

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Live working – Electrical insulating sleeves

Travaux sous tension – Protège-bras isolants électriques

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INTERNATIONAL STANDARD

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Live working – Electrical insulating sleeves

Travaux sous tension – Protège-bras isolants électriques

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**LIVE WORKING –
ELECTRICAL INSULATING SLEEVES****FOREWORD**

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International Standard IEC 60984 has been prepared by IEC technical committee 78: Live working.

This second edition cancels and replaces the first edition, published in 1990 and its Amendment 1 published in 2002. It constitutes a technical revision.

The major changes are:

- removal of the requirement for an area to mark the date of inspection;
- only the straight mounting method with water electrodes is specified for the dielectric type test;
- the d.c. electric tests are no longer included in the normative part of the document, but a d.c. test is suggested at the production level where a d.c. use of sleeves is expected, as presented in a new informative Annex E;
- preparation of the elements of evaluation of defects, and general application of IEC 61318:2007;

- the normative Annex E on sampling procedure has been deleted (not applicable according to IEC 61318:2007);
- the informative Annex F on acceptance and complementary tests has been deleted (consideration now included in IEC 61318:2007);
- in the new normative Annex F, updating of the characteristics of the liquid specified for tests on sleeves of category H, according to the latest edition of ISO 1817;
- introduction of a new normative Annex G on classification of defects;
- introduction of a new informative Annex H on the rationale for the classification of defects;
- review of the annex on in-service recommendations;
- for periodic electrical retesting, recommended voltage limit of the dielectric test methods to 10 kV except in case of the test method with water electrodes and straight mounting;

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

FDIS	Report on voting
78/1042/FDIS	78/1055/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.

Terms defined in Clause 3 are given in italic print throughout this standard.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

INTRODUCTION

This document has been prepared according to the requirements of IEC 61477 where applicable.

The product covered by this standard may have an impact on the environment during some or all stages of its life cycle. These impacts can range from slight to significant, be of short-term or long-term, and occur at the global, regional or local level.

Except for a disposal statement in the Instructions for use, this standard does not include requirements and test provisions for the manufacturers of the product, or recommendations to the users of the product for environmental improvement. However, all parties intervening in its design, manufacture, packaging, distribution, use, maintenance, repair, reuse, recovery and disposal are invited to take account of environmental considerations.

LIVE WORKING – ELECTRICAL INSULATING SLEEVES

1 Scope

This International Standard is applicable to *electrical insulating sleeves* for the protection of workers from accidental contact with live electrical conductors, apparatus or circuits.

The products designed and manufactured according to this standard contribute to the safety of the users provided they are used by skilled persons, in accordance with safe methods of work and the instructions for use.

Unless otherwise stated, in this standard the term “sleeve” is used for “*electrical insulating sleeve*”.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60060-1, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60060-2, *High-voltage test techniques – Part 2: Measuring systems*

IEC 60212, *Standard conditions for use prior to and during the testing of solid electrical insulating materials*

IEC 60417, *Graphical symbols for use on equipment*

IEC 61318:2007, *Live working – Conformity assessment applicable to tools, devices and equipment*

IEC 61477, *Live working – Minimum requirements for the utilization of tools, devices and equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61318 as well as the following apply.

3.1

elastomer

macromolecular material which returns rapidly to its initial dimensions and shape after substantial deformation by a weak stress and release of the stress

Note 1 to entry: The definition applies under room temperature test conditions.

[SOURCE: ISO 472: 2013, 2.327]

3.2**electrical insulating sleeve**

sleeve made of *elastomer* used in conjunction with an electrical insulating glove to extend protection against electric shock to the upper arm

Note 1 to entry: *Electrical insulating sleeves* are designed to protect the worker against inadvertent contacts with live parts.

Note 2 to entry: The length of the sleeve does not provide protection up to the armpit

[SOURCE: IEC 60743:2013, 8.1.4, modified – The definition is in line with the composition requirements of the standard for the type of insulating material. The note 2 to entry has been added to clarify the type of protection offered.]

3.3**formally trained and qualified person**

competent person possessing the appropriate practical and theoretical knowledge and having adequate skill and experience to enable the person to perform the required periodic testing, interpret the resultant information and from that information determine that the *electrical insulating sleeve* is safe to use, and report the importance of any defect found or suspected in relation to the safety and continued use of the *electrical insulating sleeve*

3.4**nominal voltage of a system**

suitable approximate value of voltage used to designate or identify a system

[SOURCE: IEC 60050-601:1985, 601-01-21]

4 Requirements**4.1 General**

The following requirements have been prepared in order that the products covered by this standard are designed and manufactured to contribute to the safety of the users, provided they are used by persons skilled for live working, in accordance with safe method of work and the instructions for use.

4.2 Classification

The sleeves covered by this standard shall be designated as follows:

- by class as class 0, class 1, class 2, class 3 and class 4;
- by style as style A (Straight taper) and style B (Curved elbow);
- by special properties, by the addition of a suffix to the class of the sleeve as shown in Table 1:

Table 1 – Special properties

Category	Resistant to
A	Acid
H	Oil
Z	Ozone
S ^a	Oil and ozone
C	Extremely low temperature
^a Category S combines the characteristics of Categories H and Z.	