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BSI Standards Publication

## Arc welding equipment

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Part 8: Gas consoles for welding and plasma cutting systems

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## National foreword

This British Standard is the UK implementation of EN IEC 60974-8:2021. It is identical to IEC 60974-8:2021. It supersedes BS EN 60974-8:2009, which will be withdrawn on 28 December 2021.

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 committee manager.

This publication has been prepared under a mandate given to the European Standards Organizations by the European Commission and the European Free Trade Association. It is intended to support requirements of the EU legislation detailed in the European Foreword. A European Annex, usually Annex ZA or ZZ, describes how this publication relates to that EU legislation.

For the Great Britain market (England, Scotland and Wales), if UK Government has designated this publication for conformity with UKCA marking (or similar) legislation, it may contain an additional National Annex. Where such a National Annex exists, it shows the correlation between this publication and the relevant UK legislation. If there is no National Annex of this kind, the relevant Annex ZA or ZZ in the body of the European text will indicate the relationship to UK regulation applicable in Great Britain. References to EU legislation may need to be read in accordance with the UK designation and the applicable UK law. Further information on designated standards can be found at [www.bsigroup.com/standardsandregulation](http://www.bsigroup.com/standardsandregulation).

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. Therefore Annex ZA/ZZ in the European text, and references to EU legislation, are still valid for this market.

UK Government is responsible for legislation. For information on legislation and policies relating to that legislation, consult the relevant pages of [www.gov.uk](http://www.gov.uk).

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ICS 25.160; 25.160.30

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2021.

**Amendments/corrigenda issued since publication**

Date	Text affected
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## EUROPÄISCHE NORM

November 2021

ICS 25.160

Supersedes EN 60974-8:2009 and all of its amendments  
and corrigenda (if any)

English Version

## Arc welding equipment - Part 8: Gas consoles for welding and plasma cutting systems (IEC 60974-8:2021)

Matériel de soudage à l'arc - Partie 8: Consoles de gaz  
pour soudage et systèmes de coupage par plasma  
(IEC 60974-8:2021)

Lichtbogenschweißeinrichtungen - Teil 8: Gaskonsolen für  
Schweiß- und Plasmaschneidsysteme  
(IEC 60974-8:2021)

This European Standard was approved by CENELEC on 2021-09-15. 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, 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**

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The text of document 26/719/FDIS, future edition 3 of IEC 60974-8, prepared by IEC/TC 26 "Electric welding" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60974-8:2021.

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) 2022-06-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-09-15

This document supersedes EN 60974-8:2009 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.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For the relationship with EU Directive(s) / Regulation(s), see informative Annex ZZ, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

### **Endorsement notice**

The text of the International Standard IEC 60974-8:2021 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 60204-1	NOTE	Harmonized as EN 60204-1
IEC 60974-2	NOTE	Harmonized as EN IEC 60974-2
IEC 60974-3	NOTE	Harmonized as EN IEC 60974-3
IEC 60974-7	NOTE	Harmonized as EN IEC 60974-7
IEC 61010-1:2010	NOTE	Harmonized as EN 61010-1:2010 (not modified)
ISO 3821	NOTE	Harmonized as EN ISO 3821

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(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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-151	2001	International Electrotechnical Vocabulary – Part 151: Electrical and magnetic devices (available at: <a href="http://www.electropedia.org">http://www.electropedia.org</a> )	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
			+ corrigendum May	1993
			+ A1	2000
			+ A2	2013
			+ AC	2016
			+ A2:2013/AC	2019
IEC60974-1	2017	Arc welding equipment – Part 1: Welding power source	EN60974-1	2018
IEC60974-1 AMD1	2019	Arc welding equipment – Part 1: Welding power source	EN IEC60974-1 A1	2019

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(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 standardisation request relating to harmonised 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 harmonisation 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, 13.2	
(1)(b)	Clause 9, 13.1	
(1)(c)	Clauses 1, 3, 4	
(2)(a)	Clauses 6.1, 6.2, 6.2.3, 6.2.5, 6.2.6, 6.3, 11	
(2)(b)	Clauses 6.1, 6.2, 6.3, 7, 9.3.3, 11	Hazards arising from electric, magnetic, and electromagnetic fields, other ionizing and non-ionizing radiation are covered in separate standards
(2)(c)	Clauses 9, 9.1, 9.2, 9.3, 10	
(2)(d)	Clause 6.1	
(3)(a)	Clauses 4, 6.2.1, 9, 9.1, 9.2, 9.3, 9.3.3.2, 10, 10.1, 10.2, 10.3, 13.1 b)	
(3)(b)	Clauses 4, 6.2.1, 9, 10	
(3)(c)	Clause 9	

**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

### ARC WELDING EQUIPMENT –

#### Part 8: Gas consoles for welding and plasma cutting systems

#### FOREWORD

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International Standard IEC 60974-8 has been prepared by IEC technical committee 26: Electric welding.

This third edition cancels and replaces the second edition, published in 2009. This edition constitutes a technical revision.

The significant technical changes with respect to the previous edition are the following:

- changes induced by the publication of IEC 60974-1:2017;
- requirements for the rating plate as in IEC 60974-1:2017, Clause 15;
- requirements for the instructions in 13.2.

This part of IEC 60974 is to be used in conjunction with IEC 60974-1.

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

FDIS	Report on voting
26/719/FDIS	26/723/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 defined in Clause 3: in SMALL ROMAN CAPITALS.

A list of all parts of 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.

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## INTRODUCTION

If the console is designed to operate with explosive gases, the manufacturer should perform an assessment for applicability of local legislation for explosive atmospheres (example: ATEX regulation).

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## ARC WELDING EQUIPMENT –

### Part 8: Gas consoles for welding and plasma cutting systems

#### 1 Scope

This part of IEC 60974 specifies safety and performance requirements for GAS CONSOLES intended to be used with combustible gases or oxygen. These GAS CONSOLES are designed to supply gases for use in arc welding, plasma cutting, gouging and allied processes in non-explosive atmospheres.

The GAS CONSOLE can be external or internal to the power source enclosure. In the latter case, the power source shall meet the requirements of both IEC 60974-1 and this document.

NOTE See Annex A for mechanised plasma system diagram.

#### 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 60050-151:2001, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60050-151:2001/AMD1:2013

IEC 60050-151:2001/AMD2:2014

IEC 60050-151:2001/AMD3:2019

IEC 60050-151:2001/AMD4:2020

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC 60664-1, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

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

IEC 60974-1:2017/AMD1:2019

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

ISO 10225, *Gas welding equipment — Marking for equipment used for gas welding, cutting and allied processes*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-151 and IEC 60974-1, as well as the following, apply.