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

GB/T 18779.3-2023

Replacing GB/T 18779.3-2009

**Geometrical product specifications (GPS) - Inspection by measurement
of workpieces and measuring equipment - Part 3: Guidelines for
achieving agreements on measurement uncertainty statements**

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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:

This document is part 3 of GB/T 18779 "Geometric Specification for Products (GPS) Measurement and Inspection of Workpieces and Measuring Equipment":

GB/T 18779 has published the following parts:

- Part 1: Judgment rules for qualified or unqualified verification according to the specification;
- Part 2: Guidelines for the evaluation of measurement uncertainty in GPS measurement, measurement equipment calibration and product verification;
- Part 3: Guidance on reaching a consensus on the expression of measurement uncertainty;
- Part 4: The basis for determining the functional limits and normative limits in the rules;
- Part 5: Inspection uncertainty of indicating measuring instruments;
- Part 6: General decision rules for acceptance/rejection of instruments and workpieces:

This document replaces GB/T 18779:3-2009 "Product Geometric Specifications (GPS) Measurement and Inspection of Workpieces and Measuring Equipment Part 3"

Part: Guidelines for Reaching a Consensus on the Expression of Measurement Uncertainty", compared with GB/T 18779:3-2009, except for structural adjustments and editing

In addition to sexual changes, the main technical changes are as follows:

a) Added agreement on composition rules (see 5:10);

b) Added agreement on the value of k (see 5:11):

This document is equivalent to ISO 14253-3:2011 "Geometric Product Specifications (GPS) Measurement and Inspection of Workpieces and Measuring Equipment"

Part 3: Guidance on reaching a consensus on the expression of measurement uncertainty:

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

Introduction

In order to reduce disputes between suppliers and customers during the acceptance process of workpieces and measuring equipment, reduce the cost of acceptance, and improve the economic efficiency of products

In order to better integrate with international trade rules, the acceptance strategy of workpieces and measuring equipment in my country and the rules for judging whether the acceptance is qualified or not need to be studied urgently:

formulate:

In order to adapt to my country's reform and opening up situation and to meet the needs of international trade, technology and economic exchanges, GB/T 18779 is equivalent to adopt

ISO 14253:

GB/T 18779 is a general standard for product geometric technical specifications (GPS) (see GB/T 20308), which affects the chain link of the GPS standard matrix model

Conformity and Nonconformity, Measurement, Measuring Equipment and Calibration:

GB/T 18779 applies the basic GPS rules given in GB/T 4249; unless otherwise specified, the default judgment rules given in this document

then apply to all GPS files:

GB/T 18779 mainly expounds the acceptance strategy and acceptance of workpieces and measuring equipment in the case of measurement uncertainty:

For the convenience of readers, GB/T 18779 is divided into 6 parts: These 6 parts are both interrelated and

They are independent of each other and together constitute the content of the acceptance strategy and qualification determination rules for workpieces and measuring equipment:

--- Part 1: Rules for judging whether the verification is qualified or unqualified according to

the specification: A strategy for the qualification verification of workpieces or measuring equipment is given;

Considering the measurement uncertainty of the measured value, the default criterion for determining whether it is qualified or not is verified according to the GPS specification of the workpiece or measuring equipment:

Then; according to the GPS specification verification, the possible handling situations that can neither be judged qualified nor unqualified can be judged:

--- Part 2: Guidance for the evaluation of measurement uncertainty in GPS measurements, calibration of measuring equipment, and product verification: it is based on measurement

Guide to the Estimation of Measurement Uncertainty in the GPS Field of the Guide to the Expression of Uncertainty (GUM); provides uncertainty management procedures

(PUMA) and Practical Iterative Methods for Evaluation of Measurement Uncertainty, and Whether or not a specified target is met in terms of measurement uncertainty UE

Requirements for the degree of certainty UT (i.e: $UE < UT$), evaluation of measurement uncertainty, formulation or verification (or both) of measurement procedures (including measurement criteria

pieces) etc:

--- Part 3: Guidelines for reaching a consensus on the expression of measurement uncertainty: It stipulates that the customer and the supplier solve the measurement uncertainty table

It provides a way to solve the disputes in the expression of measurement uncertainty and reach amicable agreement:

Consensus methods and specific operating procedures:

--- Part 4: The basis for determining the functional limits and normative limits in the rules: Outlines the main assumptions of the decision rules in Part 1 and discusses

It explains why these decision rules should be the default rules, and the factors that should be considered before applying different decision rules:

--- Part 5: Inspection uncertainty of indicating measuring instruments: It specifies the concepts and terminology for evaluating the uncertainty of detection values, and provides

A method for evaluating the uncertainty of detection values of indicating measuring instruments is presented:

--- Part 6: General decision rules for acceptance/rejection of instruments and workpieces: Given that when the default decision rule in Part 1 is in the economic

Surface is not the best-case decision rule:

Product Geometry Specification (GPS)

Measurement and inspection of workpieces and measuring equipment - Part 3:

Guidance for reaching consensus on the expression of measurement uncertainty

1 Scope

This document provides method guidelines and corresponding procedures for reaching a consensus on the expression of measurement uncertainty, helping customers and suppliers to solve problems in accordance with

Controversial issues caused by the expression of uncertainty when performing conformity determination according to ISO 14253-1, thereby avoiding time-consuming and costly debates:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 18779:1-2022 Product Geometric Specifications (GPS) Measurement and Inspection of Workpieces and Measuring Equipment Part 1: According to the regulations

Judgment rules for qualified or unqualified fan verification (ISO 14253-1:2017, IDT)

Note: The original version referenced is ISO 14253-1:1998, which has been replaced by ISO 14253-1:2017: The referenced content of ISO 14253-1:2017 is related to

There is no technical difference in what ISO 14253-1:1998 is referenced from:

GB/T 18779:2-2023 Product Geometric Specifications (GPS) Measurement and Inspection of Workpieces and Measuring Equipment Part 2:

Guidelines for the evaluation of measurement uncertainty in GPS surveys, measurement equipment calibration and product verification (ISO 14253-2:2011, IDT)

GB/T 24637:1-2020 Product Geometric Specifications (GPS) General Concepts Part 1: Models for Geometric Specifications and Inspections

(ISO 17450-1:2011, MOD)

Note: There is no technical difference between the referenced content of GB/T 24637:1-2020 and the referenced content of ISO 17450-1:2011: