SLOVENSKI STANDARD
SIST EN ISO 25239-4:2020

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Nadomešča:
SIST EN ISO 25239-4:2012

Varjenje z gnetenjem - Aluminij - 4. del: Popis in kvalifikacija varilnih postopkov (ISO 25239-4:2020)

Friction stir welding - Aluminium - Part 4: Specification and qualification of welding procedures (ISO 25239-4:2020)

Rührreibschweißen - Aluminium - Teil 4: Anforderung und Qualifizierung von Schweißverfahren (ISO 25239-4:2020)

Soudage par friction-malaxage - Aluminium - Partie 4: Descriptif et qualification des modes opératoires de soudage (ISO 25239-4:2020)

Ta slovenski standard je istoveten z: **EN ISO 25239-4:2020**

ICS:

25.160.10	Varilni postopki in varjenje	Welding processes
77.120.10	Aluminij in aluminijeve zlitine	Aluminium and aluminium alloys

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 25239-4

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Supersedes EN ISO 25239-4:2011

English Version

Friction stir welding - Aluminium - Part 4: Specification and qualification of welding procedures (ISO 25239-4:2020)

Soudage par friction-malaxage - Aluminium - Partie 4: Descriptif et qualification des modes opératoires de soudage (ISO 25239-4:2020)

Rührreibschweißen - Aluminium - Teil 4: Anforderung und Qualifizierung von Schweißverfahren (ISO 25239-4:2020)

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN ISO 25239-4:2020) 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of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.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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Endorsement notice

The text of ISO 25239-4:2020 has been approved by CEN as EN ISO 25239-4:2020 without any modification.

INTERNATIONAL STANDARD

ISO 25239-4

Second edition
2020-06

Friction stir welding — Aluminium —

Part 4: Specification and qualification of welding procedures

Soudage par friction-malaxage — Aluminium —

Partie 4: Descriptif et qualification des modes opératoires de soudage

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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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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 Processes* 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 25239-4:2011), which has been technically revised.

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

— alternative process control methods (e.g. temperature control) have been included;

— the wording of the paragraph on thermal management and heat treatments has been improved;

— the definition for the extraction of test specimens has been modified for all test pieces and the figures have been revised accordingly;

— the requirement for testing transverse test specimens with as welded surfaces has been deleted;

— in Table 3, a new requirement on the minimum joint efficiency has been added for heat treatable alloys below 5 mm;

— the pWPS is now to be qualified in accordance with the defined acceptance levels included in ISO 25239-5;

— acceptance levels have been included in the WPQR form in Annex D.

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.