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SIST EN 60684-1:2001

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60684-1**

November 1995

ICS 29.040.20

Descriptors: Electrical insulating materials, sheaths: protectors, flexible conductors, equipment specifications, classification, dimensions, appearance, packing, labelling

English version

**Specification for flexible insulating sleeving  
Part 1: Definitions and general requirements  
(IEC 684-1:1980)**

Spécification pour gaines isolantes  
souples  
Partie 1: Définitions et prescriptions  
générales  
(CEI 684-1:1980)

Bestimmung für flexible Isolierschläuche  
Teil 1: Begriffe und allgemeine  
Anforderungen  
(IEC 684-1:1980)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

### Foreword

The text of the International Standard IEC 684-1:1980, prepared by SC 15C, Specifications, of IEC TC 15, Insulating materials, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60684-1 on 1995-09-20 without any modification.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 1996-10-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 1996-10-01

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### Endorsement notice

The text of the International Standard IEC 684-1:1980 was approved by CENELEC as a European Standard without any modification.

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE  
NORME DE LA CEI

INTERNATIONAL ELECTROTECHNICAL COMMISSION  
IEC STANDARD

Publication 684-1  
Première édition — First edition  
1980

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Spécification pour gaines isolantes souples  
Première partie : Définitions et prescriptions générales

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## SPECIFICATION FOR FLEXIBLE INSULATING SLEEVING

## Part 1: Definitions and general requirements

## FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

## PREFACE

This standard has been prepared by Sub-Committee 15C: Specifications, of IEC Technical Committee No. 15: Insulating Materials.

A draft was discussed at the meeting held in Zurich in 1979. As a result of this meeting, a draft, Document 15C(Central Office)100, was submitted to the National Committees for approval under the Six Months' Rule in August 1979.

The National Committees of the following countries voted explicitly in favour of publication:

|                |                            |
|----------------|----------------------------|
| Austria        | Japan                      |
| Belgium        | New Zealand                |
| Brazil         | Norway                     |
| Bulgaria       | Poland                     |
| Canada         | Romania                    |
| China          | South Africa (Republic of) |
| Czechoslovakia | Spain                      |
| Denmark        | Switzerland                |
| Finland        | Union of Soviet            |
| France         | Socialist Republics        |
| Germany        | United Kingdom             |
| Ireland        | Yugoslavia                 |
| Italy          |                            |

# SPECIFICATION FOR FLEXIBLE INSULATING SLEEVING

## Part 1: Definitions and general requirements

### INTRODUCTION

This standard is one of a series which deals with flexible insulating sleeving for electrical purposes. It will consist of three parts:

Part 1: Definitions and general requirements.

Part 2: Methods of test.

Part 3: Specification requirements for individual types of sleeving.

### 1. Scope

This standard is applicable to flexible insulating sleeving including heat-shrinkable sleeving, intended primarily for insulating conductors and connections of electrical apparatus. Some of the types of sleeving are also suitable for holding together and covering a number of individually insulated conductors.

### 2. Definitions

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For the purpose of this standard, the definitions of the International Electrotechnical Vocabulary (I.E.V.) and specifically those of Chapter 211: Solid Insulating Materials, Section 01: Electrical Terms (under consideration), apply and also the following:

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#### 2.1 Central value

The middle result of an odd number of tests or the mean of the two middle results of an even number of tests when arranged in order of magnitude.

#### 2.2 Consignment

All material of one size, type, grade and colour submitted for delivery at the time.

### 3. Specimens

Sufficient sleeving for the required tests shall be selected in such a manner as to be representative of the whole consignment. Each size, type or colour in a delivery shall be regarded as a separate consignment unless otherwise agreed between purchaser and supplier.

### 4. General requirements

All material in one consignment shall be as consistent as possible and have properties within the limits of this standard throughout the consignment.

## 5. Classification

Sleeving is classified by the numbering of specification sheets in Part 3. In this, the first digit indicates the basic type of sleeving, i.e.:

- 1: Normally made by extrusion but excluding heat-shrinkable.
- 2: Heat-shrinkable.
- 3: Textile fibre; uncoated.
- 4: Textile fibre; coated.
- 5 to 9: For later allocation.

The second and third digits are used solely to differentiate between sleeveings and have no other significance.

When ordering sleeving, purchasers should include this standard number followed by the sheet number in Part 3 and its title and any additional requirements, e.g. Sheet 100, extruded PVC, temperature index 85.

## 6. Dimensions (subject to agreement between purchaser and supplier)

### 6.1 Length

Sleevings shall be supplied in either continuous or cut lengths, as agreed between purchaser and supplier. Preferred package lengths, in metres, for continuous lengths are:

1, 10, 25, 50, 100, 200 and 400.

### 6.2 Bore

For round cross-sections, the preferred nominal bore diameters, in millimetres, are as follows, but not all these bore diameters are available in every type of sleeving.

0.3, 0.5, 0.8, 1.0, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12, 16, 20, 25, 30, 40, 50.

Other preferred sizes may be selected from the R10 series.

### 6.3 Wall thickness

The wall thicknesses appropriate to each type of sleeving are given in Part 3.

### 6.4 Tolerances

The tolerances of dimensions appropriate to each type of sleeving are given in Part 3.

## 7. Colour and transparency

Sleeving shall be supplied in natural or coloured form. When two or more colours are used, each shall cover sufficient area of the surface to allow ready identification in normal daylight.

For coloured sleeving, the colour(s) shall be a reasonable match to one of those specified in IEC Publication 304: Standard Colours for PVC Insulation for Low-frequency Cables and Wires.