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**Test method for relaxation dimensional change and felting
dimensional change to washing of wool textiles**
毛纺织产品经洗涤后松弛尺寸变化率和毡化尺寸变化率试验方
法

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Test method for relaxation dimensional change and felting dimensional change to washing of wool textiles

1 Scope

This document specifies a test method for determining the rate of dimensional change of wool textile products after washing.

This document applies to washable (by hand or machine) wool knitted products, wool knitted patchwork garments and wool woven fabrics.

2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, 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 6529 Textiles - Standard atmospheres for conditioning and testing

GB/T 7477 Water quality - Determination of the sum of calcium and magnesium - EDTA titrimetric method

GB/T 8170 Rules of rounding off for numerical values & expression and judgment of limiting values

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

FZ/T 70008 Test method for cover factor of wool knitted fabrics

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 relaxation dimensional change

The dimensional changes of a sample during washing due to the release of stress caused by processing.

3.2 felting dimensional change

The dimensional change of a sample during washing, which is caused by the wool fibers becoming entangled and felted together.

3.3 total dimensional change

Dimensional changes of a specimen after relaxation and felting washing procedures.

3.4 cuff edge dimensional change

Dimensional changes along the folded edge of the specimen in length and width.

3.5 relaxation dimensional change percentage

The percentage of the dimensional change of the specimen after the relaxation washing process to the original size.

3.6 felting dimensional change percentage

The percentage of the dimensional change of the specimen after the felted washing process to the size before the felted washing process.

3.7 total dimensional change percentage

The percentage of the dimensional change of the specimen after relaxation and felted washing procedures to the original size.

3.8 area dimensional change percentage

The percentage of the area size change of the specimen after the washing process to the area before the washing process.

3.9 cuff edge dimensional change percentage

The percentage of the change in the edge dimension of the specimen after the felted washing process to the edge dimension before the felted washing process.

3.10 differential cuff edge dimensional change percentage

The difference between the edge dimensional change percentage of the specimen and the felting dimensional change percentage.

4 Principle

After the specimen has been subjected to the prescribed washing procedure, the dimensional changes after washing are measured, and the relaxation dimensional

6 Conditioning and testing atmosphere

The atmosphere used for conditioning and testing shall be the standard atmosphere specified in GB/T 6529.

7 Specimen preparation

7.1 Specimen size

7.1.1 Knitting and braided yarns

7.1.1.1 The knitted fabric according to Appendix A is folded with the front side facing outwards to form a double-layer test specimen, and the three sides are seamed firmly with dimensionally stable sewing threads. The size of the specimen shall at least meet the requirements of 7.1.2.1.

7.1.1.2 The knitting yarn and braided yarn fabric shall be washed using the 1×4G washing program and dried according to 8.4 before testing.

7.1.2 Knitwear

7.1.2.1 The knitted fabric is folded with the front side facing outwards into a double-layer test specimen with an area of approximately 300 mm×400 mm, and a minimum area of not less than 225 mm×300 mm. The ratio of the transverse to the longitudinal direction shall be 3:4. The edges of the test specimen are firmly seamed with dimensionally stable sewing threads.

NOTE: For knitted fabrics without any post-treatment, the specimen shall be washed using the 1×4G washing program and dried according to 8.4 before testing.

7.1.2.2 Sweaters, vests, woolen trousers, woolen skirts, woolen knitted patchwork garments, socks, small pieces of clothing, etc. are to be tested as a whole piece.

7.1.3 Woven fabrics

The specimen size is 500 mm×500 mm. Fold at 40 mm from the edge of the fabric in the warp and weft directions with the front side facing outwards, press and iron to form a folded edge, and then seam with a chain stitch at 30 mm~35 mm from the crease.

7.2 Marking the specimen

7.2.1 Mark with a knot of sewing thread or a non-fading pen.

7.2.2 The knitting yarn and braided yarn fabric and knitted fabric shall be marked at least 25 mm away from the edge of the specimen, with three groups of marks in the

it according to 8.4 and 8.5.

8.3 Felting dimensional change test

8.3.1 The total test load and specimen mass are the same as those in 8.2.1.

8.3.2 Place the load that has undergone the relaxation dimensional change test procedure into the washing machine.

8.3.3 The operation on detergent is the same as 8.2.3.

8.3.4 Carry out the 4G or 4N washing procedure specified in GB/T 8629-2017, and the number of cycles shall be in accordance with the relevant product standards.

NOTE: If multiple washing procedures are required, fresh detergent shall be added according to 8.3.3 before each washing.

8.3.5 After the washing process is completed, remove the specimen, dry it and measure it according to 8.4 and 8.5.

8.4 Sample drying

Use a drying oven for drying, carefully smooth out the wrinkles on the specimen, and lay it flat in the oven specified in 5.2 until it is dry.

8.5 Conditioning and measurement of dried specimens

8.5.1 Spread the dried specimen flat and place it in a standard atmosphere for conditioning for 24 hours.

8.5.2 Measure the distance between each group of marks and calculate the average value of the dimension in each direction as the relaxed or felted dimension.

8.5.3 Woven fabrics may be ironed flat with a household steam iron weighing 1.0 kg~2.0 kg before conditioning according to 8.5.1. However, if there is obvious felting, ironing is not required.

8.5.4 For routine tests in the factory, wet measurements may be used. The specimens before and after the relaxation or felting washing process shall be placed in a water tank specified in 5.5 filled with 20 mm deep cold water for wet measurements.

9 Calculation

According to the product standard, calculate the relaxation dimensional change percentage, felting dimensional change percentage, total dimensional change percentage, area dimensional change percentage, cuff edge dimensional change

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