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

GB/T 47084-2026

Additive manufacturing - Aluminium alloy by powder bed fusion

增材制造 粉末床熔融铝合金

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Nonferrous Metals Industry Association. This document was prepared by the National Technical Committee on Standardization of Nonferrous Metals (SAC/TC243) and the National Technical Committee on Standardization of Additive Manufacturing. (SAC/TC562) are jointly managed. This document was drafted by: CRRC Industrial Research Institute Co., Ltd., Guangdong Academy of Sciences Institute of New Materials, and Ningbo Zhongyuan New Materials Technology Co., Ltd. Limited Liability Company, Nonferrous Metals Technology and Economic Research Institute Co., Ltd., Northwestern Polytechnical University, Beijing Power Machinery Research Institute, Xi'an Bright Laser Technologies Co., Ltd. Technology Co., Ltd., Jiangxi Baohang New Materials Co., Ltd., Shanghai Aerospace Precision Machinery Research Institute, China Machinery Research Institute of Standards and Technology (Beijing) Limited Liability Company, GRINM Additive Manufacturing Technology Co., Ltd., Shenyang Aircraft Industry (Group) Co., Ltd., CRRC Industrial Research Institute (Qingdao) Co., Ltd. Anhui Zhongti New Materials Technology Co., Ltd., Chengdu Advanced Metal Materials Industry Technology Research Institute Co., Ltd., and Xi'an Juneng Medical Engineering Technology Co., Ltd. Limited Liability Company, Xi'an National Research Institute of Additive Manufacturing Co., Ltd., Henan Yuanyang Powder Technology Co., Ltd., Xi'an Guohong Tianyi Intelligent Technology Co., Ltd. Technology Co., Ltd., Central South University. The main drafters of this document are. Zhe Jie, Zhu Hongbin, Ren Jie, Ren Xin, Yan Xingchen, Zhao Wenjun, Yu Jun, Bai Jie, Guo Zhenyu, Zhang Yuan, and Zhao Wei. Cui Yan, Hu Fan, Ke Linda, Zhao Chunlu, Hu Qiang, Zhang Yingwei, Wang Cong, Shen Baoxiang, Shi Xiaoyan, Wu Wang, Hou Ying, Xiong Zhifei, Yu Quancheng, Li Ruidi Lu Bingwen. Additive manufacturing powder bed molten aluminum alloy

1 Scope

GB/T 47084-2026 is the Chinese national standard covering printed aluminium - the alloys that can be laser-melted without hot cracking, the powder they start from, the build parameters and the heat treatment, and the mechanical properties and porosity a finished part must reach. First edition, with GB/T 47094-2026 on zinc powder and the laser powder bed standards of this year. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the China Nonferrous Metals Industry Association. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 228.1 Metallic materials - Tensile testing - Part

GB/T 19943 Basic Rules for Nondestructive Testing of Metallic Materials by X-ray and Gamma Ray Radiography

GB/T 20975 (all parts) Chemical analysis methods for aluminum and aluminum alloys

GB/T 22315 Test methods for elastic modulus and Poisson's ratio of metallic materials

GB/T 29070 General requirements for nondestructive testing of industrial computed tomography (CT) inspection

GB/T 35351 Additive Manufacturing Terminology

GB/T 39254 General Rules for Evaluation of Mechanical Properties of Additively Manufactured Metal Parts

GB/T 42914 Test Method for Fracture Toughness of Aluminum Alloy Products

GB/T 44239 Aluminum alloy powder for additive manufacturing HB5287 Axial Loading Fatigue Test Method for Metallic Materials

3 Terms and Definitions

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

3.1 A single isolated defect Pores or unfused defects that exist independently inside or on the surface of the product and are not spatially related to other defects.

3.2 Group defects Groups of pores or unfused defects that are densely distributed, spatially correlated, and synergistically formed in localized areas inside or on the surface of the product.

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