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**Test Method for Fiber Shedding of Towel
Products**

毛巾产品脱毛测试方法

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Test Method for Fiber Shedding of Towel Products

1 Scope

This Standard specifies the test method for fiber shedding performance of the towel products.

This Standard is applicable to various towel products taking textile fiber as the raw materials.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this document.

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 8629-2017 Textiles - Domestic Washing and Drying Procedures for Textile Testing

GB/T 21196.1-2007 Textiles - Determination of the Abrasion Resistance of Fabrics by the Martindale Method - Part 1: Martindale Abrasion Testing Apparatus

GB/T 21196.4-2007 Textiles - Determination of the Abrasion Resistance of Fabrics by the Martindale Method – Part 4: Assessment of Appearance Change

3 Principles

3.1 Method A - washing weight loss method: After the sample is humidified, washed, dried and re-conditioned, measure and calculate the mass loss rate before and after the sample is washed.

3.2 Method B - friction weight loss method: the sample is rubbed by a Martindale

6.2.1 Ventilated drying oven: The ventilation type may use pressure type or convection type device with constant temperature control, which can control the temperature at $(105\pm 3)^\circ\text{C}$.

6.2.2 Martindale abrasion tester: According to the provisions of GB/T 21196.1-2007.

6.2.3 Disc sampler: the diameter is $140^{+0.5}_0$ mm.

6.2.4 Disc sampler: the diameter is $38^{+0.5}_0$ mm.

6.2.5 Balance: the division value is 0.001g.

6.2.6 Compressed air generating device with air gun, compressed air pressure: 2×10^5 Pa~ 3×10^5 Pa; bore diameter of air gun: 2.5mm.

7 Sample

7.1 Method A - washing weight loss method

7.1.1 Take the entire representative sample, and take the minimum number of samples under the condition that the total mass is no less than 100g.

7.1.2 Place the prepared sample (see 7.1.1) in an atmospheric condition with relative humidity of 10.0% ~ 25.0% and temperature not exceeding 50.0°C for pre-conditioning for at least 1h.

7.1.3 Expose the processed sample (see 7.1.2) to the standard atmosphere for textile conditioning until it reaches a constant weight (weigh continuously at an interval of 2h, and when the mass change is no more than 0.25%, it is considered to have reached constant weight).

NOTE: It is recommended that the sample be humidified for at least 24h under standard atmospheric conditions.

7.2 Method B - friction weight loss method

7.2.1 On the prepared sample (see 7.1.1), at a distance of 15 cm from the edge of the cloth or one-tenth of the width, cut and sample by a disc sampler with a diameter of 140 mm; respectively take 4 samples on the front and back sides. The sample shall not contain the same warp and weft yarns.

7.2.2 The cut sample shall be hemmed to prevent the yarn or hairiness from falling off.

NOTE: It is recommended to use needling method for edge-wrapping.

7.2.3 After the edge-wrapping of the sample, use the compressed air with a pressure

of 2×10^5 Pa~ 3×10^5 Pa to blow it on both sides to remove impurities from the sample surface.

7.2.4 Number each processed sample; then put it into a ventilated drying box (see 6.2.1); and dry it to constant weight at (105 ± 3) °C (continuously weigh at least 20min intervals till the mass difference between two weighing exceeds 0.20% of the latter weighing). Weigh the samples one by one and record their mass. The mass of the sample is accurate to 0.001g.

8 Test Procedures

8.1 Method A - washing weight loss method

8.1.1 Gently shake the conditioned and balanced sample (see 7.1) to remove the floating hair; pick up the fluff and thread entangled on the towel; weigh it by a balance, and record the weighing value m_1 .

8.1.2 Put the sample in the washing machine; add the accompanying laundry (see 5.1.1); the total mass of the sample plus accompanying laundry is 1kg. Add (20 ± 1) g standard detergent (see 5.1.2), and wash according to the procedures specified in Clause 9 in GB/T 8629-2017.

8.1.3 After the completion of washing, immediately load the sample and the accompanying laundry into the dryer; set the drying temperature to (66 ± 5) °C, and dry the sample.

8.1.4 Take out the sample immediately after drying, condition and weigh it again according to the provisions of 7.1.2 and 7.1.3; and record the weighing value m_2 .

8.2 Method - friction weight loss method

8.2.1 Install the sample (see 7.2) and wool standard abrasive (see 5.2.1); the installation method sees the provisions of 7.5 in GB/T 21196.4-2007. The wool standard abrasive is changed once every rubbing for 50,000 times.

8.2.2 After installing the sample and abrasive, put the abrasive jig guide board in the appropriate position; accurately place the abrasive jig and pin shaft on the corresponding workbench; and place the loading block on the pin shaft of each abrasive jig; so that the pressure on the sample is 9kPa.

8.2.3 Set the number of rotations for friction; and start the equipment to rub the sample 2000r (or rub according to the number of rotations required by the customer).

8.2.4 After the completion of test, take off the sample from the instrument; use compressed air with a pressure of 2×10^5 Pa~ 3×10^5 Pa to blow off the hairiness from the sample surface; and then dry and weigh the sample again in accordance with 7.2.4;

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