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

GB/T 33523.1-2020

**Geometrical product specifications (GPS). Surface texture:
Areal - Part 1: Indication of surface texture**

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Graphical symbols for marking area surface structure	1
5 Composition of complete graphic symbols for regional surface structure	3
6 Labeling of regional surface parameters	4
7 Coordinate system	7
8 Digital product definition data	7
Appendix A (Normative Appendix) Scale and Size of Graphic Symbols	9
Appendix B (Normative Appendix) Clarify the labeling of the surface structure regulations	11
Appendix C (informative appendix) Examples of surface structure requirements for marked areas	14
Appendix D (informative appendix) shows recommended procedures for intersecting planes	16
Appendix E (informative appendix) ISO special specification elements for area surface structure	18
Appendix F (Informative Appendix) Relationship with GPS Matrix Model	20
Reference	21

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 1 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 modify and adopt ISO 25178-1:2016 "Geometrical Technical Specifications for Products (GPS) Surface Structure Area

Law Part 1: Representation of Surface Structure:

Compared with ISO 25178-1:2016, 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 1101 with GB/T 1182, which is modified to adopt international standards (see Chapter 3 and Chapter 8);
- * Replace ISO 81714-1 (see Appendix A) with GB/T 16901:1 which is modified to adopt international standards;
- * Replace ISO 16792 (see Chapter 3 and Chapter 8) with GB/T 24734 (all parts) that is not equivalent to international standards:

This section has made the following editorial changes:

---In the "Scope" chapter, add "Appendix A of this part gives the scale and size of graphic symbols; Appendix B gives a clear table

The marking of the surface structure requirements; see Appendix C for examples of the surface structure requirements of the marked area; refer to the recommended procedures for indicating intersecting planes

Appendix D; For the ISO special specification elements of the regional surface structure, please refer to Appendix E "This section applies to the regional surface structure of the workpiece

Mark":

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

Drafting organizations of this section: Harbin Institute of Technology, Xi'an Edward Measuring Equipment Co., Ltd., China Machinery Productivity Promotion Center, Central China

University of Science and Technology, Tsinghua University, Shandong University, Shaanxi Institute of Metrology, China Institute of Metrology:

1 Scope

This part of GB/T 33523 specifies the use of graphical symbols to indicate areas in product technical documents (such as drawings, specifications, contracts, and reports):

The rules of the domain surface structure:

Appendix A of this part gives the proportions and dimensions of the graphic symbols; Appendix B gives the labels for clear surface structure regulations; the label area

See Appendix C for examples of domain surface structure requirements; refer to Appendix D for recommended procedures for indicating intersecting planes; ISO special regulations for area surface structures

See Appendix E for fan elements:

This section applies to the marking of the regional surface structure of the workpiece:

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 131-2006 Product Geometric Technical Specification (GPS) Representation of surface structure in technical product documents (ISO 1302:

2002, IDT)

GB/T 1182 Geometric Technical Specification for Products (GPS) Geometric tolerance shape, direction, position and runout tolerance marking

(GB/T 1182-2018, ISO 1101:2017, MOD)

GB/T 16901:1 Graphical symbols for technical documents Part 1: Basic rules (GB/T 16901:1-2008,

ISO 81714-1:1999, MOD)

GB/T 24734 (all parts) Technical product documentation Digital product definition data general rules

GB/T 33523:2-2017 Geometric Technical Specifications for Products (GPS) Surface Structure Area Law Part 2: Terms, Definitions and Tables

Surface structure parameters (ISO 25178-2:2012, IDT)

ISO 3098-2:2000 Technical product document text Part 2: Latin letters, numbers and symbols (Technical product

documentation-Lettering-Part 2: Latin alphabet, numerals and marks)

ISO 14406 Geometrical Product Specifications (GPS) Extraction [Geometrical products specifications (GPS)-Extraction]
tion]

ISO 25178-3:2012 Product Geometric Technical Specification (GPS) Surface Structure: Regional Law Part 3: Specification Operation Set [Geo-

metrical products specifications (GPS)-Surface texture: Areal-Part 3: Specification operators]

3 Terms and definitions

The terms and definitions defined in GB/T 131, GB/T 1182, GB/T 24734 (all parts), ISO 14406 and ISO 25178-3 are applicable

Used in this document:

4 Graphical symbols for marking the surface structure of the area

The requirements for the surface structure in the product technical documents can be represented by different graphic symbols: Each graphic symbol has a specific meaning: Make