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STN	**Trecie zváranie s premiešaním Hliník Časť 3: Kvalifikácia operátorov zvárania (ISO 25239-3: 2020)**	**STN EN ISO 25239-3 05 2820**

Friction stir welding - Aluminium - Part 3: Qualification of welding operators (ISO 25239-3:2020)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/20

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Oznámením tejto normy sa ruší
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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN ISO 25239-3

July 2020

ICS 25.160.01; 25.160.10 Supersedes EN ISO 25239-3:2011

English Version

Friction stir welding - Aluminium - Part 3: Qualification of welding operators (ISO 25239-3:2020)

Soudage par friction-malaxage - Aluminium - Partie 3: Qualification des opérateurs soudeurs (ISO 25239-3:2020)

Rührreibschweißen - Aluminium - Teil 3: Qualifizierung der Bediener (ISO 25239-3:2020)

This European Standard was approved by CEN on 12 July 2020.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 25239-3:2020 E

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European foreword

This document (EN ISO 25239-3:2020) has been prepared by Technical Committee ISO/TC IIW "International Institute of Welding" in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 25239-3:2020 has been approved by CEN as EN ISO 25239-3:2020 without any modification.

INTERNATIONAL STANDARD

ISO 25239-3

Second edition
2020-06

Friction stir welding — Aluminium —

Part 3: Qualification of welding operators

Soudage par friction-malaxage — Aluminium —

Partie 3: Qualification des opérateurs soudeurs

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by IIW, *International Institute of Welding*, Commission III, *Resistance Welding, Solid State Welding and Allied Joining Process*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 25239-3:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the qualification of the welding operator has been changed for reference to the acceptance levels of ISO 25239-5;

— the definitions for testing and acceptance levels of test welds have been updated;

— NDT is no longer accepted as an alternative to bend test to qualify welding operator;

— the period of welding operator qualification has been extended to three years with possible prolongation for another three years;

— Annex A has been reworded to focus on the knowledge of the welding unit and its operation;

— Annex B has been reworded to focus on the knowledge of the welding technology;

— Annex C has been modified to fit to the extended validity of the qualification.

A list of all parts in the ISO 25239 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Welding processes are widely used in the fabrication of engineered structures. During the second half of the twentieth century, fusion welding processes, wherein fusion is obtained by the melting of parent material and usually a filler metal, dominated the welding of large structures. In 1991, Wayne Thomas at TWI invented friction stir welding (FSW), which is carried out entirely in the solid phase (no melting).

The increasing use of FSW has created the need for this document in order to ensure that welding is carried out in the most effective way and that appropriate control is exercised over all aspects of the operation. This document focuses on the FSW of aluminium because, at the time of publication, the majority of commercial applications for FSW involved aluminium. Examples include railway carriages, consumer products, food processing equipment, aerospace structures, and marine vessels.

INTERNATIONAL STANDARD **ISO 25239-3:2020(E)**

Friction stir welding — Aluminium —

Part 3: Qualification of welding operators

1 Scope

This document specifies requirements for the qualification of welding operators for friction stir welding (FSW) of aluminium. In this document, the term "aluminium" refers to aluminium and its alloys.

This document does not apply to "operators" as defined in ISO 25239-1.

This document does not apply to friction stir spot welding which is covered by the ISO 18785 series.

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.

ISO 25239-1, *Friction stir welding — Aluminium — Part 1: Vocabulary*

ISO 25239-4:2020, *Friction stir welding — Aluminium — Part 4: Specification and qualification of welding procedures*

ISO 25239-5:2020, *Friction stir welding — Aluminium — Part 5: Quality and inspection requirements*

