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Aditivna proizvodnja - Preskusna telesa - Geometrijske zmogljivosti aditivnih proizvodnih sistemov (ISO/ASTM 52902:2019)

Additive manufacturing - Test artifacts - Geometric capability assessment of additive manufacturing systems (ISO/ASTM 52902:2019)

Additive Fertigung - Testkörper - Allgemeine Leitlinie für die Bewertung der geometrischen Leistung additiver Fertigungssysteme (AM-Systeme) (ISO/ASTM 52902:2019)

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Fabrication additive - Pièces types d'essai - Évaluation de la capacité géométrique des systèmes de fabrication additive (ISO/ASTM 52902:2019)

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25.030	3D-tiskanje	Additive manufacturing

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Additive manufacturing - Test artifacts - Geometric capability assessment of additive manufacturing systems (ISO/ASTM 52902:2019)

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European foreword

This document (EN ISO/ASTM 52902:2019) 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.

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Additive manufacturing — Test artifacts — Geometric capability assessment of additive manufacturing systems

1 Scope

This document covers the general description of benchmarking test piece geometries along with quantitative and qualitative measurements to be taken on the benchmarking test piece(s) to assess the performance of additive manufacturing (AM) systems.

This performance assessment can serve the following two purposes:

— AM system capability evaluation;

— AM system calibration.

The benchmarking test piece(s) is (are) primarily used to quantitatively assess the geometric performance of an AM system. This document describes a suite of test geometries, each designed to investigate one or more specific performance metrics and several example configurations of these geometries into test piece(s). It prescribes quantities and qualities of the test geometries to be measured but does not dictate specific measurement methods. Various user applications can require various grades of performance. This document discusses examples of feature configurations, as well as measurement uncertainty requirements, to demonstrate low and high grade examination and performance. This document does not discuss a specific procedure or machine settings for manufacturing a test piece, which are covered by ASTM F 2971 and other relevant process specific specifications.

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2 Normative references

The following documents are referred to in the text in such a way that some or all of 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*

ISO/ASTM 52921, *Standard terminology for additive manufacturing — Coordinate systems and test methodologies*

ASME B46.1, *Surface Texture (Surface Roughness, Waviness and Lay)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/ASTM 52900 and ISO/ASTM 52921 apply.

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— ISO Online browsing platform: available at https://www.iso.org/obp

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