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## NATIONAL STANDARD OF THE

## PEOPLE'S REPUBLIC OF CHINA

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GB/T 8878-2014

**Replacing GB/T 8878-2009** 

# **Knitted Cotton Underwear**

棉针织内衣

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### **Foreword**

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

This Standard replaces GB/T 8878-2009 "Cotton Knitted Underwear".

Compared with GB/T 8878-2009, the main changes in this Standard are as follows:

- "This Standard is applicable to identify the quality of cotton knitted underwear. Cotton blended and interlaced knitted underwear may be implemented by reference" in the scope is deleted; "This Standard is applicable to identify the quality of knitted underwear with cotton fiber content not lower than 50%. This Standard is not applicable to garment for infant of 36 months or below" is added (see Chapter 1 in this edition; and Chapter 1 in 2009 edition);
- Normative references are adjusted (see Chapter 2 in this edition; and Chapter 2 in 2009 edition);
- The format of chapters "Requirements" and "Test" is adjusted (see Chapter 4 and Chapter 5 in this edition; as well as those in 2009 edition);
- Index requirements for bursting strength are modified (see 4.3 in this edition; and 4.3 in 2009 edition);
- The requirement of "net dry content" in fiber content is deleted (see 4.3 and 5.1.2.2 in this edition; as well as 4.3 and 5.4.11 in 2009 edition);
- Index requirements for dimensional change ratio to water washing are modified (see 4.3 in this edition; and 4.3 in 2009 edition);
- Index requirements for color fastness to soaping and rubbing at printing position and non-printing position are merged (see 4.3 in this edition;);
- Index requirement for wet rubbing of first-class products for color fastness to rubbing is modified (see 4.3 in this edition; and 4.3 in 2009 edition);
- Surface defect grading requirements are modified (see 4.4.1 in this edition; and 4.4.1.4 in 2009 edition);
- The requirements of dimensional deviation are adjusted (see 4.4.2 in this edition; and 4.4.3 in 2009 edition);
- The requirements of dimensional discrepancy in symmetrical positions are refined (see 4.4.3 in this edition; and 4.4.4 in 2009 edition);

- Sewing requirements are modified (see 4.4.4 in this edition; and 4.4.5 in 2009 edition);
- Sampling requirements are modified (see 6.1 in this edition; and 5.1 in 2009 edition);
- The requirements of measuring position for dimensional change ratio to water washing test are refined (see 5.1.2.7.1 in this edition; and 5.4.2.1 in 2009 edition);
- Re-inspection contents are modified (see 6.4 in this edition; and 6.4 in 2009 edition).

This Standard was proposed by China National Textile and Apparel Council.

This Standard shall be under the jurisdiction of Technical Subcommittee on Knitwear of the Technical Committee on Textiles of Standardization Administration of China (SAC/TC 209/SC 6).

Drafting organizations of this Standard: National Knitting Quality Supervision & Inspection Center, Ningbo Shenzhou Knitting Co., Ltd., Shanghai Three Gun Group Co., Ltd., Jiangsu AB Group Co., Ltd., Shanghai Boshun Garment Co., Ltd., Shanghai Plandoo Superfine Clothing Co., Ltd., Zhejiang Grace Co., Ltd., Wuhan Aidi High Class Garment Co., Ltd., Embry (China) Garment Co., Ltd., Zhejiang Wanyu Knitting Co., Ltd., Qingdao Jifa Group Co., Ltd., Beijing Topnew Group Co., Ltd., Qingdao Xueda Group Co., Ltd., Zhejiang Langsha Underwear Co., Ltd., Hodo Home (Wuxi) Wear Co., Ltd., Shenzhen HuiJie Group Co., Ltd., Beijirog (Shanghai) Textiles Science and Technology Development Co., Ltd., Cosmo Lady Fashion Corporation, Zhejiang SOFU Home Garmet Co., Ltd., Wuhan Product Quality Supervision & Testing Institute, Ningbo Seduno Group Co., Ltd., Guangdong Oleno Underwear Group Co., Ltd., Jinfa Labi Maternity & Baby Articles Co., Ltd., Liaoyuan Youpin Underwear Co., Ltd., Guangdong Meibiao Dress Industry Co., Ltd., Hosa Industry (Fujian) Co., Ltd., Chongqing Kicolor Clothing Co., Ltd. and Jiangsu Changzhou Wuyang Printing and Dyeing Co., Ltd..

Chief drafting staffs of this Standard: Xing Zhigui, Yang Shujuan, Xue Jifeng, Wu Honglie, Fei Haifen, Fang Guoping, Shi Ranyu, Yan Chun, Cao Haihui, Luo Xinghao, Xie Zhenxiang, Qi Xiaojin, Shan Lijuan, Wang Xianqi, Bao Jinyue, Ge Dongying, Dong Xiaoying, Wu Yiming, Li Wanfang, Gu Xiaoguang, Chen Xi, Guo Xiaojun, He Bingxiang, Lin Ruowen, Qi Shaoxin, Lin Shengzhan, Kong Linghao, Ren Zhongze and Zhao Zhichu.

The previous editions replaced by this Standard are as follows:

- GB/T 8878-1988, GB/T 8878-1997, GB/T 8878-2002 and GB/T 8878-2009.

# **Knitted Cotton Underwear**

# 1 Scope

This Standard specifies the size, requirements, test, judgement rules, product instruction, packaging, transportation and storage of cotton knitted underwear.

This Standard is applicable to identify the quality of knitted underwear with cotton fiber content not lower than 50%.

This Standard is not applicable to the garment for infants of 36 months or below.

## 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 250	Textiles - Tests for Color Fastness - Grey Scale for Assessing Change in Color
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 Color Fastness - Color Fastness to Rubbing
GB/T 3921-2008	Textiles - Tests for Color Fastness - Color Fastness to Washing with Soap or Soap and Soda
GB/T 3922	Textiles - Tests for Color Fastness - Color Fastness to Perspiration
GB/T 4856	Package of Cotton Goods and Knitwear
GB 5296.4	Instructions for Use of Products of Consumer Interest - Part 4: Textiles and Apparel

GB/T 5713	Textiles - Tests for Color Fastness - Color Fastness to Water
GB/T 6411	A Series of Size of Knitted Underwear
GB/T 6529	Textiles - Standard Atmospheres for Conditioning and Testing
GB/T 7573	Textiles - Determination of pH of Aqueous Extract
GB/T 8170	Rules of Rounding off for Numerical Values & Expression and Judgement of Limiting Values
GB/T 8629-2001	Textiles - Domestic Washing and Drying Procedures for Textile Testing
GB 9994	Conventional Moisture Regains of Textiles
GB/T 14801	Test Method for Skewness and Bow in Woven and Knitted Fabrics
GB/T 17592	Textiles - Determination of the Banned Azo Colorants
GB/T 17592 GB 18401	Textiles - Determination of the Banned Azo Colorants  National General Safety Technical Code for Textile Products
GB 18401	National General Safety Technical Code for Textile Products  Textiles - Determination of Bursting Strength - Steel Ball
GB 18401 GB/T 19976-2005	National General Safety Technical Code for Textile Products  Textiles - Determination of Bursting Strength - Steel Ball Method
GB 18401 GB/T 19976-2005 GB/T 29862	National General Safety Technical Code for Textile Products  Textiles - Determination of Bursting Strength - Steel Ball Method  Textiles - Identification of Fiber Content  Textiles - Quantitative Chemical Analysis - Quaternary Fiber
GB 18401 GB/T 19976-2005 GB/T 29862 FZ/T 01026	National General Safety Technical Code for Textile Products  Textiles - Determination of Bursting Strength - Steel Ball Method  Textiles - Identification of Fiber Content  Textiles - Quantitative Chemical Analysis - Quaternary Fiber Mixtures
GB 18401 GB/T 19976-2005 GB/T 29862 FZ/T 01026 FZ/T 01057 (All Parts)	National General Safety Technical Code for Textile Products  Textiles - Determination of Bursting Strength - Steel Ball Method  Textiles - Identification of Fiber Content  Textiles - Quantitative Chemical Analysis - Quaternary Fiber Mixtures  Test Method for Identification of Textile Fibers

# 3 Size

The size of cotton knitted underwear is in accordance with the requirements of GB/T 6411 or GB/T 1335.

#### 5.1.2.2 Fiber content test

Carry out according to the requirements of GB/T 2910, FZ/T 01057, FZ/T 01095 and FZ/T 01026 and calculate in combination with conventional moisture regain which is implemented in accordance with the requirements of GB 9994.

#### 5.1.2.3 Formaldehyde content test

Carry out in accordance with the requirements of GB/T 2912.1.

## 5.1.2.4 pH value test

Carry out in accordance with the requirements of GB/T 7573.

#### 5.1.2.5 Peculiar smell test

Carry out in accordance with the requirements of GB 18401.

#### 5.1.2.6 Decomposable carcinogenic aromatic amine dyes test

Carry out in accordance with the requirements of GB/T 17592.

## 5.1.2.7 Test of dimensional change ratio to water washing

#### 5.1.2.7.1 Measuring positions

For coat, the average of the body height at 4 positions (left and right of front and back body) is adopted as the calculation basis of longitudinal length and the measured value of front body is adopted as the calculation basis of horizontal width; for the trousers, the average of the left and right length of trousers is adopted as the calculation basis of longitudinal length, and the average of left and right mid leg width is adopted as the calculation basis for the horizontal width. Marking shall be made during the measurement for the convenience of measurement after water washing; measuring positions for coats, trousers and vests are detailed in Figures 1, 2 and 3 respectively.

#### 5.1.2.7.4 Result calculation and expression

The dimensional change ratio to water washing in longitudinal or horizontal direction is calculated according to Formula (1); the dimensional shrinkage and elongation (expansion) are expressed by minus sign (-) and plus sign (+) respectively. The arithmetic mean value of all the test pieces shall be taken as the test result; if test results concerning shrinkage and elongation (expansion) coexist, the arithmetic mean value of two test pieces subjected to shrinkage (or elongation) shall be taken as the test result; the final test result is rounded off according to GB/T 8170 and accurate to one decimal place.

$$A = \frac{L_1 - L_0}{L_0} \times 100 \quad .... \tag{1}$$

Where,

A - the longitudinally or horizontally dimensional change ratio to water washing, %;

 $L_1$  - the average of longitudinal or horizontal dimension after water washing (accurate to 0.1cm), cm;

 $L_0$  - the average of longitudinal or horizontal dimension before water washing (accurate to 0.1cm), cm.

#### 5.1.2.8 Test of color fastness to water

Carry out according to the requirements of GB/T 5713.

#### 5.1.2.9 Test of color fastness to soaping

Carry out according to the requirements of A(1) based on the test conditions of GB/T 3921-2008.

#### 5.1.2.10 Test of color fastness to perspiration

Carry out according to the requirements of GB/T 3922.

## 5.1.2.11 Test of color fastness to rubbing

Carry out according to the requirements of GB/T 3920 (only for longitudinal direction).

# 5.2 Appearance quality inspection

#### 5.2.1 Appearance quality inspection conditions

**5.2.1.1** Generally, lighting inspection is adopted; a 40W white-light daylight lamp with a lamp cover is used and the vertical distance from the lamp cover to the surface

Carry out according to the requirements of GB/T 14801.

# 6 Judgement Rules

## 6.1 Sampling quantity

- **6.1.1** As for appearance quality, randomly take 1%~3% samples by batch according to type and color, and the sample quantity shall not be less than 20.
- **6.1.2** As for inherent quality, randomly take 4 samples by batch according to type and color, and the sample quantity may be increased where insufficient.

#### 6.2 Inherent quality

Inherent quality is assessed according to the requirements of 4.3; in case that one item fails to pass the inspection, this batch of products is judged as rejected. Therein, if color fastness item fails to pass the corresponding inspection, this batch of products is judged as rejected based on color.

# 6.3 Appearance quality

For appearance quality, the rate of rejected products shall be calculated according to type and color. If the rate of rejected products is within 5%, this batch of products is judged as acceptable, otherwise, it's rejected.

#### 6.4 Re-inspection

- **6.4.1** In case of any disagreement by either party regarding the inspection results, re-inspection may be required to be carried out.
- **6.4.2** The re-inspection result is treated according to the requirements of 6.2 and 6.3, and it shall prevail for judgement.

# 7 Instructions for Use, Packaging, Transportation and Storage

- **7.1** Product's instructions for use shall be implemented according to the requirements of GB 5296.4.
- **7.2** Packaging shall be implemented according to the requirements of GB/T 4856 or agreement.
- **7.3** The products shall be damp-proof, fire-proof and anti-pollution during transportation.

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