SLOVENSKI STANDARD
SIST EN ISO/ASTM 52921:2016

01-november-2016

Standardizirana terminologija za aditivno proizvodnjo - Koordinatni sistemi in preskusne metode (ISO/ASTM 52921:2013)

Standard terminology for additive manufacturing - Coordinate systems and test methodologies (ISO/ASTM 52921:2013)

Terminologie normalisée pour la fabrication additive - Systèmes de coordonnées et méthodes d'essai (ISO/ASTM 52921:2013)

Ta slovenski standard je istoveten z: **EN ISO/ASTM 52921:2016**

ICS:

01.040.25	Izdelavna tehnika (Slovarji)	Manufacturing engineering (Vocabularies)
25.030	3D-tiskanje	Additive manufacturing

SIST EN ISO/ASTM 52921:2016 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO/ASTM 52921

September 2016

ICS 25.040.20

English Version

Standard terminology for additive manufacturing - Coordinate systems and test methodologies (ISO/ASTM 52921:2013)

Terminologie normalisée pour la fabrication additive - Systèmes de coordonnées et méthodes d'essai (ISO/ASTM 52921:2013)

Normbegrifflichkeiten für die Additive Fertigung - Koordinatensysteme und Prüfmethodologien (ISO/ASTM 52921:2013)

This European Standard was approved by CEN on 29 August 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO/ASTM 52921:2016 E

Contents

Page

European foreword

The text of ISO/ASTM 52921:2013 has been prepared by Technical Committee ISO/TC 261 “Additive manufacturing” of the International Organization for Standardization (ISO) and has been taken over as EN ISO/ASTM 52921:2016 by 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 March 2017, and conflicting national standards shall be withdrawn at the latest by March 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/ASTM 52921:2013 has been approved by CEN as EN ISO/ASTM 52921:2016 without any modification.

INTERNATIONAL STANDARD

ISO/ASTM 52921

First edition
2013-06-01

Standard terminology for additive manufacturing—Coordinate systems and test methodologies

Terminologie normalisée pour la fabrication additive — Systèmes de coordonnées et méthodes d'essai

Reference number
ISO/ASTM 52921:2013(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

ASTM International,100 Barr Harbor Drive, PO Box C700,
West Conshohocken, PA 19428-2959, USA
Tel. +610 832 9634
Fax +610 832 9635
E-mail khooper@astm.org
Web www.astm.org

Published in Switzerland

Contents

Page

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. 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. Neither ISO nor ASTM International shall 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. 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.

ISO/ASTM 52921 was prepared by ASTM International (as ASTM F2921) and was adopted, under a special "fast-track procedure", by Technical Committee ISO/TC 261, *Additive manufacturing,* in parallel with its approval by the ISO member bodies. This has been done under a Partner Standards Development Organization (PSDO) Cooperation Agreement between ISO/TC 261, *Additive manufacturing,* and ASTM International Committee F42, *Additive Manufacturing Technologies.* ASTM F2921 was developed by ASTM Subcommittee F42.01, *Test Methods.*

This first edition of ISO/ASTM 52921 cancels and replaces ASTM F2921-11$^{\varepsilon 3}$.

Standard Terminology for Additive Manufacturing—Coordinate Systems and Test Methodologies[1]

This standard is issued under the fixed designation ISO/ASTM 52921; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision.

1. Scope

1.1 This terminology includes terms, definitions of terms, descriptions of terms, nomenclature, and acronyms associated with coordinate systems and testing methodologies for additive manufacturing (AM) technologies in an effort to standardize terminology used by AM users, producers, researchers, educators, press/media, and others, particularly when reporting results from testing of parts made on AM systems. Terms included cover definitions for machines/systems and their coordinate systems plus the location and orientation of parts. It is intended, where possible, to be compliant with ISO 841 and to clarify the specific adaptation of those principles to additive manufacturing.

NOTE 1—The applicability of this standard to cladding has to be evaluated. Discussions are under progress.

NOTE 2—Non-cartesian systems are not covered by this standard.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D638 Test Method for Tensile Properties of Plastics

E8/E8M Test Methods for Tension Testing of Metallic Materials

F2792 Terminology for Additive Manufacturing Technologies

2.2 *ISO Standard:*[3]

ISO 841 Industrial Automation Systems and Integration—Numerical Control of Machines—Coordinate System and Motion Nomenclature

ISO 527 (all parts), Plastics — Determination of tensile properties

ISO 6892-1 Metallic materials — Tensile testing – Part 1: Method of test at room temperature

3. Significance and Use

3.1 Although many additive manufacturing systems are based heavily upon the principles of Computer Numerical Control (CNC), the coordinate systems and nomenclature specific to CNC are not sufficient to be applicable across the full spectrum of additive manufacturing equipment. This terminology expands upon the principles of ISO 841 and applies them specifically to additive manufacturing. Although this terminology is intended to complement ISO 841, if there should arise any conflict, this terminology shall have priority for additive manufacturing applications. For any issues not covered in this terminology, the principles in ISO 841 may be applied.

3.2 Furthermore, this terminology does not prescribe the use of any specific existing testing methodologies or standards that practitioners of AM may wish to employ for testing purposes; however, it is expected that practitioners will employ appropriate existing methodologies and standards to test parts made by AM.

4. Terminology

4.1 *Definitions*—Definitions shall be in accordance with Terminology F2792 and the following:

[1] This terminology is under the jurisdiction of ASTM Committee F42 on Additive Manufacturing Technologies and is the direct responsibility of Subcommittee F42.01 on Test Methods, and is also under the jurisdiction of ISO/TC 261.

Current edition approved March 26, 2013. Published May 2013. Originally published as ASTM F2921-11. Last previous edition ASTM F2921-11$^{\varepsilon 3}$

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.