BSI Standards Publication

Arc welding equipment

Part 7: Torches

bsi.

National foreword

This British Standard is the UK implementation of EN IEC 60974-7:2019. It is identical to IEC 60974-7:2019. It supersedes BS EN 60974-7:2013, which is withdrawn.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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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD **EN IEC 60974-7**

EUROPÄISCHE NORM

November 2019

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Supersedes EN 60974-7:2013 and all of its amendments and corrigenda (if any).

English Version

Arc welding equipment - Part 7: Torches (IEC 60974-7:2019)

Matériel de soudage à l'arc - Partie 7: Torches (IEC 60974-7:2019)

Lichtbogenschweißeinrichtungen - Teil 7: Brenner (IEC 60974-7:2019)

This European Standard was approved by CENELEC on 2019-03-06. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 60974-7:2019 E

European foreword

The text of document 26/673/FDIS, future edition 4 of IEC 60974-7, prepared by IEC/TC 26 "Electric welding" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60974-7:2019.

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) 2020-05-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-11-08

This document supersedes EN 60974-7:2013 and all of its amendments and corrigenda (if any).

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

Endorsement notice

The text of the International Standard IEC 60974-7:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60974-2	NOTE	Harmonized as EN 60974-2

(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
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 60974-1	2017	Arc welding equipment - Part 1: Welding power sources	EN IEC 60974-1	2018
ISO 21904-3	2018	Health and safety in welding and allied processes - Requirements, testing and marking of equipment for air filtration - Part 3: Determination of the capture efficiency of on-torch welding fume extraction devices	EN ISO 21904-3	2018

(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 – Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1(a)	Clauses 12, 13	
1(b)	Clause 13	
1(c)		Testing during periodic maintenance or after repair is covered in separate standards
2(a)	Clauses 7, 13 k) and p)	
2(b)	Clauses 7, 8	Hazards arising from electric, magnetic, and electromagnetic fields, other ionizing and non-ionizing radiation are covered in separate standards
2(c)	Clauses 6.3 b), 9, 10, 11.3, 13 i) 2) and n)	Acoustic noise is covered in separate standards
2(d)	Clause 7.2, 7.3, 10	
3(a)	Clause 9, 10, 11	
3(b)	Clauses 4, 11.3, 13 l) and n),	Functional safety is covered in separate standards Safety-related security is covered in separate standards
3(c)	not applicable	For this product type, there are no overload conditions.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ARC WELDING EQUIPMENT –

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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, Publicly Available Specifications (PAS) 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 60974-7 has been prepared by IEC technical committee 26: Electric welding.

This fourth edition cancels and replaces the third edition published in 2013 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) definitions 3.11 and 3.20 were revised;
b) requirements for ARC STRIKING AND STABILIZING VOLTAGE rating have been added to the sequence of type tests (see 6.2);
c) the AC test voltage requirement for TORCHES that utilize ARC STRIKING AND STABILIZING VOLTAGES has been revised (see 7.5.2);

d) the test configuration of isolated circuits for TORCHES that utilize ARC STRIKING AND STABILIZING VOLTAGES has been revised (see 7.5.2);

e) the metal tube used for the heating tests has additional allowable means of cooling methods (see 8.3.2 and 8.3.5);

f) for FUME EXTRACTION TORCHES, the instructions for use include additional information (see Clause 13, item i)).

The text of this International Standard is based on the following documents:

FDIS	Report on voting
26/673/FDIS	26/678/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types are used:

– conformity statements: *in italic type;*

– terms used throughout this standard which have been defined in clause 3: SMALL ROMAN CAPITALS.

This document is to be used in conjunction with IEC 60974-1:2017.

A list of all parts in the IEC 60974 series, published under the general title *Arc welding equipment*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

ARC WELDING EQUIPMENT –

Part 7: Torches

1 Scope

This part of IEC 60974 specifies safety and construction requirements for TORCHES used for arc welding and allied processes. This document is applicable to MANUAL, MECHANICALLY GUIDED, AIR-COOLED, LIQUID-COOLED, MOTORIZED, SPOOL-ON and FUME EXTRACTION TORCHES.

In this document, a TORCH consists of the TORCH BODY, the CABLE-HOSE ASSEMBLY and other components.

This document is also applicable to a CABLE-HOSE ASSEMBLY connected between a power source and ancillary equipment.

This document is not applicable to electrode holders for manual metal arc welding or air-arc cutting/gouging.

NOTE 1 Typical allied processes are electric arc cutting and arc spraying.

NOTE 2 Other components are listed in Table A.1.

NOTE 3 In this document, all procedures and requirements are the same for "TORCHES" and "GUNS". For convenience, the term "TORCH" is used in the following text.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*

IEC 60974-1:2017, *Arc welding equipment – Part 1: Welding power sources*

ISO 21904-3:2018, *Health and safety in welding and allied processes – Requirements, testing and marking of equipment for air filtration – Part 3: Determination of the capture efficiency of on-torch welding fume extraction devices*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses: