IEC 60684-3-247

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REDLINE VERSION

colour inside

Flexible insulating sleeving –
Part 3: Specifications for individual types of sleeving –
Sheet 247: Heat-shrinkable, polyolefin sleeving, dual wall, not flame retarded, thick and medium wall

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 247: Heat-shrinkable, polyolefin sleeving, dual wall, not flame retarded, thick and medium wall

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International Standard IEC 60684-3-247 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

This second edition cancels and replaces the first edition published in 2011 and Amendment 1:2016. This edition constitutes a technical revision.

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

a) removal of the colour fastness to light test, as this is covered by the test for carbon black content;
b) change of low temperature flexibility test to -20 °C to align with sheet 214;
c) change of final conditioning temperature of peel strength samples to 200 ºC to align with the temperature in Clause 5;
d) removal of the fungus resistance test as there is no evidence that fungus growth is an issue either by testing or in use.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
15/890/FDIS	15/900/RVD

Full information on the voting for the approval of this International Standard 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.

A list of all the parts in the IEC 60684 series, under the general title *Flexible insulating sleeving*, can be found on the IEC website.

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INTRODUCTION

This document is one of a series of standards which deals with flexible insulating sleeving for electrical purposes.

The series consists of three parts:

Part 1: Definitions and general requirements (IEC 60684-1)

Part 2: Methods of test (IEC 60684-2)

Part 3: Specifications for individual types of sleeving (IEC 60684-3)

This document comprises one of the sheets of Part 3 as follows:

Sheet 247: Heat-shrinkable, polyolefin sleeving, dual wall, not flame retarded, thick and medium wall

FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 247: Heat-shrinkable, polyolefin sleeving, dual wall, not flame retarded, thick and medium wall

1 Scope

This part of IEC 60684 gives the requirements for two types of heat-shrinkable, polyolefin sleeving, dual wall, not flame retarded with a nominal shrink ratio of 3:1.

This sleeving has been found suitable for use at temperatures of up to 100 °C.

- Type A: Medium wall, internal diameter up to 200,0 mm typically.
- Type B: Thick wall, internal diameter up to 200,0 mm typically.

These sleevings are normally supplied in colour black.

Since these types of ~~sleevings~~ sleving cover a significantly large range of sizes and wall thicknesses, Annex A (Tables A.1 and A.2) provides a guide to the range of sizes available. The actual size ~~shall~~ will be agreed between the user and supplier.

Materials which conform to this specification meet established levels of performance. However, the selection of a material by a user for a specific application ~~should~~ will be based on the actual requirements necessary for adequate performance in that application and not based on this specification alone.

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 60296:~~2003~~2012, *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*

~~IEC 60502-1:2004, *Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) – Part 1: Cables for rated voltages of 1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)*~~

IEC 60684-1:2003*, Flexible insulating sleeving – Part 1: Definitions and general requirements*

IEC 60684-2:~~1997~~2011*, Flexible insulating sleeving – Part 2: Methods of test* ~~Amendment 2 (2005)~~

IEC 60757:1983, *Code for designation of colours*

~~ISO 846:1997, *Plastics – Evaluation of the action of micro-organisms*~~

ISO 868:2003, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 11357-3:~~1999~~2018, Plastics – *Differential scanning calorimetry (DSC) – Part 3: Determination of temperature and enthalpy of melting and crystallization*

ISO 11358-1:~~1997~~2014, *Plastics – Thermogravimetry (TG) of polymers – Part 1: General principles*

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Flexible insulating sleeving –
Part 3: Specifications for individual types of sleeving –
Sheet 247: Heat-shrinkable, polyolefin sleeving, dual wall, not flame retarded, thick and medium wall

Gaines isolantes souples –
Partie 3: Spécifications pour types particuliers de gaines –
Feuille 247: Gaines thermorétractables en polyoléfine, à double paroi, non ignifugées à paroi épaisse et moyenne



IEC 60684-3-247:2019-08(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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IEC 60684-1:2003*, Flexible insulating sleeving – Part 1: Definitions and general requirements*

IEC 60684-2:2011*, Flexible insulating sleeving – Part 2: Methods of test*

IEC 60757:1983, *Code for designation of colours*

ISO 868:2003, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 11357-3:2018, Plastics – *Differential scanning calorimetry (DSC) – Part 3: Determination of temperature and enthalpy of melting and crystallization*

ISO 11358-1:2014, *Plastics – Thermogravimetry (TG) of polymers – Part 1: General principles*

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GAINES ISOLANTES SOUPLES –

Partie 3: Spécifications pour types particuliers de gaines – Feuille 247: Gaines thermorétractables en polyoléfine, à double paroi, non ignifugées à paroi épaisse et moyenne

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La Norme internationale IEC 60684-3-247 a été établie par le comité d'études 15 de l'IEC: Matériaux isolants électriques solides.

Cette deuxième édition annule et remplace la première édition parue en 2011 et l'Amendement 1:2016. Cette édition constitue une révision technique.

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

a) suppression de l'essai de solidité de la couleur à la lumière, cet essai étant couvert par l'essai de détermination de la teneur en noir de carbone;

b) modification de la température de l'essai de flexion à basse température qui devient -20 °C pour aligner la valeur avec celle donnée dans la feuille 214;

c) modification de la température de conditionnement finale des échantillons pour la résistance à l'arrachement qui devient 200 ºC pour aligner la valeur avec celle donnée à l'Article 5;

d) suppression de l'essai de résistance aux moisissures étant donné qu'il n'a pas été démontré, ni par des essais, ni en fonctionnement, que le développement de moisissures constituait un problème.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
15/890/FDIS	15/900/RVD

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

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

Une liste de toutes les parties de la série IEC 60684, publiées sous le titre général *Gaines isolantes souples*, peut être consultée sur le site web de l'IEC.

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INTRODUCTION

Le présent document fait partie d'une série de normes traitant des gaines isolantes souples à usages électriques.

Cette série est constituée de trois parties:

Partie 1: Définitions et exigences générales (IEC 60684-1)

Partie 2: Méthodes d'essai (IEC 60684-2)

Partie 3: Spécifications pour types particuliers de gaines (IEC 60684-3)

Le présent document contient l'une des feuilles qui composent la Partie 3, comme suit:

Feuille 247: Gaines thermorétractables en polyoléfine, à double paroi, non ignifugées, à paroi épaisse et moyenne

GAINES ISOLANTES SOUPLES –

Partie 3: Spécifications pour types particuliers de gaines – Feuille 247: Gaines thermorétractables en polyoléfine, à double paroi, non ignifugées à paroi épaisse et moyenne

1 Domaine d'application

La présente partie de l'IEC 60684 donne les exigences relatives à deux types de gaines thermorétractables en polyoléfine, à double paroi, non ignifugées, dont le rapport de rétreint nominal est 3:1.

Ces gaines se sont avérées appropriées pour une utilisation à des températures allant jusqu'à 100 °C.

- Type A: Paroi moyenne, diamètre intérieur généralement jusqu'à 200 mm
- Type B: Paroi épaisse, diamètre intérieur généralement jusqu'à 200 mm

La couleur de ces gaines est normalement le noir.

Comme ces types de gaines couvrent une plage très étendue de tailles et d'épaisseurs de paroi, l'Annexe A (Tableaux A.1 et A.2) fournit un guide des tailles disponibles dans cette plage. La taille réelle fait l'objet d'un accord entre l'utilisateur et le fournisseur.

Les matériaux conformes à la présente spécification satisfont à des niveaux de performances établis. Cependant, le choix d'un matériau par un utilisateur, pour une application spécifique, est fondé sur les exigences réelles nécessaires pour obtenir des performances adéquates pour l'application concernée, et n'est pas fondé sur cette seule spécification.

2 Références normatives

Les documents suivants cités dans le texte 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 60296:2012, *Fluides pour applications électrotechniques – Huiles minérales isolantes neuves pour transformateurs et appareillages de connexion*

IEC 60684-1:2003, *Gaines isolantes souples – Partie 1: Définitions et exigences générales*

IEC 60684-2:2011, *Gaines isolantes souples – Partie 2: Méthodes d'essai*

IEC 60757:1983, *Code de désignation de couleurs*

ISO 868:2003, *Plastiques et ébonite – Détermination de la dureté par pénétration au moyen d'un duromètre (dureté Shore)*

ISO 11357-3:2018, *Plastiques – Analyse calorimétrique différentielle (DSC) – Partie 3: Détermination de la température et de l'enthalpie de fusion et de cristallisation*

ISO 11358-1:2014, *Plastiques – Thermogravimétrie (TG) des polymères – Partie 1: Principes généraux*