SLOVENSKI STANDARD
oSIST prEN IEC 60974-4:2024

01-julij-2024

Oprema za obločno varjenje - 4. del: Perodični pregledi in preskus

Arc welding equipment - Part 4: Periodic inspection and testing

Lichtbogenschweißeinrichtungen - Teil 4: Wiederkehrende Inspektion und Prüfung

Matériel de soudage à l'arc - Partie 4: Inspection et essais périodiques

Ta slovenski standard je istoveten z: **prEN IEC 60974-4**

ICS:

25.160.30 Varilna oprema Welding equipment

oSIST prEN IEC 60974-4:2024 **en**

26/761/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 60974-4 ED4**	
DATE OF CIRCULATION: **2024-06-07**	CLOSING DATE FOR VOTING: **2024-08-30**
SUPERSEDES DOCUMENTS: **26/753/CD, 26/758/CC**	

IEC TC 26 : ELECTRIC WELDING

SECRETARIAT: Austria	SECRETARY: Mr Josef Feichtinger
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING ☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any relevant “In Some Countries” clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Arc welding equipment - Part 4: Periodic inspection and testing

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ARC WELDING EQUIPMENT –

Part 4: Periodic inspection and testing

FOREWORD

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International Standard IEC 60974-4 has been prepared by IEC technical committee 26: Electric welding.

This fourth edition cancels and replaces the third edition published in 2016. It constitutes a technical revision.

The main significant technical changes with respect to the previous edition are the following:

- Examples for the measurements in respect of EN 50699, Recurrent Test of Electrical Equipment and EN 50678, General procedure for verifying the effectiveness of the protective measures of electrical equipment after repair;
- Consideration of measuring equipment in respect of IEC 61557-series, Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures;
- More determinations of NO-LOAD VOLTAGE for welding equipment built according to IEC 60974-1:1998+AMD1:20002005 or earlier;

- New Annex D providing additional information to be considered when testing battery-powered WELDING POWER SOURCES and connected chargers;

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

FDIS	Report on voting

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 list of all the parts of the IEC 60974 series, under the general title *Arc welding equipment*, can be found on the IEC website.

In this standard, the following print types are used:

- *conformity statements: in italic type*.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

ARC WELDING EQUIPMENT –

Part 4: Periodic inspection and testing

1 Scope

This part of IEC 60974 specifies test procedures for PERIODIC INSPECTION and, after REPAIR, to ensure electrical safety. These test procedures are also applicable for MAINTENANCE.

This standard is applicable to power sources for arc welding and allied processes designed in accordance with IEC 60974-1 or IEC 60974-6. Stand-alone ancillary equipment designed in accordance with other parts of IEC 60974 may be tested in accordance with relevant requirements of this part of IEC 60974.

NOTE 1 The WELDING POWER SOURCE can be tested with any ancillary equipment fitted that can affect the test results.

This standard is not applicable to testing of new power sources or engine-driven power sources.

NOTE 2 For a power source not built in accordance with IEC 60974-1, see Annex C.

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 60050-151, *International Electrotechnical Vocabulary – Part 151: Electrical and magnetic devices*

IEC 60050-192, *International Electrotechnical Vocabulary – Part 192 - Dependability*

IEC 60050-195, *International Electrotechnical Vocabulary – Part 195: Earthing and protection against electric shock*

IEC 60050-426, *International Electrotechnical Vocabulary – Part 426: Equipment for explosive atmospheres*

IEC 60050-851, *International Electrotechnical Vocabulary – Part 851: Electric welding*

IEC 60974-1:2021, *Arc welding equipment – Part 1: Welding power sources*

IEC 60974-6:2015, *Arc welding equipment – Part 6: Limited duty equipment*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*

IEC 61557-2:2019, Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 2: Insulation resistance

IEC 61557-4:2021, Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding

IEC 61557-16:2014, Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c - Equipment for testing, measuring or monitoring of protective measures - Part 16: Equipment for testing the effectiveness of the protective measures of electrical equipment and/or medical electrical equipment

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-151 and IEC 60974-1, as well as 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

3.1

welding power source
arc welding power source
equipment for supplying current and voltage and having the required characteristics suitable for arc welding and allied processes

Note 1 to entry: A WELDING POWER SOURCE can also supply services to other equipment and auxiliaries for example auxiliary power, cooling liquid, consumable arc welding electrode and gas to shield the arc and the welding area.

Note 2 to entry: This entry revises IEC 60050-851:2008, 851-13-01, which will be updated.

3.2

expert
person who can judge the work assigned and recognize possible hazards on the basis of professional training, knowledge, experience and knowledge of the relevant equipment

Note: Several years of practice in the relevant technical field may be taken into consideration in assessment of professional training.

[SOURCE: IEC 60050-851:2008, 851-11-10]

3.3

instructed person
person informed about the tasks assigned and about the possible hazards involved in neglectful behavior

Note: If necessary, the person has undergone some training.

[SOURCE: IEC 60050-851:2008, 851-11-13]

3.4

periodic inspection
inspection of all equipment, systems and installations carried out on a routine basis

[SOURCE: IEC 60050-426:2020, 426-14-07]

3.5
maintenance
combination of all technical and management actions intended to retain an item in, or restore it to, a state in which it can perform as required

Note to entry: Management is assumed to include supervision activities

[SOURCE: IEC 60050-192:2015, 192-06-01]

3.6
repair
direct action taken to effect restoration

Note to entry: REPAIR includes fault localization (192-06-19), fault diagnosis (192-06-20); fault correction (192-06-21); and function checkout (192-06-22).

[SOURCE: IEC 60050-192:2015, 192-06-14]

3.7
no-load voltage
voltage, exclusive of any arc striking or arc stabilizing voltage, between the accessible output terminals of a WELDING POWER SOURCE when the WELDING CIRCUIT is open but energized

Note 1 to entry: This entry revises IEC 60050-851:2008, 851-12-24, which will be updated.

3.8
touch current
electric current passing through a human body or through an animal body when it touches one or more accessible parts of an installation or of equipment

Note 1 to entry: TOUCH CURRENT is measured by using a measuring network that simulates the impedance of the human body.

[SOURCE: IEC 60050-195:1998, 195-05-21, modified – Addition of a note to entry.]

3.9
visual inspection
inspection by eye to verify that there are no apparent discrepancies with respect to provisions of the standard concerned

[SOURCE: IEC 60050-851:2008, 851-11-11]

3.10
welding circuit
conductive material through which the WELDING CURRENT is intended to flow

Note 1 to entry: In arc welding, the arc is a part of the WELDING CIRCUIT.

Note 2 to entry: In certain arc welding processes, the welding arc can be established between two electrodes. In such a case, the workpiece is not necessarily a part of the WELDING CIRCUIT.

[SOURCE: IEC 60050-851:2008, 851-14-10]

3.11
welding current
current delivered by a WELDING POWER SOURCE during welding

3.12
environment with increased risk of electric shock
environment where the probability of electric shock by arc welding is increased in relation to normal arc welding conditions