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Arc Welding Equipment Part 2: Liquid Cooling Systems
(Adoption with Modifications and Revision)

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FOREWORD FOR U.S. ADOPTION

This American National Standard is an adoption of IEC 60974-2, edition 4, *Arc welding equipment-Part 2: Liquid cooling systems,* 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 60974-2 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/NEMA/IEC 60974 part, where it exists.

This Standard contains all the original text as-is from IEC 60974-2, 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:

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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
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Joe	Krueger	Miller Electric Mfg. LLC An ITW Welding Company	Alt. Voting	ANSI - PRODUCER
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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 60974-2. 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"

2DV.1 Modify clause 2 by replacing the reference to IEC 60974-1 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 reference to IEC 60974-7 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 60974-7:2020 contains the entire original text from IEC 60974-7:2019 plus U.S. Differences.

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

12.1DV.1 Modify 12.1 by deleting list item (n)

12.2.3DV.1 Modify 12.2.3 by replacing the heading and the text with the following:

12.2.3 Pressure warning

If the rated maximum pressure of the liquid cooling system is higher than 0,5 MPa (5 bar), a precautionary label shall be attached. This label shall, as a minimum, contain English text. This text may be supplemented with the use of symbols, examples of which are provided in Annex L of ANSI/NEMA/IEC 60974-1 or in NEMA EW 6.

NOTE The methodology for the design, application, use, and validation of safety labels is found in ANSI Z535.4.

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ARC WELDING EQUIPMENT –

Part 2: Liquid cooling systems

FOREWORD

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International Standard IEC 60974-2 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) changes induced by the publication of IEC 60974-1:2017;
b) reference in 11.1 changed.

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

FDIS	Report on voting
26/670/FDIS	26/675/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 shall be used in conjunction with IEC 60974-1:2017.

A list of all 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 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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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 2: Liquid cooling systems

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

1 Scope

This part of IEC 60974 specifies safety and construction requirements for industrial and professional LIQUID COOLING SYSTEMS used in arc welding and allied processes to cool torches.

This document is applicable to LIQUID COOLING SYSTEMS which are stand-alone (separate from the welding equipment) or built-in (housed in a single enclosure with other welding equipment).

This document is not applicable to refrigerated cooling systems.

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

NOTE 2 This part of IEC 60974 does not include electromagnetic compatibility (EMC) requirements that are given in IEC 60974-10.