

First edition
2007-06-01

Geometrical product specifications (GPS) — Dimensional and geometrical tolerances for moulded parts —

Part 3: General dimensional and geometrical tolerances and machining allowances for castings

*Spécification géométrique des produits (GPS) — Tolérances
dimensionnelles et géométriques des pièces moulées —*

*Partie 3: Tolérances dimensionnelles et géométriques générales et
surépaisseurs d'usinage pour les pièces moulées*



Reference number
ISO 8062-3:2007(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 8062-3 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This first edition of ISO 8062-3, together with ISO 8062-1 and ISO/TS 8062-2, cancels and replaces ISO 8062:1994, of which it constitutes a technical revision.

ISO 8062 consists of the following parts, under the general title *Geometrical product specifications (GPS) — Dimensional and geometrical tolerances for moulded parts*:

- *Part 1: Vocabulary*
- *Part 3: General dimensional and geometrical tolerances and machining allowances for castings*

Rules is to form the subject of a future Part 2 [Technical Specification].

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Introduction

This part of ISO 8062 is a geometrical product specification (GPS) standard and is to be regarded as a complementary process-specific tolerance standard (see ISO/TR 14638). It influences chain link 2 of the chain of standards on mouldings.

For more detailed information about the relation of this part of ISO 8062 to other standards and the GPS matrix model, see Annex F.

This part of ISO 8062 defines a system of tolerance grades and machining allowance grades for cast metals and their alloys.

The specified system applies if the manufacturer provides a pattern or die equipment, or accepts responsibility for proving it.

The tolerances specified for a casting may determine the casting method. It is therefore recommended, before the design or the order is finalized, that the customer liaise with the foundry to discuss:

- a) the proposed casting design and accuracy required;
- b) machining requirements;
- c) the method of casting;
- d) the location of the parting surfaces and the necessary draft angles;
- e) the number of castings to be manufactured;
- f) the casting equipment involved;
- g) the consequences of the wear-out of the equipment during its life cycle;
- h) the datum system in accordance with ISO 5459;
- i) the casting alloy;
- j) any special requirements, e.g. individual dimensional and geometrical tolerances, fillet radii, tolerances and individual machining allowances;

NOTE Because the dimensional and geometrical accuracy of a casting is related to production factors, tolerance grades which can be achieved for various methods and metals are described in Annex A.

- k) dimensional tolerances for long series and mass production, where development, adjustment and maintenance of casting equipment make it possible to achieve close tolerances;
- l) dimensional tolerances for short series and single production;
- m) geometrical tolerances.

Information on typical required machining allowance grades is given in Annex B.