

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Specifications for particular types of winding wires –
Part 39: Glass-fibre braided resin or varnish-impregnated, bare or enamelled
rectangular copper wire, temperature index 180**

**Spécifications pour types particuliers de fils de bobinage –
Partie 39: Fil de section rectangulaire en cuivre nu ou émaillé, recouvert d'une
tresse de fibres de verre imprégnées de résine ou de vernis, indice de
température 180**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –**Part 39: Glass-fibre braided resin or varnish-impregnated, bare or enamelled rectangular copper wire, temperature index 180**

FOREWORD

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International Standard IEC 60317-39 has been prepared by IEC technical committee 55: Winding wires.

This second edition cancels and replaces the first edition published in 1992, Amendment 1:1997 and Amendment 2:2005. This edition constitutes a technical revision.

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

- revision to Clause 2, Normative references;
- new 3.2.2 containing general notes on winding wire, formerly a part of the scope;
- revision to references to IEC 60317-0-5 to clarify that their application is normative.

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

CDV	Report on voting
55/1460/CDV	55/1499/RVC

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.

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 standard is not continuous from Clauses 20 and 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 publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

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IEC 60317-39:2015

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INTRODUCTION

This part of IEC 60317 forms an element 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 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 39: Glass-fibre braided resin or varnish-impregnated, bare or enamelled rectangular copper wire, temperature index 180

1 Scope

This part of IEC 60317 specifies the requirements of glass-fibre braided impregnated, bare, or grade 1 or grade 2 enamelled rectangular copper winding wire, temperature index 180.

NOTE For this type of wire, the heat shock test is inappropriate and therefore a heat shock temperature cannot be established. Consequently, a class based on the requirements for temperature index and heat shock temperature cannot be specified.

2 Normative references

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.

IEC 60317-0-5:2006, *Specifications for particular types of winding wires – Part 0-5: General requirements – Glass-fibre braided, resin or varnish impregnated, bare or 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 3.1 of IEC 60317-0-5:2006 apply.

3.2 General notes

3.2.1 Methods of test

Subclause 3.2 of IEC 60317-0-5:2006 applies. In case of inconsistencies between IEC 60317-0-5:2006 and this part of IEC 60317, the latter shall prevail.

3.2.2 Winding wire

The enamelled wire shall have a temperature index of at least 180 and shall be agreed between purchaser and supplier.

The temperature index of the wire is dependent upon the type of impregnating agent used.

The impregnating agent applied to the polyester glass fibre shall have a minimum temperature index of 180.

Coverings applicable to this specification have the following grades of thickness:

- BGL1, bare conductor with one braided layer of glass fibre;
- BGL2, bare conductor with two braided layers of glass fibre;

- grade 1 BGL1, enamelled grade 1 (grade 1) with one braided layer of glass fibre (BGL1);
- grade 1 BGL2, enamelled grade 1 (grade 1) with two braided layers of glass fibre (BGL2);
- grade 2 BGL1, enamelled grade 2 (grade 2) with one braided layer of glass fibre (BGL1);
- grade 2 BGL2, enamelled grade 2 (grade 2) with two braided layers of glass fibre (BGL2).

3.3 Appearance

Subclause 3.3 of IEC 60317-0-5:2006 applies.

4 Dimensions

Clause 4 of IEC 60317-0-5:2006 applies.

5 Electrical resistance

Clause 5 of IEC 60317-0-5:2006 applies.

6 Elongation

Clause 6 of IEC 60317-0-5:2006 applies.

7 Springiness

Clause 7 of IEC 60317-0-5:2006 applies.

8 Flexibility and adherence

Clause 8 of IEC 60317-0-5:2006 applies.

9 Heat shock

Test inappropriate.

10 Cut-through

Test inappropriate.

11 Resistance to abrasion

Test inappropriate.

12 Resistance to solvents

Test inappropriate.

13 Breakdown voltage

Clause 13 of IEC 60317-0-5:2006 applies.

14 Continuity of insulation

Test inappropriate.

15 Temperature index

Clause 15 of IEC 60317-0-5:2006 applies.

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 inappropriate.

21 Loss of mass

Test inappropriate.

23 Pin hole test

Test inappropriate.

30 Packaging

Clause 30 of IEC 60317-0-5:2006 applies.