



ANSI/NEMA 60974-5-2009

American National Standard for Arc- Welding Equipment - Part 5: Wire Feeders



National Electrical Manufacturers Association
1300 North 17th Street, Suite 900 • Rosslyn, VA 22209
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ANSI/IEC 60974-5-2009

**American National Standard
for Arc Welding Equipment**

Part 5: Wire Feeders



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*Arc Welding Equipment—
Part 5: Wire Feeders*

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FOREWORD FOR U.S. ADOPTION

This American National Standard is an adoption of IEC 60974-5 edition 2, *Arc welding equipment—Part 5: Wire feeders*, and was developed and approved in accordance with procedures set forth by the American National Standards Institute. It is the intention that this American National Standard be a standalone document, replacing the use of IEC 60974-5 in the U.S. As such, any reference in this standard to an IEC 60974 part is understood to mean a reference to the equivalent ANSI/IEC 60974 part, where it exists.

This standard contains all the original text as-is from IEC 60974-5, edition 2, in addition to a number of U.S. Differences to the IEC standard that were identified by Accredited Standards Committee W1, *Requirements for Apparatus Designed for Use in Arc Welding, Plasma Arc Cutting, and Allied Processes*. Each U.S. Difference is found both in a compilation of U.S. Differences following this foreword, and inserted in the appropriate place(s) in the standard relating to the difference. Each insertion is in red text and is marked on its left by three lines (two thin, one thick). Each U.S. Difference is identified with the following format:

[Clause/Subclause Number]DV.[Number of Difference for the Given Clause/Subclause]

Following this format, the example 17.1DV.3 signifies that it is the third U.S. Difference to subclause 17.1.

Suggestions for the improvement of this standard are welcome and should be submitted to the Secretariat of Accredited Standards Committee W1 as follows:

Greg Winchester, ASC W1 Secretary
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Email gre_winchester@nema.org

This standard was processed and approved by the Accredited Standards Committee W1. Committee approval does not necessarily imply that all Committee members voted for its approval. At the time this standard was approved, Accredited Standards Committee W1 consisted of the following members:

<i>Organization Represented</i>	<i>Name of Representative</i>
American Welding Society	Andrew Davis – principal Dick Holdren – alternate
CenterLine (Windsor) Limited	David Beneteau
CSA International	Andrew Krumins
ESAB Welding and Cutting	Charles Aimar
Hypertherm Inc.	Tony Zeller – principal Bill Lynn – alternate
Lincoln Electric Company	Frank Stupczy – principal Gary Mikitin – alternate
Miller Electric Manufacturing Company	David Werba – principal Terry Christianson-Plato – alternate Mike Madsen – alternate
Northeast Product Safety Society	John Freudenberg
Wayne Hoffman – Consultant / U.S. Technical Advisor, IEC TC 26	Wayne Hoffman

COMPILATION OF U.S. DIFFERENCES

NOTE This section is an integral part of American National Standard ANSI/IEC 60974-5. See the section "Foreword for U.S. Adoption" for an explanation of the format used to identify U.S. Differences.

GlobalDV.1 Throughout this document, replace the phrase "this part of IEC 60974" with "this part of ANSI/IEC 60974"

ForewordDV.1 Modify the foreword by adding the following:

The numbering system in this standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

2DV.1 Modify clause 2 by changing the IEC 60529 reference to the following:

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

2DV.2 Modify clause 2 by replacing the reference to IEC 60974-1 with a reference to ANSI/IEC 60974-1 and adding the following text and note:

All subsequent references in this standard to IEC 60974-1 shall be a reference to ANSI/IEC 60974-1.

NOTE ANSI/IEC 60974-1-2008 contains the entire original text from IEC 60974-1:2005 plus U.S. Differences.

2DV.3 Modify clause 2 by replacing the reference to IEC 60974-7 with a reference to ANSI/IEC 60974-7 and adding the following text at the end of the clause:

All subsequent references in this standard to IEC 60974-7 shall be a reference to ANSI/IEC 60974-7.

NOTE ANSI/IEC 60974-7-2009 contains the entire original text from IEC 60974-7:2005 plus U.S. Differences.

2DV.4 Modify clause 2 by deleting the normative reference to IEC 60974-10

9DV.1 Modify clause 9 by replacing list item (b) with the following text:

b) for parts within restricted access areas, e.g., robotic applications, the limits of Table 7 may be exceeded for surfaces that are marked with the following symbol IEC 60417-5041 (DB:2002-10):



13.1DV.1 Modify 13.1 by deleting list item (p)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ARC WELDING EQUIPMENT –

Part 5: Wire feeders

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 nongovernmental 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 60974-5 has been prepared by IEC technical committee 26: Electric welding.

This second edition cancels and replaces the first edition published in 2002 and constitutes a technical revision.

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

- changes induced by the publication of IEC 60974-1, edition 3;
- IEC 60974-5 is not applicable to spool-on torches that IEC 60974-7 covers (see Clause 1);
- IEC 60974-5 is not applicable to wire feeders which are designed for use by laymen that IEC 60974-6 covers (see Clause 1);
- wire feeders with degree of protection IP23S may be stored, but are not intended to be used outside during precipitation unless sheltered (see 6.2.1 and Table 1);

- withdrawal of voltage limitation for input supply network (see 6.4);
- protective connection provision for welding circuit (see 6.5);
- addition of tilting stability (see 10.5);
- clarification of the definition of the thermal requirement test. The manufacturer gives the maximum load (see Clause 9);
- introduction of rating plate layout for stand-alone wire feeder (see 11.2);
- introduction of new combined symbols for liquid/gas input and output based on IEC 60974-1 (see 13.2).

The text of this standard is based on the following documents:

FDIS	Report on voting
26/364/FDIS	26/368/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

This standard shall be used in conjunction with IEC 60974-1 and IEC 60974-7.

The list of all the parts of IEC 60974, under the general title *Arc welding equipment*, can be found on the IEC web site.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

ForewordDV.1 Modify the foreword by adding the following:

The numbering system in this standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

ARC WELDING EQUIPMENT –

Part 5: Wire feeders

GlobalDV.1 Throughout this document, replace the phrase "this part of IEC 60974" with "this part of ANSI/IEC 60974"

1 Scope

This part of IEC 60974 specifies safety and performance requirements for industrial and professional equipment used in arc welding and allied processes to feed filler wire.

The wire feeder may be a stand-alone unit which may be connected to a separate welding power source or one where the welding power source and the wire feeder are housed in a single enclosure.

The wire feeder may be suitable for manually or mechanically guided torches.

This part of IEC 60974 is not applicable to spool-on torches that are covered by IEC 60974-7.

This part of IEC 60974 is not applicable to wire feeders which are designed for use by laymen and are covered by IEC 60974-6.

NOTE 1 Typical allied processes are, for example, plasma arc cutting and arc spraying.

NOTE 2 This standard does not include electromagnetic compatibility (EMC) requirements.

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 60050-195, *International Electrotechnical Vocabulary (IEV) – Part 195: Earthing and protection against electric shock*

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

2DV.1 Modify clause 2 by changing the IEC 60529 reference to the following:

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

IEC 60974-1:2005, *Arc welding equipment – Part 1: Welding power sources*

2DV.2 Modify clause 2 by replacing the reference to IEC 60974-1 with a reference to ANSI/IEC 60974-1 and adding the following text and note:

All subsequent references in this standard to IEC 60974-1 shall be a reference to ANSI/IEC 60974-1.

NOTE ANSI/IEC 60974-1-2008 contains the entire original text from IEC 60974-1:2005 plus U.S. Differences.