International

ISO 5459

# Geometrical product specifications (GPS) — Geometrical tolerancing — Datums and datum systems

*Spécification géométrique des produits (GPS) — Tolérancement géométrique — Références spécifiées et systèmes de références spécifiées*

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This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*, collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 290, *Dimensional and geometrical product specification and verification,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 5459:2011), which has been technically revised.

The main changes are as follows:

— update of the Normative references and Bibliography;

— addition of definitions 3.20, 3.20.1 and 3.20.2;

— in Table 1, update of the symbol of the datum feature indicator;

— in Table 1, addition of the symbol of single datum target indicator, moveable datum target indicator, restricted datum feature, indication of a situation feature and datum coordinate system indicator, and addition of a note;

— in Table 2, addition of [SV], [SF] and [SF*xx*], and addition of a note;

— in Clause 6, addition of a paragraph before the example in 6.1, update of 6.2.1 and 6.2.2, replacement of the first paragraph in 6.2.3 and 6.2.4, addition of the last paragraph in 6.3.2 and table titles added in 6.3.2 and subsequent tables renumbered;

— in Clause 7, addition of a note in 7.1, update of 7.2.1, 7.3, 7.4.2.1 and 7.4.2.2, update of the text and figures in 7.4.2.4 up to Figure 22, update of the first paragraph of 7.4.2.6, update of Figure 39, addition of a new rule 11 in 7.4.2.11 and a new rule 12 in 7.4.2.12;

— addition of a new Clause 8;

— in Annex A, update of the text between Figures A.1 and A.2, update of the first paragraph in A.2.1 and of Figure A.4, addition of Notes 1 and 2 in A.2.2.3, and update of the row for the plane in Table A.2;

— update of Annex F, addition of new Annexes G to J, update of Annex K giving the relation to the GPS matrix model.

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.

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

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 the specifications made in accordance with this document, unless otherwise indicated.

For more detailed information on the relationship of this document to other standards and the GPS matrix model, see Annex K.

For the definitive presentation (proportions and dimensions) of symbols for geometrical tolerancing, see ISO 7083.

The previous version of this document dealt only with planes, cylinders and spheres being used as datums. There is a need to consider all types of surfaces, which are increasingly used in industry. The definitions of classes of surfaces as given in Annex B are exhaustive and unambiguous.

This document applies new concepts and terms that have not been used in previous ISO GPS standards. These concepts are described in detail in ISO 14638, ISO 17450-1 and ISO 17450-2; therefore, it is recommended to refer to these standards when using this document.

This document provides tools to express location or orientation constraints, or both, for a tolerance zone. It does not provide information about the relationship between datums or datum systems and functional requirements or applications.