
Arc welding equipment - Part 3: Arc striking and stabilizing devices (IEC 60974-3:2003)

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NORME EUROPÉENNE

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Arc welding equipment
Part 3: Arc striking and stabilizing devices
(IEC 60974-3:2003)

Matériel de soudage à l'arc
Partie 3: Dispositifs d'amorçage et
de stabilisation de l'arc
(CEI 60974-3:2003)

Lichtbogenschweißeinrichtungen
Teil 3: Lichtbogenzünd- und
-stabilisierungseinrichtungen
(IEC 60974-3:2003)

This European Standard was approved by CENELEC on 2003-10-01. 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 Central Secretariat or to any CENELEC member.

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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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 26/257/FDIS, future edition 1 of IEC 60974-3, prepared by IEC TC 26, Electric welding, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60974-3 on 2003-10-01.

This part shall be read in conjunction with EN 60974-1:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-10-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annex ZA is normative and annexes A and B are informative.

L'annexe ZA a été ajoutée par le CENELEC.

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The text of the International Standard IEC 60974-3:2003 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60974-1	1998	Arc welding equipment Part 1: Welding power sources	EN 60974-1	1998
A1	2000		A1	2000
A2	2003		A2	2003

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Première édition
First edition
2003-07

Matériel de soudage à l'arc –

**Partie 3:
Dispositifs d'amorçage et de
stabilisation de l'arc**

iTeh STANDARD PREVIEW

Arc welding equipment –

Part 3: SIST EN 60974-3:2004
**Arc striking and stabilizing
devices**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ARC WELDING EQUIPMENT –

Part 3: Arc striking and stabilizing devices

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, 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 60974-3 has been prepared by IEC technical committee 26: Electric welding.

This part of IEC 60974 shall be read in conjunction with IEC 60974-1.

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

FDIS	Report on voting
26/257/FDIS	26/263/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 2005. At this date, the publication will be

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

ARC WELDING EQUIPMENT –

Part 3: Arc striking and stabilizing devices

1 Scope

This part of IEC 60974 specifies safety requirements for arc striking and arc stabilizing devices used in arc welding and allied processes.

NOTE Typical allied processes are for example plasma arc cutting and arc spraying.

Arc striking and arc stabilizing devices may be stand-alone units which may be connected to a separate welding power source or one where the welding power source and arc striking and arc stabilizing devices are housed in a single enclosure.

This standard does not include electromagnetic compatibility (EMC) requirements.

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 60974-1:1998, *Arc welding equipment – Part 1: Welding power sources*

Amendment 1 (2000)

Amendment 2 (2003)

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60974-1 and IEC 60974-7 as well as the following apply.

3.1

arc striking device

device which superimposes a voltage on the welding circuit to ignite an arc

3.2

arc stabilizing device

device which superimposes a voltage on the welding circuit to maintain an arc

3.3

arc striking voltage

voltage superimposed on the no-load voltage to ignite an arc

3.4

arc stabilizing voltage

voltage superimposed on the welding voltage to maintain an arc

3.5

arc striking period

period during which the arc striking voltage is superimposed to the no-load voltage

4 Environmental conditions

As specified in IEC 60974-1, Clause 4.

5 Test conditions

As specified in Clause 5 of IEC 60974-1, with the exception of the following:

For the high voltage probe, the accuracy of the measuring equipment shall be maximum $\pm 5\%$.

5.1 Type tests

As specified in 5.1 of IEC 60974-1, with the addition of:

Rated arc striking and stabilizing peak voltage shall be measured according to 11.1 in any convenient sequence of type tests, but before verifying mechanical requirements.

The other type tests included in this standard and not listed may be carried out in any convenient sequence.

5.2 Routine tests

All routine tests shall be carried out on each stand-alone unit in the following sequence:

- a) general visual inspection, see 3.7 of IEC 60974-1;
- b) continuity of the protective circuit, see if applicable, 10.4.2 of IEC 60974-1, see Clause 10 of this standard;
- c) dielectric strength, see 6.1.4 of IEC 60974-1;
- d) high voltage circuit test: working voltage shall be applied to high voltage circuits to establish insulation integrity as specified by the manufacturer;
NOTE No-load voltage and connection of work lead, either to the ground circuit or isolated, affects working voltage.
- e) general visual inspection, see 3.7 of IEC 60974-1.

6 Protection against electric shock

As specified in Clause 6 of IEC 60974-1, with the addition of following type tests:

6.1 Clearances

The minimum clearances of high voltage components shall be in accordance with Table 1.

Conformity shall be checked by measurement and visual inspection.

6.2 Creepage distances

The minimum creepage distances of arc striking and stabilizing circuits shall be in accordance with Table 1.

Conformity shall be checked by measurement and visual inspection.