

Translated English of Chinese Standard: GB/T1031-2009

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GB/T 1031-2016

Replacing GB/T 1031-1995

Geometrical product specifications (GPS) - Surface structure: Profile method - Surface roughness parameters and their values

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Foreword

This standard replaces GB/T 1031-1995 “Surface roughness parameters and their values”. As compared with GB/T 1031-1995, the main changes are as follows:

- ADD the foreword of the standard;
- ADD the factor “Geometric product specification (GPS)” to the product name, in order to in line with the new standard system;
- In accordance with the provisions of GB/T 3505 on the surface roughness parameters and the definition, CHANGE the parameter code “Ry” of the “profile maximum height” of the original standard into “Rz”; CHANGE the parameter code “Sm” of the “mean spacing of profile micro-unevenness” of the original standard into “Rsm”;
- In accordance with the provisions of GB/T 3505 on the “sampling length”, CHANGE the sampling length code “l” of the original standard into “lr”.

Appendix A and B of this Standard are informative. The location of this standard in the GPS system is described in Appendix B.

This standard was proposed by AND shall be under the jurisdiction of the National Technical Committee for Standardization of Product Dimensions and Geometrical Specifications (SAC/TC 240).

The drafting organizations of this standard: China Productivity Center for Machinery, Harbin Measuring Tool & Cutting Tool Group Co., Ltd., China Institute of Metrology, Times Group Corporation, Beijing Institute of Metrology and Testing.

The main drafters of this standard: Wang Xinling, Lang Yanmei, Gao Sitian, Wang Zhongbin, Chen Jingyu.

This Standard replaces the standard previously issued as follows:

- GB/T 1031-1983, GB/T 1031-1995.

Geometrical product specifications (GPS) - Surface structure: Profile method - Surface roughness parameters and their values

1 Scope

This standard specifies the general rules for the evaluation of surface roughness parameters and their value series AND for the definition of surface roughness.

This standard applies to the evaluation of the surface roughness of industrial products.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) 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 3505-2009 Geometrical product specifications (GPS) - Surface texture: Profile methods - Terms, definitions and surface texture parameters (ISO 4287:1997, IDT)

GB/T 10610-2009 Geometrical product specifications (GPS) - Surface texture: Profile method - Rules and procedures for assessment of surface structures (ISO 4288:1996, IDT)

GB/Z 20308-2006 Geometrical product specifications (GPS) - Masterplan (ISO/TR 14638:1995, MOD)

3 Terms and definitions

This standard uses the relevant terms and definitions of GB/T 3505.

machining sequence, and the roughness of the different areas.

6.2 The indication method of surface roughness shall comply with the provisions of GB/T 131; AND the default evaluated length shall comply with the provisions of GB/T 10610.

6.3 In order to ensure the surface quality of products, it may follow the functional requirements to specify the surface roughness parameter values. Otherwise, it may neither specify the parameter values nor conduct inspection.

6.4 The value of each parameter of surface roughness shall be obtained from each section perpendicular to the reference plane. For a given surface, if the direction of the cross-section coincides with the direction of the height parameter (R_a , R_z), it may not specify the direction of the measurement cross-section; otherwise it shall be indicated on the drawing.

6.5 As for the surface defects to which the surface roughness requirements do not apply, in the evaluation process, it shall not include the surface defects (such as grooves, pores, scratches, etc.). If necessary, it shall separately specify the requirements for surface defects.

6.6 Depending on the surface function and economic rationality of production, When the value series in Table 1, Table 2 and Table 3 are not satisfactory, it may select the supplementary series values, as shown in Appendix A.

Appendix B

(Informative)

Position in the GPS matrix model

As for the full details of the GPS matrix, SEE GB/Z 20308-2006.

B.1 This standard information and its application

This standard specifies the general rules for the evaluation of surface roughness parameters and their value series and for the definition of surface roughness.

B.2 Position in the GMP matrix model

This standard is a universal standard for GPS, which affects the link 1 of the roughness profile standard link in the GPS universal standard matrix, as shown in B.1.

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