SVENSK STANDARD SS-EN 60974-10

Fastställd	Utgåva	Sida	Ansvarig kommitté
2008-02-25	2	1 (1+26)	SEK TK 26

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

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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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

SEK Svensk Elstandard 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.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60974-10

December 2007

ICS 25.160

Supersedes EN 60974-10:2003

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)

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

Ref. No. EN 60974-10:2007 E

SEK Svensk Elstandard

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.

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Endorsement notice

The text of the International Standard IEC 60974-10:2007 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

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.

Publication	Year	Title	EN/HD	Year
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.

Publication	Year	Title	EN/HD	Year
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).

Publication	Year	Title	EN/HD	Year
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

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 ≤ 16 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 ≤ 16 A per phase and not subject to conditional connection*[1]

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.