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INTERNATIONAL STANDARD



**Flexible insulating sleeving –
Part 3: Specifications for individual types of sleeving –
Sheet 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving**

INTERNATIONAL
ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving

FOREWORD

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International Standard IEC 60684-3-216 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

This second edition cancels and replaces the first edition published in 2001, Amendment 1:2005 and Amendment 2:2013. This edition constitutes a technical revision.

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

- a) the temperature at which the sleeving is shrunk in a forced-air circulation oven for (5 ± 1) min has been increased from $(150 \pm 5) ^\circ\text{C}$ to $(200 \pm 5) ^\circ\text{C}$.

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

FDIS	Report on voting
15/888/FDIS	15/902/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 parts in the IEC 60684 series, published under the general title *Flexible insulating sleeving*, can be found on the IEC website.

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- amended.

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INTRODUCTION

This International Standard is one of a series 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 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving

FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving

1 Scope

This ~~sheet~~ ~~part~~ of IEC 60684-3 gives the requirements for four types of heat-shrinkable, flame-retarded, limited-fire-hazard sleeving with a thermal endurance rating of 105 °C as shown below.

Class A:	thin wall	shrink ratio 2:1	internal diameter up to 102,0 mm
Class B:	medium wall	shrink ratio 2:1	internal diameter up to 60,0 mm
Class C:	thick wall	shrink ratio 2:1	internal diameter up to 51,0 mm
Class D:	medium wall	shrink ratio 3:1	internal diameter up to 40,0 mm

These sleeveings are normally supplied in the following colours: black, red, green, blue, white, yellow and green/yellow.

Sizes or colours other than those listed in this document ~~may be~~ ~~are~~ available as custom items. These items ~~shall be~~ ~~are~~ considered to comply with this document if they comply with the property requirements listed in Tables 5, 6, 7 and 8, excluding dimensions and mass.

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 60684-1: ~~1980~~2003, ~~Specification for~~ Flexible insulating sleeving – Part 1: Definitions and general requirements

IEC 60684-2: ~~1997~~2011, Flexible insulating sleeving – Part 2: Methods of test

IEC 60757:1983, Code for designation of colours

ISO 846: ~~1997~~2019, Plastics – Evaluation of the action of microorganisms

ISO 1817: ~~1999~~2015, Rubber, vulcanized or thermoplastic – Determination of the effect of liquids ~~(available in English only)~~

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Flexible insulating sleeving –
Part 3: Specifications for individual types of sleeving –
Sheet 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving**

**Gaines isolantes souples –
Partie 3: Spécifications pour types particuliers de gaines –
Feuille 216: Gaines thermorétractables, ignifugées, au risque de feu limité**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FLEXIBLE INSULATING SLEEVING –

**Part 3: Specifications for individual types of sleeving –
Sheet 216: Heat-shrinkable, flame-retarded,
limited-fire-hazard sleeving**

FOREWORD

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Sheet 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving

FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 216: Heat-shrinkable, flame-retarded, limited-fire-hazard sleeving

1 Scope

This part of IEC 60684-3 gives the requirements for four types of heat-shrinkable, flame-retarded, limited-fire-hazard sleeving with a thermal endurance rating of 105 °C as shown below.

Class A:	thin wall	shrink ratio 2:1	internal diameter up to 102,0 mm
Class B:	medium wall	shrink ratio 2:1	internal diameter up to 60,0 mm
Class C:	thick wall	shrink ratio 2:1	internal diameter up to 51,0 mm
Class D:	medium wall	shrink ratio 3:1	internal diameter up to 40,0 mm

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Materials which conform to this specification meet established levels of performance. However, the selection of a material by a user for a specific application 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 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 846:2019, *Plastics – Evaluation of the action of microorganisms*

ISO 1817:2015, *Rubber, vulcanized or thermoplastic – Determination of the effect of liquids*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

GAINES ISOLANTES SOUPLES –

**Partie 3: Spécifications pour types particuliers de gaines –
Feuille 216: Gainés thermorétractables,
ignifugés, au risque de feu limité**

AVANT-PROPOS

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La Norme internationale IEC 60684-3-216 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 2001, l'Amendement 1:2005 et l'Amendement 2:2013. Cette édition constitue une révision technique.

Cette édition inclut la modification technique majeure suivante par rapport à l'édition précédente:

- a) la température à laquelle les gaines sont rétreintes dans une étuve à circulation d'air forcée pendant (5 ± 1) min a été augmentée de $(150 \pm 5) ^\circ\text{C}$ à $(200 \pm 5) ^\circ\text{C}$.

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

FDIS	Rapport de vote
15/888/FDIS	15/902/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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- amendé.

INTRODUCTION

La présente Norme internationale fait partie d'une série 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 216: Gains thermorétractables, ignifugées, au risque de feu limité

GAINES ISOLANTES SOUPLES –

Partie 3: Spécifications pour types particuliers de gaines – Feuille 216: Gainses thermorétractables, ignifugées, au risque de feu limité

1 Domaine d'application

La présente partie de l'IEC 60684-3 donne les exigences relatives à quatre types de gaines thermorétractables, ignifugées, au risque de feu limité, ayant un indice d'endurance thermique de 105 °C, comme cela est indiqué ci-dessous.

Classe A: paroi mince rapport de rétreint 2:1 diamètre intérieur allant jusqu'à 102,0 mm

Classe B: paroi moyenne rapport de rétreint 2:1 diamètre intérieur allant jusqu'à 60,0 mm

Classe C: paroi épaisse rapport de rétreint 2:1 diamètre intérieur allant jusqu'à 51,0 mm

Classe D: paroi moyenne rapport de rétreint 3:1 diamètre intérieur allant jusqu'à 40,0 mm

Ces gaines sont normalement disponibles dans les couleurs suivantes: noir, rouge, vert, bleu, blanc, jaune et vert/jaune.

Des dimensions et des couleurs autres que celles indiquées dans le présent document sont disponibles comme articles spéciaux. Ces articles sont considérés comme conformes au présent document s'ils satisfont aux exigences relatives aux propriétés indiquées dans les Tableaux 5, 6, 7 et 8, à l'exception des dimensions et de la masse.

Les matériaux qui sont 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 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 60684-1:2003, *Spécification pour gaines isolantes souples – Partie 1: Définitions et exigences générales.*

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

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