



# SLOVENSKI STANDARD

## SIST EN 60317-0-3:2001

01-september-2001

---

### Specifications for particular types of winding wires - Part 0-3: General requirements - Enamelled round aluminium wire

Specifications for particular types of winding wires -- Part 0-3: General requirements - Enamelled round aluminium wire

Technische Lieferbedingungen für bestimmte Typen von Wickeldrähten -- Teil 0-3: Allgemeine Anforderungen - Runddrähte aus Aluminium, lackisoliert

Spécifications pour types particuliers de fils de bobinage -- Partie 0-3: Prescriptions générales - Fil de section circulaire en aluminium émaillé

[https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-](https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-c74439d5c650/sist-en-60317-0-3-2001)

Ta slovenski standard je istoveten z: **EN 60317-0-3:1998**

---

#### **ICS:**

29.060.10      Žice      Wires

**SIST EN 60317-0-3:2001**      en

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

[SIST EN 60317-0-3:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-c74439d5c650/sist-en-60317-0-3-2001>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60317-0-3**

January 1998

ICS 29.060.10

Supersedes EN 60317-0-3:1994 and its amendments

Descriptors: Winding, electric wire, insulated wire, enamelled wire, aluminium, round shape, specification, dimension

English version

**Specifications for particular types of winding wires**  
**Part 0: General requirements**  
**Section 3: Enamelled round aluminium wire**  
**(IEC 60317-0-3:1997)**

Spécifications pour types particuliers  
de fils de bobinage  
Partie 0: Prescriptions générales  
Section 3: Fil de section circulaire  
en aluminium émaillé  
(CEI 60317-0-3:1997)

Technische Lieferbedingungen für  
bestimmte Typen von Wickeldrähten  
Teil 0: Allgemeine Anforderungen  
Hauptabschnitt 3: Lackisolierte  
Runddrähte aus Aluminium  
(IEC 60317-0-3:1997)

[SIST EN 60317-0-3:2001](https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-c74439d5c650/sist-en-60317-0-3-2001)

<https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-c74439d5c650/sist-en-60317-0-3-2001>

This European Standard was approved by CENELEC on 1998-01-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, 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 texts of documents 55/559/FDIS and 55/610/FDIS, future amendments to IEC 60317-0-3:1990, prepared by IEC TC 55, Winding wires, were submitted to the IEC-CENELEC parallel vote.

These texts, together with those of IEC 60317-0-3:1990 and its amendments 1:1992 and 2:1993, were published by IEC as the second edition of IEC 60317-0-3 and were approved by CENELEC as EN 60317-0-3 on 1998-01-01.

This European Standard supersedes EN 60317-0-3:1994 and its amendments.

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) 1998-10-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 1998-10-01

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 and annexes A, B, C, D and E are informative.

Annex ZA has been added by CENELEC.

(standards.iteh.ai)

#### Endorsement notice

<https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-7429454e0673/iec-60317-0-3-1997>

The text of the International Standard IEC 60317-0-3:1997 was approved by CENELEC as a European Standard without any modification.



## 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 60172	1987	Test procedure for the determination of the temperature index of enamelled winding wires	EN 60172	1994
IEC 60317-14	1990	Specifications for particular types of winding wires Part 14: Polyvinyl acetal enamelled round aluminium wire, class 105	EN 60317-14	1994
IEC 60317-15	1990	Part 15: Polyesterimide enamelled round aluminium wire, class 180	EN 60317-15	1994
IEC 60317-24	1990	Part 24: Polyester or polyesterimide enamelled round aluminium wire overcoated with polyamide, class 180	EN 60317-24	1995
IEC 60317-25	1990	Part 25: Polyester or polyesterimide overcoated with polyamide-imide enamelled round aluminium wire, class 200	EN 60317-25	1996
IEC 60851	series	Methods of test for winding wires	EN 60851	series
ISO 3	1973	Preferred numbers - Series of preferred numbers	-	-

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

[SIST EN 60317-0-3:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-c74439d5c650/sist-en-60317-0-3-2001>

**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC**

**60317-0-3**

**Edition 2.1**

2000-01

Edition 2:1997 consolidée par l'amendement 1:1999  
Edition 2:1997 consolidated with amendment 1:1999

**Spécifications pour types particuliers  
de fils de bobinage –**

**Partie 0-3:**

**Prescriptions générales –**

**Fil de section circulaire en aluminium émaillé  
(standards.iteh.ai)**

**Specifications for particular types  
of winding wires –**

**Part 0-3:**

**General requirements –**

**Enamelled round aluminium wire**

© IEC 2000 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photo-copie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission  
Telefax: +41 22 919 0300

e-mail: [inmail@iec.ch](mailto:inmail@iec.ch)

3, rue de Varembe Geneva, Switzerland  
IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

**R**

Pour prix, voir catalogue en vigueur  
For price, see current catalogue

## CONTENTS

	Page
FOREWORD .....	5
INTRODUCTION .....	7
Clause	
1 Scope .....	9
2 Normative references .....	9
3 Definitions and general notes on methods of test .....	11
4 Dimensions .....	13
5 Electrical resistance .....	19
6 Elongation .....	19
7 Springiness .....	19
8 Flexibility and adherence .....	19
9 Heat shock .....	21
10 Cut-through .....	21
11 Resistance to abrasion .....	23
12 Resistance to solvents .....	23
13 Breakdown voltage .....	23
14 Continuity of insulation (nominal conductor diameters up to and including 1,600 mm).....	25
15 Temperature index .....	25
16 Resistance to refrigerants .....	25
17 Solderability .....	27
18 Heat or solvent bonding .....	27
19 Dielectric dissipation factor .....	27
20 Resistance to transformer oil .....	27
21 Loss of mass .....	27
30 Packaging .....	27
Annex A (informative) Dimensions for intermediate nominal conductor diameters (R 40) .....	29
Annex B (informative) Method for the calculation of minimum overall diameter .....	33
Annex C (informative) Method for the calculation of linear resistance .....	35
Annex D (informative) Resistance .....	37
Annex E (informative) High temperature failure test .....	39



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 0-3: General requirements –  
Enamelled round aluminium wire

## 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 60317-0-3 has been prepared by IEC technical committee 55: Winding wires.

This second edition cancels and replaces the first edition published in 1990, its amendment 1 (1992), its amendment 2 (1993) and constitutes a technical revision.

This standard also contains all general requirements of enamelled round copper wires taken from the IEC 60317 series issued in 1988.

This consolidated version of IEC 60317-0-3 is based on the second edition (1997) [documents 55/559, 55/610/FDIS and 55/603, 55/630/RVD] and its amendment 1 (1999) [documents 55/690/FDIS and 55/717/RVD].

It bears the edition number 2.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

Annexes A, B, C, D and E are for information only.

## INTRODUCTION

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

- 1) methods of test (IEC 60851);
- 2) specifications (IEC 60317);
- 3) packaging (IEC 60264).

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

[SIST EN 60317-0-3:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/016d061f-945c-4457-b6f5-c74439d5c650/sist-en-60317-0-3-2001>

## SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

### Part 0-3: General requirements – Enamelled round aluminium wire

#### 1 Scope

This International Standard specifies the general requirements of enamelled round aluminium winding wires with or without a bonding layer.

The range of nominal conductor diameters is given in the relevant specification sheet.

When reference is made to a winding wire according to a standard of the IEC 60317 series mentioned under clause 2, the following information is given in the description:

- reference to IEC specification;
- nominal conductor diameter in millimetres;
- grade.

EXAMPLE: IEC 60317-14 – 0,500 Grade 1

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of IEC 60317. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of IEC 60317 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60172:1987, *Test procedure for the determination of the temperature index of enamelled winding wires*

IEC 60317-14:1990, *Specifications for particular types of winding wires – Part 14: Polyvinyl acetal enamelled round aluminium wire, class 105*

IEC 60317-15:1990, *Specifications for particular types of winding wires – Part 15: Polyesterimide enamelled round aluminium wire, class 180*

IEC 60317-24:1990, *Specifications for particular types of winding wires – Part 24: Polyester or polyesterimide overcoated with polyamide enamelled round aluminium wire, class 180*

IEC 60317-25:1990, *Specifications for particular types of winding wires – Part 25: Polyester or polyesterimide overcoated with polyamide-imide enamelled round aluminium wire, class 200*

IEC 60851, *Methods of test for winding wires*

ISO 3:1973, *Preferred numbers – Series of preferred numbers*