

ICS 01.040.17; 17.040.20
CCS J04



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

GB/T 24631.1-2024

**Geometrical product specifications (GPS) - Straightness - Part
1: Vocabulary and parameters of straightness**

产品几何技术规范（GPS） 直线度 第1部分：词汇和参数

Issued on: September 29, 2024

Implemented on: September 29, 2024

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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 is required. This document is Part 1 of GB/T 24631 "Geometric Technical Specification for Products (GPS) Straightness". GB/T 24631 has been issued The following parts were published. Part

1 Scope

GB/T 24631.1-2024 gives the vocabulary and parameters of straightness in the Chinese GPS system. Straightness is applied to the axis of a shaft or bore, to the edge of a part and to a line on a surface, and in each case the number obtained depends on the reference line fitted to the extracted points and on the parameter taken from the residuals; a least squares line, a minimum zone, a maximum inscribed or minimum circumscribed line give different answers, and total, peak and valley parameters differ again. The standard defines the basic terminology, the terms for the extracted line and the association operations, each reference line and the parameters derived from it, so that the drawing, the measuring instrument and the inspection report agree on what is being asked. It is the straightness member of the Chinese GPS form standards, alongside those for flatness, roundness and cylindricity. It took effect on 29 September 2024.

This document defines the terms and concepts related to the straightness of individual components. This document applies only to the complete straightness profile of a single component.

Note. The straightness of the extracted axis of the cylindrical surface is defined by ISO 121801 and ISO 121802.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies. in this document. ISO 17450

3 Terms and definitions

For the purpose of this document, the terms and definitions defined in ISO 174501 and the following apply.

3.1 Basic terminology

3.1.1 Straightness Properties of a straight line.

Note. The mathematical definition of the straightness tolerance of nominal components is given in Appendix A.

3.1.2 normal of the surface Fits normals to components.

3.1.3 Straightness plane The plane that intersects the fitted elements as a straight line.
Note

3.2 Terms related to contours

3.2.1 Extracted line < Straightness> The intersection of the actual surface expressed numerically with the straightness plane.