

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Arc welding equipment –
Part 4: Periodic inspection and testing**

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



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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 second edition cancels and replaces the first edition published in 2006. It constitutes a technical revision.

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

- title is amended;
- scope is extended to equipment designed in accordance with IEC 60974-6;
- complementary instructions from the manufacturer shall be followed;
- qualification of test personnel is clarified (see 4.1);
- plasma cutting power sources are excluded from no-load voltage test (see 5.6);
- voltage reducing device functional test is simplified (see 6.3);
- supply voltage is recorded in test report (see 7.1).

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

FDIS	Report on voting
26/422/FDIS	26/428/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 list of all the parts of the IEC 60974 series, under the general title *Arc welding equipment*, can be found on the IEC website.

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- withdrawn,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.

Withdrawn

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 part of IEC 60974 may be tested in accordance with relevant requirement of this part of IEC 60974.

NOTE 1 The welding power source may be tested with any ancillary equipment fitted that could 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 referenced documents are indispensable for the application 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 (IEV) – Part 151: Electrical and magnetic devices*

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

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

IEC 60974-1:2005, *Arc welding equipment – Part 1: Welding power sources*

IEC 60974-6, *Arc welding equipment – Part 6: Limited duty manual metal arc welding power sources*

IEC 61557-4, *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 4: Resistance of earth connection and equipotential bonding*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in the IEC 60050-151, the IEC 60050-195, the IEC 60050-851, the IEC 60974-1, as well as the following, apply.

3.1
expert
competent person
skilled person

a 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.

[IEC 60974-1:2005, 3.3]

3.2
instructed person

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

NOTE If necessary, the person has undergone some training

[IEC 60974-1:2005, 3.4]

3.3
periodic inspection and test

examination carried out at specified intervals to reduce the risk of hazard

3.4
maintenance

service carried out at specified intervals to reduce the risk of hazard and failure

3.5
repair

restore to a safe and intended operating condition

3.6
test personnel

instructed person or expert that has been trained and authorized to perform periodic inspection and testing

4 General requirements

4.1 Qualification of test personnel

Tests of welding equipment can be hazardous and shall be carried out by an instructed person or expert in the field of electrical repair, preferably also familiar with welding, cutting and allied processes. Instructed persons should be considered qualified for simple periodic testing and maintenance provided the equipment enclosure does not have to be opened.

NOTE Hazardous voltages and currents inside the equipment enclosure may cause shock, burn or death. Only expert test personnel may open the equipment.

4.2 Test conditions

Tests shall be carried out at an ambient air temperature between 10 °C and 40 °C on dry and cleaned welding equipment.

4.3 Measuring instruments

The accuracy of measuring instruments shall be class 2.5 as a minimum, except for the measurement of insulation resistance, where the accuracy of the instruments is not specified but shall be taken into account for the measurement.