



IEC 60317-12

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# INTERNATIONAL STANDARD



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**Specifications for particular types of winding wires –  
Part 12: Polyvinyl acetal enamelled round copper wire, class 120**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –****Part 12: Polyvinyl acetal enamelled round copper wire, class 120**

## FOREWORD

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International Standard IEC 60317-12 has been prepared by IEC technical committee 55: Winding wires.

This fourth edition of IEC 60317-12 cancels and replaces the third edition published in 2010. This edition constitutes a technical revision.

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

- a) modification of the Scope;
- b) addition of reference to transformer oil resistance test method in Clause 20.

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

FDIS	Report on voting
55/1841/FDIS	55/1854/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 60317-0-1:2013 and its Amendment 1:2019.

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

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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).

## SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

### Part 12: Polyvinyl acetal enamelled round copper wire, class 120

#### 1 Scope

This part of IEC 60317 specifies the requirements of enamelled round copper winding wires of class 120 with a sole coating based on polyvinyl acetal or polyvinyl formal resin, which ~~may~~ can be modified provided it retains the chemical identity of the original resin and meets all specified wire requirements.

NOTE 1 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 120 is a thermal class that requires a minimum temperature index of 120 and a heat shock temperature of at least 155 °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.~~

NOTE 2 Polyvinyl acetal is a general name for a family of thermoplastic vinyl resins produced by the condensation of polyvinyl alcohol with an aldehyde. Examples are polyvinyl acetal, polyvinyl formal and polyvinyl butyral.

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

- Grade 1: 0,040 mm up to and including 2,500 mm;
- Grade 2: 0,040 mm up to and including 5,000 mm;
- Grade 3: 0,080 mm up to and including 5,000 mm.

The nominal conductor diameters are specified in Clause 4 of IEC 60317-0-1:2013.

#### 2 Normative references

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 60317-0-1:2008/2013, *Specifications for particular types of winding wires – Part 0-1: General requirements – Enamelled round copper wire*  
IEC 60317-0-1:2013/AMD1:2019

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Specifications for particular types of winding wires –  
Part 12: Polyvinyl acetal enamelled round copper wire, class 120**

**Spécifications pour types particuliers de fils de bobinage –  
Partie 12: Fil de section circulaire en cuivre émaillé avec acétal de polyvinyle,  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –****Part 12: Polyvinyl acetal enamelled round copper wire, class 120**

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### Part 12: Polyvinyl acetal enamelled round copper wire, class 120

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IEC 60317-0-1:2013, *Specifications for particular types of winding wires – Part 0-1: General requirements – Enamelled round copper wire*  
IEC 60317-0-1:2013/AMD1:2019

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## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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### SPÉCIFICATIONS POUR TYPES PARTICULIERS DE FILS DE BOBINAGE –

#### **Partie 12: Fil de section circulaire en cuivre émaillé avec acétal de polyvinyle, classe 120**

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Cette quatrième édition de l'IEC 60317-12 annule et remplace la troisième édition parue en 2010. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) modification du domaine d'application;
- b) ajout d'une référence à la méthode d'essai de résistance à l'huile de transformateur à l'Article 20.

Le texte de cette publication est issu des documents suivants:

FDIS	Rapport de vote
55/1841/FDIS	55/1854/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de ce document.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

La présente Norme internationale doit être utilisée conjointement avec l'IEC 60317-0-1:2013 et son Amendement 1:2019.

Une liste de toutes les parties de la série IEC 60317, publiées sous le titre général *Spécifications pour types particuliers de fils de bobinage*, peut être consultée sur le site web de l'IEC.

La numérotation des articles dans le présent document n'est pas continue entre les Articles 21 et 30 afin de permettre l'introduction d'éventuelles futures exigences concernant les fils avant celles concernant le conditionnement des fils.

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- amendé.

## INTRODUCTION

La présente partie de l'IEC 60317 appartient à une série de normes traitant des fils isolés utilisés pour les enroulements des appareils électriques. L'ensemble est composé des trois séries de normes suivantes:

- 1) *Fils de bobinage – Méthodes d'essai* (série IEC 60851);
- 2) *Spécifications pour types particuliers de fils de bobinage* (série IEC 60317);
- 3) *Conditionnement des fils de bobinage* (série IEC 60264).



## SPÉCIFICATIONS POUR TYPES PARTICULIERS DE FILS DE BOBINAGE –

### Partie 12: Fil de section circulaire en cuivre émaillé avec acétal de polyvinyle, classe 120

#### 1 Domaine d'application

La présente partie de l'IEC 60317 spécifie les exigences relatives aux fils de bobinage de section circulaire en cuivre émaillés de classe 120 avec un revêtement simple à base de résine acétal de polyvinyle ou formol de polyvinyle qui peut être modifiée sous réserve qu'elle conserve l'identité chimique de la résine initiale et respecte l'ensemble des exigences spécifiées du fil.

NOTE 1 Une résine modifiée est une résine dont les propriétés chimiques ont été modifiées ou qui contient un ou plusieurs additifs visant à améliorer certaines performances ou caractéristiques d'application.

NOTE 2 L'acétal de polyvinyle est le nom générique désignant une famille de résines thermoplastiques vinyliques produites par la condensation de l'alcool polyvinylique avec un aldéhyde. Des exemples sont l'acétal de polyvinyle, le formol de polyvinyle et le butyral de polyvinyle.

La gamme des diamètres nominaux des conducteurs couverts par le présent document est:

- grade 1: 0,040 mm jusques et y compris 2,500 mm;
- grade 2: 0,040 mm jusques et y compris 5,000 mm;
- grade 3: 0,080 mm jusques et y compris 5,000 mm.

Les diamètres nominaux du conducteur sont spécifiés à l'Article 4 de l'IEC 60317-0-1:2013.

#### 2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60317-0-1:2013, *Spécifications pour types particuliers de fils de bobinage – Partie 0-1: Exigences générales – Fil de section circulaire en cuivre émaillé*  
IEC 60317-0-1:2013/AMD1:2019