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National adoption of IEC 60974-5
with modifications and revision of
ANSI/NEMA/IEC 60974-5-2008

ANSI/NEMA/IEC 60974-5-2021

Arc Welding Equipment Part 5: Wire feeders
(Adoption with Modifications and Revision)

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FOREWORD FOR U.S. ADOPTION

This American National Standard is an adoption of IEC 60974-5, edition 4, *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 4, 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 by three lines on its left (two thin, one thick). Each 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:

Khaled Masri, AStd Program Manager
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1300 North 17th Street, Suite 900
Rosslyn, VA 22209
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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 published, Accredited Standards Committee W1 consisted of the following members:

Greg Corban, Chair
Mike Madsen, Vice-Chair
Khaled Masri, Secretary

Name		Organization	Voting Status	Interest Category
Andrew	Davis	American Welding Society	Alt. Voting	ANSI - GEN INTEREST
David	Werba	American Welding Society	Voting	ANSI - GEN INTEREST
David	Beneteau	CenterLine (Windsor) Limited	Voting	ANSI - GEN INTEREST
Jean-Pierre	Boivin	CSA Group - Certification	Voting	ANSI - USER
Ramana	Tangirala	CSA Group - Standards	Alt. Voting	ANSI - USER
Sam	Zaffino	CSA Group - Certification	Alt. Voting	ANSI - USER
Lorenzo	Tiracchia	CSA Group - Standards	Voting	ANSI - GEN INTEREST
Carlos	De Lima	ESAB Welding & Cutting Products	Voting	ANSI - PRODUCER
Gregory	Corban	Hypertherm Incorporated	Voting	ANSI - PRODUCER
Patrick	Salas	Hypertherm Incorporated	Alt. Voting	ANSI - PRODUCER
Tak Ming	Liu	Hypertherm Incorporated	Alt. Voting	ANSI - PRODUCER
Amanda	Dotten	Intertek	Alt. Voting	ANSI - USER
Peter	Sedor	Intertek	Voting	ANSI - USER
Samir	Farah	Lincoln Electric	Voting	ANSI - PRODUCER
Frank	Stupczy	Lincoln Electric	Alt. Voting	ANSI - PRODUCER
Terry	Christianson-Plato	Miller Electric Mfg. LLC An ITW Welding Company	Alt. Voting	ANSI - PRODUCER
Joe	Krueger	Miller Electric Mfg. LLC An ITW Welding Company	Alt. Voting	ANSI - PRODUCER
Michael	Madsen	Miller Electric Mfg. LLC An ITW Welding Company	Voting	ANSI - PRODUCER
John	Freudenberg	Northeast Product Safety Society	Voting	ANSI - GEN INTEREST
Christopher	Doty	UL LLC	Voting	ANSI - USER

COMPILATION OF U.S. DIFFERENCES

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

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.

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

GlobalDV.2 Throughout this document, the following IEC and U.S. terms are equivalent:

a) “MIG” and “GMAW”
b) “MAG” and “GMAW”
c) “MIG/MAG” and “GMAW”
d) “TIG” and “GTAW”
e) “metal inert gas arc welding” and “gas metal arc welding”
f) “metal active gas arc welding” and “gas metal arc welding”
g) “tungsten inert gas” and “gas tungsten arc welding”
h) “tungsten inert gas arc welding” and “gas tungsten arc welding”

2DV.1 Modify clause 2 by replacing the IEC 60974-1 reference with a reference to ANSI/NEMA/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/NEMA/IEC 60974-1.

NOTE ANSI/NEMA/IEC 60974-1-2019 contains the entire original text from IEC 60974-1:2017 plus U.S. Differences.

2DV.2 Modify clause 2 by replacing the IEC 60974-7 reference with a reference to ANSI/NEMA/IEC 60974-7 and adding the following text and note:

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

NOTE ANSI/NEMA/IEC 60974-7-2021 contains the entire original text from IEC 60974-7:2021 plus U.S. Differences.

2DV.3 Modify clause 2 by deleting the reference to IEC 60974-10.

9DV.1 Modify Clause 9 by replacing the seventh paragraph with the following:

Current-carrying components shall be capable of carrying the rated welding current without causing the external surface temperatures of the WIRE FEEDER specified in Table 7 of ANSI/NEMA/IEC 60974-1:2019 to be exceeded. External surface temperatures in restricted access areas, e.g. robotic applications, or covered areas in normal use, e.g. welding circuit, may exceed the limits of Table 7 of ANSI/NEMA/IEC 60974-1:2019 if marked with the following symbol IEC 60417-5041:2002-10:

14.1DV.1 Modify Clause 14.1 by deleting list item p).

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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 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 60974-5 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:

- changes induced by the publication of IEC 60974-1:2017;
- addition of requirements for welding circuit connections in 6.9;
- clarification of requirements and conformity in 6.3.1;
- clarification of thermal requirements in Clause 9;

- addition of requirements in relation to abnormal operation in Clause 10.

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

FDIS	Report on voting
26/672/FDIS	26/677/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 document, the following print types are used:

– conformity statements: in *italic* type.
– terms used throughout this document which have been defined in Clause 3: in SMALL CAPITALS.

This International Standard 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.

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ARC WELDING EQUIPMENT –

Part 5: Wire feeders

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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.

This document is applicable to WIRE FEEDERS and to WIRE-FEED CONTROLS that are stand-alone (separate from the welding equipment), housed together in a single enclosure or housed in a single enclosure with other welding equipment. The WIRE FEEDER can be suitable for manually or mechanically guided torches.

This document is not applicable to spool-on torches, which are covered by IEC 60974-7.

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

NOTE 2 This document does not include electromagnetic compatibility (EMC) requirements, which are given in IEC 60974-10.