



**SLOVENSKI STANDARD**  
**SIST EN 60317-0-2:2014**

**01-marec-2014**

**Nadomešča:**

**SIST EN 60317-0-2:2001**

**SIST EN 60317-0-2:2001/A1:2001**

**SIST EN 60317-0-2:2001/A2:2005**

---

**Specifikacije za posebne vrste navijalnih žic - 0-2. del: Splošne zahteve - Emajliran bakren vodnik s pravokotnim prerezom (IEC 60317-0-2:2013)**

Specifications for particular types of winding wires - Part 0-2: General requirements - Enamelled rectangular copper wire

**(standards.iteh.ai)**

Technische Lieferbedingungen für bestimmte Typen von Wickeldrähten - Teil 0-2: Allgemeine Anforderungen - Flachdrähte aus Kupfer, lackisoliert

<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014>

Spécifications pour types particuliers de fils de bobinage - Partie 0-2: Prescriptions générales - Fil de section rectangulaire en cuivre émaillé

**Ta slovenski standard je istoveten z: EN 60317-0-2:2014**

---

**ICS:**

29.060.10	Žice	Wires
77.150.30	Bakreni izdelki	Copper products

**SIST EN 60317-0-2:2014** en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 60317-0-2:2014

<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60317-0-2**

January 2014

ICS 29.060.10

Supersedes EN 60317-0-2:1998 + A1:2000 + A2:2005

English version

**Specifications for particular types of winding wires -  
Part 0-2: General requirements -  
Enamelled rectangular copper wire  
(IEC 60317-0-2:2013)**

Spécifications pour types particuliers de  
fils de bobinage -  
Partie 0-2: Exigences générales -  
Fil de section rectangulaire en cuivre  
émaillé  
(CEI 60317-0-2:2013)

Technische Lieferbedingungen für  
bestimmte Typen von Wickeldrähten -  
Teil 0-2: Allgemeine Anforderungen -  
Lackisolierte Flachdrähte aus Kupfer  
(IEC 60317-0-2:2013)

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

This European Standard was approved by CENELEC on 2013-11-11. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CENELEC**

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**

## Foreword

The text of document 55/1410/FDIS, future edition 3 of IEC 60317-0-2, prepared by IEC/TC 55 "Winding wires" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60317-0-2:2014.

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) 2014-08-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-11-11

This document supersedes EN 60317-0-2:1998.

EN 60317-0-2:2014 includes the following significant technical changes with respect to EN 60317-0-2:1998:

- addition of 3.2.2, transferring general winding wire requirements from the scope;
- correction to Table 7 units;
- change to Clause 15 requirements with a simple reference to EN 60172;
- deletion of Annex E.

This standard is to be read in conjunction with the EN 60851 series. The clause numbers used in this part of EN 60317 are identical with the respective test numbers of EN 60851 series.

In case of inconsistencies between EN 60851 and this part of EN 60317, the latter prevails.

The numbering of clauses in this standard is not continuous from Clauses 21 and 30 in order to reserve space for possible future wire requirements prior to those for wire packaging.

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

## Endorsement notice

The text of the International Standard IEC 60317-0-2:2013 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 60264 Series	NOTE	Harmonized as EN 60264 Series (not modified).
IEC 60317 Series	NOTE	Harmonized as EN 60317 Series (not modified).

## 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 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 60172	-	Test procedure for the determination of the temperature index of enamelled winding wires	EN 60172	-
IEC 60851	Series	Winding wires - Test methods	EN 60851	Series
ISO 3	-	Preferred numbers - Series of preferred numbers	-	-

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 60317-0-2:2014

<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 60317-0-2:2014

<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014>



IEC 60317-0-2

Edition 3.0 2013-10

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

Specifications for particular types of winding wires –  
Part 0-2: General requirements – Enamelled rectangular copper wire  
(standards.iteh.ai)

Spécifications pour types particuliers de fils de bobinage –  
Partie 0-2: Exigences générales – Fil de section rectangulaire en cuivre émaillé

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

T

ICS 29.060.10

ISBN 978-2-8322-1149-6

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms, definitions, general notes and appearance.....	7
3.1 Terms and definitions .....	7
3.2 General notes.....	8
3.2.1 Methods of test.....	8
3.2.2 Winding wire.....	9
3.3 Appearance.....	9
4 Dimensions.....	9
4.1 Conductor dimensions .....	9
4.2 Tolerance on conductor dimensions.....	9
4.3 Rounding of corners .....	10
4.4 Increase in dimensions due to the insulation .....	12
4.5 Overall dimensions .....	12
4.5.1 Nominal overall dimensions.....	12
4.5.2 Minimum overall dimensions.....	12
4.5.3 Maximum overall dimensions.....	12
5 Electrical resistance.....	13
6 Elongation .....	13
7 Springiness.....	13
8 Flexibility and adherence .....	13
8.1 Mandrel winding test.....	13
8.2 Adherence test .....	13
9 Heat shock .....	14
10 Cut-through .....	14
11 Resistance to abrasion .....	14
12 Resistance to solvents .....	14
13 Breakdown voltage .....	14
14 Continuity of insulation.....	14
15 Temperature index.....	14
16 Resistance to refrigerants .....	15
17 Solderability.....	15
18 Heat or solvent bonding .....	15
19 Dielectric dissipation factor .....	15
20 Resistance to transformer oil .....	15
21 Loss of mass .....	15
23 Pin hole test .....	15
30 Packaging.....	15
Annex A (informative) Nominal cross-sectional areas for preferred and intermediate sizes.....	17
Bibliography .....	25



Table 1 – Conductor tolerances .....	10
Table 2 – Nominal cross-sectional areas of preferred sizes.....	11
Table 3 – Corner radii .....	12
Table 4 – Increases in dimensions.....	12
Table 5 – Elongation .....	13
Table 6 – Mandrel winding.....	13
Table 7 – Breakdown voltage .....	14
Table A.1 – Nominal cross-sectional areas (1 of 7) .....	17
Table B.1 – Tolerances for calculating special maximum and minimum dimensions of grade 2 rectangular wire.....	24

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 60317-0-2:2014](https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014)

<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATIONS FOR PARTICULAR  
TYPES OF WINDING WIRES –****Part 0-2: General requirements –  
Enamelled rectangular copper wire**

## 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.
- 2) The formal decisions or agreements of 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.  
<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-3599d793a101/iec-60317-0-2-2014>
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60317-0-2 has been prepared by IEC technical committee 55: Winding wires.

This third edition cancels and replaces the second edition published in 1997, Amendment 1:1999 and Amendment 2:2005. This edition constitutes a technical revision.

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

- addition of 3.2.2, transferring general winding wire requirements from the scope;
- correction to Table 7 units;
- change to Clause 15 requirements with a simple reference to IEC 60172;
- deletion of Annex E.

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

FDIS	Report on voting
55/1410/FDIS	55/1431/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.

This International standard is to be read in conjunction with the IEC 60851 series. The clause numbers used in this part of IEC 60317 are identical with the respective test numbers of IEC 60851 series.

In case of inconsistencies between IEC 60851 and this part of IEC 60317, the latter prevails.

The numbering of clauses in this standard is not continuous from Clauses 21 and 30 in order to reserve space for possible future wire requirements prior to those for wire packaging.

A list of all parts in the IEC 60317 series, published under the general title *Specifications for particular types of winding wires*, 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 web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed, [SIST EN 60317-0-2:2014](https://standards.iteh.ai/catalog/standards/sist/en-60317-0-2-2014)
- withdrawn, <https://standards.iteh.ai/catalog/standards/sist/ef8785c-167d-4677-88c6-130745094d70/sist-en-60317-0-2-2014>
- replaced by a revised edition, or
- amended.

## INTRODUCTION

This part of IEC 60317 is one of a series which deals with insulated wires used for windings in electrical equipment. The series has three groups describing:

- 1) Winding wires – Test methods (IEC 60851);
- 2) Specifications for particular types of winding wires (IEC 60317);
- 3) Packaging of winding wires (IEC 60264).

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 60317-0-2:2014](https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014)

<https://standards.iteh.ai/catalog/standards/sist/eff8785c-167d-4677-88c6-d3b745094d70/sist-en-60317-0-2-2014>