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

GB/T 33523.2-2026

Replacing GB/T 33523.2-2017

**Geometrical product specifications (GPS) - Surface texture:
Areal - Part 2: Terms, definitions and surface texture parameters**

产品几何技术规范（GPS）表面结构：区域法 第2部分：术语、定义及表面结构
参数

(English Translation)

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References

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.

This document is Part 2 of GB/T 33523 "Geometric Specifications for Products (GPS) - Surface Texture. Zone Method".

The following sections have been released.

---Part 1: Representation of Surface Structures;

---Part 2: Terminology, Definitions, and Surface Structure Parameters;

---Part 3: Standard Operation Set;

---Part 6: Classification of Surface Structure Measurement Methods;

---Part 70: Physical Measurement Standards;

- Part 71: Software Measurement Standards;
- Part 72: XML File Format x3p;
- Part 73: Terms and definitions for physical standard surface defects;
- Part 601: Nominal characteristics of contact (stylus) instruments;
- Part 602: Nominal characteristics of non-contact (confocal chromatic aberration probe) instruments;
- Part 603: Nominal characteristics of non-contact (phase-shifting interferometry) instruments;
- Part 604: Nominal characteristics of non-contact (coherent scanning interferometry) instruments;
- Part 605: Nominal characteristics of non-contact (point autofocus probe) instruments;
- Part 606: Nominal characteristics of non-contact (zoom) instruments;
- Part 700: Calibration, Adjustment and Validation of Area Topography Instruments;
- Part 701: Calibration and measurement standards for contact (stylus) instruments.

This document replaces GB/T 33523.2-2017 "Geometric Specifications for Products (GPS) - Surface Structure Zone Method - Part 2: Techniques".

The terminology, definitions, and surface structure parameters, compared with GB/T 33523.2-2017, have undergone structural adjustments and editorial changes, with the main technical changes being...

The following is a simplified version.

- The term and definition of "surface structure" have been added (see 3.1.2);
- Change "Original Surface" to "Base Surface" (see 3.1.5, 3.1.3 in the 2017 version);
- Change "coordinate value" to "vertical coordinate value" (see 3.2.5, 3.2.6 in the 2017 version);
- The term and definition of "motif" have been added (see 3.3.4);
- The terms and definitions of "first segmentation property," "second segmentation property," and "third segmentation property" have been removed (see section 3.3.6.2 of the 2017 edition).
- 3.3.6.4);
- Change "high resolution" to "high discrimination" (see 3.3.9, 3.3.12 in the 2017 version);
- Change "peak mean square deviation" to "plateau mean square deviation" (see 4.5.5.2, 4.4.4.9 in the 2017 version);

Chapter 4 of the edition);

---See Appendix E for other technical changes.

This document is equivalent to ISO 25178-2:2021 "Geometrical specifications for products (GPS) - Surface texture. Zone method - Part 2: Techniques".

Terminology, definition, and surface structure parameters.

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 and is under the jurisdiction of the National Technical Committee on Standardization of Product Geometric Specifications (SAC/TC240).

Introduction

With the implementation of the national product quality improvement plan, unified standards or principles are needed for the use of product design, manufacturing, measurement, and inspection.

The demand is becoming increasingly urgent. The existing surface structure representation methods and related standards in product geometric specifications are no longer sufficient to meet the needs of product manufacturing.

Surface quality control requirements during the process.

GB/T 33523 "Product Geometric Specification (GPS) Surface Structure. Zone Method" is based on the new generation GPS product geometric specification system.

By employing digital measurement technology, software analysis technology, and metrological evaluation methods, a novel system for the measurement and analysis of three-dimensional surface structures is constructed.

Recommended national standard. GB/T 33523, based on proposing surface structure representation methods, surface structure parameters, and specification operation sets, analyzes the surface structure...

While introducing measuring instruments, the book also highlights a variety of non-contact measuring instruments that are valuable in high-precision measurement applications but lack standard support.

GB/T 33523 also specifies standards for physical measurement and software measurement, and provides metrological characteristics for software documentation standards and surface structure measurement.

Sexuality. GB/T 33523 represents a leap from two-dimensional contour measurement to three-dimensional surface structure measurement, providing a geometric specification system for GPS products.