

~~2023-06-22~~

ISO/ASTM FDIS 52926-4:2023(E)

ISO/TC 261

~~DATE: 2023-xx~~

Secretariat: DIN

Additive ~~Manufacturing~~ **manufacturing** of metals — Qualification principles — Part 4:
Qualification of operators for DED-LB

*Fabrication additive de métaux — Principes de qualification — Partie 4: Qualification des opérateurs pour
DED-LB*

- Style Definition:** Heading 1: Indent: Left: 0 pt, First line: 0 pt, Tab stops: Not at 21.6 pt
- Style Definition:** Heading 2: Font: Bold, Tab stops: Not at 18 pt
- Style Definition:** Heading 3: Font: Bold
- Style Definition:** Heading 4: Font: Bold
- Style Definition:** Heading 5: Font: Bold
- Style Definition:** Heading 6: Font: Bold
- Style Definition:** ANNEX
- Style Definition:** AMEND Terms Heading: Font: Bold
- Style Definition:** AMEND Heading 1 Unnumbered: Font: Bold
- Style Definition:** List Bullet: Indent: Left: 0 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 18 pt, List tab
- Style Definition:** List Bullet 2: Indent: Left: 14.15 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 32.15 pt, List tab
- Style Definition:** List Bullet 3: Indent: Left: 28.3 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 46.3 pt, List tab
- Style Definition:** List Bullet 4: Indent: Left: 42.45 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 60.45 pt, List tab
- Style Definition:** List Bullet 5: Indent: Left: 56.6 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 74.6 pt, List tab
- Style Definition:** List Number: Indent: Left: 0 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 18 pt, List tab
- Style Definition:** List Number 5: Indent: Left: 56.6 pt, Hanging: 18 pt, No bullets or numbering, Tab stops: 74.6 pt, List tab

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

ISO/ASTM 52926-4

<https://standards.itih.ai/catalog/standards/sist/9dbc9eb7-8eb1-495a-b303-a2768>

© ISO/ASTM 2023

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. In the United States, such requests should be sent to ASTM International.

ISO copyright office ASTM International

CP 401 • Ch. de Blandonnet 8 100 Barr Harbor Drive, PO Box C700

CH-1214 Vernier, Geneva West Conshohocken, PA 19428-2959, USA

Phone: +41 22 749 01 11 Phone: +610 832 9634

Fax: +41 22 749 09 47 Fax: +610 832 9635

Email: copyright@iso.org Email: khooper@astm.org

Website: www.iso.org Website: www.astm.org

Commented [eXtyles1]: Not found: "ISO/ASTM 2023"

Formatted: Pattern: Clear

Formatted: Pattern: Clear

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

ISO/ASTM 52926-4

<https://standards.iteh.ai/catalog/standards/sist/9dbc9eb7-8eb1-495a-b303-a2768d3f714b/iso-astm-52926-4>

Contents

Foreword	4
Introduction.....	5
1 Scope	1
2 Normative References <u>references</u>	1
3 Terms and Definitions <u>redefinitions</u>	1
4 Operator qualification	2
4.1 General	2
4.2 Assessment procedures	2
4.2.1 General	2
4.2.2 Aspects of DED-LB/M	2
4.2.3 Feedstock activities	3
4.2.4 System set up activities	3
4.2.5 Manufacturing/Build activities	3
4.2.6 Post-processing activities.....	4
4.2.7 Quality related activities	4
Annex A (informative) Example of manufacturing plan.....	Error! Bookmark not defined.
Bibliography	5

Document Preview

<https://standards.iteh.ai>

<https://standards.iteh.ai/catalog/standards/sist/9dbc9eb7-8eb1-495a-b303-a2768d3f714b/iso-astm-52926-4>

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.

Formatted: Adjust space between Latin and Asian text, Adjust space between Asian text and numbers

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~~document 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).

Field Code Changed

~~Attention is drawn~~ISO draws attention to the possibility that ~~some of the elements~~implementation of this document may ~~be involve~~ the ~~subject~~use of (a) patent(s). ISO takes no position concerning the ~~evidence, validity or applicability~~ of any claimed patent rights ~~in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. 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.

Formatted: English (United States)

This document was prepared by Technical Committee ISO/TC 261, *Additive manufacturing*, Joint Group JG 74, *Personnel Qualifications* in cooperation with ASTM Committee F42, *Additive manufacturing technologies*, on the basis of a partnership agreement between ISO and ASTM International with the aim to create a common set of ISO/ASTM standards on additive manufacturing, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 438, *Additive manufacturing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts of the ~~ISO/ASTM 52926 series~~ can be found on the ISO website.

Commented [eXtyles2]: Invalid reference: "ISO/ASTM 52926 series"

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.

Formatted: Pattern: Clear

Formatted: Pattern: Clear

Formatted: Pattern: Clear

Introduction

For many companies, additive manufacturing represents an alternative to more conventional manufacturing processes such as casting, forging or milling. The trend towards complex components, decentralised production and customer specific products allows an economically feasible use for more and more areas. This also applies to many series applications, which comprise completely different demands on the efficiency of the processes. In particular, components used in different fields (e.g., automotive industry, mechanical engineering, railway sector, aerospace, process and industrial plants, medical technology, etc.) are subject to high demands in terms of quality and safety. This creates a need for norms and standards that provide a transparent baseline for the production of components for a great variety of application areas.

The manufacturing of products intended for applications subjected to specific requirements relies on that the products' compliance to these requirements can be assured. Additive manufacturing is no exception to this. To this end, the production chain and environment should be designed in such a way that the process quality and the resulting product quality are always consistent and reproducible. To assure this consistency and reproducibility, is of utmost importance to ensure that the involved workforce is adequately qualified for all stages in the production.

ISO/ASTM 52926 series describes the activities and responsibilities of the operators in the field of the Additive Manufacturing technology. Its aim is to specify the qualification tests to be employed in the assessment of AM operators' skills when operating AM machines, especially in regulated industries, such as automotive industry, mechanical engineering, the railway sector, process and industrial plants or medical technology, consideration of the criteria specified within the framework of this document create a basis for fulfilling the requirements for specific products.

NOTE: This document specifies gives the constraints and requirements for an operator to be qualified for Directed Energy Deposition directed energy deposition - Laser Beam beam (DED-LB).

Commented [eXtyle3]: Invalid reference: "ISO/ASTM 52926 series"

Formatted: Pattern: Clear

Formatted: Pattern: Clear

Formatted: Pattern: Clear

[ISO/ASTM 52926-4](https://standards.iteh.ai/catalog/standards/sist/9dbc9eb7-8eb1-495a-b303-a2768d3f714b/iso-astm-52926-4)

<https://standards.iteh.ai/catalog/standards/sist/9dbc9eb7-8eb1-495a-b303-a2768d3f714b/iso-astm-52926-4>

