

Svenska Elektriska Kommissionen, SEK

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Bågsvetsutrustning – Del 10: EMC-fordringar

Arc welding equipment –

Part 10: Electromagnetic compatibility (EMC) requirements

Som svensk standard gäller europastandarden EN 60974-10:2003. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60974-10:2003.

Nationellt förord

Europastandarden EN 60974-10:2003

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60974-10, First edition, 2002 - Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare utgiven svensk standard SS-EN 50199, utgåva 1, 1996 och SS-EN 50199 C1, utgåva 1, 1998, gäller ej fr o m 2006-03-01.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK

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English version

Arc welding equipment
Part 10: Electromagnetic compatibility (EMC) requirements
(IEC 60974-10:2002, modified)

Matériel de soudage à l'arc
Partie 10: Exigences relatives
à la compatibilité électromagnétique
(CEM)
(CEI 60974-10:2002, modifiée)

Lichtbogenschweißeinrichtungen
Teil 10: Elektromagnetische
Verträglichkeit (EMV) Anforderungen
(IEC 60974-10:2002, modifiziert)

This European Standard was approved by CENELEC on 2003-03-18. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, 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 26/237/FDIS, future edition 1 of IEC 60974-10, prepared by IEC TC 26, Electric welding, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60974-10 on 2003-03-18.

A draft amendment, prepared by the Technical Committee CENELEC TC 26A, Electric arc welding equipment, was submitted to the formal vote and was approved by CENELEC for inclusion into EN 60974-10 on 2003-03-18.

This European Standard supersedes EN 50199:1995 + corrigendum January 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) 2004-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-03-01

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 annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60974-10:2002 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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 60050-161	- ¹⁾	International Electrotechnical Vocabulary (IEV) Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-851	- ¹⁾	Chapter 851: Electric welding	-	-
IEC 60974-1	- ¹⁾	Arc welding equipment Part 1: Welding power sources	EN 60974-1	1998 ²⁾
IEC 61000-3-2 (mod)	2000	Electromagnetic compatibility (EMC) Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	EN 61000-3-2	2000 ²⁾
IEC 61000-3-3	1994	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
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	- ¹⁾	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 ²⁾
IEC 61000-4-2	- ¹⁾	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995 ²⁾
IEC 61000-4-3	- ¹⁾	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002 ²⁾
IEC 61000-4-4	- ¹⁾	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995 ²⁾
IEC 61000-4-11	- ¹⁾	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994 ²⁾
CISPR 11 (mod)	1997	Industrial, scientific and medical (ISM) radio-frequency equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55011	1998
A1	1999		A1	1999
A2	2002		A2	2002
CISPR 16-1	- ¹⁾	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	-	-

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ARC WELDING EQUIPMENT –

Part 10: Electromagnetic compatibility (EMC) requirements

1 Scope and object

This part of IEC 60974 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 stabilising devices.

NOTE 1 Allied processes are, e.g., 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 co-ordination 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.

1.1 Emission

The objective of this standard is to specify

- a) test methods to be used in conjunction with CISPR 11 and its amendments 1 and 2 to determine electromagnetic emissions;
- b) relevant standards for harmonic current emission, voltage fluctuations and flicker.

1.2 Immunity

The objective of this standard is to define immunity requirements and test methods for continuous and transient, conducted and radiated disturbances including electrostatic discharges.

NOTE 3 These requirements do not cover extreme cases, which may occur with an extremely low probability of occurrence in any location.

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 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A*
Amendment 1 (2001)

IEC/TS 61000-3-4, *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*

IEC 61000-3-11, *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*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio frequency, electromagnetic field immunity test*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test*

IEC 61000-4-11, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

CISPR 11:1997, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*
Amendment 1 (1999)
Amendment 2 ¹

CISPR 16-1, *Specification for radio disturbance and immunity measuring apparatus and method – Part 1: Radio disturbance and immunity measuring apparatus*

■ [REDACTED]

[REDACTED]

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¹ To be published.