

<b>STN</b>	<b>Jadrá káblov</b>	<b>STN EN IEC 60228</b>  34 7201
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Conductors of insulated cables

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. 10/24

Obsahuje: EN IEC 60228:2024, IEC 60228:2023

Oznámením tejto normy sa od 12.06.2027 ruší  
STN EN 60228 (34 7201) z októbra 2005

**139396**

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Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024  
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii  
v znení neskorších predpisov.

EUROPEAN STANDARD

**EN IEC 60228**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2024

ICS 29.060.20

Supersedes EN 60228:2005/corrigendum May 2005; EN 60228:2005

English Version

**Conductors of insulated cables  
(IEC 60228:2023)**Ames des câbles isolés  
(IEC 60228:2023)Leiter für Kabel und isolierte Leitungen  
(IEC 60228:2023)

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60228:2024 (E)****European foreword**

The text of document 20/2125/FDIS, future edition 4 of IEC 60228, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60228:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-03-12 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-06-12 document have to be withdrawn

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## Annex ZA (normative)

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

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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.cencenelec.eu](http://www.cencenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IECEE OD-5014	-	IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System), Committee of Testing Laboratories (CTL), Instrument Accuracy Limits	-	-

**EN IEC 60228:2024 (E)****Annex ZB**  
(normative)**Special national conditions**

**Special national condition:** National characteristic or practice that cannot be changed even over a long period, e. g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Clause      Special national condition

Table 3      **Cyprus, Ireland, United Kingdom**

*Add:*

1,25	0,21	15,6	16,1
------	------	------	------

NOTE This conductor is for cables which are intended for use on appliances fitted with 13 A plugs conforming to BS 1363-1 or I.S. 401

Table C.1      **Cyprus, Ireland, United Kingdom**

*Add:*

1,25	–	–	1,7
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IEC 60228

Edition 4.0 2023-12

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Conductors of insulated cables**

**Ames des câbles isolés**



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IEC 60228

Edition 4.0 2023-12

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Conductors of insulated cables**

**Ames des câbles isolés**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

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ICS 29.060.20

ISBN 978-2-8322-7808-6

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## CONDUCTORS OF INSULATED CABLES

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IEC 60228 has been prepared by IEC technical committee 20: Electric cables. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2004. This edition constitutes a technical revision.

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

- a) a description of Milliken conductors has been added;
- b) nominal cross-sectional areas above 2 500 mm<sup>2</sup> have been added;

- c) the old 2 500 mm<sup>2</sup> aluminium resistance value has been corrected and a new value introduced.

For legacy systems where the 2 500 mm<sup>2</sup> aluminium conductor was designed taking into account the value presented in previous editions and no longer tabulated, then the original design can be maintained and still utilized.

The suppliers can furthermore utilize such superseded design of 2 500 mm<sup>2</sup> aluminium conductors either in systems already designed and qualified but not delivered or for example to produce repair and additional spare lengths for delivered systems.

The choice of utilizing the original superseded design of 2 500 mm<sup>2</sup> aluminium conductors or a new one based on the new resistance tabulated value is a matter of agreement between the supplier and final users.

The text of this International Standard is based on the following documents:

Draft	Report on voting
20/2125/FDIS	20/2131/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

This document is intended as a fundamental reference standard for IEC technical committees and National Committees in drafting standards for electric cables, and to the National Committees in drafting specifications for use in their own countries. These committees select from the tables of this general standard the conductors appropriate to the particular applications relevant to them and either include the applicable details in their cable specifications or make appropriate references to this document.

## CONDUCTORS OF INSULATED CABLES

### 1 Scope

This document specifies the nominal cross-sectional areas, in the range 0,5 mm<sup>2</sup> to 3 500 mm<sup>2</sup>, for conductors in electric power cables and cords of a wide range of types. Requirements for numbers and sizes of wires and resistance values are also included. These conductors include solid, stranded and Milliken, copper, aluminium and aluminium alloy conductors in cables for fixed installations and flexible copper conductors.

This document does not apply to conductors for telecommunication purposes.

The applicability of this document to a particular type of cable is as specified in the standard for the type of cable.

Unless specified otherwise in a particular clause, this document relates to the conductors in the finished cable and not to the conductor as made or supplied for inclusion into a cable.

Conductors described in this document are specified in metric sizes.

Informative annexes provide supplementary information covering temperature correction factors for resistance measurement (Annex B) and guidance on dimensional limits of circular conductors (Annex C).

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IECEE OD-5014, *Instrument Accuracy Limits*

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