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colour inside

Specifications for particular types of winding wires – Part 18: Polyvinyl acetal enamelled rectangular copper wire, class 120

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SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES –

Part 18: Polyvinyl acetal enamelled rectangular copper wire, class 120

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International Standard IEC 60317-18 has been prepared by IEC technical committee 55: Winding wires.

This fourth edition cancels and replaces the third edition published in 2004 and Amendment 1:2009. 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 (Clause 1);
b) revision to thermal class designation from 105 to 120 in 3.2.2;
c) renaming of stretching test to adherence test, and modification to the requirements in 8.2;
d) revision to the cut-through requirement in Clause 10.

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

FDIS	Report on voting
55/1843/FDIS	55/1856/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.

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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 18: Polyvinyl acetal enamelled rectangular copper wire, class 120

1 Scope

This part of IEC 60317 specifies the requirements of enamelled rectangular 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 dimensions covered by this document is:

~~– width: minimum 2,0 mm; maximum 16,0 mm;~~

~~thickness: minimum 0,80 mm; maximum 5,60 mm.~~

– width: min. 2,0 mm max. 31,5 mm;
– thickness: min. 0,80 mm max. 10,0 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 ratio width/thickness are given in IEC 60317-0-2.

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

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Specifications for particular types of winding wires – Part 18: Polyvinyl acetal enamelled rectangular copper wire, class 120

Spécifications pour types particuliers de fils de bobinage – Partie 18: Fil de section rectangulaire en cuivre émaillé avec acétal de polyvinyle, classe 120



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

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SPÉCIFICATIONS POUR TYPES PARTICULIERS DE FILS DE BOBINAGE –

Partie 18: Fil de section rectangulaire en cuivre émaillé avec acétal de polyvinyle, classe 120

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Cette quatrième édition annule et remplace la troisième édition parue en 2004, et l'Amendement 1: 2009. 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 (Article 1);
b) révision de la désignation de classe thermique de 105 à 120 en 3.2.2;
c) "essai d'étirement" renommé "essai d'adhérence", et modification des exigences en 8.2;

d) révision de l’exigence relative à la thermoplasticité à l’Article 10.

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

La présente Norme internationale doit être utilisée conjointement avec l'IEC 60317-0-2:2020.

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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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 18: Fil de section rectangulaire 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 rectangulaire en cuivre émaillés de classe 120 avec un revêtement simple à base de résine acétal de polyvinyle ou formal 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 formal de polyvinyle et le butyral de polyvinyle.

La gamme des dimensions nominales des conducteurs couvertes par le présent document est:

– largeur: min. 2,0 mm max. 31,5 mm;
– épaisseur: min. 0,80 mm max. 10,0 mm.

Les fils de grades 1 et 2 sont couverts par la présente spécification et s'appliquent à toute la gamme de conducteurs.

Les combinaisons largeur-épaisseur spécifiées ainsi que le rapport largeur/épaisseur spécifié sont indiqués dans l'IEC 60317-0-2.

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 60317-0-2:2020, *Spécifications pour types particuliers de fils de bobinage — Partie 0-2: Exigences générales – Fil de section rectangulaire en cuivre émaillé*