



**NSAI**  
Standards

Irish Standard  
I.S. EN 61340-2-1:2015

# Electrostatics - Part 2-1: Measurement methods - Ability of materials and products to dissipate static electric charge

**I.S. EN 61340-2-1:2015**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 61340-2-1:2015 is the adopted Irish version of the European Document EN 61340-2-1:2015, Electrostatics - Part 2-1: Measurement methods - Ability of materials and products to dissipate static electric charge

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EUROPEAN STANDARD

**EN 61340-2-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2015

ICS 17.220.99; 29.020

Supersedes EN 61340-2-1:2002

English Version

**Electrostatics - Part 2-1: Measurement methods - Ability of  
materials and products to dissipate static electric charge  
(IEC 61340-2-1:2015)**

Electrostatique - Partie 2-1: Méthodes de mesure -  
Capacité des matériaux et des produits à dissiper des  
charges électrostatiques  
(IEC 61340-2-1:2015)

Elektrostatik - Teil 2-1: Messverfahren - Fähigkeit von  
Materialien und Erzeugnissen, elektrostatische Ladungen  
abzuleiten  
(IEC 61340-2-1:2015)

This European Standard was approved by CENELEC on 2015-10-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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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**

**EN 61340-2-1:2015**

**European foreword**

The text of document 101/446/CDV, future edition 2 of IEC 61340-2-1, prepared by IEC/TC 101 "Electrostatics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61340-2-1:2015.

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) 2016-07-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-10-02

This document supersedes EN 61340-2-1:2002.

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

IEC 61340-5-1                      NOTE                      Harmonized as EN 61340-5-1.

## **Annex ZA**

(normative)

### **Normative references to international publications with their corresponding European publications**

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61340-4-6	-	Electrostatics - Part 4-6: Standard test methods for specific applications - Wrist straps	EN 61340-4-6	-
IEC 61340-4-7	-	Electrostatics - Part 4-7: Standard test methods for specific applications - Ionization	-	-

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**IEC 61340-2-1**

Edition 2.0 2015-08

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

HORIZONTAL STANDARD

NORME HORIZONTALE

**Electrostatics –**

**Part 2-1: Measurement methods – Ability of materials and products to dissipate static electric charge**

**Électrostatique –**

**Partie 2-1: Méthodes de mesure – Capacité des matériaux et des produits à dissiper des charges électrostatiques**



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IEC 61340-2-1

Edition 2.0 2015-08

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

HORIZONTAL STANDARD

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**Electrostatics –**

**Part 2-1: Measurement methods – Ability of materials and products to dissipate static electric charge**

**Électrostatique –**

**Partie 2-1: Méthodes de mesure – Capacité des matériaux et des produits à dissiper des charges électrostatiques**

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## CONTENTS

FOREWORD .....	4
INTRODUCTION .....	6
1 Scope .....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 Method of measurement of charge decay .....	8
4.1 Principles .....	8
4.2 Environmental conditions .....	9
4.3 Apparatus for measurement of corona charge decay .....	10
4.3.1 Physical design features .....	10
4.3.2 Containment of test material .....	11
4.3.3 Corona charge deposition .....	11
4.3.4 Fieldmeter .....	11
4.4 Apparatus for measurement of contact charge decay .....	12
4.4.1 Physical design features .....	12
4.4.2 Charge decay time ( $t_{SD}$ ) .....	13
5 Practical application of test methods and procedures .....	14
5.1 General .....	14
5.2 Charge decay test for textile materials .....	14
5.2.1 Selection of test method .....	14
5.2.2 Test surface preparation .....	14
5.2.3 Testing .....	14
5.2.4 Results .....	15
5.2.5 Test report .....	15
5.3 Charge decay test via gloves, finger cots or tools .....	15
5.3.1 Selection of test method .....	15
5.3.2 Common steps in testing .....	15
5.3.3 Test procedure for charge decay properties of finger cots as worn .....	16
5.3.4 Test procedure for the charge decay properties of gloves as worn .....	16
5.3.5 Test report for finger cots or gloves .....	16
5.3.6 Test procedure for the charge decay properties of tools .....	17
5.3.7 Test report for tools .....	17
5.4 Null test for CPM .....	17
Annex A (normative) Performance verification of measuring instrumentation .....	19
A.1 Verification of corona charge decay measuring instrumentation .....	19
A.1.1 Aspects to be verified .....	19
A.1.2 Surface potential sensitivity verification .....	19
A.1.3 Decay time verification .....	19
A.1.4 Verification procedure .....	19
A.2 Methods for verification of the capacitance of an isolated conductive plate .....	20
A.2.1 General .....	20
A.2.2 Capacitance meter method .....	20
A.2.3 Charge measuring method .....	20
A.2.4 Charge-sharing method .....	21
Bibliography .....	22

Figure 1 – Example of an arrangement for measurement of dissipation of charge using corona charging .....	10
Figure 2 – Example of an arrangement for measurement of dissipation of charge using a charged plate .....	12
Figure 3 – Charged plate detail .....	13
Figure 4 – Charge decay time ( $t_{sd}$ ) and offset voltage ( $U_0$ ) .....	13
Figure A.1 – Equivalent circuit for CPM and reference capacitor .....	21

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### ELECTROSTATICS –

#### **Part 2-1: Measurement methods – Ability of materials and products to dissipate static electric charge**

#### FOREWORD

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International Standard IEC 61340-2-1 has been prepared by IEC technical committee 101: Electrostatics.

This second edition cancels and replaces the first edition published in 2002. This edition constitutes a technical revision.

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

- a) the first edition supported requirements in IEC TR 61340-5-1, but with the revision of IEC TR 61340-5-1 into an International Standard, this support is no longer required; references to IEC 61340-5-1[1]<sup>1</sup> have been removed;
- b) the introduction gives additional information on when charge decay time measurements are appropriate, and the applications for which each of the two test methods are best suited;
- c) procedures for performance verification of measuring instruments for the corona charging method have been added.

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

CDV	Report on voting
101/446/CDV	101/462/RVC

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.

It has the status of a horizontal standard in accordance with IEC Guide 108[3].

A list of all the 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,
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- amended.

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

## INTRODUCTION

Measurements of the rate of dissipation of static charge belong to the essential measurement techniques in the field of electrostatics.

For homogeneous conductive materials, this property can be evaluated indirectly by measuring resistance or resistivity parameters. Care should be exercised when determining the homogeneity of materials, as some materials that appear homogenous do exhibit non-homogeneous electrical characteristics. If the homogeneity of materials is not known and cannot be otherwise verified, resistance measurements may not be reliable or may not give enough information. Resistance measurements may also not be reliable when evaluating materials in the dissipative or insulative range and especially for high ohmic materials including conductive fibres (e.g. textiles with a metallic grid). In such cases, the rate of dissipation of static charge should be measured directly.



## ELECTROSTATICS –

### **Part 2-1: Measurement methods – Ability of materials and products to dissipate static electric charge**

#### **1 Scope**

This part of IEC 61340 describes test methods for measuring the rate of dissipation of static charge of insulating and static dissipative materials and products.

It includes a generic description of test methods and detailed test procedures for specific applications.

The two test methods for measuring charge decay time, one using corona charging and one using a charged metal plate are different and may not give equivalent results. Nevertheless, each method has a range of applications for which it is best suited. The corona charging method is suitable for evaluating the ability of materials, e.g. textiles, packaging, etc., to dissipate charge from their own surfaces. The charged metal plate method is suitable for evaluating the ability of materials and objects such as gloves, finger cots, hand tools, etc. to dissipate charge from conductive objects placed on or in contact with them. The charged plate method may not be suitable for evaluating the ability of materials to dissipate charge from their own surfaces.

In addition to its general application, this horizontal standard is also intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 108.

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#### **2 Normative references**

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IEC 61340-4-6, *Electrostatics – Part 4-6: Standard test methods for specific applications – Wrist straps*

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

#### **3 Terms and definitions**

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