
**Geometrical product specifications
(GPS) — General concepts —**

**Part 3:
Toleranced features**

*Spécification géométrique des produits (GPS) — Concepts
généraux —*

Partie 3: Éléments tolérancés

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 213, *Dimensional and geometrical product specifications and verifications*.

This first edition of ISO 17450-3 cancels and replaces ISO 14660-2:1999, which has been technically revised.

ISO 17450 consists of the following parts, under the general title *Geometrical product specification (GPS) — General concepts*:

- *Part 1: Model for geometrical specification and verification*
- *Part 2: Basic tenets, specifications, operators, uncertainties and ambiguities*
- *Part 3: Toleranced features*
- *Part 4: Geometrical characteristics for quantifying form, orientation, location and run-out deviations*

Introduction

This part of ISO 17450 is a geometrical product specifications (GPS) standard and is to be regarded as a fundamental GPS standard (see ISO 14638). It influences all chain links of all chains of standards in the general GPS matrix model.

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 relation of this part of ISO 17450 to the GPS matrix model, see [Annex A](#).

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Geometrical product specifications (GPS) — General concepts —

Part 3: Toleranced features

1 Scope

This part of ISO 17450 gives default definitions for the extracted features (integral or derived) of workpieces, which are toleranced features in GPS specifications (dimensional, geometrical, or surface texture specifications). This part of ISO 17450 defines default geometrical features used to define GPS characteristics.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17450-1, *Geometrical product specifications (GPS) — General concepts — Part 1: Model for geometrical specification and verification*

ISO 22432, *Geometrical product specifications (GPS) — Features utilized in specification and verification*

ISO 25378, *Geometrical product specification (GPS) — Characteristics and conditions — Definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17450-1, ISO 22432, ISO 25378 and the following apply.

3.1

opposing point pair

collection of two points established simultaneously, the separation of which is a local size of a feature of size

Note 1 to entry: The distance between the two points constituting an opposing point pair is a two point size (see ISO 14405-1).

Note 2 to entry: In the case of a feature of size defined as “two opposed planes”, the median point of the two points constituting an extracted opposing point pair belongs to its median extracted surface.

3.2

elementary toleranced feature

smallest part of a complete geometrical feature for which a GPS characteristic is defined

EXAMPLE 1 For an unrestricted flatness specification, a global GPS characteristic is defined for the complete integral feature, which in this case is an elementary toleranced feature.

EXAMPLE 2 For a straightness specification, a local GPS characteristic may be defined for each line feature in a given direction in the complete integral feature. Each of these line features is the intersection between a planar feature and the complete integral feature and is an elementary toleranced feature. The complete integral feature is the toleranced feature.