SLOVENSKI STANDARD
SIST EN ISO/ASTM 52927:2024

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Nadomešča:
SIST EN ISO 17296-3:2016

Aditivna proizvodnja - Splošna načela - Glavne karakteristike in ustrezne preskusne metode (ISO/ASTM 52927:2024)

Additive manufacturing - General principles - Main characteristics and corresponding test methods (ISO/ASTM 52927:2024)

Additive Fertigung - Grundlagen - Hauptmerkmale und entsprechende Prüfverfahren (ISO/ASTM 52927:2024)

Fabrication additive - Principes généraux - Principales caractéristiques et méthodes d'essai correspondantes (ISO/ASTM 52927:2024)

Ta slovenski standard je istoveten z: **EN ISO/ASTM 52927:2024**

ICS:

25.030	3D-tiskanje	Additive manufacturing

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English Version

Additive manufacturing - General principles - Main characteristics and corresponding test methods (ISO/ASTM 52927:2024)

Fabrication additive - Principes généraux - Principales caractéristiques et méthodes d'essai correspondantes (ISO/ASTM 52927:2024)

Additive Fertigung - Grundlagen - Hauptmerkmale und entsprechende Prüfverfahren (ISO/ASTM 52927:2024)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO/ASTM 52927:2024) 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of an identical text or by endorsement, at the latest by October 2024, and conflicting national standards shall be withdrawn at the latest by October 2024.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.

This document supersedes EN ISO 17296-3:2016.

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The text of ISO/ASTM 52927:2024 has been approved by CEN as EN ISO/ASTM 52927:2024 without any modification.

ASTM INTERNATIONAL

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Additive manufacturing — General principles — Main characteristics and corresponding test methods

Fabrication additive — Principes généraux — Principales caractéristiques et méthodes d'essai correspondantes

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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, and 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).

The first edition of this document cancels and replaces the first edition of ISO 17296-3:2014, which has been technically revised and merged with document ASTM F3122-14 and therefore re-designated and renamed to ISO/ASTM 52927.

The main changes are as follows:

— the main types of materials (metallic, polymers and ceramics) are separated in specific annexes following the main part containing general requirements;

— This document includes the contents of ASTM F3122-14 and merges them with (formerly) ISO 17296-3.

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

Additive manufacturing is a process of joining materials to make parts from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing and formative methodologies. It is used to manufacture prototypes and production parts.

This document aims to offer recommendations and advice to machine manufacturers, feedstock suppliers, AM system users, part providers, and customers, to improve communication between these stakeholders concerning test methods.

This document has been developed within a set of consistent documents from terminology to test methods and data exchange.

Additive manufacturing processes require the selective application of thermo-physical and/or chemical mechanisms to generate the part. Thus, it is possible to produce parts with different characteristics, depending on the method and the process parameters used. However, complete testing of all characteristics for every part is neither cost-effective nor technologically feasible. Therefore, when formulating parts specifications, the nature and scope of testing is an important issue.

This document provides an overview of test methods for the characterization of the mechanical properties of metals, ceramics and polymers. It lists all the applicable standards based on specimens manufactured in a traditional process and gives the complement applicable when these specimens are manufactured by additive manufacturing.

At the time of publication of this document, the state of the art does not allow to describe all these specificities related to additive manufacturing. This document will therefore be regularly revised in order to incorporate the knowledge acquired in the field of additive manufacturing.