

**SLOVENSKI STANDARD**  
**SIST EN IEC 60684-3-247:2019****01-december-2019****Nadomešča:****SIST EN 60684-3-247:2011****SIST EN 60684-3-247:2011/A1:2017**

---

**Gibke izolacijske cevi - 3. del: Specifikacije za posamezne tipe cevi - 247. list:  
Toplotno skrčljive poliolefinske cevi z dvojno steno, neognjevarne, debelostenske  
in srednje debele stene (IEC 60684-3-247:2019)**

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 (IEC 60684-3-247:2019)

(standards.iteh.ai)

Isolierschläuche - Teil 3: Anforderungen für einzelne Schlauchtypen - Blatt 247:  
Wärmeschrumpfende Polyolefinschläuche mit Innenbeschichtung, nicht flammhemmend,  
dickwandig und mittlere Wanddicke (IEC 60684-3-247:2019)

Gaines isolantes souples - Partie 3: Spécifications pour types particuliers de gaines -  
Feuille 247: Gaines thermorétractables en polyoléfine, à double paroi (épaisse et  
moyenne), non retardées à la flamme (IEC 60684-3-247:2019)

**Ta slovenski standard je istoveten z: EN IEC 60684-3-247:2019**

---

**ICS:**

29.035.20      Plastični in gumeni izolacijski materiali      Plastics and rubber insulating materials

**SIST EN IEC 60684-3-247:2019**      en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN IEC 60684-3-247:2019

<https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019>

EUROPEAN STANDARD

**EN IEC 60684-3-247**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2019

ICS 29.035.20

Supersedes EN 60684-3-247:2011 and all of its  
amendments and corrigenda (if any)

English Version

**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  
(IEC 60684-3-247:2019)**

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)

Isolierschläuche - Teil 3: Anforderungen für einzelne  
Schlauchtypen - Blatt 247: Wärmeschrumpfende  
Polyolefinschläuche mit Innenbeschichtung, nicht  
flammhemmend, dickwandig und mittlere Wanddicke  
(IEC 60684-3-247:2019)

This European Standard was approved by CENELEC on 2019-09-12. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60684-3-247:2019 (E)****European foreword**

The text of document 15/890/FDIS, future edition 2 of IEC 60684-3-247, prepared by IEC/TC 15 "Solid electrical insulating materials" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60684-3-247:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-06-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-09-12

This document supersedes EN 60684-3-247:2011 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

### **Endorsement notice**

[SIST EN IEC 60684-3-247:2019](https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019)

[https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-](https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019)

The text of the International Standard IEC 60684-3-247:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60684-3 (series)      NOTE      Harmonized as EN 60684-3-420 to 422 (series)

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60296	2012	Fluids for electrotechnical applications - Unused mineral insulating oils for transformers and switchgear	EN 60296	2012
IEC 60684-1	2003	Flexible insulating sleeving - Part 1: Definitions and general requirements	EN 60684-1	2003
IEC 60684-2	2011	Flexible insulating sleeving - Part 2: Methods of test	EN 60684-2	2011
IEC 60757	1983	Code for designation of colours	HD 457 S1	1985
ISO 868	2003	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)	EN ISO 868	2003
ISO 11357-3	2018	Plastics - Differential scanning calorimetry (DSC) - Part 3: Determination of temperature and enthalpy of melting and crystallization	EN ISO 11357-3	2018
ISO 11358-1	-	Plastics - Thermogravimetry (TG) of polymers - Part 1: General principles	EN ISO 11358-1	2014

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN IEC 60684-3-247:2019

<https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019>



IEC 60684-3-247

Edition 2.0 2019-08

# 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**

[SIST EN IEC 60684-3-247:2019](https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-8820e6275af1/sist-en-iec-60684-3-247-2019)

[https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-](https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-8820e6275af1/sist-en-iec-60684-3-247-2019)

**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**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 29.035.20

ISBN 978-2-8322-7213-8

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	7
4 Designation .....	7
5 Conditions of test.....	7
6 Requirements .....	7
7 Sleeving conformance.....	7
Annex A (informative) Guide to the available sizes and wall thicknesses .....	12
Bibliography.....	14
Table 1 – Property requirements .....	8
Table 2 – Requirements for breakdown voltage .....	11
Table 3 – Resistance to selected fluids.....	11
Table A.1 – Type A medium wall.....	12
Table A.2 – Type B thick wall .....	13

iteh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN IEC 60684-3-247:2019

<https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019>



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## 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**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 °C 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.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

ITEH STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN IEC 60684-3-247:2019

<https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019>

## 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

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

[SIST EN IEC 60684-3-247:2019](https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019)

<https://standards.iteh.ai/catalog/standards/sist/fdbd074d-9af0-4a4d-89ae-9820e6275af1/sist-en-iec-60684-3-247-2019>