

Additive manufacturing - General principles - Part 3:
Main characteristics and corresponding test methods
(ISO 17296-3:2014)

EESTI STANDARDI EESSÕNA

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EUROPEAN STANDARD

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Additive manufacturing - General principles - Part 3: Main characteristics and corresponding test methods (ISO 17296-3:2014)

Fabrication additive - Principes généraux - Partie 3: Principales caractéristiques et méthodes d'essai correspondantes (ISO 17296-3:2014)

Additive Fertigung - Grundlagen - Teil 3: Haupteigenschaften und entsprechende Testmethoden (ISO 17296-3:2014)

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European foreword

The text of ISO 17296-3:2014 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 17296-3:2016 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of an identical text or by endorsement, at the latest by March 2017, and conflicting national standards shall be withdrawn at the latest by March 2017.

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Endorsement notice

The text of ISO 17296-3:2014 has been approved by CEN as EN ISO 17296-3:2016 without any modification.

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Introduction

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

This part of ISO 17296 aims to offer recommendations and advice to machine manufacturers, feedstock suppliers, machine users, part providers, and customers, to improve communication between these stakeholders concerning test methods.

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

The manufacturing of parts by additive manufacturing processes is subject to numerous variables. The processes described in ISO 17296-2 can be used to manufacture parts that meet technological requirements only if these factors are controlled, optimized and, if necessary, customized for each order. When assessing parts quality, comparison with the specific requirements is one of the most important aspects.

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 used and the process parameters. However, complete testing of all parts characteristics is neither cost-effective nor technologically feasible. Therefore, when formulating parts specifications, the nature and scope of testing is an important issue.

Additive manufacturing — General principles —

Part 3: Main characteristics and corresponding test methods

1 Scope

This part of ISO 17296 covers the principal requirements applied to testing of parts manufactured by additive manufacturing processes.

This part of ISO 17296

- specifies main quality characteristics of parts,
- specifies appropriate test procedures, and
- recommends the scope and content of test and supply agreements.

This part of ISO 17296 is aimed at machine manufacturers, feedstock suppliers, machine users, part providers, and customers to facilitate the communication on main quality characteristics. It applies wherever additive manufacturing processes are used.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17296-1¹⁾, *Additive manufacturing — General — Part 1: Terminology*

ISO/ASTM 52915, *Standard specification for additive manufacturing file format (AMF) Version 1.1*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17296-1 and the following apply.

3.1

machine manufacturer

manufacturer of additive manufacturing equipment including machine

[SOURCE: ISO 17296-1¹⁾]

3.2

feedstock supplier

provider of bulk raw material/consumable to be processed in additive manufacturing equipment

[SOURCE: ISO 17296-1¹⁾]

1) To be published.