

ICS 17.220.20

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

GB/T 37977.41-2024

**Electrostatics - Part 4-1: Standard test methods for specific
applications - Electrical resistance of floor coverings and
installed floors**

(English Translation)

Issued on: August 23, 2024

Implemented on: August 23, 2024

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 for standardization documents" Drafting is required.

This document is part 4-1 of GB/T 37977 "Electrostatics". GB/T 37977 has published the following parts.

Part 2-1.Test methods for electrostatic charge dissipation capability of materials and products; -Part 2-3.Test methods for resistance and resistivity of antistatic solid planar

materials;

Part 3-2.Simulation methods of electrostatic effects Electrostatic discharge test waveforms of machine models (MM);

Part 4-1.Standard test methods for electrical resistance of floor coverings and assembled floors in specific applications;

Part 4-3.Standard test methods for specific applications Footwear; -Part 4-5.Standard test methods for specific applications Methods for characterizing the electrostatic protection properties of human/shoe/ground systems; -Part 4-6.Standard test methods for specific applications Wrist straps; -Part 4-8.Standard test methods for specific applications Electrostatic discharge shielding bags;

Part 4-9.Standard test methods for specific applications Clothing; -Part 5-1.General requirements for electrostatic protection of electronic components.

This document is equivalent to IEC 61340-4-1:2015 "Electrostatics Part 4-1.Standard test methods for floor coverings in specific applications" Electrical resistance of covering and assembled floors.

Introduction

GB/T 37977 "Electrostatics" is the basic standard of electrostatics. It adopts the IEC 61340 series of standards and aims to define the model of electrostatic effects.

Simulation method, anti-static parameter test method for anti-static materials and products, standard test method in specific applications, electrostatic protection of electronic devices Etc. GB/T 37977 is intended to consist of the following parts.

Part 2-1.Test methods Materials and products Electrostatic charge dissipation capability. The purpose is to specify test methods for testing insulation and the electrostatic charge dissipation capabilities of static dissipative materials and products.

Part 2-3.Test methods for resistance and resistivity of antistatic solid planar materials. The purpose is to specify test methods for measuring Test the resistance and resistivity of anti-static solid flat materials. The applicable range of the measured resistance is 104 ohm~1012 ohm.

Part 3-2.Simulation methods for electrostatic effects Electrostatic discharge test waveforms for machine models (MM). The purpose is to specify Basic requirements for simulating electrostatic discharge current waveforms for MM and the equipment used to generate and verify these waveforms.

Part 4-1.Standard test methods for electrical resistance of floor coverings and assembled floors in specific applications.

Method for testing the resistance of floor coverings and assembled floors, including resistance to ground, point-to-point resistance and vertical resistance.

The applicable resistance range is 104 ohm~1013 ohm.

Part 4-3. Standard test methods for specific applications - Footwear. The purpose is to specify test methods for testing the performance of anti-static footwear.

resistance.

Part 4-4. Standard test methods for specific applications - Classification of flexible bulk containers (FIBC) for static electricity.

Requirements for flexible bulk containers (FIBC) with a volume of 0.25 m³ to 3 m³ used in hazardous explosive atmospheres.

Part 4-5. Standard test methods for specific applications Characterization of electrostatic protection properties of man/shoe/ground systems.

Establish test methods to evaluate the anti-static performance of human/shoe/floor systems.

Part 4-6. Standard test methods for specific applications Wrist straps. The purpose is to specify the electrical and mechanical performance requirements of wrist straps.

and test methods for testing these properties.

Part 4-8. Standard test methods for electrostatic discharge shielding bags in specific applications. The purpose is to provide a method for evaluating electrostatic discharge shielding bags.

Performance test methods.

Part 4-9. Standard test methods for specific applications - Clothing. The purpose is to specify test methods for testing antistatic clothing.

resistance.

Part 5-1. General requirements for electrostatic protection of electronic devices. The purpose is to establish anti-static management and technical requirements to avoid or reduce Low electronics damage due to electrostatic discharge.

Part 5-4. Electrostatic protection of electronic devices Compliance verification. The purpose is to propose technical items involved in the electrostatic control program Compliance verification test methods.

Part 6-1. General requirements for electrostatic control facilities in medical facilities. The purpose is to specify the equipment, Material and product requirements.

This document describes a test method for evaluating the electrical resistance of floor

coverings and assembled floors in the 104 ohm to 1013 ohm resistance range, including it includes ground resistance, point-to-point resistance and vertical resistance.

Electrostatics Part 4-1. Electrostatics for specific applications Standard test method for electrical resistance of floor coverings and assembled floors

1 Scope

This document, as part of the standard test methods for specific applications in the GB/T 37977 series, specifies the test methods for the 104 ohm~1013 ohm resistance range.

Test methods for determining the electrical resistance of various floor coverings and assembled floors, including test methods for resistance to earth, point-to-point resistance and vertical resistance Laboratory evaluation tests conducted under specified environmental conditions can be used for classification or quality management.

Tests performed on the board can be used to assess whether an installation is qualified or as part of verification testing of the system in use.

NOTE: Although this document does not include requirements for personal safety, the floor coverings covered by the specified test methods are subject to local Laws and regulations related to personal health and safety.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies.

in this document.

ISO 1957 Machine-made textile floor cover - Selection and cutting of test specimens for physical testing
ISO 1957 Machine-made textile floor cover - Selection and cutting of specimens for physical tests)

3 Terms and definitions

The following terms and definitions apply to this document.

Acceptance testing

A test carried out immediately after the floor is installed, or a conformity test carried out by the customer on production samples prior to initial acceptance.

Geometric mean