BS EN 60974-1:2012

BSI Standards Publication

Arc welding equipment

Part 1: Welding power sources

This British Standard is the UK implementation of EN 60974-1:2012. It is identical to IEC 60974-1:2012. It supersedes BS EN 60974-1:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/6, Electric arc welding equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English version

Arc welding equipment - Part 1: Welding power sources

(IEC 60974-1:2012)

Matériel de soudage à l'arc - Partie 1: Sources de courant de soudage (CEI 60974-1:2012)

Lichtbogenschweißeinrichtungen - Teil 1: Schweißstromquellen (IEC 60974-1:2012)

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

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Foreword

The text of document 26/472/FDIS, future edition 4 of IEC 60974-1, prepared by IEC/TC 26, "Electric welding" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60974-1:2012.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-04-17
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-07-17

This document supersedes EN 60974-1:2005.

EN 60974-1:2012 includes the following significant technical changes with respect to EN 60974-1:2005:

– the heating test shall be carried out at ambient temperature of 40 °C (see 5.1);

– new Figure 1 summarizes example of insulation requirements;

– creepage distances for pollution degree 4 are no longer valid (see Table 2);

– insulation requirements for Class II equipment are defined (see Table 3);

– dielectric test voltage interpolation restriction lower limit is changed to 220 V and interpolation for control and welding circuit is clarified (see Table 4);

– water test is clarified by suppression of visual inspection (see 6.2.1);

– isolation requirements of the supply circuit and the welding circuit are moved in protection against electric shock in normal service (see 6.2.4);

– touch current in normal service and in single fault condition requirements are changed (see 6.2.5, 6.2.6 and 6.3.6);

– maximum temperature for insulation systems are reviewed in accordance with current edition of EN 60085 (see Table 6);

– limits of temperature rise for external surfaces are updated depending of unintentional contact period as defined in EN ISO 13732-1 (see Table 7);

– loading test is completed by a dielectric test (see 7.4);

– conformity test for tolerance to supply voltage fluctuation is clarified (see 10.1);

– marking of terminals is limited to external protective conductor and three-phase equipment terminals (see 10.4);

– usage of hazard reducing device is clarified (see 11.1);

– requirements for control circuits are changed (see Clause 12);

– impact test is clarified (see 14.2.2);

– environmental parameters are completed (see Annex M).

In this standard, the following print types are used:

– *conformity statements: in italic type.*

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC)

Endorsement notice

The text of the International Standard IEC 60974-1:2012 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60038:2009	NOTE	Harmonized as EN 60038:2011 (modified).
IEC 60085	NOTE	Harmonized as EN 60085.
IEC 60204-1	NOTE	Harmonized as EN 60204-1.
IEC 60309-1	NOTE	Harmonized as EN 60309-1.
IEC 60950-1	NOTE	Harmonized as EN 60950-1.
IEC 60974-6	NOTE	Harmonized as EN 60974-6.
IEC 60974-10	NOTE	Harmonized as EN 60974-10.
IEC 60974-12	NOTE	Harmonized as EN 60974-12.
IEC 61558-1	NOTE	Harmonized as EN 61558-1.
IEC 62079	NOTE	Harmonized as EN 62079.
ISO 13732-1	NOTE	Harmonized as EN ISO 13732-1

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 60050-151	2001	International Electrotechnical Vocabulary (IEV) - Part 151: Electrical and magnetic devices	-	-
IEC 60050-851	2008	International Electrotechnical Vocabulary - Part 851: Electric welding	-	-
IEC 60245-6	-	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 6: Arc welding electrode cables	-	-
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60445	-	Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors	EN 60445	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	-
IEC 60695-11-10	-	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	-
IEC 60974-7	-	Arc welding equipment - Part 7:Torches	EN 60974-7	-
IEC 61140	-	Protection against electric shock - Common aspects for installation and equipment	EN 61140	-
IEC 61558-2-4	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers	EN 61558-2-4	-

Publication	Year	Title	EN/HD	Year
IEC 61558-2-6	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	-

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