International Standard

ISO 2768

Geometrical product specifications (GPS) — Dimensional tolerancing — Tolerance limits for general specification of linear and angular sizes

Spécification géométrique des produits (GPS) — Tolérancement dimensionnel — Limites de tolérance pour la spécification générale des tailles linéaires et angulaires

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Second edition
2026-11

Reference number
ISO 2768:2026(en)

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Published in Switzerland

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Foreword

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This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*, in collaboration with the European Committee for Standardization (CEN) in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 2768-1:1989), which has been technically revised.

The main changes are as follows:

— deletion of Clause 6;

— revision of the scope to limit it to linear and angular sizes to align with the ISO 14405 series;

— removal of tolerance limits for broken edges (external radii and chamfer heights);

— extension of the field of application to parts independent of material and manufacturing method.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document is a geometrical product specification (GPS) standard and is to be regarded as a complementary ISO GPS standard (see ISO 14638). It influences chain link A of the chains of standards on size.

The ISO GPS matrix model given in ISO 14638 gives an overview of the ISO GPS system of which this document is a part. The fundamental rules of ISO GPS given in ISO 8015 apply to this document and the default decision rules given in ISO 14253-1 apply to specifications made in accordance with this document, unless otherwise indicated.

For more detailed information of the relationship of this document to other standards and the ISO GPS matrix model, see Annex C, Table C.1.

This document contains tables of tolerance limits for linear sizes and angular sizes.

ISO 2768:1973 was a general tolerance standard for parts produced by metal removal processes.
ISO 2768-1:1989 updated the tolerances and extended the tables covering a wider range of nominal sizes, and introduced tolerances for broken edges (external radii and chamfer heights). It also changed the field of application by adding parts formed from sheet metal. Significant changes have occurred in industry since these standards were released, for example, machine performance, process capability, metrology or process planning. The tolerance limits contained in this document have not been updated. Therefore, this document is no longer representative of the current state of the art in industry.

However, ISO 2768-1:1989 is still heavily used and its usage is still widespread in industry. ISO 2768-1:1989 is sometimes even used for parts made of non-metallic materials or manufactured with process other than machining. However, those materials and manufacturing process were not part of the assumptions made for the determination of the values contained herein.

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This document intends to continue to provide the users a set of values that are still considered a useful source of information by many companies around the world while removing the main source of ambiguities that was present in ISO 2768-1:1989. This document, used in conjunction with ISO 22081, minimizes ambiguities and misinterpretation and respects legacy constraints by using the same values that were used in the past for the general specification of linear and angular sizes.

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The user is reminded that the selection of tolerance limits derived from a functional analysis often allows for an optimized product. This is in contrast with selecting values from the tables in this document that are not correlated to functional needs. For further information, see the fundamental assumptions and principles stated in ISO 8015.

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