



SLOVENSKI STANDARD SIST EN IEC 60900:2018

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SIST EN 60900:2012

Delo pod napetostjo - Ročna orodja za uporabo pri izmeničnih napetostih do največ 1000 V in enosmernih napetostih do 1500 V

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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|-----------|--|---|
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| 25.140.01 | Ročna orodja na splošno | Hand-held tools in general |

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EUROPEAN STANDARD

EN IEC 60900

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2018

ICS 13.260; 29.240.20; 29.260.99

Supersedes EN 60900:2012

English Version

**Live working - Hand tools for use up to 1 000 V AC and 1 500 V
DC
(IEC 60900:2018)**

Travaux sous tension - Outils à main pour usage jusqu'à 1
000 V en courant alternatif et 1 500 V en courant continu
(IEC 60900:2018)

Arbeiten unter Spannung - Handwerkzeuge zum Gebrauch
bis AC 1 000 V und DC 1 500 V
(IEC 60900:2018)

This European Standard was approved by CENELEC on 2018-07-25. 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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 60900:2018 (E)**European foreword**

The text of document 78/1221/FDIS, future edition 4.0 of IEC 60900, prepared by IEC/TC 78 "Live working" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60900:2018.

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) 2019-04-25
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-07-25

This document supersedes EN 60900:2012

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

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Endorsement notice

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The text of the International Standard IEC 60900:2018 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 standards indicated:

IEC 60743 NOTE Harmonized as EN 60743

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

| <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 60417 | - | Graphical symbols for use on equipment. Index, survey and compilation of the single sheets. | - | - |
| 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 | - |
| ISO 1174-1 | - | Assembly tools for screws 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 4.0 2018-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Live working – iTeh STANDARD PREVIEW
Hand tools for use up to 1 000 V AC and 1 500 V DC
(standards.iteh.ai)

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

INTERNATIONAL
ELECTROTECHNICAL
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CONTENTS

| | |
|---|----|
| FOREWORD..... | 5 |
| INTRODUCTION..... | 7 |
| 1 Scope..... | 8 |
| 2 Normative references | 8 |
| 3 Terms and definitions | 8 |
| 4 Requirements | 9 |
| 4.1 General requirements | 9 |
| 4.1.1 Safety..... | 9 |
| 4.1.2 Performance under load | 10 |
| 4.1.3 Multiple-ended hand tools..... | 10 |
| 4.1.4 Marking | 10 |
| 4.1.5 Separating of covers..... | 11 |
| 4.1.6 Instructions for correct adjustment and assembly..... | 11 |
| 4.2 Requirements concerning insulating materials | 11 |
| 4.2.1 General | 11 |
| 4.2.2 Thermal stability | 12 |
| 4.3 Requirement concerning exposed conductive parts of hybrid tools..... | 12 |
| 4.4 Additional requirements | 12 |
| 4.4.1 Hand tools capable of being assembled..... | 12 |
| 4.4.2 Screwdrivers..... | 14 |
| 4.4.3 Spanners – un-insulated areas | 15 |
| 4.4.4 Adjustable spanners | 16 |
| 4.4.5 Pliers, strippers, cable scissors, cable-cutting hand tools | 17 |
| 4.4.6 Scissors | 21 |
| 4.4.7 Knives | 22 |
| 4.4.8 Tweezers..... | 23 |
| 5 Tests | 24 |
| 5.1 General..... | 24 |
| 5.2 Visual check | 25 |
| 5.3 Dimensional check..... | 25 |
| 5.4 Impact tests | 25 |
| 5.4.1 Type test | 25 |
| 5.4.2 Alternative methods in cases where hand tools have completed the production phase | 28 |
| 5.5 Dielectric tests | 28 |
| 5.5.1 General requirements | 28 |
| 5.5.2 Conditioning (for type test only) | 29 |
| 5.5.3 Dielectric testing of insulated and hybrid hand tools | 29 |
| 5.5.4 Dielectric testing of insulating hand tools | 32 |
| 5.6 Indentation test (for <i>insulated hand tools</i>) | 33 |
| 5.6.1 Type test | 33 |
| 5.6.2 Alternative methods in cases where insulated hand tools have completed the production phase | 34 |
| 5.7 Test for adhesion of the insulating material coating of insulated hand tools..... | 34 |
| 5.7.1 Conditioning | 34 |
| 5.7.2 Type test | 35 |

| | | |
|---|--|----|
| 5.7.3 | Alternative methods in cases where insulated hand tools have completed the production phase | 40 |
| 5.8 | Test of adhesion of exposed conductive parts at the working head of hybrid hand tools | 41 |
| 5.8.1 | Type test | 41 |
| 5.8.2 | Alternative methods in cases where hybrid hand tools have completed the production phase | 41 |
| 5.9 | Mechanical tests | 41 |
| 5.9.1 | Test of adhesion of insulating covers of conductive adjusting or switching elements | 41 |
| 5.9.2 | Insulated hand tools | 42 |
| 5.9.3 | Insulating and hybrid hand tools | 42 |
| 5.9.4 | Tweezers | 43 |
| 5.9.5 | Retaining force test for tools capable of being assembled..... | 43 |
| 5.10 | Durability of marking | 46 |
| 5.11 | Flame retardancy test | 46 |
| 5.11.1 | Type test | 46 |
| 5.11.2 | Alternative methods in cases where hand tools have completed the production phase | 47 |
| 6 | Conformity assessment of hand tools having completed the production phase..... | 48 |
| 7 | Modifications | 48 |
| Annex A (informative) | Description and examples for insulated, hybrid and insulating hand tools..... | 49 |
| Annex B (informative) | Mechanical strength of insulating and hybrid hand tools | 50 |
| B.1 | Context..... | 50 |
| B.2 | General. https://standards.iteh.ai/catalog/standards/sist/33aff4fd-6d8c-4cad-9109-4d656401421d/sist-en-iec-60900-2018 | 50 |
| B.3 | Insulating and hybrid screwdrivers..... | 50 |
| B.4 | Insulating and hybrid spanners and ratchets | 51 |
| B.5 | Insulating and hybrid T-spanners | 51 |
| B.6 | Insulating and hybrid pliers and cable shears..... | 51 |
| Annex C (normative) | Suitable for live working; double triangle (IEC 60417-5216:2002-10)..... | 52 |
| Annex D (informative) | Recommendation for use and in-service care | 53 |
| D.1 | General..... | 53 |
| D.2 | Storage..... | 53 |
| D.3 | Inspection before use..... | 53 |
| D.4 | Temperature | 53 |
| D.5 | Periodic examination and electrical retesting | 53 |
| Annex E (normative) | General type test procedure | 54 |
| Annex F (normative) | Examples of calculation of the total linear length of insulation and acceptable leakage current (see 5.5.3.1.1)..... | 55 |
| Annex G (normative) | Classification of defects and tests to be allocated | 56 |
| Annex H (informative) | Rationale for the classification of defects | 57 |
| Bibliography | | 59 |
| Figure 1 – Marking of the electrical working limit adjacent to the double triangle symbol (IEC 60417-5216:2002-10)..... | | 11 |
| Figure 2 – Description of the insulating overlapping element and different assembly configurations for hand tools capable of being assembled with square drives | | 13 |

| | |
|---|----|
| Figure 3 – Marking symbol for hand tools capable of being assembled and designed to be interchangeable between different manufacturers (IEC 60417-6168:2012-07) | 14 |
| Figure 4 – Illustration of insulation of a typical screwdriver | 15 |
| Figure 5 – Illustration of insulation of typical spanners | 16 |
| Figure 6 – Insulated or hybrid adjustable spanner | 17 |
| Figure 7 – Illustration of insulation of typical pliers | 18 |
| Figure 8 – Insulation of pliers | 19 |
| Figure 9 – Insulation of multiple slip joint pliers | 19 |
| Figure 10 – Insulation of pliers with a functional area below the joint | 20 |
| Figure 11 – Illustration of insulation of pliers and nippers for electronics | 21 |
| Figure 12 – Insulation of scissors | 22 |
| Figure 13 – Insulation of knives | 23 |
| Figure 14 – Example of insulation of the handles of tweezers | 24 |
| Figure 15 – Example of test arrangement for the impact test – Method A | 26 |
| Figure 16 – Example of test arrangement for the impact test – Method B | 27 |
| Figure 17 – Dielectric testing arrangement for insulated or hybrid hand tools | 30 |
| Figure 18 – Description of dummies for dielectric tests for hand tools capable of being assembled with square drives | 31 |
| Figure 19 – Dielectric testing arrangement for insulating hand tools | 32 |
| Figure 20 – Indentation test | 34 |
| Figure 21 – Principle of the testing device for checking adhesion of the insulating coating on conductive parts of the insulated hand tool – Test on the working head – Method A | 36 |
| Figure 22 – Principle of the testing device for checking adhesion of the insulating coating on conductive parts of the insulated hand tools – Test on the working head – Method B | 37 |
| Figure 23 – Testing device for checking adhesion of the insulating coating of insulated screwdrivers on conductive parts and the handle | 38 |
| Figure 24 – Example of mountings for checking stability of adhesion of the insulation of the entire insulated hand tool | 40 |
| Figure 25 – Dummies for testing locking systems used with square drives of nominal size 12,5 mm of ISO 1174 | 44 |
| Figure 26 – Dummies for testing locking systems used with square drives of nominal size 10 mm of ISO 1174 | 45 |
| Figure 27 – Example of a flame retardancy test arrangement | 47 |
| Table 1 – Dimensions and tolerances of the insulating overlapping element | 13 |
| Table 2 – Dimensions and tolerances for dummies to be used for dielectric tests | 31 |
| Table B.1 – Torque values for insulating and hybrid screwdrivers | 50 |
| Table E.1 – Sequential order for performing type tests | 54 |
| Table G.1 – Classification of defects and associated requirements and tests | 56 |
| Table H.1 – Justification for the type of defect | 57 |

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 fourth edition cancels and replaces the third edition, published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of a third category of tools has been added, namely *hybrid hand tools*;
- b) introduction of a new informative Annex A on examples of *insulated*, *insulating* and *hybrid hand tools*.

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

| FDIS | Report on voting |
|--------------|------------------|
| 78/1221/FDIS | 78/1229/RVD |

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

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

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

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

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

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INTRODUCTION

This document has been prepared in accordance with the requirements of IEC 61477 where applicable.

The products covered by this document 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 duration, and occur at the global, regional or local level.

This document does not include requirements and test provisions for the manufacturers of the products, or recommendations to the users of the products for environmental improvement. However, all parties intervening in their 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 document is applicable to *insulated, insulating and hybrid hand tools* used for working live or close to live parts at nominal voltages up to 1 000 V AC and 1 500 V DC.

The products designed and manufactured according to this document 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 are referred to in the text in such a way that some or all of their content constitutes requirements 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 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*

IEC 60417, *Graphical symbols for use on equipment* (available at <http://www.graphical-symbols.info/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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

NOTE The definitions of general terms used in this document are given in IEC 60050 or in special definitions given in IEC 60743.

3.1

hand tool

hand held tool

Note 1 to entry: *Hand tools* may be *insulated hand tools*, *insulating hand tools* or *hybrid hand tools* (see Annex A).

Note 2 to entry: *Hand tools* are normally tools such as screwdrivers, pliers, spanners or knives.

Note 3 to entry: *Hand tools* are designed to provide protection to the worker against electric shock.

[SOURCE: IEC 60050-651:2014, 651-21-19, modified – Note 1 to entry has been modified to refer to Annex A.]

3.1.1

hybrid hand tool

hand tool made from insulating material(s) with exposed conductive parts at the *working head*

Note 1 to entry: *Hybrid hand tools* may have some non-exposed conductive parts used for reinforcement.

[SOURCE: IEC 60050-651:2014, 651-21-22]

3.1.2

insulated hand tool

hand tool made of conductive material(s), fully or partially covered by insulating material(s)

[SOURCE: IEC 60050-651:2014, 651-21-20]

3.1.3

insulating hand tool

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

[SOURCE: IEC 60050-651: 2014, 651-21-21,]

3.2

working head

part of the tool head that is limited to the working surface and the contact area

Note 1 to entry: See Figures 5 and 7.

4 Requirements

4.1 General requirements

4.1.1 Safety

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

NOTE 1 *Insulating hand tools* minimize the risk of short-circuits between two parts at different potentials.

NOTE 2 *Hybrid hand tools* reduce the risk of short-circuits between two parts at different potentials.