

INTERNATIONAL STANDARD

IEC
60684-3-248

First edition
2007-02

Flexible insulating sleeving –

Part 3:

**Specifications for individual types of sleeving –
Sheet 248: General purpose, heat-shrinkable, dual
wall polyolefin sleeving, flame retarded, shrink
ratios 2:1, 3:1, 4:1**

© IEC 2007 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

M

For price, see current catalogue

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references.....	6
3 Designation	7
4 Conditions of test.....	7
5 Requirements	7
6 Sleeving conformance.....	7
7 Elevated temperature performance test.....	8
Figure 1 – Test assembly for elevated temperature performance	8
Table 1 – Size of stepped mandrel for elevated temperature performance test.....	8
Table 2 – Dimensional requirements – Type AL and AH.....	9
Table 3 – Dimensional requirements – Type BL and BH.....	9
Table 4 – Dimensional requirements – Type CL and CH.....	10
Table 5 – Property requirements	11
Table 6 – Requirements for breakdown voltage	12
Table 7 – Resistance to selected fluids.....	13
Table 8 – Additional property requirements	13

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FLEXIBLE INSULATING SLEEVING –

**Part 3: Specifications for individual types of sleeving –
Sheet 248: General purpose, heat-shrinkable, dual wall polyolefin
sleeving, flame retarded, shrink ratios 2:1, 3:1, 4:1**

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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 60684-3-248 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

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

FDIS	Report on voting
15/359/FDIS	15/372/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

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 standard comprises one of the sheets of Part 3 as follows:

Sheet 248: General purpose, heat-shrinkable, dual wall polyolefin sleeving, flame retarded, shrink ratios 2:1, 3:1, 4:1

FLEXIBLE INSULATING SLEEVING –

Part 3: Specifications for individual types of sleeving – Sheet 248: General purpose, heat-shrinkable, dual wall polyolefin sleeving, flame retarded, shrink ratios 2:1, 3:1, 4:1

1 Scope

This part of IEC 60684 gives the requirements for six types of general purpose, heat shrinkable dual wall polyolefin sleeveings, flame retarded with nominal shrink ratios of 2:1, 3:1 or 4:1 and available in low and high temperature adhesive inner walls.

The low temperature adhesive sleeving has been found suitable for temperatures up to 105 °C and the high temperature adhesive sleeving has been found suitable for temperatures up to 125 °C.

- Type AL:
2:1 shrink ratio, internal diameter up to 51 mm, low temperature adhesive inner wall.
- Type AH:
2:1 shrink ratio, internal diameter up to 51 mm, high temperature adhesive inner wall.
- Type BL:
3:1 shrink ratio, internal diameter up to 40 mm, low temperature adhesive inner wall.
- Type BH:
3:1 shrink ratio, internal diameter up to 40 mm, high temperature adhesive inner wall.
- Type CL:
4:1 shrink ratio, internal diameter up to 52 mm, low temperature adhesive inner wall.
- Type CH:
4:1 shrink ratio, internal diameter up to 52 mm, high temperature adhesive inner wall.

The sleeving consists of an outer layer being of a flexible cross-linked polyolefin. The inner wall consists of a hot melt adhesive that flows and fuses during the shrinking process to provide a bond.

These sleeveings are normally supplied in colour black.

Sizes or colours other than those listed in this standard may be available as custom items. These items are considered to comply with this standard if they comply with the property requirements listed in Tables 5 and 6 and Table 8 where applicable, with the exception of dimensions.

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 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 referenced documents are indispensable for the application 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 60684-2:1997, *Flexible insulating sleeving – Part 2: Methods of test*¹⁾
Amendment 1 (2003)
Amendment 2 (2005)

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

ISO 1817:2005, *Rubber, vulcanized – Determination of the effect of liquids*

¹⁾ A consolidated edition 2.1 exists, including IEC 60684-2:1997 and its Amendment 1 (2003).