



**SLOVENSKI STANDARD  
SIST EN IEC 60974-8:2022**

**01-februar-2022**

**Nadomešča:  
SIST EN 60974-8:2009**

---

**Oprema za obločno varjenje - 8. del: Plinske konzole za varilne in plazemske rezalne sisteme (IEC 60974-8:2021)**

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

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

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

[SIST EN IEC 60974-8:2022](https://standards.iteh.ai/catalog/standards/sist/a966f2b7-4ab8-4000-af40-000000000000/sist-en-iec-60974-8-2022)

[https://standards.iteh.ai/catalog/standards/sist/a966f2b7-](https://standards.iteh.ai/catalog/standards/sist/a966f2b7-4ab8-4000-af40-000000000000/sist-en-iec-60974-8-2022)

**Ta slovenski standard je istoveten z: EN IEC 60974-8:2021**  
2022

---

**ICS:**

25.160.30      Varilna oprema      Welding equipment

**SIST EN IEC 60974-8:2022**      en

**iTeh STANDARD  
PREVIEW  
(standards.iteh.ai)**

SIST EN IEC 60974-8:2022

<https://standards.iteh.ai/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022>

EUROPEAN STANDARD

EN IEC 60974-8

NORME EUROPÉENNE

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

**EN IEC 60974-8:2021 (E)****European foreword**

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.

SIST EN IEC 60974-8:2022

**Endorsement notice**

<https://standards.iec.ch/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022>

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

## Annex ZA (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
		<a href="https://standards.iteh.ai/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022">https://standards.iteh.ai/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022</a>	+ 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

## Annex ZZ (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.



IEC 60974-8

Edition 3.0 2021-04

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

---

iTeh STANDARD

Arc welding equipment – **PREVIEW**  
Part 8: Gas consoles for welding and plasma cutting systems  
(standards.iteh.ai)

Matériel de soudage à l'arc –  
Partie 8: Consoles de gaz pour soudage et systèmes de coupage par plasma

[https://standards.iteh.ai/catalog/standards/sist/a966f2b7-  
ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-  
2022](https://standards.iteh.ai/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022)

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

---

ICS 25.160.30

ISBN 978-2-8322-9705-6

**Warning! Make sure that you obtained this publication from an authorized distributor.**  
**Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 Environmental conditions.....	9
5 Tests .....	9
5.1 Test conditions .....	9
5.2 Measuring instruments.....	9
5.3 Conformity of components .....	9
5.4 Type tests.....	9
5.5 Routine tests.....	9
5.5.1 EXTERNAL GAS CONSOLE.....	9
5.5.2 INTERNAL GAS CONSOLE.....	9
6 Protection against electric shock .....	9
6.1 Insulation.....	9
6.1.1 General .....	9
6.1.2 Clearances .....	10
6.1.3 Creepage distances.....	10
6.1.4 Insulation resistance.....	10
6.1.5 Dielectric strength.....	10
6.2 Protection against electric shock in normal service (direct contact) .....	10
6.2.1 Protection provided by the enclosure.....	10
6.2.2 Capacitors.....	10
6.2.3 Automatic discharge of supply circuit capacitors .....	10
6.2.4 Isolation of the welding circuit.....	10
6.2.5 Welding circuit touch current .....	10
6.2.6 Touch current in normal condition .....	10
6.3 Protection against electric shock in case of a fault condition (indirect contact) .....	10
7 Thermal requirements.....	11
7.1 Heating test .....	11
7.2 Temperature measurement .....	11
7.3 Limits of temperature rise .....	11
8 Connections for plasma cutting torches .....	11
9 Mechanical provisions .....	11
9.1 General.....	11
9.2 Protection against fire or explosion .....	11
9.3 Gas line purging.....	12
9.4 Enclosure .....	12
9.4.1 Design requirements.....	12
9.4.2 Enclosure purging.....	12
9.4.3 Safe design of GAS CONSOLE .....	13
9.4.4 Open structure.....	13
9.4.5 Solid filled enclosure .....	13



9.5	EXTERNAL GAS CONSOLE .....	14
9.6	INTERNAL GAS CONSOLE .....	14
10	Gas lines .....	14
10.1	Gas hoses and tubing .....	14
10.2	Gas fittings .....	14
10.3	Leak test.....	14
11	Control circuits .....	15
12	Rating plate .....	15
12.1	EXTERNAL GAS CONSOLE .....	15
12.2	INTERNAL GAS CONSOLE .....	15
13	Instructions and markings.....	15
13.1	General.....	15
13.2	Instructions .....	15
13.3	Marking.....	16
Annex A (informative) Mechanized plasma system diagram .....		17
Annex B (informative) Example of a rating plate layout .....		18
Bibliography.....		19
<b>iTeh STANDARD</b>		
Figure A.1 – Example of a mechanized plasma system .....		17
<b>PREVIEW</b>		
Figure B.1 – Principle of a rating plate .....		18
<b>(standards.iteh.ai)</b>		
Table 1 – Colour coding.....		14

SIST EN IEC 60974-8:2022

<https://standards.iteh.ai/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ARC WELDING EQUIPMENT –

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

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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.

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.

iteh STANDARD  
PREVIEW  
(standards.iteh.ai)

SIST EN IEC 60974-8:2022

<https://standards.iteh.ai/catalog/standards/sist/a966f2b7-ca78-464a-a584-64f4ab8c06ae/sist-en-iec-60974-8-2022>