PD IEC TS 61340-5-4:2021

BSI Standards Publication

# Electrostatics

Part 5-4: Protection of electronic devices from electrostatic phenomena — Compliance verification



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# National foreword

This Published Document is the UK implementation of IEC TS 61340-5-4:2021. It supersedes PD IEC TR 61340-5-4:2019, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/101, Electrostatics.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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# IEC TS 61340-5-4

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# TECHNICAL SPECIFICATION

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## Electrostatics –
## Part 5-4: Protection of electronic devices from electrostatic phenomena – Compliance verification

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## Electrostatics –
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# Part 5-4: Protection of electronic devices from electrostatic phenomena – Compliance verification

## FOREWORD

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IEC TS 61340-5-4 has been prepared by IEC technical committee 101: Electrostatics. It is a Technical Specification.

This first edition cancels and replaces IEC TR 61340-5-4 published in 2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC TR 61340-5-4:

a) test methods in the main body of the document have been made normative, and consequently normative references have been added;
b) the term "ESD ground" has been added and defined;
c) description of equipment for measuring low resistance has been added;
d) user specified electrodes, including surface resistance bar electrodes, are permitted to be used for resistance measurements;

e) an informative annex on verification of compliance verification test equipment has been added;

f) compliance verification of person-footwear-flooring systems by measuring body voltage has been moved to an informative annex.

The text of this Technical Specification is based on the following documents:

| Draft | Report on voting |
|---|---|
| 101/615/DTS | 101/627A/RVDTS |

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 Technical Specification 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.

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 in the data related to the specific document. At this date, the document will be

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

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# INTRODUCTION

Compliance verification is the process of monitoring and measuring all elements of an ESD control program. Regular compliance verification checks and tests are an essential part of this process, ensure that area precautions and equipment remain effective, and that an ESD control program is correctly implemented in compliance with an ESD control program plan.

Qualification testing is typically carried out under controlled conditions, often in a laboratory environment, and using industry recognized standards. Compliance verification testing is carried out under operational conditions using test methods that are appropriate to a user's requirements. Although qualification test methods can be used, compliance verification testing often uses simple equipment and procedures. Accuracy is still important, but of equal importance is the ability to carry out non-destructive testing without interrupting the normal business of the organization.

This document describes equipment and test methods that can be used for compliance verification testing of ESD control items and systems, and provides users with some guidance on how to carry out the tests and take appropriate action to ensure continuous compliance.

# ELECTROSTATICS –

# Part 5-4: Protection of electronic devices from electrostatic phenomena – Compliance verification

## 1 Scope

This part of IEC 61340 describes compliance verification testing for technical items that are included in ESD control programs, such as those specified in IEC 61340-5-1.

Test methods are based on those specified in IEC 61340-5-1 and other parts of the IEC 61340 series, and are simplified where necessary for the purposes of compliance verification, to be performed by competent personnel.

Users can, by reference to this document in their compliance verification plan, adopt the necessary test methods described herein without change or addition. Alternatively, test methods described in this document can be adapted to match the requirements of their own ESD control program, provided deviations in equipment or procedure are documented in their compliance verification plan.

Compliance verification test frequency is not specified in this document. Guidance on how users can consider compliance verification test frequency is given in informative Annex A.

Product qualification is excluded from the scope of this document.

## 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 61340-4-7, Electrostatics – *Part 4-7: Standard test methods for specific applications – Ionization*

IEC 61340-5-1, *Electrostatics – Part 5-1: Protection of electronic devices from electrostatic phenomena – General requirements*

IEC 62631-3-2, *Dielectric and resistive properties of solid insulating materials – Part 3-2: Determination of resistive properties (DC methods) – Surface resistance and surface resistivity*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in the documents listed in Clause 2 and the following apply.

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