

ICS 17.040.20

CCS J 04



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

GB/T 33523.71-2020

**Geometrical product specifications (GPS) - Surface texture:
Areal - Part 71: Software measurement standards**

Issued on: December 14, 2020

Implemented on: July 1, 2021

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

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 S-type software measurement standard	2
5 File format of S1 reference data	3
6 Software measurement standard certificate	5
Appendix A (informative appendix) File format example	6
Appendix B (informative appendix) Relationship with GPS matrix model	8
Reference	9

Foreword

GB/T 33523 "Geometric Technical Specifications for Products (GPS) Surface Structure Area Law" is divided into the following parts:

- Part 1: Representation of surface structure;
- Part 2: Terms, definitions and surface structure parameters;
- Part 3: Standardized 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 measuring surface defects of materials;
- Part 600: Metrological characteristics of the area topography measurement method;
- 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 interference microscope) instruments;
- Part 604: Nominal characteristics of non-contact (coherent scanning interference) instruments;

---Part 605: Nominal characteristics of non-contact (spot autofocus) instruments;

---Part 606: Nominal characteristics of non-contact (zoom) instruments;

--- Part 607: Nominal characteristics of non-contact (confocal microscope) instruments;

---Part 701: Calibration and measurement standards for contact (stylus) instruments:

This part is part 71 of GB/T 33523:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

This part uses the redrafting method to amend and adopt ISO 25178-71:2017

``Geometrical Technical Specifications for Products (GPS) Surface Structure: Regional Method

Part 71: Software Measurement Standards:

Compared with ISO 25178-71:2017, this part has technical differences: The corresponding technical differences and their reasons are as follows:

---Regarding normative reference documents, this section has made adjustments with technical differences to adapt to my country's technical conditions and adjustments:

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows:

* Replace ISO 5436-2 with GB/T 19067:2, which is equivalent to the international standard (see Chapter 3);

* Replace ISO 17450-2 with GB/T 24637:2 modified to adopt international standards (see Chapter 3 and Chapter 6);

* Replace ISO 16610 (all parts) with GB /Z 26958 (all parts) equivalent to the international standard (see Chapter 3);

* Replace ISO 25178-2 with GB/T 33523:2 which is equivalent to the international standard (see Chapter 3, 5:1);

* Use JJF1001 instead of ISO /IEC Guide 99 (see Chapter 3):

This part is proposed and managed by the National Standardization Technical Committee for Product Geometric Technical Specifications (SAC/TC240):

Drafting organizations of this section: Shandong University, Tsinghua University, China Machinery Productivity Promotion Center, Tianjin University, China Institute of Metrology, China

Jiliang University, Guangdong Institute of Metrology, Ningbo Institute of Technology, Zhejiang University:

1 Scope

This part of GB/T 33523 specifies the technique of S1 and S2 software measurement standards (etalon) used for software calibration of measuring instruments:

Language definition:

This part also specifies the file format of S1 software measurement standards:

This section applies to the surface structure standard chain based on the area method, the contour surface structure defined by the link G and the area surface structure measuring instrument

The measurement standard for calibration of metrological characteristics:

Note: In this section, the term "software gauge" is the abbreviation for software measurement standard S1:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article

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

GB/T 19067:2 Product Geometrical Quantity Technical Specification (GPS) Surface Structure Profile Method Measurement Standard Part 2: Software Measurement

Quantity standard (GB/T 19067:2-2004, ISO 5436-2:2001, IDT)

GB/T 24637:2 Product Geometric Technical Specification (GPS) General Concepts Part 2: Basic Principles, Specifications, Operational Sets and Uncertainties

Fixed degree (GB/T 24637:2-2020, ISO 17450-2:2012, MOD)

GB /Z 26958 (all parts) Product geometric technical specification (GPS) filtering [ISO 16610 (all parts)]

GB/T 33523:2 Product Geometric Technical Specification (GPS) Surface Structure Area Method Part 2: Terms, Definitions and Surface Structure

Parameters (GB/T 33523:2-2017, ISO 25178-2:2012, IDT)

JJF1001 General measurement terms and definitions

ISO 25178-3 Product Geometric Technical Specification (GPS) Surface Structure Area Law Part 3: Specification Operation Set

(Geometricalproductspecifications(GPS)-Surfacetexture:Areal-Part

3: Specification operators)

ISO /IEC Guide 98-1 Uncertainty of Measurement Part 1: Expression of Uncertainty of Measurement (Uncertainty of measurement-Part 1: Introduction to the expression of uncertainty in measurement)

3 Terms and definitions

By GB/T 19067:2, GB/T 33523:2, GB /Z 26958 (all parts), GB/T 24637:2, JJF1001, ISO 25178-3,

The terms and definitions defined in ISO /IEC Guide 98-1 and the following apply to this document:

3:1

Software measurement standard

In order to verify the software used to calculate the measured parameter on the measuring instrument, it can reproduce the parameter value of the measured parameter with known specification uncertainty:

Test data or reference software:

3:2

Character [n] CHAR[n]

An array of n ASCII characters: