ICS 25.030
CCS J 04

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 35021-2018

Additive manufacturing -- Process categories and feedstock

Issued on: May 14, 2018 **Implemented on: March 1, 2019**

Issued by: State Administration for Market Regulation, China National Standardization Administration

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify the use of ISO 17296-2.2015 "Additive Manufacturing General Principles Part 2. Process Classification and Raw Materials

material".

Compared with ISO 17296-2.2015, this standard has more structural adjustments. Appendix A lists this standard and ISO 17296-2.

2015 chapter number comparison list.

There are technical differences between this standard and ISO 17296-2.2015. Appendix B gives the corresponding technical differences and their causes.

Watch list.

1 Scope

This standard specifies the basic principles and classification of additive manufacturing processes. Due to the rapid development of new technologies, this standard only gives existing additives.

An overview of the classification of manufacturing processes. This standard describes how different additive manufacturing processes use different raw materials for product manufacturing and different processes.

The types of raw materials used are described.

This standard applies to research, testing, testing and production applications in the field of additive manufacturing.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 35351 Additive Manufacturing Terminology

3 Terms and definitions

The terms and definitions defined in GB/T 35351 apply to this document.

4.1 Overview

Parts manufactured by additive manufacturing can be used as prototypes and products. The final stage (link) of the product parts should reflect the designer's

Expected requirements. Whether it is a prototype or a product, you should choose different types depending on the type of part, the application area, and the cost and delivery cycle.

Process and raw material types. The design of the part and the specifications to be referenced are determined by the designer. The part manufacturer should consult closely with the user, based on

The user's comments and requirements select the appropriate manufacturing plan.

4.2 Parts Classification

The quality level of the part should be divided from the highest level to the lowest according to the quality level requirements and traceability. Specific plan

Sub-methods and requirements will be given in the relevant raw materials, processes and application standards.

5 Process Chain

The additive manufacturing process chain is characterized by direct manufacturing based on the 3D CAD data of the parts, without the need for intermediate processes such as mold making.

The additive manufacturing process chain can be divided into two categories.

--- Single-step process. A single-step operation to complete the additive manufacturing

process of parts or physical manufacturing, can get the basic expectations of the product at the same time

What shape and basic performance;

--- Multi-step process. The additive manufacturing process for parts or physical manufacturing is completed in two or more steps. Usually the first step is

To the basic geometry of the part or object, through subsequent operations to achieve the expected basic performance.

Note. Depending on the final application requirements, the above two processes may require one or more post-treatments to achieve the final performance requirements of the part. These ones