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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 33523.72-2022

Geometrical product specifications (GPS) - Surface texture: Areal - Part 72: XML file format x3p

产品几何技术规范（GPS）表面结构 区域法 第72部分：XML文件格式x3p

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Foreword

This document was issued on 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 April 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 17.040.20, Chinese classification J04.

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.

This document is part 72 of GB/T 33523 "Geometric Specification for Products (GPS) Surface Structure Area Law". GB/T 33523

The following parts have been published.

--- Part 1.Representation of surface structure;

--- Part 2.Terms, definitions and surface structure parameters;

--- Part 3.Specification 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 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-shift interference microscopy)

instruments;

--- Part 604.Nominal characteristics of non-contact (coherent scanning interference) instruments;

--- Part 605.Nominal characteristics of non-contact (point autofocus probe) instruments;

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

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

This document is equivalent to Part 72 of ISO 25178-72.2017 "Geometric Product Specification (GPS) Surface Structure Area Method.

XML file format x3p".

The following minimal editorial changes have been made to this document.

---Incorporated the amendments of ISO 25178-72.2017/AMD.1.2020, the outer margins of the terms involved are used

Vertical double lines (||) are marked.

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

This document is proposed and managed by the National Product Geometric Technical Specification Standardization Technical Committee (SAC/TC240).

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Introduction

With the implementation of the national product quality improvement plan, the unified norms or principles used in the process of product design, manufacturing, measurement and inspection

needs are becoming more and more urgent. The surface structure representation method and related standards in the original product geometric technical specifications can no longer meet the requirements of the product manufacturing process.

Surface quality control requirements in the process.

GB/T 33523 "Product Geometric Specifications (GPS) Surface Structure Area Method" is based on the new generation of GPS product geometric specifications

Through digital measurement technology, software analysis technology and measurement evaluation, a new set of three-dimensional surface structure measurement and analysis

recommended national standards. GB/T 33523, on the basis of proposing the surface structure representation, surface structure parameters and standard operation set, analyzes

The method of surface structure measurement is given, the measurement technique used and the nominal characteristics of the instrument are given. In particular, GB/T 33523 covers contact

At the same time, it focuses on introducing a variety of non-contact measuring instruments that are of great value in high-precision measurement applications but lack standard support.

Measuring instrument. GB/T 33523 also regulates physical measurement and software measurement standards, and provides software file standards and surface structure measurement standards.

quantitative characteristics. GB/T 33523 realizes the leap from two-dimensional profile measurement to three-dimensional surface structure measurement, and is the standard system for GPS product geometry

Provides metrology test support.

GB/T 33523 is proposed to consist of 14 parts.

--- Part 1.Representation of surface structure. Specifies the use of diagrams in product technical documents (such as drawings, specifications, contracts and reports)

Shaped symbols represent the rules of the surface structure of the region.

--- Part 2.Terms, definitions and surface structure parameters. Specifies the terms, definitions and parameters for the evaluation of surface structure by the area method.

--- Part 3.Specification operation set. It specifies the complete standard operation applicable to the evaluation of surface structure (scale-limited surface) by the area method.

set.

--- Part 6.Classification of surface structure measurement methods. Specifies the

classification system mainly used for surface structure measurement methods, defines

Three types of methods describe the relationship between the three types of methods and give a brief description of the specific methods.

--- Part 70.physical measurement standards. Specifies physical measurements for periodic verification and adjustment of area-based surface structure measuring instruments

standard features.

--- Part 71.Software measurement standards. Specifies the S1 and S2 software measurement standards for software calibration of measuring instruments (standard

Definition of terms).

--- Part 72.XML file format x3p. Specifies an XML file format for storing and exchanging topography and contour data

Formula x3p.

--- Part 601.Nominal characteristics of contact (stylus) instruments. Specifies the standard for surface structure area method contact (stylus) instruments

called characteristics.

--- Part 602.Nominal characteristics of non-contact (confocal chromatic aberration probe) instruments. It stipulates the use of white light based on the axial dispersion characteristic

Design and metrological characterization of a non-contact instrument for the measurement of surface structure with a revolutionary confocal chromatic aberration probe.

--- Part 603.Nominal characteristics of non-contact (phase-shift interference microscopy) instruments. Phase shift interferometry (PSI) profile and area specified

Metrological properties of surface structure measurement microscopes.

--- Part 604.Nominal characteristics of non-contact (coherent scanning interference) type instruments. Specifies the phase for 3D mapping of surface heights

Metrology characterization of dry scanning interferometry (CSI) measurement systems.

--- Part 605.Nominal characteristics of non-contact (point AF probe) instruments. specifies the use of point autofocus probe measurements

Metrological properties of surface structures for non-contact instruments.

--- Part 606.Nominal characteristics of non-contact (zoom) instruments. Specifies the use of variable focus (FV) sensors to measure surface structure

Design and metrological characteristics of non-contact instruments.

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