

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Electrostatics –  
Part 5-3: Protection of electronic devices from electrostatic phenomena –  
Properties and requirements classification for packaging intended for  
electrostatic discharge sensitive devices**

**Électrostatique –  
Partie 5-3: Protection des dispositifs électroniques contre les phénomènes  
électrostatiques – Classification des propriétés et des exigences relatives à  
l'emballage destiné aux dispositifs sensibles aux décharges électrostatiques**



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### Electrostatics –

**Part 5-3: Protection of electronic devices from electrostatic phenomena –  
Properties and requirements classification for packaging intended for  
electrostatic discharge sensitive devices**

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COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ELECTROSTATICS –

**Part 5-3: Protection of electronic devices from electrostatic phenomena –  
Properties and requirements classification for packaging intended for  
electrostatic discharge sensitive devices**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 61340-5-3 has been prepared by IEC technical committee 101: Electrostatics. It is an International Standard.

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) reference to IEC 61340-4-10<sup>1</sup> [1]<sup>2</sup> was removed;
- b) material resistance property "electrostatic field shielding" was removed;

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<sup>1</sup> Withdrawn.

<sup>2</sup> Numbers in square brackets refer to the bibliography.

- c) the requirement for electrostatic discharge shielding was changed from 50 nJ to 20 nJ;
- d) Table 1 – footnote "b" was changed to mention the two-point probe in IEC 61340-2-3;
- e) "shall be marked" was changed to "should be marked" in 7.2.2 and 7.2.3;
- f) Table 3 – the classification symbol and the primary function code F was removed;
- g) Table A.2 – references to IEC TS 61340-5-4 [2] and IEC TR 61340-5-5 [3] were added;
- h) Annex C – guidance regarding electric field shielding was added;
- i) Annex D – low charging material property was added.

The text of this International Standard is based on the following documents:

| Draft        | Report on voting |
|--------------|------------------|
| 101/649/FDIS | 101/660/RVD      |

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

## INTRODUCTION

Packaging is necessary to protect electrostatic discharge sensitive devices (ESDSs) from static electricity and electrostatic discharge (ESD) damage as well as physical and environmental damage during manufacture, transportation and storage.

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## ELECTROSTATICS –

### Part 5-3: Protection of electronic devices from electrostatic phenomena – Properties and requirements classification for packaging intended for electrostatic discharge sensitive devices

#### 1 Scope

This part of IEC 61340 defines the ESD protective packaging properties required to protect ESD sensitive devices (ESDSs) through all phases of production, rework and maintenance, transport and storage. Test methods are referenced to evaluate packaging and packaging materials for these product and material properties. Performance limits are provided.

This document does not address protection from electromagnetic interference (EMI), electromagnetic pulsing (EMP) or protection of electrically initiated explosive materials or devices.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 61340-2-3, *Electrostatics – Part 2-3: Methods of test for determining the resistance and resistivity of solid materials used to avoid electrostatic charge accumulation*

IEC 61340-4-8, *Electrostatics – Part 4-8: Standard test methods for specific applications – Electrostatic discharge shielding – Bags*

#### 3 Terms, definitions and abbreviated terms

##### 3.1 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

##### 3.1.1

##### **electrostatic discharge**

##### **ESD**

rapid transfer of charge between bodies at different electrostatic potentials