

Specifications for particular types of winding wires —

Part 27: Paper tape covered rectangular copper wire

The European Standard EN 60317-27:1998, with the incorporation of amendment A1:2000 has the status of a British Standard

ICS 29.060.10

National foreword

This British Standard is the English language version of EN 60317-27:1998, including amendment A1:2000. It is identical with IEC 60317-27:1998, including amendment 1:1999. It supersedes BS EN 60317-27:1996 which will be withdrawn on 1998-10-01.

The UK participation in its preparation was entrusted to Technical Committee GEL/55, Winding wires, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Attention is drawn to the fact that CEN and CENELEC standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 7 and a back cover.

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Sidelining in this document indicates the most recent changes by amendment.

This British Standard, having been prepared under the direction of the Eletrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 June 1998

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ISBN 0 580 29915 5

Amendments issued since publication

Amd. No.	Date	Comments
10940	August 2000	Indicated by a sideline

Specifications for particular types of winding wires Part 27: Paper tape covered rectangular copper wire

(includes amendment A1:2000)

(IEC 60317-27:1998 + A1:1999)

Spécifications pour types particuliers
de fils de bobinage
Partie 27: Fil de section rectangulaire
en cuivre recouvert de ruban papier
(inclut l'amendement A1:2000)
(CEI 60317-27:1998 + A1:1999)

Technische Lieferbedingungen für
bestimmte Typen von Wickeldrähten
Teil 27: Flachdrähte aus Kupfer,
papierisoliert
(enthält Änderung A1:2000)
(IEC 60317-27:1998 + A1:1999)

This European Standard was approved by CENELEC on 1998-01-01; amendment A1 was approved by CENELEC on 2000-01-01. 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

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Foreword

The text of document 55/616/FDIS, future edition 3 of IEC 60317-27, prepared by IEC TC 55, Winding wires, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60317-27 on 1998-01-01.

This European Standard supersedes EN 60317-27:1994 and its amendment A1:1994.

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 ZA is normative and Annex AA and Annex B are informative. Annex ZA ZA has been added by CENELEC.

Foreword to amendment A1

The text of document 55/700/FDIS, future amendment 1 to IEC 60317-27, prepared by IEC TC 55, Winding wires, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60317-27:1998 on 2000-01-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2000-10-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2003-01-01

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1 Scope

This International Standard specifies the requirements of paper tape covered rectangular copper winding wires. This covering consists of two or more layers of paper tape, all in the same direction and is primarily intended for winding coils for oil immersed transformers.

The range of nominal conductor dimensions covered by this standard is

- width: min. 2,0 mm max. 16,0 mm;
- thickness: min. 0,80 mm max. 5,60 mm.

The paper tapes covered by this standard are restricted to those specified in IEC 60554-1 having thicknesses in the range 25 µm to 125 µm inclusive.

When reference is made to a winding wire according to the present standard, the following information is given in the description:

- reference to IEC specification;
- nominal conductor dimensions in millimetres (width × thickness);
- nominal increase in dimensions due to paper.

EXAMPLE: IEC 60317-27 – 4,00 × 1,00 + 0,20

2 Normative references

The following normative documents 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 normative documents 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 normative documents indicated below. Members of the IEC and ISO maintain registers of currently valid international standards.

IEC 60317-0-2:1990, *Specifications for particular types of winding wires — Part 0: General requirements — Section 2: Enamelled rectangular copper wire.*

IEC 60554-1:1977, *Specification for cellulosic papers for electrical purposes — Part 1: Definitions and general requirements.*

IEC 60851, *Methods of test for winding wires.*

3 Definitions and general notes on methods of test

For definitions and general notes on methods of test, see clause 3 of IEC 60317-0-2.

In the case of inconsistencies between IEC 60317-0-2 and IEC 60317-27, the latter shall prevail.

3.1

Terms and definitions

class

the thermal performance of a wire expressed by the temperature index and the heat shock temperature

conductor

the bare metal after removal of the insulation

covering

a material which is wound, wrapped or braided around a bare or insulated conductor

insulation

a coating or covering on the conductor with the specific function of withstanding voltage

nominal conductor dimension

the designation of the conductor size in accordance with IEC 60317

winding wire

a wire used for winding a coil to provide a magnetic field

wire

a conductor coated or covered with an insulation

3.2

General notes on methods of test

All methods of test to be used for this standard are given in IEC 60851.

The clause numbers used in this standard are identical with the respective test numbers of IEC 60851.

In case of inconsistencies between the publication on methods of test and this standard, IEC 60317-27 shall prevail.

Where no specific range of nominal conductor dimensions is given for a test, the test applies to all nominal conductor dimensions covered by the specification sheet.

Unless otherwise specified, all tests shall be carried out at a temperature from 15 °C to 35 °C and a relative humidity from 45 % to 75 %. Before measurements are made, the specimens shall be preconditioned under these atmospheric conditions for a time sufficient to allow the specimens to reach stability.

The wire to be tested shall be removed from the packaging in such a way that the wire will not be subjected to tension or unnecessary bends. Before each test, sufficient wire should be discarded to ensure that any damaged wire is not included in the test specimens.