

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electrostatics –
Part 4-8: Standard test methods for specific applications – Discharge shielding –
Bags**

**Électrostatique –
Partie 4-8: Méthodes d'essai normalisées pour des applications spécifiques –
Blindage contre les décharges – Sacs**



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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	6
4 Required equipment.....	6
4.1 ESD simulator.....	6
4.2 Waveform verification equipment.....	7
4.2.1 Oscilloscope.....	7
4.2.2 Current probe.....	7
4.2.3 High voltage resistor.....	7
4.3 Capacitive probe.....	7
4.4 Discharge electrode and ground electrode.....	7
4.5 Bag size.....	7
4.6 Computer/software.....	7
4.7 Environmental chamber.....	7
5 ESD simulator waveform verification procedure.....	8
6 System verification procedure.....	8
7 Test procedure/conditioning.....	8
8 Reporting.....	9
Annex A (informative) Energy calculation program.....	13
Figure 1 – ESD simulator.....	10
Figure 2 – Parallel plate capacitive probe.....	11
Figure 3 – Current waveform through a 500 Ω resistor.....	12

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROSTATICS –

**Part 4-8: Standard test methods for specific applications –
Discharge shielding – Bags**

FOREWORD

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International Standard IEC 61340-4-8 has been prepared by IEC technical committee 101: Electrostatics.

The text of this standard is based on ANSI/ESD STM11.31-2006. It was submitted to the National Committees for voting under the Fast Track Procedure.

This bilingual version (2011-04) replaces the English version.

The text of this standard is based on the following documents:

FDIS	Report on voting
101/293/FDIS	101/297/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The French version of this standard has not been voted upon.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61340 series, under the general title *Electrostatics*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

It is the intent of this part of IEC 61340 to provide industry with a common, repeatable method for testing and determining the shielding abilities of electrostatic shielding bags.

This test method improved upon the existing industry test method for static shielding by controlling some of the variables that were not previously addressed such as:

- discharge waveform characteristics;
- capacitive probe capacitance;
- bag size.

This test method has also made a significant change by discontinuing the use of two voltage probes and incorporating a single current probe for measurement purposes. This was done to eliminate the problems that were encountered with attempting to balance the voltage probes which resulted in measurement errors.

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ELECTROSTATICS –

Part 4-8: Standard test methods for specific applications – Discharge shielding – Bags

1 Scope

This part of IEC 61340 provides a test method for evaluating the performance of electrostatic discharge shielding bags. The design voltage for the test apparatus is 1 000 V.

The purpose of this standard is to ensure that testing laboratories who use this test method to evaluate a given packaging material will obtain similar results.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ANSI/ESD STM5.1, *ESD association standard test method for electrostatic discharge sensitivity testing – Human body model (HBM) – Component level*¹

ASTM D-257-78 (reapproved 1983), *Standard test method for DC resistance or conductance of insulating materials*²

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

electrostatic shield

barrier or enclosure that limits the penetration of an electrostatic field

3.2

electrostatic discharge shield

barrier or enclosure that limits the passage of current and attenuates an electromagnetic field resulting from an electrostatic discharge

4 Required equipment

4.1 ESD simulator

A basic ESD simulator is shown in Figure 1. This simulator and the resulting waveforms were taken from ANSI/ESD STM5.1. The equivalent circuit for the simulator consists of a 100 pF capacitor in series with a 1 500 Ω resistor.

¹ ESD Association, 7900 Turin Road, Bldg. 3, Ste 2, Rome, NY 13440-2069, 315-339-6937, www.esda.org

² American Society for Testing and Materials (ASTM) 1916 Race Street, Philadelphia, PA 19103-1187, 215-299-5400