

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Specifications for particular types of winding wires –
Part 82: Polyesterimide enamelled rectangular copper wire, class 200

Spécifications pour types particuliers de fils de bobinage –
Partie 82: Fil de section rectangulaire en cuivre émaillé avec polyesterimide,
de classe 200



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 82: Polyesterimide enamelled rectangular copper wire, class 200

FOREWORD

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International Standard IEC 60317-82 has been prepared by IEC technical committee 55: Winding wires.

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

FDIS	Report on voting
55/1848/FDIS	55/1869/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This International Standard is to be used in conjunction with IEC 60317-0-2:2020.

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
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INTRODUCTION

This part of IEC 60317 forms an element of a series of standards which deals with insulated wires used for windings in electrical equipment. It is composed of the following series:

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

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SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 82: Polyesterimide enamelled rectangular copper wire, class 200

1 Scope

This part of IEC 60317 specifies the requirements of enamelled rectangular copper winding wires of class 200 with a sole coating based on polyesterimide resin, which can be modified provided it retains the chemical identity of the original resin and meets all specified wire requirements.

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.

The range of nominal conductor dimensions covered by this document is:

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

Wires of grade 1 and grade 2 are included in this specification and apply to the complete range of conductors.

The specified combinations of width and thickness as well as the specified width/thickness ratio are given in IEC 60317-0-2.

2 Normative references

[IEC 60317-82:2020](#)

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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.

IEC 60317-0-2:2020, *Specifications for particular types of winding wires – Part 0-2: General requirements – Enamelled rectangular copper wire*

3 Terms, definitions, general notes and appearance

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60317-0-2 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.2 General notes

3.2.1 Methods of test

Subclause 3.2 of IEC 60317-0-2:2020 applies. In case of inconsistencies between IEC 60317-0-2 and this document, the latter shall prevail.

3.2.2 Winding wire

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.

3.3 Appearance

Subclause 3.3 of IEC 60317-0-2:2020 applies.

4 Dimensions

Clause 4 of IEC 60317-0-2:2020 applies.

5 Electrical resistance

Clause 5 of IEC 60317-0-2:2020 applies.

6 Elongation

Clause 6 of IEC 60317-0-2:2020 applies.

NOTE When the value of the proof strength of the copper is specified between minimum and maximum limits, the requirements are agreed upon between the purchaser and supplier. The description of the term "proof strength" and the method of determination are given in ISO 6892-1.

7 Springiness

Clause 7 of IEC 60317-0-2:2020 applies.

8 Flexibility and adherence

Clause 8 of IEC 60317-0-2:2020 applies.

9 Heat shock

Clause 9 of IEC 60317-0-2:2020 applies, where the minimum heat shock temperature shall be 220 °C.

10 Cut-through

Clause 10 of IEC 60317-0-2:2020 applies.

11 Resistance to abrasion

Test inappropriate.

12 Resistance to solvents

Clause 12 of IEC 60317-0-2:2020 applies.

13 Breakdown voltage

Clause 13 of IEC 60317-0-2:2020 applies, where the elevated temperature shall be 200 °C.

14 Continuity of insulation

Test inappropriate.

15 Temperature index

Clause 15 of IEC 60317-0-2:2020 applies, where the minimum temperature index shall be 200.

16 Resistance to refrigerants

Test inappropriate.

17 Solderability

Test inappropriate.

18 Heat or solvent bonding

Test inappropriate.

19 Dielectric dissipation factor

Test inappropriate.

20 Resistance to transformer oil

Test requirements under consideration.

21 Loss of mass

Test inappropriate.

23 Pin hole test

Test inappropriate.

30 Packaging

Clause 30 of IEC 60317-0-2:2020 applies.

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Bibliography

IEC 60264 (all parts), *Packaging of winding wires*

IEC 60317 (all parts), *Specifications for particular types of winding wires*

IEC 60851 (all parts), *Winding wires – Test methods*

ISO 6892-1:2016, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature*

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