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INTERNATIONAL STANDARD

colour inside

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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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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This commented version (CMV) of the official standard IEC 61340-5-3:2022 edition 3.0 allows the user to identify the changes made to the previous IEC 61340-5-3:2015 edition 2.0. Futhermore, comments from IEC TC 101 experts are provided to explain the reasons of the most relevant changes.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

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[1] [1][2] was removed;
b) material resistance property "electrostatic field shielding" was removed;
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. The main document types developed by IEC are described in greater detail at 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.

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INTRODUCTION

Packaging is necessary to protect electrostatic discharge sensitive devices (ESDSs) from static electricity and electrostatic discharge (ESD) damage as well as 1 physical and environmental damage during manufacture, transportation and storage.

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 ~~needed~~ required to protect ~~electrostatic discharge~~ 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 ~~volatile materials~~ electrically initiated explosive materials or devices **2**.

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 ~~planar~~ 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*

~~IEC 61340-4-10, *Electrostatics – Part 4-10: Standard test methods for specific applications – Two-point resistance measurement*[3] **3**~~

~~IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment) **4**~~

IEC 61340-5-3

Edition 3.0 2022-04

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



IEC 61340-5-3:2022-04(en-fr)

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

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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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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La Norme internationale IEC 61340-5-3 a été établie par le comité d'études 101 de l'IEC: Electrostatique. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2015. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) la référence à l'IEC 61340-4-10[1] [1][2] a été supprimée;
b) la propriété de résistance des matériaux "blindage contre les champs électrostatiques" a été supprimée;
c) l'exigence relative au blindage contre les décharges électrostatiques qui était de 50 nJ est désormais fixée à 20 nJ;
d) la note b) du Tableau 1 a été modifiée de manière à mentionner la sonde à deux points de l'IEC 61340-2-3;
e) les expressions "doit figurer" et "doivent figurer" ont été remplacées par l'expression "il convient d'apposer" en 7.2.2 et en 7.2.3;
f) dans le Tableau 3, le symbole de classification et le code de fonction primaire F ont été supprimés;
g) dans le Tableau A.2, des références à l'IEC TS 61340-5-4 [2] et à l'IEC TR 61340-5-5 [3] ont été ajoutées;
h) l'Annex C, Recommandations relatives au blindage contre les champs électriques, a été ajoutée;
i) l'Annex D, Propriété des matériaux à faible charge, a été ajoutée.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
101/649/FDIS	101/660/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Le présent document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

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2 Les chiffres entre crochets renvoient à la Bibliographie.

INTRODUCTION

L'emballage est nécessaire pour protéger les dispositifs sensibles aux décharges électrostatiques (ESDS, *Electrostatic Discharge Sensitive Device*) contre les dommages liés à l'électricité statique et aux décharges électrostatiques (DES), et contre les dommages physiques et environnementaux au cours de la fabrication, du transport et du stockage.

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

1 Domaine d'application

La présente partie de l'IEC 61340 définit les propriétés des emballages de protection contre les DES qui sont exigées pour protéger les dispositifs sensibles aux DES (ESDS) pendant toutes les phases de production, de retouche et maintenance, de transport et de stockage. Des méthodes d'essai sont citées pour évaluer les emballages et les matériaux d'emballage par rapport aux propriétés de ces produits et matériaux. Des limites de performance sont données.

Le présent document ne traite pas de la protection contre le brouillage électromagnétique (EMI, *Electromagnetic Interference*) et les impulsions électromagnétiques (EMP, *Electromagnetic Pulsing*) ni de la protection des matériaux ou dispositifs explosifs à amorçage électrique.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 61340-2-3, *Electrostatique – Partie 2-3: Méthodes d'essais pour la détermination de la résistance et de la résistivité des matériaux solides destinés à éviter les charges électrostatiques*

IEC 61340-4-8, *Electrostatique – Partie 4-8: Méthodes d'essai normalisées pour des applications spécifiques – Blindage contre les décharges électrostatiques – Sacs*