

**Tableau C.1 (2 sur 2)**

Diamètre nominal du conducteur mm	Résistance à 20 °C $\Omega/m$		
	Minimale	Nominale	Maximale
0,315	0,212 1	0,219 3	0,227 0
0,355	0,167 4	0,172 7	0,178 2
0,400	0,131 6	0,136 0	0,140 7
0,450	0,104 2	0,107 5	0,110 9
0,500	0,084 62	0,087 06	0,089 59
0,560	0,067 36	0,069 40	0,071 53
0,630	0,053 35	0,054 84	0,056 38
0,710	0,041 98	0,043 18	0,044 42
0,800	0,033 05	0,034 01	0,035 00
0,900	0,026 12	0,026 87	0,027 65
1,000	0,021 16	0,021 76	0,022 40
1,120		0,017 35	
1,250		0,013 93	
1,400		0,011 10	
1,600		0,008 502	
1,800		0,006 718	
2,000		0,005 441	
2,240		0,004 338	
2,500		0,003 482	
2,800		0,002 776	
3,150		0,002 193	
3,550		0,001 727	
4,000		0,001 360	
4,500		0,001 075	
5,000		0,000 870 6	

## Bibliographie

IEC 60264 (toutes les parties), *Conditionnement des fils de bobinage*

IEC 60317 (toutes les parties), *Spécifications pour types particuliers de fils de bobinage*

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# FINAL VERSION

# VERSION FINALE

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

**Spécifications pour types particuliers de fils de bobinage –  
Partie 0-1: Exigences générales – Fil de section circulaire en cuivre émaillé**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATIONS FOR PARTICULAR TYPES  
OF WINDING WIRES –**

**Part 0-1: General requirements –  
Enamelled round copper wire**

FOREWORD

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**This Consolidated version of IEC 60317-0-1 bears the edition number 4.1. It consists of the fourth edition (2013-10) [documents 55/1409/FDIS and 55/1430/RVD] and its amendment 1 (2019-08) [documents 55/1782/FDIS and 55/1799/RVD]. The technical content is identical to the base edition and its amendment.**

**This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.**

International Standard IEC 60317-0-1 has been prepared by IEC technical committee 55: Winding wires.

This fourth edition constitutes a technical revision.

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

- revision to the definition of nominal conductor dimension;
- new subclause containing general notes on winding wire, formerly a part of the scope;
- revision to elongation requirements in Table 4;
- revisions to Clause 13, Breakdown voltage, to include new requirements for intermediate wire diameters;
- revision to continuity of insulation requirements in Table 13;
- revision to the introduction of Annex A;
- revision to B.2 of Annex B;
- revision to Table C.1 of Annex C.

This standard is to be read in conjunction with the IEC 60851 series. The clause numbers used in this part of IEC 60317 are identical with the respective test numbers of the IEC 60851 series.

In case of inconsistencies between IEC 60851 and this part of IEC 60317, the latter prevails.

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 committee has decided that the contents of the base publication and its amendment 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.

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## 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 – Test methods (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 0-1: General requirements – Enamelled round copper wire

#### 1 Scope

This part of IEC 60317 specifies general requirements of enamelled round copper winding wires with or without bonding layer.

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

#### 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 60172, *Test procedure for the determination of the temperature index of enamelled winding wires*

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

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

ISO 1190-1, *Copper and copper alloys – Code of designation – Part 1: Designation of materials*

ASTM B49-17, *Standard Specification for Copper Rod for Electrical Purposes*

EN 1977:2013, *Copper and copper alloys – Copper drawing stock (wire rod)*

#### 3 Terms, definitions, general notes and appearance

For the purposes of this document, the following terms and definitions apply.

##### 3.1 Terms and definitions

###### 3.1.1

###### **bonding layer**

material which is deposited on an enamelled wire and which has the specific function of bonding wires together

###### 3.1.2

###### **class**

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

**3.1.3  
coating**

material which is deposited on a conductor or wire by a suitable means and then dried and/or cured

**3.1.4  
conductor**

bare metal after removal of the insulation

**3.1.5  
crack**

opening in the insulation which exposes the conductor to view at the stated magnification

**3.1.6  
dual coating**

insulation composed of two different materials, an underlying and a superimposed coating

**3.1.7  
enamelled wire**

wire coated with an insulation of cured resin

**3.1.8  
grade**

range of thickness of the insulation of a wire

**3.1.9  
insulation**

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

**3.1.10  
nominal conductor dimension**

designation of the conductor size in accordance with the IEC 60317 series

**3.1.11  
normal vision**

20/20 vision, with corrective lenses, if necessary

**3.1.12  
sole coating**

insulation composed of one material

**3.1.13  
winding wire**

wire used for winding a coil to provide a magnetic field

**3.1.14  
wire**

conductor coated or covered with an insulation

**3.2 General notes****3.2.1 Methods of test**

All methods of test to be used for this part of IEC 60317 are given in the IEC 60851 series.

The clause numbers used in this standard are identical to the corresponding test numbers in the IEC 60851 series of standards.