IEC 61230

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Live working – Portable equipment for earthing or earthing and short-circuiting

Travaux sous tension – Equipements portables de mise à la terre ou de mise à la terre et en court-circuit

IEC 61230:2008

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CONTENTS

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LIVE WORKING – PORTABLE EQUIPMENT FOR EARTHING OR EARTHING AND SHORT-CIRCUITING

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.
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International Standard IEC 61230 has been prepared by IEC technical committee 78: Live working.

This second edition cancels and replaces the first edition published in 1993. It constitutes a technical revision.

The major changes are:

– extension of the scope to cover the use of equipment on d.c. installations;
– extension of the use of aluminium to all conductive parts of the device;
– extension of the application to silicone rubber cables made by the revision of TC 20 document IEC 61138;
– possibility of using this standard for separate components of the equipment;
– general revision of requirements and tests;
– deletion of the marking requirement of the double triangle to clarify that the products covered by the standard are not appropriate for performing live working;

– clarification and modification to the procedure for short-circuit test:
  - change of the number of devices submitted to test,
  - change of the pre-conditioning time to 48 h,
  - clarification of the test procedure for separate components,
– application of conformity assessment for products having completed the production phase, according to IEC 61318 Ed.3;
– revision of existing annexes;
– change of normative Annexes A and C into informative Annexes C and B with a reviewed wording;
– deletion of Annex B, not applicable according to IEC 61318 Ed.3;
– deletion of Annex D, its requirements and tests being now included in the body of the standard;
– introduction of a new informative Annex A on railway application;
– introduction of a new informative Annex D giving guidelines for determination of the equivalent r.m.s. value of a short-circuit current;
– revision of the list of type tests, which now appears in normative Annex E;
– introduction of a new normative Annex F on classification of defects.

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

FDIS	Report on voting
78/741/FDIS	78/748/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.

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.

INTRODUCTION

This International Standard has been prepared in accordance with the requirements of IEC 61477.

An agreement may be made between manufacturer and customer for additional requirements, and tests. These additional requirements are prescribed in the customer's specification on the basis of an acceptance procedure.

LIVE WORKING – PORTABLE EQUIPMENT FOR EARTHING OR EARTHING AND SHORT-CIRCUITING

1 Scope

This International Standard is applicable to portable equipment, with or without matching connection points, for temporary earthing or earthing and short-circuiting of electrically isolated or de-energized a.c. and d.c. installations, distribution and transmission networks, whether they are overhead or underground or of low or high voltage.

NOTE Annex A provides guidance for application to railway systems.

This standard covers equipment comprising an earthing or a short-circuiting or an earthing and short-circuiting device and insulating component. An example is given in Figure 1a and Figure 1b.

It also covers:

– earthing or short-circuiting or earthing and short-circuiting devices intended to be installed with insulating means. An example of an earthing device is given in Figure 1c;
– separate components, such as conductive extension (see Figure 1b) or clamp or cable with end fittings.

The performance of equipment, devices and components covered by this standard is based on electro-dynamic and electro-thermal effects acting during short-circuit. The withstand capability of the devices and equipment is expressed by their rated values of current, time and peak factor. No rated voltage is given, but the geometrical dimensions of the equipment are also linked to the voltage of the installation.

Examples of connection diagrams of earthing and short-circuiting devices are given in Figures 2 and 3. Associated usual lengths of cables are given in Table 1.

Not covered in this standard are:

– insulating means, such as insulating sticks, telescopic sticks, insulating handles, insulating gloves, aerial devices with insulating booms, insulating ropes to be used to install the earthing and short-circuiting device;
– insulating components, except for basic safety requirements for the insulating element;

  NOTE Basic safety recommendations for earthing sticks are given in Annex B.

– devices meant only for the draining of induced currents;
– relevant working procedures for using portable equipment for earthing or earthing and short-circuiting.

NOTE The equipment complying with this standard should be used according to safe working procedures and according to local or national regulation, such as live working or dead working procedures.