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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 37698-2019

**Additive manufacturing - Design - Requirements, guidelines
and recommendations**

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Standardization Administration**

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52910.2018 chapter number comparison list.

52901 is listed in Chapter 2;

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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 /ASTM52910..2018 "additive manufacturing design requirements, guidelines and recommendations."

This standard has more structural adjustments than ISO /ASTM52910.2018. Appendix A lists this standard and ISO /ASTM.

52910.2018 chapter number comparison list.

There are technical differences between this standard and ISO /ASTM52910.2018. The corresponding technical differences and their originals are given in Appendix B.

List of factors.

This standard also made the following editorial changes.

---According to China's national conditions, 6.2.4 replaced the ISO /" with the National Plastics Standardization Technical Committee (SAC/TC48)"

ASTM52910. "ASTM Committee D20" in 6.4.4 of.2018;

--- ISO /ASTM52910.2018 6.6.8 and 6.9.2 normative references but not included in Chapter 2 ISO /ASTM

52901 is listed in Chapter 2;

--- Removed the example sentence in 6.7.1 of ISO /ASTM52910.2018 "Similarly, standards for the characteristics of raw materials are being developed, such as

Metal powder for powder bed melting process (see ASTM F3049-14)";

--- Removed the future possible standards in ISO /ASTM52910.2018, 6.7.2.1 and the example sentence "Comprehensive classification of materials"

The standard will be released, and the standard may include some elements of this section. For example, ASTM F3122-14 is an evaluation of additive manufacturing.

Guide to the mechanical properties of metal parts";

--- In the reference, the normative reference document ISO /ASTM 52900 referenced in the body has been deleted, adding the text mentioned in the text

Reference standard GB/T 16288.

1 Scope

This standard gives the requirements, guidelines and recommendations for the design of additive manufacturing products.

This standard applies to the design of various products, devices, systems, components or parts manufactured by any additive manufacturing system.

This standard helps determine which design factors are utilized in a design project or which additive manufacturing processes are utilized.

This standard provides guidance on common issues, but does not include specific design, process or material data.

The use of this standard includes the following three categories.

- Designers of additive manufacturing products and their managers;
- Students who study mechanical design and computer-aided design;
- Developer of additive manufacturing design guide and design guidance system.

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 228.1 tensile testing of metallic materials - Part 1. Test methods for room temperature (GB/T 228.1-2010, ISO 6892-1.

2009, MOD)

Plastics -- Determination of density of non-foam plastics -- Part 1 . Dipping method, liquid pycnometer method and titration method

(GB/T 1033.1-2008, ISO 1183-1:2004, IDT)

GB/T 1034 Determination of water absorption of plastics (GB/T 1034-2008, ISO 62:2008,

IDT)

Determination of tensile properties of plastics - Part 2. Test conditions for moulding and extruded plastics (GB/T 1040.2-

2006, ISO 527-2..1993, IDT)

GB/T 1041 Determination of compression properties of plastics (GB/T 1041-2008, ISO 604.2002, IDT)

GB/T 1408.1 Test methods for electrical strength of insulating materials - Part 1. Tests under power frequency (GB/T 1408.1-2016,

IEC 60243-1.2013, IDT)

GB/T 1409 Measure the permittivity and dielectric loss factor of electrical insulating materials at power frequency, audio, high frequency (including meter wave wavelength)

Recommended method (GB/T 1409-2006, IEC 60250. 1969, MOD)

GB/T 1410 solid insulation material volume resistivity and surface resistivity test method (GB/T 1410-2006, IEC 60093.

1980, IDT)

GB/T 1634.2 Determination of deformation temperature of plastics - Part 2. Plastics, hard rubber and long fibre reinforced composites

(GB/T 1634.2-2004, ISO 75-2.2003, IDT)

GB/T 1843 Determination of impact strength of plastic cantilever beam (GB/T 1843-2008, ISO 180.2000, IDT)

GB/T 2039 uniaxial tensile creep test method for metallic materials (GB/T 2039-2012, ISO 204.2009, MOD)