Irish Standard
I.S. EN 60445:2010

Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors (IEC 60445:2010 (EQV))

I.S. EN 60445:2010

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:	*This document is based on:*	*Published:*
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I.S. EN 60445:2010

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60445

November 2010

ICS 29.020

Supersedes EN 60445:2007, EN 60446:2007

English version

Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors

(IEC 60445:2010)

Principes fondamentaux et de sécurité pour les interfaces homme-machines, le marquage et l'identification - Identification des bornes de matériels, des extrémités de conducteurs et des conducteurs
(CEI 60445:2010)

Grund und Sicherheitsregeln für die Mensch-Maschine-Schnittstelle - Kennzeichnung von Anschlüssen elektrischer Betriebsmittel, angeschlossenen Leiterenden und Leitern
(IEC 60445:2010)

This European Standard was approved by CENELEC on 2010-11-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60445:2010 E

Foreword

The text of document 16/479/FDIS, future edition 5 of IEC 60445, prepared by IEC TC 16, Basic and safety principles for man-machine interface, marking and identification, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60445 on 2010-11-01.

This European Standard supersedes EN 60445:2007 and EN 60446:2007.

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

This European Standard includes the following significant technical changes with respect to EN 60445:2007 and EN60446:2007:

– addition of new definitions in Clause 3;

– revision of some clauses to use words from reference IEC standards. These revisions did not change any technical requirements but to clarify the wording;

– addition of Annex B (informative) “List of notes concerning certain countries”.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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)	2011-08-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-11-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60445:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60079-11:2006	NOTE	Harmonized as EN 60079-11:2007 (not modified).
IEC 60601 series	NOTE	Harmonized in EN 60601 series (partially modified).
IEC 61666:1997	NOTE	Harmonized as EN 61666:1997 (not modified).
IEC 62491:2008	NOTE	Harmonized as EN 62491:2008 (not modified).

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

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

Publication	Year	Title	EN/HD	Year
IEC 60417	-	Graphical symbols for use on equipment	-	-
IEC 60617	-	Graphical symbols for diagrams	-	-
IEC Guide 104	-	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

BASIC AND SAFETY PRINCIPLES FOR MAN-MACHINE INTERFACE, MARKING AND IDENTIFICATION – IDENTIFICATION OF EQUIPMENT TERMINALS, CONDUCTOR TERMINATIONS AND CONDUCTORS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60445 has been prepared by IEC technical committee 16: Basic and safety principles for man-machine interface, marking and identification.

This fifth edition is a merged version of IEC 60445 and IEC 60446, and cancels and replaces the fourth edition of IEC 60445, published in 2006, and the fourth edition of IEC 60446, published in 2007.

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

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

a) addition of new definitions in Clause 3;

b) revision of some clauses to use words from reference IEC standards. These revisions did not change any technical requirements but to clarify the wording;

c) addition of Annex B (informative) “List of notes concerning certain countries”.

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

FDIS	Report on voting
16/479/FDIS	16/480/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.

The reader’s attention is drawn to the fact that Annex B lists all of the “in-some-country” clauses on differing practices of a less permanent nature relating to the subject of this standard.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This basic safety publication is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

It is not intended for use by manufacturers or certification bodies. One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

In this fifth edition of IEC 60445, the terminology has been aligned with IEC 60050-195.