
**Friction stir welding — Aluminium —
Part 3:
Qualification of welding operators**

*Soudage par friction-malaxage — Aluminium —
Partie 3: Qualification des opérateurs soudeurs*

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 25239-3:2020](https://standards.iteh.ai/catalog/standards/iso/4bce5f1d-d8d1-4463-a3e6-66fb5a44d60b/iso-25239-3-2020)

<https://standards.iteh.ai/catalog/standards/iso/4bce5f1d-d8d1-4463-a3e6-66fb5a44d60b/iso-25239-3-2020>



Reference number
ISO 25239-3:2020(E)

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 25239-3:2020

<https://standards.iteh.ai/catalog/standards/iso/4bce5f1d-d8d1-4463-a3e6-66fb5a44d60b/iso-25239-3-2020>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	1
4.1 Welding operator qualification	1
4.2 Essential variables and ranges of qualification	2
4.2.1 General	2
4.2.2 Friction stir welding methods	2
4.2.3 Welding equipment	2
4.2.4 Parent materials	2
4.2.5 Weld joint geometry	2
4.2.6 Quality acceptance levels	2
4.3 Qualification methods	3
4.3.1 Qualification based on standard welding test	3
4.3.2 Qualification based on welding procedure test	3
4.3.3 Qualification based on pre-production welding test	3
4.3.4 Qualification based on production sample welding test	3
4.4 Test welds	4
4.4.1 General	4
4.4.2 Testing and acceptance levels of test welds	4
4.4.3 Re-testing	4
4.5 Test report	5
5 Certificate	5
5.1 General	5
5.2 Period of validity	5
5.2.1 Initial qualification	5
5.2.2 Confirmation of the validity	5
5.2.3 Prolongation of qualification	5
Annex A (normative) Knowledge of the welding unit and its operation	7
Annex B (normative) Knowledge of welding technology	9
Annex C (informative) Example of a qualification test certificate for FSW welding operators	11
Bibliography	13

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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.