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

GB/T 45675-2025

**Additive manufacturing - Surface texture measurement and
characterization method for metal part manufactured by powder
bed fusion**

增材制造 金属粉末床熔融成形件表面结构的测量及表征方法

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Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Characterization methods	2
4.1 General Principles	2
4.2 Contour method	2
4.3 Regional Law	3
5 Surface characteristics and preparation of the test piece	5
5.1 Surface characteristics of the test piece	5
5.2 Preparation of the surface to be tested	6
6 Measuring equipment	6
6.1 Classification	6
6.2 Working Principle	6
6.3 Measuring range	6
7 Measurement procedure	7
7.1 Measurement location	7
7.2 Measurement track	7
7.3 Measurement area size	7
7.4 Measuring equipment parameters	7
8 Data Processing	8
8.1 General	8
8.2 Missing and Abnormal Data	8
8.3 Filtering	8
9 Test Report	9
Appendix A (Informative) Recommended Characterization Parameters for Contour Method and Area Method	10
Appendix B (Informative) Measurement equipment configuration and parameter selection	12
B.1 Contact (stylus) instruments	12
B.2 Optical system	12
B.3 X-ray computed tomography system	13
Reference	14

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document was prepared by the National Technical Committee on Additive Manufacturing Standardization (SAC/TC562) and the National Technical Committee on Product Geometry Technical Specifications Standardization The Committee (SAC/TC240) is jointly responsible for this work.

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Additive Manufacturing Metal Powder Bed Fusion Parts Surface structure measurement and characterization methods

1 Scope

This document specifies the characterization method of the surface structure of metal powder bed fusion formed parts, the surface characteristics and preparation of the test parts, the measurement equipment, the test Measurement procedures, data processing and test reports.

This document is applicable to the measurement and characterization of the surface structure of metal powder bed fusion forming parts, and the surface of metal forming parts by other additive manufacturing processes.

Measurement and characterization of structures for reference use.

2 Normative references

GB/T 33523.3

GB/T 35351-2017

ISO 21920

3 Terms and definitions

The terms and definitions defined in GB/T 35351-2017 and the following apply to this document.

3.1 asbuilt

In the additive manufacturing process, in addition to removing the forming platform, removing the support and/or removing the raw material, the parts are A state before art.

[Source. GB/T 35351-2017, 2.7.2]

3.2 top surface

The upper surface of the metal powder bed fusion part is parallel to the XY plane.

Note. In the printing device coordinate system, the axis perpendicular to the Z axis and parallel to the front of the machine is the X axis, and the axis perpendicular to the Z axis and the X axis is the Y axis. GB/T 41507.

3.3 side surface

Surfaces of metal powder bed fusion parts that are not parallel to the XY plane.

Note. In the printing device coordinate system, the axis perpendicular to the Z axis and parallel to the front of the machine is the X axis, and the axis perpendicular to the Z axis and the X axis is the Y axis. GB/T 41507.