



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

GB/T 12703.2-2021

**Textiles - Test methods for electrostatic propensity - Part 2: Test
method using manual friction**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is the second part 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 12703.2-2009 "Evaluation of Electrostatic Properties of Textiles Part 2. Charge Area Density", this document and

Compared with GB/T 12703.2-2009, the main differences are as follows.

---Modified the scope of application of the standard (see Chapter 1, Chapter 1 of the 2009 edition);

---Modified and supplemented the normative reference documents (see Chapter 2, Chapter

2 of the.2009 edition);

---Modified and supplemented terms and definitions (see Chapter 3, Chapter 3 of the.2009 edition);

---Modified the expression of the principle (see Chapter 4, Chapter 4 of the.2009 edition);

---Revised the relative humidity of the atmosphere for humidity control and testing (see Chapter 5, Chapter 6 of the.2009 edition);

---Modified the description of the test device and the schematic diagram of the device (see 6.1, 5.1 of the.2009 edition);

---Modified the requirements of friction cloth, and added the test of acrylic friction cloth (see 6.2, 5.2 of the.2009 edition);

---Modified the preparation of the friction bar (see 6.3, 5.2 of the.2009 edition);

---Modified the sample washing and drying process (see 7.2, 7.1 of the.2009 edition);

---Modified the number of tests for each sample and the reporting method of test results (see 8.21, Chapter 9 of the.2009 edition);

---Adjust Chapter 10 "Charge Surface Density Technical Requirements" as an informative Appendix B (see Appendix B, Chapter 10 of the.2009 edition);

---Appendix A has been added.

This document uses the redrafting method to modify the ISO 18080-3.2015 "Test Methods for the Evaluation of Electrostatic Properties of Textile Fabrics"

Part 3.Manual friction method.

The technical differences between this document and ISO 18080-3.2015 are as follows.

--- Replace the international standards in the normative reference documents with the corresponding national standards to adapt to my country's technical conditions and make specific adjustments

as follows.

* Replace ISO 6330 with GB/T 8629, which is modified to adopt international standards;

* Replace ISO 3175-2 with GB/T 19981.2, which is modified to adopt international standards;

* Replace ISO 3175-3 with GB/T 19981.3, which is equivalent to adopting international standards;

* Removed the reference to IEC 61340-5-1;

---Added the tolerance of the thickness and length of the PVC pipe in 6.3.1;

- Added the tolerance of each size in 6.4;
- The type of detergent is specified in 7.2.2;
- Change the "humidity adjustment for at least 24h" in 7.3 to "humidity adjustment to balance";
- Adjust the 8.11 pressing force of 40N as recommended content;
- In 8.11, "If a manipulator or similar device is used to carry out the above procedures, it should be noted in the report.";
- In 8.14, the provisions on the elimination of Faraday cylinders have been added;
- Clarify the rounding digits of the test results in 8.21;
- Added the requirements for the number of washings in the test report in Chapter 9;
- Deleted the rinsing program in A.2.3.2.

This document has made the following editorial changes.

- Change the name of the standard to "Test Methods for Electrostatic Properties of Textiles Part 2.Manual Friction Method";
- Modify ISO 139 in the note of Chapter 5 to GB/T 6529;
- Added the note "Appendix A gives the comparative test results, and Appendix B gives the evaluation of the test results" in 8.21;
- Unify the equipment used in the comparison laboratory in A.2.2 as a charge areal density measurement device;
- Corrected some values of "Laboratory Average" and "All Laboratory Average" in Table A.3;
- Informative Appendix B has been added.

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 standards, 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 and pollution.

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.

The test method described in this document can be used to measure the surface charge density of textiles produced by friction.

One of the performance test methods. Since the charge generated is determined by the material of the textile, the surface condition and the nature of the friction, it can be used gently

The friction to simulate actual wearing.

Like any manual operating procedure, this document has a dependency on the operator, and this dependency cannot be eliminated. Tests from different laboratories

The test results may differ by more than five times.

Textile electrostatic performance test method

Part 2.Manual friction method

1 Scope

This document describes the method of measuring the charge areal density of fabrics using the manual friction method.

This document applies to fabrics of various compositions and structures that can withstand triboelectric operations.

Certain fabrics (such as fabrics with low strength or loose structure) may not be able to withstand the mechanical friction in this test method, or may produce errors.

As a result, in this case, the method specified in GB/T 12703.1 can be used for testing.

This document does not apply to the evaluation of clothing and clothing materials related to personal safety and protection of electrostatic discharge sensitive devices.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations