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NATIONAL STANDARD OF THE
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GB/T 10610-2009 / ISO 4288:1996

Replacing GB/T 10610-1998

Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Rules and Procedures for the Assessment of Surface Texture

产品几何技术规范（GPS）表面结构

轮廓法 评定表面结构的规则和方法

(ISO 4288:1996, IDT)

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Foreword

This Standard equivalently adopt the international standard ISO 4288:1996 *Geometrical Product Specifications (GPS) – Surface Texture: Profile Method – Rules and Procedures for the Assessment of Surface Texture* (English version). This Standard is consistent with ISO 4288:1996 in the aspect of technical contents; only the following editorial modifications are made:

- Delete the Introduction of the international standard;
- In the Clause 2 “Normative References”, use the Chinese standards that adopt the international standard to replace the corresponding international standard.

This Standard replaced GB/T 10610-1998 *Geometrical Product Specifications (GPS) – Surface Texture: Profile Method – Rules and Procedures for the Assessment of Surface Texture*.

Compared with GB/T 10610-1998, this Standard has the major changes as follows:

- Add 5 items of normative references;
- Modify individual words in 4.1.2, 5.2, 6.2, 7.2.1;
- Modify the titles of Tables 1, 2 and 3;
- Change the unit name of *Rsm* from “ μm ” to “mm” in Table 3.

Appendixes A and B in this Standard are informative. The position of this Standard in GPS system is described in Appendix B.

This Standard was proposed by and under the jurisdiction of National Technical Committee for Standardization of Product Dimension and Geometric Element Specifications.

Drafting staffs of this Standard: China Productivity Center for Machinery; Harbin Measuring & Cutting Tool Group Co., Ltd.; Beijing Institute of Metrology; China National Institute of Metrology; and China Institute of Metrology.

Chief drafting staffs of this Standard: Wang Xinling, Lang Yanmei, Wu Xun, Wang Zhongbin, Gao Sitian, Zhao Jun, and Chen Jingyu.

The historical editions replaced by this Standard are as follows:

- GB/T 10610-1983, GB/T 10610-1998.

Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Rules and Procedures for the Assessment of Surface Texture

1 Scope

This Standard specifies the rules for comparison of the measured values with the tolerance limits for surface texture parameters defined in GB/T 3505-2009, GB/T 18618, GB/T 18778.2-2003, GB/T 18778.3-2006.

This Standard also specifies the default rules for selection of cut-off wavelength, λ_c , for measuring roughness profile parameters according to GB/T 3505-2009 by using stylus instruments according to GB/T 6062.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 131-2006 Geometrical Product Specifications (GPS) - Indication of Surface Texture in Technical Product Documentation (ISO 1302:2002, IDT)

GB/T 1031-2009 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Surface Roughness Parameters and Their Value

GB/T 3505-2009 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Terms Definitions and Surface Texture Parameters (ISO 4287:1997, IDT)

GB/T 6062-2009 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Nominal Characteristic of Contact (Stylus) Instruments (ISO 3274:1996, IDT)

GB/T 18618-2002 Geometrical Product Specifications (GPS) - Surface Texture - Profile Method - Motif Parameters (eqv ISO 12085:1996)

GB/T 18778.1-2002 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Surfaces Having Stratified Functional Properties - Part 1: Filtering and General Measurement Conditions (eqv ISO 13565-1:1996)

GB/T 18778.2-2003 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method Surface Having Stratified Functional Properties - Part 2: Height Characterization Using the Linear Material Ratio Curve (ISO 13565-2:1996, IDT)

GB/T 18778.3-2006 Geometrical Product Specifications (GPS) - Surface Texture: Profile Method - Surface Having Stratified Functional Properties - Part 3: Height Characterization Using the Material Probability Curve (ISO 13565-3:1998, IDT)

GB/T 18779.1-2002 Geometrical Product Specifications (GPS) – Inspection by Measurement of Workpieces and Measuring Equipment – Part 1: Decision Rules for Proving Conformance or Non-Conformance with Specifications (eqv ISO 14253-1:1998)

GB/Z 20308-2006 Geometrical Product Specifications (GPS) – Masterplan (ISO/TR 14638:1995, MOD)

3 Terms and Definitions

For the purpose of this Standard, the terms and definitions given in GB/T 6062-2009, GB/T 3505-2009, GB/T 18618-2002, GB/T 18778.2-2003, GB/T 18778.3-2006 apply.

4 Parameter Estimation

4.1 Parameters defined over the sampling length

4.1.1 Parameter estimate

An estimate of the parameter's value is calculated using the measured data from only one sampling length.

4.1.2 Average parameter estimate

An average parameter estimate is calculated by taking the arithmetic mean of the parameter estimates from all the individual sampling lengths.

When the standard number of five sampling lengths is used for roughness profile parameters, no suffix needs to be added to the symbol.

For a parameter evaluated over a number of sampling lengths other than five, that number shall be added as a suffix to the parameter symbol (e.g. Rz_1 , Rz_3).

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