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Bågsvetsutrustning – Del 10: EMC-fordringar

*Arc welding equipment –
Part 10: Electromagnetic compatibility (EMC) requirements*

Som svensk standard gäller europastandarden EN 60974-10:2007. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60974-10:2007.

Nationellt förord

Europastandarden EN 60974-10:2007

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60974-10, Second edition, 2007 - Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standad SS-EN 60974-10, utgåva 1, 2003, gäller ej fr o m 2010-12-01.

ICS 25.160

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EUROPEAN STANDARD

EN 60974-10

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

**Arc welding equipment -
Part 10: Electromagnetic compatibility (EMC) requirements
(IEC 60974-10:2007)**

Matériel de soudage à l'arc -
Partie 10: Exigences relatives à la
compatibilité électromagnétique (CEM)
(CEI 60974-10:2007)

Lichtbogenschweißeinrichtungen -
Teil 10: Anforderungen an die
elektromagnetische Verträglichkeit (EMV)
(IEC 60974-10:2007)

This European Standard was approved by CENELEC on 2007-12-01. 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.

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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 26/341/CDV, future edition 2 of IEC 60974-10, prepared by IEC TC 26, Electric welding, was submitted to the IEC-CENELEC parallel Unique Acceptance Procedure and was approved by CENELEC as EN 60974-10 on 2007-12-01.

This European Standard supersedes EN 60974-10:2003.

Significant technical changes with respect to EN 60974-10:2003 are:

- application of more stringent r.f. emission limits for the idle mode;
- mandatory classification of arc starting and stabilizing devices as Class A equipment;
- additional immunity tests (surges and r.f. common-mode currents);
- inclusion of informative Annex B, containing the applicable emission limits for information of the user of the standard.

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) 2008-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-12-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2004/108/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60974-10:2007 was approved by CENELEC as a European Standard without any modification.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

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 60050-161	– ¹⁾	International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility	–	–
IEC 60050-851	– ¹⁾	International Electrotechnical Vocabulary (IEV) – Chapter 851: Electric welding	–	–
IEC 60974-1	– ¹⁾	Arc welding equipment – Part 1: Welding power sources	EN 60974-1	2005 ²⁾
IEC 60974-3	– ¹⁾	Arc welding equipment – Part 3: Arc striking and stabilizing devices	EN 60974-3	2007 ²⁾
IEC 60974-6	– ¹⁾	Arc welding equipment – Part 6: Limited duty manual metal arc welding power sources	EN 60974-6 + corr. May	2003 ²⁾ 2005
IEC 61000-3-2	2005	Electromagnetic compatibility (EMC) – Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN 61000-3-2	2006
IEC 61000-3-3	1994	Electromagnetic compatibility (EMC) – Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection	EN 61000-3-3 + corr. July	1995 1997
A1	2001		A1	2001
A2	2005		A2	2005
IEC/TS 61000-3-4	– ¹⁾	Electromagnetic compatibility (EMC) – Part 3-4: Limits - Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A	–	–

¹⁾ Undated reference.

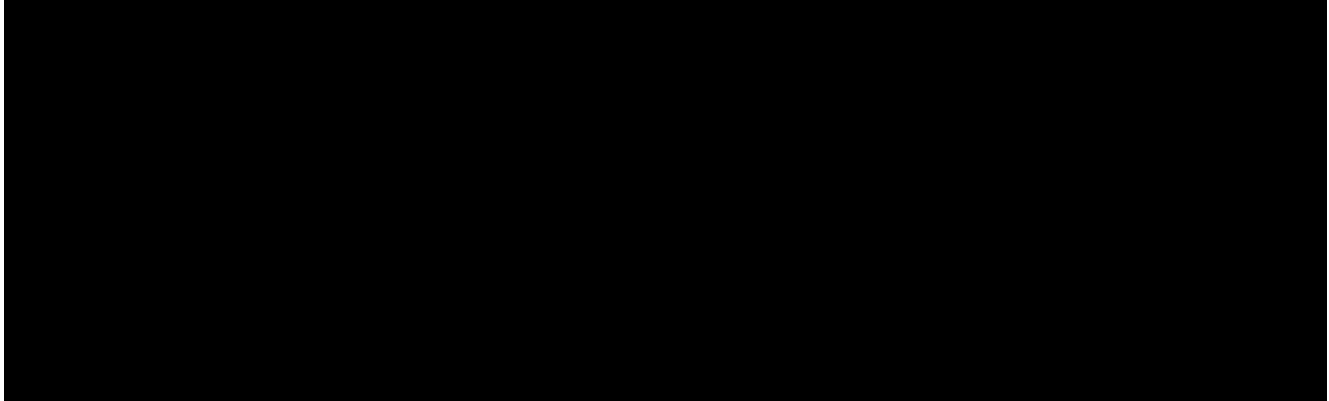
²⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-3-11	2000	Electromagnetic compatibility (EMC) – Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subject to conditional connection	EN 61000-3-11	2000
IEC 61000-3-12	2004	Electromagnetic compatibility (EMC) – Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase	EN 61000-3-12	2005
IEC 61000-4-2	$-^1)$	Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995 ²⁾
IEC 61000-4-3	$-^1)$	Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006 ²⁾
IEC 61000-4-4	$-^1)$	Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2004 ²⁾
IEC 61000-4-5	$-^1)$	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006 ²⁾
IEC 61000-4-6	$-^1)$	Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6 + corr. August	2007 ²⁾ 2007
IEC 61000-4-11	$-^1)$	Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004 ²⁾
CISPR 11 (mod)	2003	Industrial scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement	EN 55011 ³⁾	2007
CISPR 14-1	$-^1)$	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission	EN 55014-1	2006 ²⁾

³⁾ EN 55011 includes A1:2004 to CISPR 11 (mod).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
CISPR 16-1-1	– ¹⁾	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	EN 55016-1-1	2007 ²⁾
CISPR 16-1-2	– ¹⁾	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-2: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Conducted disturbances	EN 55016-1-2	2004 ²⁾
CISPR 16-1-4	– ¹⁾	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-4: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Radiated disturbances	EN 55016-1-4	2007 ²⁾

Annex ZZ
(informative)



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CONTENTS

1	Scope	6
2	Normative references	6
3	Terms and definitions	7
4	General test requirements	8
4.1	Test conditions	8
4.2	Measuring instruments	8
4.3	Artificial mains network	8
4.4	Voltage probe	8
4.5	Antennas	8
5	Test set-up for emission and immunity	8
5.1	General	8
5.2	Load	10
5.3	Ancillary equipment	10
5.3.1	General requirements	10
5.3.2	Wire feeders	10
5.3.3	Remote controls	11
6	Emission tests	11
6.1	Classification for r.f. emission tests	11
6.1.1	Class A equipment	11
6.1.2	Class B equipment	11
6.2	Test conditions	11
6.2.1	Welding power source	11
6.2.2	Load	12
6.2.3	Wire feeders	12
6.2.4	Ancillary equipment	12
6.3	Emission limits	13
6.3.1	General	13
6.3.2	Mains terminal disturbance voltage	13
6.3.3	Electromagnetic radiation disturbance	14
6.3.4	Harmonics, voltage fluctuations and flicker	14
7	Immunity tests	14
7.1	Classification	14
7.1.1	Applicability of tests	14
7.1.2	Category 1	14
7.1.3	Category 2	15
7.2	Test conditions	15
7.3	Immunity performance criteria	15
7.3.1	Performance criterion A	15
7.3.2	Performance criterion B	15
7.3.3	Performance criterion C	15
7.4	Immunity levels	15
8	Documentation for the purchaser/user	17
	Annex A (informative) Installation and use	18

Annex B (informative) Limits	20
Figure 1 – Typical arc welding equipment with a conventional load	9
Figure 2 – Position of arc welding equipment and conventional load with respect to the antenna	9
Table 1 – Immunity levels – Enclosure	16
Table 2 – Immunity levels – AC input power port.....	16
Table 3 – Immunity levels – Ports for process measurement and control lines.....	16
Table B.1 – Mains terminal disturbance voltage limits, idle state	20
Table B.2 – Mains terminal disturbance voltage limits, load conditions.....	20
Table B.3 – Electromagnetic radiation disturbance limits, idle state	21
Table B.4 – Electromagnetic radiation disturbance limits, load conditions	21
Table B.5 – Maximum permissible harmonic current for non-professional equipment with input current $I_{1\max} \leq 16$ A	21
Table B.6 – Current emission limits for professional equipment with $I_{1\max} \leq 75$ A other than balanced three-phase equipment	22
Table B.7 – Current emission limits for professional balanced three-phase equipment with $I_{1\max} \leq 75$ A.....	22
Table B.8 – Current emission limits for professional balanced three-phase equipment with $I_{1\max} \leq 75$ A under specified conditions	22
Table B.9 – Limits for arc welding equipment with $I_{1\max} \leq 75$ A.....	23

ARC WELDING EQUIPMENT –

Part 10: Electromagnetic compatibility (EMC) requirements

1 Scope

This part of IEC 60974 specifies

- a) applicable standards and test methods for radio-frequency (r.f.) emissions;
- b) applicable standards and test methods for harmonic current emission, voltage fluctuations and flicker;
- c) immunity requirements and test methods for continuous and transient, conducted and radiated disturbances including electrostatic discharges.

This standard is applicable to equipment for arc welding and allied processes, including power sources and ancillary equipment, for example wire feeders, liquid cooling systems and arc striking and stabilizing devices.

NOTE 1 Allied processes are, for example, plasma cutting and arc stud welding.

NOTE 2 This standard does not specify basic safety requirements for arc welding equipment such as protection against electric shock, unsafe operation, insulation coordination and related dielectric tests.

Arc welding equipment type tested in accordance with, and which has met the requirements of, this standard is considered to be in compliance for all applications.

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 60050-161, *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility*

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

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

IEC 60974-3, *Arc welding equipment – Part 3: Arc striking and stabilizing devices*

IEC 60974-6, *Arc welding equipment – Part 6: Power sources for manual metal arc welding with limited duty*

IEC 61000-3-2:2005, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current $\leq 16\text{ A per phase}$)*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current $\leq 16\text{ A per phase}$ and not subject to conditional connection¹*

Amendment 1 (2001)

Amendment 2 (2005)

¹ There exists a consolidated edition 1.2 (2005) that includes edition 1 and its amendments 1 and 2.