



NSAI
Standards

Irish Standard
I.S. EN 60317-13:2010

Specifications for particular types of winding wires -- Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200 (IEC 60317-13:2010 (EQV))

I.S. EN 60317-13:2010

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.

<i>This document replaces:</i> EN 60317-13:1994	<i>This document is based on:</i> EN 60317-13:2010 EN 60317-13:1994	<i>Published:</i> 7 May, 2010 14 November, 1994
This document was published under the authority of the NSAI and comes into effect on: 11 May, 2010		ICS number: 29.060.10
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60317-13

May 2010

ICS 29.060.10

Supersedes EN 60317-13:1994 + A1:1997 + A2:1998

English version

**Specifications for particular types of winding wires -
Part 13: Polyester or polyesterimide overcoated with polyamide-imide
enamelled round copper wire, class 200
(IEC 60317-13:2010)**

Spécifications pour types particuliers
de fils de bobinage -
Partie 13: Fil de section circulaire
en cuivre émaillé avec polyester
ou polyesterimide et avec surcouche
polyamide-imide, classe 200
(CEI 60317-13:2010)

Technische Lieferbedingungen
für bestimmte Typen von Wickeldrähten -
Teil 13: Runddrähte aus Kupfer,
lackisoliert mit Polyester
oder Polyesterimid und darüber
mit Polyamidimid, Klasse 200
(IEC 60317-13:2010)

This European Standard was approved by CENELEC on 2010-05-01. 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

Foreword

The text of document 55/1179/FDIS, future edition 3 of IEC 60317-13, prepared by IEC TC 55, Winding wires, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60317-13 on 2010-05-01.

This European Standard supersedes EN 60317-13:1994 + A1:1997 + A2:1998.

The main changes with respect to EN 60317-13:1994 and its amendments are listed below:

- new requirements for appearance;
- reference to new resistance to refrigerants test in IEC 60851-4;
- deletion of high temperature failure requirement;
- new pin hole test requirements.

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) | 2011-02-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-05-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60317-13:2010 was approved by CENELEC as a European Standard without any modification.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60317-0-1	2008	Specifications for particular types of winding wires - Part 0-1: General requirements - Enamelled round copper wire	EN 60317-0-1	2008
IEC 60851-4	1996	Winding wires - Test methods -	EN 60851-4	1996
+ A1	1997	Part 4: Chemical properties	+ A1	1997
+ A2	2005		+ A2	2005

This page is intentionally left BLANK.

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and general notes on methods of test and appearance	6
3.1 Terms and definitions	6
3.2 General notes on methods of test.....	7
3.3 Appearance	7
4 Dimensions	7
5 Electrical resistance	7
6 Elongation	7
7 Springiness	7
8 Flexibility and adherence.....	7
9 Heat shock	7
10 Cut-through	7
11 Resistance to abrasion (nominal conductor diameters from 0,250 mm up to and including 2,500 mm)	7
12 Resistance to solvents.....	8
13 Breakdown voltage	8
14 Continuity of insulation	8
15 Temperature index	8
16 Resistance to refrigerants.....	8
17 Solderability	9
18 Heat or solvent bonding.....	9
19 Dielectric dissipation factor.....	9
20 Resistance to transformer oil.....	9
21 Loss of mass	9
23 Pin hole test	9
30 Packaging	9
Table 1 – Resistance to abrasion.....	8

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200

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.
- 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 60317-13 has been prepared by IEC technical committee 55: Winding wires.

This third edition of IEC 60317-13 cancels and replaces the second edition published in 1990, its amendment 1 (1997) and its Amendment 2 (1997). This edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- new requirements for appearance;
- reference to new resistance to refrigerants test in IEC 60851-4;
- deletion of high temperature failure requirement;
- new pin hole test requirements.

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

FDIS	Report on voting
55/1179/FDIS	55/1190/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 IEC 60317-0-1 (2008).

A list of all the parts in the IEC 60317 series, 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 amendment and the base 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.

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 and methods of test (IEC 60851) ;
- 2) specifications for particular types of winding wires (IEC 60317);
- 3) packaging of winding wires (IEC 60264).

SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 13: Polyester or polyesterimide overcoated with polyamide-imide enamelled round copper wire, class 200

1 Scope

This Part of IEC 60317 specifies the requirements of enamelled round copper winding wire of class 200 with a dual coating. The underlying coating is based on polyester or polyesterimide resin, which may be modified providing it retains the chemical identity of the original resin and meets all specified wire requirements. The superimposed coating is based on polyamide-imide resin.

NOTE A modified resin is a resin that has undergone a chemical change, or contains one or more additives to enhance certain performance or application characteristics.

Class 200 is a thermal class that requires a minimum temperature index of 200 and a heat shock temperature of at least 220 °C.

The temperature in degrees Celsius corresponding to the temperature index is not necessarily that at which it is recommended that the wire be operated and this will depend on many factors, including the type of equipment involved.

The range of a nominal conductor diameters covered by this standard is as follows:

- Grade 1: 0,050 mm up to and including 2,000 mm;
- Grade 2: 0,050 mm up to and including 5,000 mm.

The nominal conductor diameters are specified in Clause 4 of IEC 60317-0-1.

2 Normative references

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.

IEC 60317-0-1:2008, *Specifications for particular types of winding wires – Part 0-1: General requirements – Enamelled round copper wire*

IEC 60851-4:1996, *Methods of test for winding wires – Part 4: Chemical properties*

Amendment 1 (1997)

Amendment 2 (2005)

3 Terms, definitions and general notes on methods of test and appearance

3.1 Terms and definitions

For terms and definitions, see 3.1 of IEC 60317-0-1. In case of inconsistencies between IEC 60317-0-1 and this standard, IEC 60317-13 shall prevail.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-