

Additive Manufacturing of metals - Qualification principles - Part 1: General qualification of operators (ISO/ASTM 52926-1:2023)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO/ASTM 52926-1:2023 sisaldab Euroopa standardi EN ISO/ASTM 52926-1:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.11.2023.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO/ASTM 52926-1:2023 consists of the English text of the European standard EN ISO/ASTM 52926-1:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 22.11.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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EUROPEAN STANDARD

EN ISO/ASTM 52926-1

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English Version

Additive Manufacturing of metals - Qualification principles
- Part 1: General qualification of operators (ISO/ASTM
52926-1:2023)

Fabrication additive de métaux - Principes de
qualification - Partie 1: Qualification générale des
opérateurs (ISO/ASTM 52926-1:2023)

Additive Fertigung von Metallen - Grundsätze der
Qualifizierung - Teil 1: Grundlegende Qualifizierung
von Maschinenbedienern (ISO/ASTM 52926-1:2023)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

European foreword

This document (EN ISO/ASTM 52926-1:2023) has been prepared by Technical Committee ISO/TC 261 "Additive manufacturing" in collaboration with Technical Committee CEN/TC 438 "Additive Manufacturing" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by May 2024, and conflicting national standards shall be withdrawn at the latest by May 2024.

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/ASTM 52926-1:2023 has been approved by CEN as EN ISO/ASTM 52926-1:2023 without any modification.

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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 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).

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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 Technical Committee ISO/TC 261, *Additive manufacturing* 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 group standard can be found on the ISO website.

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Introduction

For many companies, additive manufacturing represents an alternative to more conventional manufacturing processes such as casting, forging and 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 used 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, it is of utmost importance to ensure that the involved workforce is adequately qualified for all stages in the production.

Since this document is designed not to be cross-technology, the different processes are indicated in the relevant four parts of the standard.

This document offers a common approach for the qualification of professionals in AM. If the requirements of ISO/ASTM 52926 series are fulfilled, the scope of an audit can be greatly reduced.

Additive manufacturing of metals — Qualification principles —

Part 1: General qualification of operators

1 Scope

This document specifies the activities and responsibilities of the AM operators in the field of the additive manufacturing (AM) technologies dealing with metallic parts production.

This document is intended to provide guidance for qualification of AM machine operators in general industrial applications. Where industry-specific requirements exist for the qualification of AM operators, such as ISO/ASTM 52942 for aerospace applications, those industry-specific standards are used instead of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all 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/ASTM 52900, *Additive manufacturing — General principles — Fundamentals and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/ASTM 52900 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

AM operator, noun

AM machine operator

AM system operator

person who operates machines and auxiliary equipment in the additive manufacturing system

Note 1 to entry: AM system operators normally follow specified procedures and instructions for the AM process and associated requirements, for example, preparation of the equipment and EHS.

3.2

examiner, noun

person who has been appointed to verify conformance to the applicable standard

Note 1 to entry: In certain cases, an external independent examiner can be required [see ISO/IEC 17024].

[SOURCE: ISO 14732:—, 3.12, modified Note 1 to entry to include a reference to ISO/IEC 17024].