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

GB/T 24632.1-2024

**Geometrical product specifications (GPS) - Roundness - Part 1:
Vocabulary and parameters of roundness**

产品几何技术规范（GPS）圆度 第1部分：词汇和参数

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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 24632 "Product Geometric Technical Specification (GPS) Roundness". GB/T 24632 has been published The following sections. Part

1 Scope

GB/T 24632.1-2024 gives the vocabulary and parameters of roundness in the Chinese GPS system. Roundness is measured on almost every turned and ground component, and it is the form characteristic where the choice of reference circle has the largest practical effect: the least squares circle, the minimum zone circle, the maximum inscribed circle and the minimum circumscribed circle each answer a different engineering question, the last two corresponding to what a mating bore or shaft actually feels, and each yields a different roundness value from the same trace. The standard defines the basic terminology, the terms for the extracted circular line, the association operations, each of the reference circles and the parameters derived from it, together with the harmonic content by which a roundness profile is characterised. It is the roundness member of the Chinese GPS form standards. It took effect on 29 September 2024.

This document defines the terms and concepts related to the circularity of single components. This document applies to the complete roundness profile of a single component.

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 Roundness Characteristics of a circle.

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

3.1.2 roundness axis The axis of an element related to its constituent elements.

Note. The component element can be the surface of a cylinder or a surface of a body of revolution.

3.1.3 roundness plane A plane perpendicular to the circularity axis within the entire extent of a feature.

3.2 Terms related to contours

3.2.1 extracted circumferential line < Roundness > The intersection of the actual surface and the roundness plane expressed in numbers.

Note. The roundness extraction rules are specified in ISO 121812, and the extracted circular line is one of the extracted components.