4 Storage

This product shall be stacked in batches and stored in a dry and clean warehouse. Must not stack in open air. Do not put it upside down and avoid super high during storage to protect product quality from damage.

number of hairs with a length of less than 3mm (including loop hairs with a vector length of less than 3mm) is greater than 20 (including the number of hairs exceeding 3mm), it shall be reduced to a qualified product. A wounded thread of which the single thread is not completely broken, is counted by the wool.

A.2.4.3 Knot: Refers to the connection after the thread breaks. During inspection, the tubed yarn is counted directly from the small end, and the knot shall be placed on the end of the small end of the yarn tube. The twisted yarn is counted from the inside and outside two layers. If there is a broken head, missed or wrong connection, it is regarded as out-of-class product.

A.2.4.4 Pollution: Refers to oily yarn, rusty yarn and stains that cannot be washed off with water. During the inspection, when the total area contaminated on the surface of the tube is not more than 6mm^2 , it shall be slightly oblivious. When it does not exceed 8mm^2 , it shall be more obvious. When the number of strands and the total length of the strands are less than 3 or the total length is shorter than 20mm, it shall be slightly obvious. When the number of strands is less than 7 or when the total length is shorter than 40mm, it shall be more obvious. The cake-packed yarn is calculated according to the total pollution area of the yarn cake. It shall be slightly obvious when it is less than 6mm^2 . It shall be more obvious when it is less than 8mm^2 .

A.2.4.5 Curling: Refers to the regular bending and wrinkle points formed when the thread is generated. When inspecting yarn skeins and yarn cakes, compare with the standard sample respectively. The yarn cake with obvious curling shall be out-of-class product.

A.2.4.6 Forming: Refers to the neatly winding condition of the yarn tube (cake) layer. Do not press by hand during inspection.

When both ends of the paper tube of yarn tube shall protrude from the surface of the yarn and the unevenness of the yarn layer is 7mm between the highest and the lowest, it shall be the qualified product. When the difference between the unevenness is less than or equal to 3mm, it shall be the first-class product. When it is greater than 3mm, it shall be the qualified product. When the yarn layer is flush with the tube, it shall be the qualified product. When the tube is loose, it shall be reduced to the qualified product. When the inner and outer layers of the yarn tube have two obvious elastic layers, it shall be quite good. When there are three elastic layers, it shall be slightly bad. When it exceeds three elastic layers, it shall be quite bad.

When the two ends of the cake-packed yarn are flush, it shall be good. When there are unobvious size heads, it shall be slightly bad. When there are obvious size heads, it shall be quite bad. When feathers appear on the surface of the cake and tails appear on the inner layer, it shall be out-of-class product.

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