

ICS 59.060.20
CCS W 52

FZ

**TEXTILE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

FZ/T 54013-2019

**Polyamide 66 filament yarns for industry
(English Translation)**

Issued on: May 2, 2019

Implemented on: November 1, 2019

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

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1 Scope

This Standard specifies the terms and definitions, product identification, technical requirements, test methods, inspection rules and marking, packaging, transportation, storage and other requirements for polyamide 66 filament yarns for industry.

This Standard is applicable to polyamide 66 filament yarns for industry with a linear density range of 500 dtex~3000 dtex. Other polyamide 66 filament yarns for industry can be used for reference.

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 2828.1-2012, Sampling procedures for inspection by attribute -- Part 1:

Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

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 (all parts), Textiles -- Man-made fibres

GB/T 6502, Sampling method for synthetic filament yarns

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

GB/T 6504, Testing method for oil content of man-made fibres

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

GB/T 8170-2008, Rules of rounding off for numerical values & expression and judgement of limiting values

GB/T 14343, Testing method for linear density of synthetic filament yarns

GB/T 14344, Man-made fibre -- Test method for tensile properties of filament yarns

L0 - length of the specimen before heat treatment, in millimeters (mm);

S - average dry heat shrinkage rate, %;

n1 - number of specimens.

6.5.1 Principle

Under specified conditions, the percentage of the breaking strength of the test specimen after being heated to high temperature to the original breaking strength.

6.5.2.1

Refer to GB/T 14344 for the strength and elongation test instruments.

6.5.2.2 Oven

equipped with a constant temperature control device.

6.5.2.3

Wire winding rack, etc.

6.5.3.1

The breaking strength test conditions are the same as those in 6.3.2.

6.5.3.2

The oven temperature is: $(180 \pm 1)^{\circ}\text{C}$.

6.5.3.3

The treatment time is: 4 h.

6.5.3.4 Laboratory samples

specimen preparation is the same as in 6.1.2; each sample is tested twice.

6.5.4.1

Twist the humidified specimen according to 6.3.1 and measure the strength on a strength tester.

6.5.4.2

Wind the remaining specimen after strength test on the wire winding rack for about 20 turns and then cut it off. Tie a knot at the two ends of the wire and tie a colored thread at the knot.

6.5.4.3

Remove the specimen from the wire winding rack and hang it on a bracket.

Place it in a 180°C oven for 4 h. After taking it out, place it in a constant temperature and humidity chamber for (24 ± 2) h.

6.5.4.4

Measure the strength of the specimen after humidity adjustment on a strength testing machine. The strength compared with the strength before heating is the strength retentivity at high temperature.

7.4.3

Damaged packages shall not be extracted.

7.5.1

Appearance inspection items shall be evaluated barrel by barrel according to the requirements of the supplier and the purchaser or according to the provisions of Table

A.1.

7.5.2

The test values or calculated values of the performance items shall be compared with the index limit values in Table 1 according to the rounded value comparison method in GB/T 8170-2008. The grade of the lowest item in the performance items in the inspection batch shall be determined as the grade of the batch of products.

7.5.3

If the user has special requirements for physical properties, the classification regulations shall be implemented according to the contract standards.

7.6.1 General

Within 3 months after a batch of products arrives at the consignee, a re-inspection may be requested as acceptance or if there is any objection to the quality. If more than one- third of the batch of products has been used, re-inspection shall not be requested. If the quality of the batch of products affects the quality of the subsequent processed products and causes serious losses, the supplier and the purchaser shall analyze the reasons, clarify the responsibilities, and negotiate a solution.

7.6.2 Inspection items

Same as 7.2.

7.6.3 Batching rules

Batching shall be based on production batches.

7.6.4.1

Appearance and quality differences are subject to sampling inspection. The sample size (code) is determined according to the general inspection level II in Table 1 of GB/T 2828-2012 based on the batch.

7.6.4.2

The laboratory samples of the performance inspection items are graded according to the provisions of 7.4.2.

7.6.5.1.1

For appearance, the sample size is as per 7.6.4.1. Then, according to the qualified quality level AQL value of 4.0 in Table 2 of GB/T 2828.1-2012 for "single sampling plan for normal inspection", determine the qualified acceptance number A_c and the unqualified rejection number R_e .

7.6.5.1.2

Appearance shall be evaluated in accordance with the provisions of 5.5. When the number of unqualified packages is $\leq A_c$, the original grade shall be maintained.

When the number of unqualified packages is $\geq R_e$, the original grade shall be reduced by