



SLOVENSKI STANDARD

SIST EN 60900:2012

01-oktober-2012

Nadomešča:
SIST EN 60900:2004

Delo pod napetostjo - Ročna orodja za uporabo pri izmeničnih napetostih do največ 1000 V in enosmernih napetostih do 1500 V (IEC 60900:2012)

Live working - Hand tools for use up to 1 000 V a.c. and 1 500 V d.c.

Arbeiten unter Spannung - Handwerkzeuge zum Gebrauch bis AC 1 000 V und DC 1 500 V

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Travaux sous tension - Outils à main pour usage jusqu'à 1 000 V en courant alternatif et 1 500 V en courant continu

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Ta slovenski standard je istoveten z: EN 60900:2012

ICS:

| | | |
|--------|--|---|
| 13.260 | Varstvo pred električnim udarom. Delo pod napetostjo | Protection against electric shock. Live working |
|--------|--|---|

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60900

August 2012

ICS 13.260; 29.240.20; 29.260.99

Supersedes EN 60900:2004

English version

**Live working -
Hand tools for use up to 1000 V a.c. and 1500 V d.c.
(IEC 60900:2012)**

Travaux sous tension -
Outils à main pour usage jusqu'à 1000 V
en courant alternatif et 1500 V en courant
continu
(CEI 60900:2012)

Arbeiten unter Spannung -
Handwerkzeuge zum Gebrauch bis AC
1000 V und DC 1500 V
(IEC 60900:2012)

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This European Standard was approved by CENELEC on 2012-07-19. 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.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 78/947/FDIS, future edition 3 of IEC 60900, prepared by IEC/TC 78 "Live working" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60900:2012.

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) 2013-04-19
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-07-19

This document supersedes EN 60900:2004.

EN 60900:2012 includes the following significant technical changes with respect to EN 60900:2004:

- general review of the requirements and test provisions;
- preparation of the elements of evaluation of defects, and general application of EN 61318:2008;
- deletion of Annexes D and E, not applicable according to EN 61318;
- introduction of a new normative Annex D on chronology of type tests;
- introduction of a new normative Annex F on classification of defects.

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

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Endorsement notice

The text of the International Standard IEC 60900:2012 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 60743

NOTE Harmonized as EN 60743.

Annex ZA
(normative)
Normative references to international publications
with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|--|--------------|-------------|
| IEC 60060-1 | - | High-voltage test techniques - Part 1: General definitions and test requirements | EN 60060-1 | - |
| IEC 60212 | - | Standard conditions for use prior to and during the testing of solid electrical insulating materials | EN 60212 | - |
| IEC 61318 | - | Live working - Conformity assessment applicable to tools, devices and equipment | EN 61318 | - |
| IEC 61477 | - | Live working - Minimum requirements for the utilization of tools, devices and equipment | EN 61477 | - |
| IEC 60417 | Data base | Graphical symbols for use on equipment | - | - |
| ISO 1174-1 | - | Assembly tools for screw and nuts - Driving squares - Part 1: Driving squares for hand socket tools | - | - |
| ISO 9654 | - | Pliers and nippers for electronics - Single-purpose nippers - Cutting nippers | - | - |
| ISO 9655 | - | Pliers and nippers for electronics - Single-purpose nippers - Pliers for gripping and manipulating | - | - |
| ISO 9656 | - | Pliers and nippers for electronics - Test methods | - | - |
| ISO 9657 | - | Pliers and nippers for electronics - General technical requirements | - | - |

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IEC 60900

Edition 3.0 2012-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Live working – Hand tools for use up to 1 000 V a.c. and 1 500 V d.c.

Travaux sous tension – Outils à main pour usage jusqu'à 1 000 V en courant alternatif et 1 500 V en courant continu

<https://standards.iteh.ai/catalog/standards/sist/8a98d4e0-14c9-4603-8abf-972153066090/sist-en-60900-2012>

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LIVE WORKING –
HAND TOOLS FOR USE UP
TO 1 000 V AC AND 1 500 V DC**

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 60900 has been prepared by IEC technical committee 78: Live working.

This third edition cancels and replaces the second edition, published in 2004. This edition constitutes a technical revision.

It includes the following significant technical changes with regard to the previous edition:

- general review of the requirements and test provisions;
- preparation of the elements of evaluation of defects, and general application of IEC 61318:2007 (Ed.3);
- deletion of Annexes D and E, not applicable according to IEC 61318 Ed.3;
- introduction of a new normative Annex D on chronology of type tests;
- 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 |
|-------------|------------------|
| 78/947/FDIS | 78/953/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 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.

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INTRODUCTION

This International Standard has been prepared in accordance with 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.

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.

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LIVE WORKING – HAND TOOLS FOR USE UP TO 1 000 V AC AND 1 500 V DC

1 Scope

This International Standard is applicable to insulated and insulating hand tools used for working live or close to live parts at nominal voltages up to 1 000 V a.c. and 1 500 V d.c.

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 (where appropriate).

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.

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

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

[SIST EN 60900:2012](https://standards.iteh.ai/catalog/standards/sist/8a98d4e0-14c9-4603-8abf-973530660000/iec-60900-2012)

<https://standards.iteh.ai/catalog/standards/sist/8a98d4e0-14c9-4603-8abf-973530660000/iec-60900-2012>

IEC 60417, *Graphical symbols for use on equipment*

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

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

ISO 1174-1, *Assembly tools for screw and nuts – Driving squares – Part 1: Driving squares for hand socket tools*

ISO 9654, *Pliers and nippers for electronics – Single-purpose nippers – Cutting nippers*

ISO 9655, *Pliers and nippers for electronics – Single-purpose pliers – Pliers for gripping and manipulating*

ISO 9656, *Pliers and nippers for electronics – Test methods*

ISO 9657, *Pliers and nippers for electronics – General technical requirements*

3 Terms and definitions

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

NOTE For the definitions of general terms in this document, reference should be made to the IEC 60050 series or to special definitions laid down in IEC 60743. Nomenclature of hand tools are found in the relevant ISO standards such as ISO 1703, ISO 5742 and ISO 8979.

3.1

hand tool (for live working)

hand held insulated or insulating tool

Note 1 to entry: Hand tools are normally tools such as screwdrivers, pliers, wrenches or knives.

[SOURCE: IEC 60050-651:1999, 651-01-27, modified – The scope of the definition has been enlarged.]

3.2

insulated hand tool

hand tool made of conductive materials, fully or partially covered by insulating materials

[SOURCE: IEC 60050-651:1999, 651-01-25, modified – The definition has been changed to refer specifically to hand tools.]

3.3

insulating hand tool

hand tool made totally or essentially from insulating materials except for inserts made from conductive materials used for reinforcement, but with no exposed conductive parts

[SOURCE: IEC 60050-651:1999, 651-01-26, modified – The definition has been changed to refer specifically to hand tools and its scope has been narrowed.]

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4 Requirements

SIST EN 60900:2012

4.1 General requirements

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4.1.1 Safety

Insulated and insulating hand tools shall be manufactured and dimensioned in such a way that they protect the user from electric shock.

NOTE Insulated hand tools completely covered by insulating materials and insulating tools minimize the risk of short circuits between two parts at different potentials when they are used in the correct manner.

The following requirements have been prepared in order that the hand tools 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 methods of work and the instructions for use (where appropriate).

4.1.2 Performance under load

The mechanical specifications for insulated hand tools shall comply with the corresponding ISO standards, or, where no ISO standard exists, with a standard specified by the manufacturer or the customer, (for example a national standard). The mechanical specifications for the working parts of the hand tools shall be retained even after application of an insulating layer.

Insulating hand tools specially designed for live working may have lower stress resistance than insulated hand tools, but they shall withstand the expected workloads without failing due to remaining deformation or breaking. These hand tools can be equipped with devices that limit the workloads that can be applied with them, for example by overload slipping clutches (see also Annex A).