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STN	**Elektrostatika Časť 4-7: Normalizované skúšobné metódy na špeciálne používanie Ionizácia**	**STN EN 61340-4-7** 34 6440

Electrostatics - Part 4-7: Standard test methods for specific applications - Ionization

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/17

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EUROPEAN STANDARD

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English Version

Electrostatics - Part 4-7: Standard test methods for specific applications - Ionization (IEC 61340-4-7:2017)

Électrostatique - Partie 4-7: Méthodes d'essai normalisées pour des applications spécifiques - Ionisation (IEC 61340-4-7:2017)

Elektrostatik - Teil 4-7: Standard-Prüfverfahren für spezielle Anwendungen - Ionisation (IEC 61340-4-7:2017)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

The text of document 101/521/FDIS, future edition 2 of IEC 61340-4-7, prepared by IEC/TC 101 "Electrostatics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61340-4-7:2017.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2017-11-10
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-02-10

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In the official version, for Bibliography, the following note has to be added for the standard indicated :

IEC/TR 61340-5-2	NOTE	Harmonized as CLC/TR 61340-5-2

IEC 61340-4-7

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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FOREWORD

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International Standard IEC 61340-4-7 has been prepared by IEC technical committee 101: Electrostatics.

This second edition cancels and replaces the first edition, published in 2010, and constitutes a technical revision.

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

– the use of contacting plate voltage measurements in addition to the previous non-contacting plate voltage measurements has been added. Charged plate monitors (CPMs) using this technology have been in use in the industry for many years.

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

FDIS	Report on voting
101/521/FDIS	101/524/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.

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

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 publication will remain unchanged until the stability date indicated on the IEC website 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.

INTRODUCTION

Grounding is the primary method used to limit static charge when protecting electrostatic discharge sensitive items in the work environment. However, grounding methods are not effective in removing static charges from the surfaces of non-conductive (insulative) or isolated conductive materials. Air ionization techniques, by means of ionizer systems, can be utilized to reduce this charge.

The preferred way of evaluating the ability of an ionizer to neutralize a static charge is to directly measure the rate of charge decay. Charges to be neutralized may be located on insulators as well as on isolated conductors. It is difficult to charge an insulator reliably and repeatably. Charge neutralization is more easily evaluated by measuring the rate of decay of the voltage of an isolated conductive plate. The measurement of this decay should not interfere with or change the nature of the actual decay. Four practical methods of air ionization are addressed in this document:

a) radioactive emission;

b) high-voltage corona from a.c. electric fields;

c) high-voltage corona from d.c. electric fields;

d) soft X-ray emission.

This part of IEC 61340 provides test methods and procedures that can be used when evaluating ionization equipment. The objective of the test methods is to generate meaningful, reproducible data. The test methods are not meant to be a recommendation for any particular ionizer configuration. The wide variety of ionizers, and the environments within which they are used, will often require test methods different from those described in this document. Users of this document should be prepared to adapt the test methods as required to produce meaningful data in their own application of ionizers.

Similarly, the test conditions chosen in this document do not represent a recommendation for acceptable ionizer performance. There is a wide range of item sensitivities to static charge. There is also a wide range of environmental conditions affecting the operation of ionizers. Performance specifications should be agreed upon between the user and manufacturer of the ionizer in each application. Users of this document should be prepared to establish reasonable performance requirements for their own application of ionizers.

Annex B provides a method for measuring capacitance of the isolated conductive plate.

ELECTROSTATICS –

Part 4-7: Standard test methods for specific applications – Ionization

1 Scope

This part of IEC 61340 provides test methods and procedures for evaluating and selecting air ionization equipment and systems (ionizers).

This document establishes measurement techniques, under specified conditions, to determine offset voltage (ion balance) and decay (charge neutralization) time for ionizers.

This document does not include measurements of electromagnetic interference (EMI), or the use of ionizers in connection with ordnance, flammables, explosive items or electrically initiated explosive devices.

As contained in this document, the test methods and test conditions can be used by manufacturers of ionizers to provide performance data describing their products. Users of ionizers are urged to modify the test methods and test conditions for their specific application in order to qualify ionizers for use, or to make periodic verifications of ionizer performance. The user will decide the extent of the data required for each application.

CAUTION: Procedures and equipment described in this document can expose personnel to hazardous electrical and non-electrical conditions. Users of this document are responsible for selecting equipment that complies with applicable laws, regulatory codes and both external and internal policy. Users are cautioned that this document cannot replace or supersede any requirements for personnel safety.

2 Normative references

There are no normative references in this document.