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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 12703.5-2020

Replacing GB/T 12703.5-2010

**Textiles. Test methods for electrostatic propensity - Part 5: Test
method using rotary mechanical friction**

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 Standardization Guidelines Part 1: Structure and Drafting Rules of Standardization Documents

Drafting:

This document is part 5 of GB/T 12703 "Test Methods for Electrostatic Properties of Textiles": GB/T 12703 has released the following

section:

---Part 1: Corona charging method;

---Part 2: Manual friction method;

---Part 3: The amount of charge;

---Part 4: Resistivity;

---Part 5: Rotating machinery friction method;

---Part 6: Fiber leakage resistance;

---Part 7: Dynamic static voltage;

---Part 8: Horizontal mechanical friction method:

This document replaces GB/T 12703:5-2010 "Evaluation of electrostatic properties of textiles Part 5: Frictional electrification voltage", and

Compared with GB/T 12703:5-2010, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

---Modified the scope (see Chapter 1, Chapter 1 of the:2010 edition);

---The relative humidity of the atmosphere for humidity control and testing is modified to (40+/-4)%, and the wind speed requirement is deleted (see Chapter 5,:2010 edition

Chapter 6);

---Improved the regulations on test equipment (see 6:1, Chapter 5 of the:2010 edition);

---Modified the type of friction cloth to wool and cotton standard lining fabric (see 6:4, 8:4 in:2010 edition);

---Modified the sample washing procedure, drying conditions (see 7:2:2,:2010 edition 7:1) and pre-bake temperature (see 7:3,:2010 edition

7:2);

---Added provisions for measuring sample thickness (see 8:1) and adjusting the height of the friction cloth clamp (see 8:3);

---Modified the sample size, the number of parallel samples and the number of samples during the test (see 9:1, 7:2 of the:2010 edition);

--- Deleted the technical requirements for frictional electrification voltage (see Chapter 10 of the:2010 edition);

---Appendix A and Appendix B have been added:

This document uses the redrafting method to revise and adopt ISO 18080-2:2015 "Test Methods for the Evaluation of Textile Electrostatic Properties Part 2"

Sub: Rotating Machinery Friction Law:

The structural differences between this document and ISO 18080-2:2015 are as follows:

--- Amend "6:2 Drum" to the items listed in 6:1, and then the article numbers will be extended in turn;

--- 9:9 has been added to make it clear that the remaining samples are tested:

The technical differences between this document and ISO 18080-2:2015 are as follows:

---Regarding normative reference documents, this document has made adjustments with technical differences to adapt to my country's technical conditions and adjustments

It is concentratedly reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows:

* Replace ISO 5084 with GB/T 3820, which is equivalent to the international standard (see 8:1);

* Replace ISO 105-F01 (see 6:4) with GB/T 7568:1 modified to adopt international standards;

* Replace ISO 105-F02 with GB/T 7568:2 (see 6:4);

* Replace ISO 6330:2012 (see 7:2:2) with GB/T 8629-2017 modified to adopt international

standards;

* Replace ISO 3175-2 (see 7:2:3) with GB/T 19981:2 modified to adopt international standards;

* Replace ISO 3175-3 (see 7:2:3) with GB/T 19981:3, which is equivalent to the international standard:

--- Modify the 7:3 sample humidity control time to humidity to balance to increase the applicability of the standard:

This document has made the following editorial changes:

--- Amend the standard name to "Textile Electrostatic Performance Test Method Part 5: Rotating Machinery Friction Law";

--- Change the second paragraph in the scope of Chapter 1 of the ISO document to the content of the note;

--- Modify ISO 139 in the note of Chapter 5 to GB/T 6529;

--- 7:2:2 clarified the type of washing machine and detergent type regulations;

--- 9:1 specifies the requirements for the test surface of the sample;

--- 9:8 stipulates that the test results are retained to an integer;

--- The instrument model of B:3 in Appendix B has been deleted:

Please note that certain contents of this document may involve patents: The issuing agency of this document is not responsible for identifying patents:

This document was proposed by China National Textile and Apparel Council:

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Introduction

In addition to the electrostatic safety hazards and the damage and interference to sensitive electronic equipment and systems that have been included in other documents, the static electricity of clothing will also

Cause problems such as adhesion, uncomfortable electric shock, adsorption of dust and other pollutants in the air:

In some fast-developing industries related to precision technology, biotechnology, food, hygiene, etc., clothing is required to block air dust

At the same time, the wearer usually hopes that the clothing will not stick to the skin or produce uncomfortable electric shocks:

Many national and international standards, including ISO and IEC , have standards for electrostatic performance evaluation, which are used to guide clothing design:

To avoid problems caused by static electricity: However, the relationship between the measured electrostatic performance and the end-use performance is more complicated and may require

Use different methods for testing according to the actual situation of the application:

This document is one of the testing methods for the electrostatic properties of textiles: This document does not give clear performance requirements, only given in Appendix A

As a reference for the result evaluation, the performance evaluation table is based on the prevention of adhesion, electrostatic discharge discomfort and adsorption of particulate pollutants in the industry:

It is set based on relevant experience for reference only: It is recommended that users of this document check their applicability according to their own application: Appendix B gives

Compare the test result data:

This test method simulates the process of generating static electricity when the clothing is worn: The standard friction cloth and test conditions are based on long-term experience

Selected:

Textile electrostatic performance test method

Part 5: Rotating Machinery Friction Method

1 Scope

This document specifies the method for determining the frictional charging voltage of fabrics using the rotating mechanical friction method: