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**FZ**

TEXTILE INDUSTRY STANDARD OF  
THE PEOPLE'S REPUBLIC OF CHINA

ICS 59.080.30

W 63

**FZ/T 73043-2020**

Replacing FZ/T 73043-2012

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**Knitted shirts**

针织衬衫

**Issued on: December 9, 2020**

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## Foreword

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

This standard replaces FZ/T 73043-2012 *Knitted shirts*. Compared with FZ/T 73043-2012, the main technical changes are as follows:

- The scope of the standard is modified to clarify that it does not apply to shirts containing fillings or products for infants and young children aged 36 months or below (see Chapter 1; see Chapter 1 of the 2012 edition);
- The assessment indicators such as dimensional change rate after dry cleaning, color fastness to dry cleaning, and appearance quality after washing are added, and the content that shirts worn by children aged older than 36 months and no older than 14 years shall also comply with the relevant provisions of GB 31701 is added (see 4.2; see 4.2 of the 2012 edition);
- The assessment requirements for fiber content, dimensional change rate after washing (dry cleaning), pilling, crinkling degree of all-wool products after washing, and color fastness to light and perspiration are modified (see 4.2; see 4.2 of the 2012 edition);
- The separate classification of the assessment indicators of color fastness to soaping and rubbing of printed (hot stamping) products is deleted (see 4.2.1; see 4.2.1 of the 2012 edition);
- The specification deviation and measurement regulations on the clothes length are modified, the specification deviation requirements for the neckline of superior products are modified, and the specification tolerance of the length of short sleeves is added (see Table 3 and Table 6; see Table 3 and Table 4 of the 2012 edition);
- The intrinsic quality inspection conditions are modified (see 5.4; see 5.3 of the 2012 edition);
- The test method for the distortion rate after washing is modified (see 5.5.7; see 5.4.7 of the 2012 edition);
- The test method for color fastness to dry cleaning is added (see 5.5.14);
- The test method for color fastness to transfer in joints is modified, and the original Appendix A is deleted (see 5.5.17; see 5.4.16 and Appendix A of the 2012 edition);
- The test method for appearance quality after washing is added (see 5.5.18);

# Knitted shirts

## 1 Scope

This standard specifies the product sizes, requirements, inspection rules, judgment rules and product instructions, packaging, transportation and storage of knitted shirts.

This standard applies to knitted shirts made of knitted fabrics as the main material.

This standard does not apply to shirts containing fillings or products for infants and young children aged 36 months and below.

## 2 Normative references

The following documents are essential for the application of this document. For referenced documents with dates, only the versions corresponding to the dates are applicable to this document; for referenced documents without dates, the latest versions (including all amendments) are applicable to this document.

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

GB/T 1335(all parts) Standard sizing systems for garments

GB/T 2910(all parts) Textiles - Quantitative chemical analysis

GB/T 2912.1 Textiles - Determination of formaldehyde - Part 1: Free and hydrolyzed formaldehyde (water extraction method)

GB/T 3920 Textiles - Tests for colour fastness - Colour fastness to rubbing

GB/T 3921-2008 Textiles - Tests for colour fastness - Colour fastness to washing with soap or soap and soda

GB/T 3922 Textiles - Tests for colour fastness - Colour fastness to perspiration

GB/T 4802.1-2008 Textiles - Determination of fabric propensity for fuzzing and pilling - Part 1: Circular locus method

GB/T 4856 Package of cotton goods and knitwear

GB/T 5296.4 Instructions for use of products of consumer interest - Part 4: Textiles and apparel

GB/T 5711 Textiles - Tests for colour fastness - Colour fastness to drycleaning using perchloroethylene solvent

GB/T 5713 Textiles - Tests for colour fastness - Colour fastness to water

GB/T 6411 A series of size of knitted underwear

GB/T 7573 Textiles - Determination of pH of aqueous extract

GB/T 8427-2019 Textiles—Tests for color fastness—Color fastness to artificial light: Xenon arc

GB/T 8629-2017 Textiles - Domestic washing and drying procedures for textile testing

GB/T 8878 Knitted underwear

GB/T 14576 Textiles - Tests for colour fastness - Colour fastness to light of textiles wetted with artificial perspiration

GB/T 14801 Test method for skewness and bow in woven and knitted fabrics

GB/T 16988 Quantitative determination for mixtures of special animal fibre and wool

GB/T 17592 Textiles - Determination of the banned azo colourants

GB 18401 National general safety technical code for textile products

GB/T 19976-2005 Textiles - Determination of bursting strength - Steel ball method

GB/T 23319.3-2010 Textiles - Determination of spirality after laundering - Part 3: Woven and knitted garments

GB/T 29862 Textiles - Identification of fiber content

GB/T 31127-2014 Textiles - Tests for colour fastness - Colour fastness to transfer in joints

GB 31701 Safety technical code for infants and children textile products

FZ/T 01026 Textiles - Quantitative chemical analysis - Multinary fibre mixtures

FZ/T 01057(all parts) Test method for identification of textile fibers

FZ/T 80007.3 Dry wash resistance test method for garments used adhesive interlining

## **5.4 Intrinsic quality inspection conditions**

**5.4.1** The specimens taken shall not have defects that may affect the test results.

**5.4.2** The specimens shall be taken from different parts of the product.

## **5.5 Intrinsic quality test methods**

### **5.5.1 Fiber content test**

It shall be implemented in accordance with the provisions of GB/T 2910(all parts), FZ/T 01057(all parts), FZ/T 01026, GB/T 16988 and GB/T 29862.

### **5.5.2 Formaldehyde content test**

It shall be implemented in accordance with the provisions of GB/T 2912.1.

### **5.5.3 pH test**

It shall be implemented in accordance with the provisions of GB/T 7573.

### **5.5.4 Odor test**

It shall be implemented in accordance with the provisions of GB 18401.

### **5.5.5 Test for degradable carcinogenic aromatic amine dyes**

It shall be implemented in accordance with the provisions of GB/T 17592.

### **5.5.6 Dimensional change test after washing (dry cleaning)**

#### **5.5.6.1 Marking and measuring parts**

Test the neckline, 1/2 bust, and clothes length according to 4.3.2. For round-sleeved garments, the calculation of clothes length is based on the average value of the measured lengths at four positions on the left and right sides of the front and the back; for raglan-sleeved garments, the clothes length is measured only from the midpoint of the back neck to the hem. Mark the measurement to facilitate measurement after washing.

#### **5.5.6.2 Washing and drying test**

The test for the dimensional change rate after washing shall be carried out in accordance with the provisions of GB/T 8629-2017, using the 4N program of the A-type standard washing machine, the detergent selected is "standard detergent 3", and the drying program is hanging to dry. Use a rod to pass through the two sleeves to keep the bust at the armhole straight, and separate and flatten the two pieces by hand from the bottom. The dried specimens are placed horizontally at a temperature of  $(20\pm 2)$  °C and relative

humidity of  $(65\pm 4)\%$  and conditioned for no less than 4 hours, and the creases are gently patted flat before measurement. The number of test pieces is 3. If there are both shrinkage and elongation test results, the average value of the two shrinkage (or elongation) specimens is taken as the test result.

The dimensional change rate after dry cleaning is tested according to FZ/T 80007.3. The number of test pieces is 1, and the measurement and calculation are carried out according to the test method for the dimensional change rate after washing.

#### **5.5.7 Test for the distortion rate after washing**

Lay the garments after washing on a smooth surface, flatten them gently with hands, and measure them according to method B specified in GB/T 23319.3-2010. Measure the side with the largest distortion for each product, and take the average distortion rate of the three pieces as the calculation result.

#### **5.5.8 Bursting strength test**

It shall be implemented according to the provisions of GB/T 19976-2005; the diameter of the steel ball is  $(38\pm 0.02)$  mm.

#### **5.5.9 Pilling test**

It shall be implemented in accordance with the provisions of Method E in GB/T 4802.1-2008, and the rating shall be based on GSB 16-1523 *Photos of pilling on knitted fabrics*.

#### **5.5.10 Test for color fastness to light and perspiration**

It shall be implemented in accordance with the provisions of GB/T 14576.

#### **5.5.11 Test for color fastness to light**

It shall be implemented in accordance with the provisions of method 3 in GB/T 8427-2019.

#### **5.5.12 Test for color fastness to water**

It shall be implemented in accordance with the provisions of GB/T 5713.

#### **5.5.13 Test for color fastness to soaping**

The test shall be carried out in accordance with GB/T 3921-2008 and the test conditions shall be carried out in accordance with A(1).

#### **5.5.14 Test for color fastness to dry cleaning**

It shall be implemented in accordance with the provisions of GB/T 5711.

#### **5.5.15 Test for color fastness to perspiration**

It shall be implemented in accordance with the provisions of GB/T 3922.

#### **5.5.16 Test for color fastness to rubbing**

It shall be implemented in accordance with the provisions of GB/T 3920, and the test is only carried out in the longitudinal direction.

#### **5.5.17 Test for color fastness to transfer in joints**

It shall be implemented in accordance with the provisions of Method A in GB/T 31127-2014.

#### **5.5.18 Test for appearance quality after washing**

Washing and drying shall be implemented according to the test method for dimensional change rare after washing specified in this standard, and then the evaluation is carried out according to Table 1; the crinkle degree of the collar, sleeve, top fly and side seam after washing is rated according to GSB 16-3605; the color change after washing is rated using the grey scale specified in GB/T 250.

## **6 Judgment rules**

### **6.1 Batch determination**

#### **6.1.1 Intrinsic quality**

If any one of the internal quality items does not meet the requirements, the batch of products will be deemed unqualified. Among them, if the color fastness item does not meet the requirements, the batch of products will be deemed unqualified by color. For the test for appearance quality after washing, if at least two or more pieces meet the requirements, the batch of products will be deemed qualified, and if not, the batch of products will be deemed unqualified.

#### **6.1.2 Appearance quality**

For the appearance quality, the non-conforming product rate is calculated by the type and color. If the non-conforming product rate is within 5.0%, the batch of products is considered qualified; if the non-conforming product rate exceeds 5.0%, the batch of products is considered unqualified.

#### **6.1.3 Result determination**

If the products are qualified according to 6.1.1 and 6.1.2, then the batch of products is qualified.



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