
Zaščita pred električnim udarom – Skupni vidiki za inštalacijo in opremo (IEC 61140:2001)

Protection against electric shock - Common aspects for installation and equipment

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EUROPEAN STANDARD

EN 61140

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2002

ICS 13.260;29.020;91.140.50

Supersedes EN 61140:2001

English version

**Protection against electric shock –
Common aspects for installation and equipment
(IEC 61140:2001)**

Protection contre les chocs électriques -
Aspects communs aux installations et
aux matériels
(CEI 61140:2001)

Schutz gegen elektrischen Schlag -
Gemeinsame Anforderungen
für Anlagen und Betriebsmittel
(IEC 61140:2001)

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This European Standard was approved by CENELEC on 2001-12-04. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 64/1191/FDIS, future edition 3 of IEC 61140, prepared by IEC TC 64, Electrical installations and protection against electric shock, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61140 on 2001-12-04.

This European Standard supersedes EN 61140:2001.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2003-08-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-12-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annexes A, B, C and ZB are informative.
Annexes ZA and ZB have been added by CENELEC.

iTeh STANDARD PREVIEW Endorsement notice (standards.iteh.ai)

The text of the International Standard IEC 61140:2001 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-131	- ¹⁾	International Electrotechnical Vocabulary (IEV) Chapter 131: Electric and magnetic circuits	-	-
IEC 60050-195	1998	Chapter 195: Earthing and protection against electric shock	-	-
A1	2001		-	-
IEC 60050-351	1998	Part 351: Automatic control	-	-
IEC 60050-826	1982	Chapter 826: Electrical installations of buildings	-	-
A2	1995		HD 384.2 S2	2001 ²⁾
IEC 60071-1	1993	Insulation co-ordination Part 1: Definitions, principles and rules	EN 60071-1	1995
IEC 60071-2	1996	Part 2: Application guide	EN 60071-2	1997
IEC 60364-4-41 (mod)	- ¹⁾	Electrical installations of buildings Part 4: Protection for safety - Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996 ³⁾
IEC 60364-4-443 (mod)	1995	Part 4: Protection for safety - Chapter 44: Protection against overvoltages - Section 443: Protection against overvoltages of atmospheric origin or due to switching	HD 384.4.443 S1	2000

1) Undated reference.

2) HD 384.2 S2 includes A1:1990 + A2:1995 + A3:1999 to IEC 60050-826.

3) Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60364-5-54 (mod)	1980	Part 5: Selection and erection of electrical equipment - Chapter 54: Earthing arrangements and protective conductors	HD 384.5.54 S1	1988
IEC 60364-6-61 (mod)	1986	Part 6: Verification - Chapter 61: Initial verification	HD 384.6.61 S1	1992
IEC 60417-2	- ¹⁾	Graphical symbols for use on equipment Part 2: Symbol originals	EN 60417-2	1999 ³⁾
IEC 60446	1999	Basic and safety principles for man-machine interface, marking and identification - Identification of conductors by colours or numerals	EN 60446	1999
IEC 60479-1	1994	Effects of current on human beings and livestock Part 1: General aspects	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60601	Series	Medical electrical equipment	EN 60601	Series
IEC 60601-1	1988	Medical electrical equipment Part 1: General requirements for safety	EN 60601-1 + corr. July	1990 1994
IEC 60664-1 (mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1 + corr. November	1996 1996
IEC 60721	Series	Classification of environmental conditions	EN 60721	Series
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 61201	1992	Extra-low-voltage (ELV) - Limit values	-	-
ISO/IEC Guide 51	1999	Safety aspects - Guidelines for their inclusion in standards	-	-
IEC Guide 104	1997	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-

Annex ZB
(informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC member.

This European Standard falls under Directive 73/23/EEC.

NOTE (from CEN/CENELEC IR Part 2, 3.1.9): Where standards fall under EC Directives, it is the view of the Commission of the European Communities (OJ No C 59; 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

A-deviations in an EFTA-country are **valid instead** of the relevant provisions of the European Standard in that country until they have been removed.

<u>Clause</u>	<u>Deviation</u>
3.17.3	Belgium (Wiring rules: Règlement Général sur les Installations Electriques (RGIE) / Algemeen Reglement op de Elektrische Installaties (AREI) art. 28.02)

A conductive part embedded in concrete is not allowed as an earth electrode.

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STANDARD

CEI
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61140

Troisième édition
Third edition
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PUBLICATION FONDAMENTALE DE SÉCURITÉ
BASIC SAFETY PUBLICATION

**Protection contre les chocs électriques –
Aspects communs aux installations
et aux matériels**

**Protection against electric shock –
Common aspects for installation
and equipment**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PROTECTION AGAINST ELECTRIC SHOCK – COMMON ASPECTS FOR INSTALLATION AND EQUIPMENT

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61140 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This third edition cancels and replaces the second edition, published in 1997, and constitutes a technical revision.

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

FDIS	Report on voting
64/1191/FDIS	64/1202/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 3.

It has the status of a basic safety publication in accordance with IEC Guide 104.

Annexes A, B and C are for information only.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

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

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INTRODUCTION

This International Standard is a Basic Safety Publication intended for use by technical committees in the preparation of standards in accordance with the principles of IEC Guide 104 and ISO/IEC Guide 51.

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PROTECTION AGAINST ELECTRIC SHOCK – COMMON ASPECTS FOR INSTALLATION AND EQUIPMENT

1 Scope

This International Standard applies to the protection of persons and animals against electric shock. It is intended to give fundamental principles and requirements which are common to electrical installations, systems and equipment or necessary for their co-ordination.

This standard has been prepared for installations, systems and equipment without a voltage limit.

NOTE There are some clauses in this standard which refer to low-voltage and high-voltage systems, installations and equipment. For the purpose of this standard, low -voltage is any rated voltage up to and including 1 000 V a.c. or 1 500 V d.c. High voltage is any rated voltage exceeding 1 000 V a.c. or 1 500 V d.c.

The requirements of this standard apply only if they are incorporated, or are referred to, in the relevant standards. It is not intended to be used as a stand-alone standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(131): *International Electrotechnical Vocabulary (IEV) – Chapter 131: Electric and magnetic circuits*

IEC 60050(195): 1998, *International Electrotechnical Vocabulary (IEV) – Part 195: Earthing and protection against electric shock*
Amendment 1 (2001)

IEC 60050(351):1998, *International Electrotechnical Vocabulary – Part 351: Automatic control*

IEC 60050(826):1982, *International Electrotechnical Vocabulary – Chapter 826: Electrical installations of buildings*
Amendment 2 (1995)

IEC 60071-1:1993, *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 60071-2:1996, *Insulation co-ordination – Part 2: Application guide*

IEC 60364-4-41, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 41: Protection against electric shock*

IEC 60364-4-443:1995, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 44: Protection against overvoltages – Section 443: Protection against overvoltages of atmospheric origin or due to switching*