
Translated English of Chinese Standard: FZ/T20020-1999 (GB 8690-88)

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TEXTILE INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

UDC 677.66: 677.07

W 20

FZ/T 20020-1999 (GB 8690-88)

**Testing method for determination of the
resistance to abrasion of wool fabrics -**

Martindale method

毛织物耐磨试验方法

马丁旦尔 (Martindale) 法

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Issued on: February 4, 1988

Implemented on: July 01, 1988

**Approved by: Ministry of Textile Industry of the People's Republic of
China**

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Testing method for determination of the resistance to abrasion of wool fabrics - Martindale method

This method equivalently adopts international standard IWS. TM. No.112-1980 "Testing method for textile rub-resistance (adopting Martindale instrument)".

1. Scope of application

This standard mainly applies to wool and wool blended fabric and knitted fabric, and other non-woven fabrics; but it does not apply to textile fabrics or blended textile fabrics made of synthetic fibers, and long floss fabrics.

2. Principle

Rounded samples, under certain pressure, rub with standard abrasive material in the motion trail of Lissajous curve and lead to sample damage.

3. Equipment and auxiliary materials

3.1 Flat abrasion tester

3.2 Standard grinding material

It is a kind of combing plain wave fabric made of mixed wool, and the specifications are as follows:

	warp	weft
yarn density, tex	R55×2	R74×2
pieces of yarn in each centimeter	19	12
degree of twist of single yarn, twist degree/m	490±20	550±20
direction of twist of single yarn	Z	
degree of twist of double yarn, twist degree/m	470±20	410±20
direction of twist of double yarn	S	
average diameter of fiber, μm	31±2	
Minimum fabric weight, g/m ³	185	
Grinding material size, mm ²	160×160	

3.3 Standard padding

rub, change new standard grinding materials. If the standard padding is damaged, both sides are contaminated, or it has been used for 25 experiments, change some new ones.

6.3 Sandwich the sample on the rubbing platform and make the dabber to be inserted in the sample clamp by passing through the bearing. Then pressurize to the required pressure as per the application of the fabrics. Intensity of pressure for clothes use fabric samples is 595 g/m², and that for the decoration use fabric samples is 794 g/m².

6.4 Adjust the counter to zero position. In the preset counter, preset a proper rubbing time, and start the instrument, take out the samples and observe when the instrument stops. Estimate the time needed if the experiment continues. When the experiment is getting to the end, reduce the time based on the real conditions. During the experiment, if woolen particles are generated on the samples, cut the particles carefully with scissors.

6.5 End of experiment

6.5.1 The woven fabric is rubbed to broken into two pieces or more than two pieces of non-adjacent yarns, while the knitted fabric is gridded to the end as a hole.

6.5.2 The experiment can be treated as ended when the sample color is rubbed till faded or the sample appearance is deformed to the degree that causes customer complaints. The color fading degree can be compared with the standard gray fading card of color fastness degree. The experiment ends when grade III is reached.

6.5.3 Record the rubbing times when experiment of each sample ends.

7. Experimental result

Calculate the average value of the four samples. Take the rounded integer numbers.

8. Test report

- a. Name and number of the experimented samples;
- b. Date of experiment;
- c. Conditions of experiment;
- d. Result of experiment;
- e. Reason to experiment termination (breakage, fading, etc.)
- f. Experimental method;
- g. Any details deviating from this Standard.

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Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

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