

INTERNATIONAL STANDARD

IEC 61140

Third edition
2001-10

BASIC SAFETY PUBLICATION

Protection against electric shock – Common aspects for installation and equipment

*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



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CONTENTS

FOREWORD	7
INTRODUCTION	11
1 Scope	13
2 Normative references	13
3 Definitions	15
4 Fundamental rule of protection against electric shock	31
4.1 Normal conditions	31
4.2 Single-fault conditions	31
4.2.1 Protection by two independent protective provisions	33
4.2.2 Protection by an enhanced protective provision	33
4.3 Special cases	33
5 Protective provisions (elements of protective measures)	35
5.1 Provisions for basic protection	35
5.1.1 Basic insulation	35
5.1.2 Barriers or enclosures	35
5.1.3 Obstacles	37
5.1.4 Placing out of arm's reach	37
5.1.5 Limitation of voltage	39
5.1.6 Limitation of steady-state touch current and charge	39
5.1.7 Potential grading	39
5.1.8 Other provisions	39
5.2 Provisions for fault protection	39
5.2.1 Supplementary insulation	39
5.2.2 Protective-equipotential-bonding	41
5.2.3 Protective screening	43
5.2.4 Indication and disconnection in high-voltage installations and systems	45
5.2.5 Automatic disconnection of supply	45
5.2.6 Simple separation (between circuits)	45
5.2.7 Non-conducting environment	45
5.2.8 Potential grading	47
5.2.9 Other provisions	47
5.3 Enhanced protective provisions	47
5.3.1 Reinforced insulation	47
5.3.2 Protective-separation between circuits	47
5.3.3 Limited-current-source	49
5.3.4 Protective impedance device	49
5.3.5 Other provisions	49
6 Protective measures	49
6.1 Protection by automatic disconnection of supply	49
6.2 Protection by double or reinforced insulation	49
6.3 Protection by equipotential bonding	51
6.4 Protection by electrical separation	51
6.5 Protection by non-conducting environment (low-voltage)	51
6.6 Protection by SELV	51

6.7	Protection by PELV	53
6.8	Protection by limitation of steady-state touch current and charge	53
6.9	Protection by other measures	53
7	Co-ordination of electrical equipment and of protective provisions within an electrical installation	53
7.1	Class 0 equipment	55
7.1.1	Insulation	55
7.2	Class I equipment	55
7.2.1	Insulation	55
7.2.2	Protective-equipotential-bonding.....	55
7.2.3	Accessible surfaces of parts of insulating material	55
7.2.4	Connection of a protective conductor	57
7.3	Class II equipment	57
7.3.1	Insulation	57
7.3.2	Protective bonding.....	59
7.3.3	Marking.....	59
7.4	Class III equipment	59
7.4.1	Voltages.....	59
7.4.2	Protective bonding.....	61
7.4.3	Marking.....	61
7.5	Touch currents, protective conductor currents, leakage currents.....	61
7.5.1	Touch currents	61
7.5.2	Protective conductor currents	63
7.5.3	Other requirements	65
7.6	Safety and boundary clearances and warning labels for high-voltage installations.....	65
8	Special operating and servicing conditions.....	67
8.1	Devices to be operated manually and components intended to be replaced manually	67
8.1.1	Devices to be operated or components intended to be replaced by ordinary persons in low-voltage installations, systems and equipment	67
8.1.2	Devices to be operated or components intended to be replaced by skilled or instructed persons	67
8.2	Electrical values after isolation	69
Annex A (informative) Survey of protective measures as implemented by protective provisions.....		71
Annex B (informative) Values of maximum a.c. limits of protective conductor currents for cases 7.5.2.2 a) and 7.5.2.2 b)		75
Annex C (informative) Index of definitions		77

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.

Withdrawn

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.

Withdrawn

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*

IEC 60364-5-54:1980, *Electrical installations of buildings – Part 5: Selection and erection of electrical equipment – Chapter 54: Earthing arrangements and protective conductors*

IEC 60364-6-61:1986, *Electrical installations of buildings – Part 6: Verification – Chapter 61: Initial verification*

IEC 60417-2, *Graphical symbols for use on equipment – Part 2: Symbol originals*

IEC 60446:1999, *Basic and safety principles for man-machine interface, marking and identification – Identification of conductors by colours or numerals*

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)*

IEC 60601 (all parts), *Medical electrical equipment*

IEC 60601-1:1988, *Medical electrical equipment – Part 1: General requirements for safety*

IEC 60664-1:1992, *Insulation co-ordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60721 (all parts), *Classification of environmental conditions*

IEC 60990:1999, *Methods of measurement of touch current and protective conductor current*

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*